Sustainability transition in the fashion industry

A multi-case study of manufacturers in the Prato textile Industrial District (Italy).

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Degree of Master of Arts (60 credits) with a Major in Leadership and Organization
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Abstract

The fashion industry, the world's third-largest manufacturing sector, is a complex network involving creation, production, distribution, and consumption of fashion products. Despite extensive research on sustainable transitions in supply chains, little attention has been given to the role of supply chain actors in sustainability, especially yarn mills and manufacturers. This thesis investigates the sustainability transition within fashion supply chains with a specific focus on knitwear and textile production in the Prato textile Industrial District (Italy), characterized by its interconnected small and medium-sized enterprises, which evolved from wool production to a diverse fashion hub. This research aims to understand the role of knitwear and woven producers in sustainability transition, exploring drivers, barriers, and sustainability identification. To address this gap, semi-structured interviews were conducted with members of four different companies, and company sustainability reports and certifications were also analyzed. The theoretical foundation integrates the Triple Bottom Line (TBL) concept, organizational change, and network theory to explore economic, social, and environmental aspects, fostering a holistic approach to sustainability. Organizational change models like Lewin's three-step model and Kotter's 8-step change model inform the investigation of sustainable organizational practices. Thematic analysis uncovers key themes surrounding sustainable transition, spanning historical context, sustainability definitions, sustainability practices, barriers, drivers, and sustainability partners. These themes are linked to organizational change and Network theory in the axial coding process, illustrating connections between theory and empirical findings. A conceptual framework is designed to link fashion companies' strategies with triple bottom line (TBL), highlighting manufacturing processes and strategic approaches towards sustainability. Key themes include governance, material sourcing, transparency, partnerships, diverse practices, and categorizing drivers and barriers. This study contributes to understanding how economic, social, and environmental factors intersect in fostering sustainable fashion practices. The findings also provide valuable insights into organizational change theory and network theory's applicability in sustainable fashion contexts. Recommendations for future research include broader industry scopes, technology impacts, government policies, and longitudinal studies to track evolving perceptions and practices. The analysis enriches the discourse on sustainable fashion manufacturing and guides further research endeavors in the fashion industry's sustainability domain.

Key words: Sustainability transition, Organizational change, Network theory, Triple bottom line, Fashion Industry, Drivers &Barriers, CSR.
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1. Introduction

1.1 Background

Many studies have researched the various factors that determine the sustainability transition of supply chains, but there is still a lack of research that studies the role of the supply chain actors in Sustainability transition in the fashion industry, especially the role of yarn mills and textile manufacturers. The fashion industry is a complex system that is formed by a network of actors involved in the different activities such as creation, production, distribution and consumption of fashion products. It is the third largest manufacturing industry in the world and plays a key role in the global economy in terms of annual revenues and its ongoing rapid growth (Ellen MacArthur Foundation, 2017). Specifically, the textiles and clothing global market accounts for 1.5tr USD and employs more than 300 million people (McKinsey & Company, 2023). Until recent years the textile production followed a linear way of producing, distributing and using clothes, which is not sustainable anymore. This is because, this system puts pressure on resources, degrades the natural environment, pollutes, and builds significant societal impacts at local, regional and international scale (McKinsey & Company, 2023). Furthermore, fashion brands are forced to be more vigilant towards their sustainability agenda, by ensuring that their Sustainability efforts go beyond “greenwashing” activities. This is because consumer’s awareness towards sustainability-related initiatives and products increased considerably in the last years and there are new and emerging regulations towards Sustainable reporting (Buchel et al., 2022). Lastly, fashion industry’s value chains are formed by an asymmetric power distribution (Buchel et al., 2022). Therefore, there is the necessity to shift into a Sustainable model that reduces the usage of non-renewable resources and consumption of resources in general. This can be done in different ways, such as recycling yarn and materials and re-using production waste (Ellen MacArthur Foundation, 2017). Furthermore, the sustainability challenges are present along fashion supply chains, as for many manufacturers “their overall social and environmental impact comes mostly from their supply base rather than their internal operations” (Preuss and Fearne, 2021).

1.2 Research problem

In this paper we focus on the sustainability transition in the fashion supply chain, in specific the knitwear and textile family-owned small-medium firms. Focusing on the supply chain of textiles is important because supply chain management strongly affects the competitive advantages of fashion companies and its profitability (Towers et al., 2013). Here, different themes are necessary as transparency along the supply chain, supply network that involves different partners, and different initiatives that suppliers must undertake in order to reduce the negative effect of supply chain on the environment and society (Rezaul et al., 2019).

One of the main challenges for manufacturers is to produce a vast range of products, starting from the fibers and yarns, to different patterns and designs, following sustainability practices that are required by their customers (Biglardi and Bottani, 2022). Furthermore, they must align with the critical success factors of the products they made, as the products are innovative, functional and sustainable (Biglardi and Bottani, 2022).

Fashion supply chains present normally a strong power imbalance, where retailers and suppliers commonly have little negotiating power, because all the power is in the customer's hands. But this lack of power from the supplier's standpoint can be increased by engaging in different sustainability practices and improving cooperation, collaboration and coordination between partners (Perry, 2012), which introduces the concept of “networking” (Biglardi and Bottani, 2022). Such collaboration helps firms bridge gaps in their information, scientific knowledge, resources and competencies (Biglardi and Bottani, 2022). The fashion industry engages different actors and activities, thus making sustainability a complex task and around this industry lean different “networks of persons whose cooperative activity, organized on the basis of their common knowledge of the conventional ways to
do things, produces the peculiar kind of works of art for which that world is known” (Biglardi and Bottani, 2022). Consequently, the main strategy is to obtain diverse knowledge and skills, and there is the need for better “cooperation, coordination and collaboration” between supply chain partners (Biglardi and Bottani, 2022).

Therefore, sustainable supply chain management (SSCM) has become a significant issue in recent research. It combines the concepts of sustainability and supply chain management and involves all the series of activities necessary to increase sustainability in a company's supply chain. Moreover, the barriers and drivers for sustainable supply chain management have been studied by different researchers, because of their importance. For example, it emerged that textile companies use code of conduct to ensure supplier’s compliance to certain sustainability standards. The strong complexity of the textile supply chains led to different research concerning the sustainable management of supply chains, but there are still various research gaps in relation to the rationale behind the sustainable practices and mechanisms via which social and environmental supply chain strategies are executed. Thus, the sensitivity of the textile sector to each dimension of sustainability according to the triple bottom line (TBL) (Biglardi and Bottani, 2022).

1.3 Purpose of the research

The purpose of this research is to generate understanding about the factors and role of the knitwear/woven producers in the fashion Sustainability transition. Specifically, we want to explore the drivers and barriers of this transition by following the theories of organizational change, network theory and following the Strategic approaches towards social and environmental sustainability in the TBL.

1.4 Research questions

These challenges lead us to the following research question:

*How is the sustainability transition in fashion practiced by yarn mills and textile manufacturers?*

In order to successfully answer this research question, the following sub-questions have been chosen:

- *What are the drivers to Sustainable practices in the textile supply chain?*
- *What are the barriers to Sustainable practices in the textile supply chain?*
- *How is Sustainability identified in the organizations?*
- *In which level is Sustainability identified in the organizations?*

1.5 Thesis Structure

The paper will start with a definition of terms and concepts that is necessary to contextualize the cases studied. This will be followed by the theory chapter that contains the main theories of the thesis: Organizational change, Network Theory and the Triple Bottom Line. Here, the theoretical framework of strategic approaches towards social and environmental sustainability is highlighted, as it will be used in the analysis combined with the TBL perspective. Subsequently, the methods and methodology chapter will be described, followed by the analysis. The latter will be succeeded by the discussion chapter where all the key findings will be described. The last two chapters will be the conclusions that will answer the research question and sub questions, followed by the future research chapter that will close the paper.
1.6 Definition of terms and concepts

1.6.1. Sustainability

Sustainability is defined as the “respectful use of natural resources in order to leave possibilities for future generations to live on earth with the same or better conditions as present generations” (Visser & Brundtland, 2013, p. 37). Sustainability as a term has been known for a long time in the business-economics arena as long-term conservation and development of the firm. Later on, with the introduction of the corporate citizenship’s concept, and with the appearance of the United Nations Sustainable Development Goals (SDGs) in 2015, the notion of sustainability developed including social and environmental interests in corporate sustainability’s definition (Rendtorff, 2019). The notion of sustainability has been developed additionally in the triple bottom line concept, which argues that companies account not merely for its economic returns and prosperity, but also for its influence on the environmental and social interconnections with its employees and local communities (Rendtorff, 2019). Furthermore, another central model developed further is the concept of Corporate Social Responsibility (CSR), which makes use of business ethics with the internal and external firm’s surroundings. In specific, this means that the firm should not simply follow the law, but also engage in improving the society (Rendtorff, 2019). On one hand, CSR is related to the integration of the firm in its strategic management, on the other hand is connected with prudent risk management with the aim to defend the firm's reputation. Therefore, CSR management is central in the move towards the SDGs (Rendtorff, 2019). Unfortunately, CSR has the risk of “moral blindness” (Rendtorff, 2019, p. 29) and lack of ethics related to the current global crisis. This led to the creation of notions as “green washing” and the new “SDG-washing” because companies write selective reports of their impacts, in order to achieve the SDGs.

In this paper, Sustainability will be analyzed focusing on the concept of Sustainability transition and the role of supply chains combined with the use of CSR strategy to reach such transition, which will give a practical contribution to CSR research.

1.6.2 Sustainable Fashion industry

The current modern fashion industry became after almost one century a “key mean of one’s expression”, and despite the acknowledgment of the enormous social, environmental, and economic issues created by this industry, fashion demand is overgrowing by disregarding sustainability (Bhandari et al., 2022).

There is no final definition of sustainable fashion, but many concepts and terms have arisen in the past few decades describing the movement towards sustainability as “greener, more ethical, slower, circular and more transparent fashion (i.e., Clark 2008; Fletcher 2010; Ozdamar Ertekin and Atik 2015; Henninger et al. 2016; Brydges et al. 2014). Bridges et al. (2020) defined Sustainable fashion as “clothing, shoes and accessories that are manufactured, marketed and used in the most sustainable manner possible, taking into account both environmental and socio-economic aspects.” In fact, this indicates a constant improvement of a product's life cycle stages, starting from raw material production, manufacturing to use, reuse, remake, repair and recycle of the products and its fibers or constituents. In Sustainable fashion it is central to question which stakeholders took part of the decision-making processes and which have been left out.

The UN outlined in 1987 the Sustainable Development framework that faces the needs and requirements of the present without invalidating future generation’s capacity to address their needs (Bhandari et al., 2022). Sustainable Development’s objective is to achieve a balance between economic, social and environmental sustainability. Taking into consideration this definition, sustainable fashion has been defined as “a process that involves sourcing, manufacturing, and consumption of the clothes whilst responsible utilization of the resources, which is harmless to our environment” (Bhandari et al., 2022).
Different practices such as overproduction, overconsumption and fast fashion still dominate fashion’s landscape, which has not yet been able to eliminate unsustainable practices (Buchel et al., 2022). In fact, the textile and clothing industry is still among the largest polluters in the world and its environmental and social unsustainability is not retreating. Therefore, civil society, private and public figures urge a substantial change toward a sustainable fashion industry. As a reaction, different opportunities of sustainable fashion are rising across the industry, including pre-competitive business collaboration, consumer awareness and interest for sustainable fashion and the emerging of alternative business models, material and practices (Buchel et al., 2022).

Nevertheless, the sustainable transformation of the fashion industry shows just a slow progress, and one of the reasons is the complexity and fragmentation of the fashion supply chains (Buchel et al., 2022).

1.6.3 Sustainability transition

Sustainability transitions research aims to investigate how an unsustainable regime or industry that is locked-in can shift into a sustainable one. Within the fashion industry, the sustainability transition is not studied in a specific space, theme, or actor, but it unravels the complexity of the fashion system and focuses on specific entry points for change that are already existing (Buchel et al., 2022).

In general, sustainability transitions need a radical change from the different actors and activities along the value chain. Here, supply chain actors move from tough power imbalances relationships toward collaboration and partnerships based on reciprocity, mutual understanding and connection. Supply chain allies share benefits and risks, build long-term collaborations to build capacities and improve sustainability performances. Furthermore, they allocate resources to allow all actors to change their business-as-usual practices. Some of the best indicators of this new supply chain model are the duration of the partnerships, their power balance, the transparency of production processes and chains and the changes applied in how materials are managed and owned (Buchel et al., 2022).

1.6.4 Fashion Supply chain

After the tragic episode of the Rana Plaza collapse on 24th April 2013, transparency has gained attention and improved supply chain checkups in whole manufacturing processes are required. Though, there have not been many changes in supply chains, where workers keep being mistreated (Bhandari et al., 2022). From this accident the whole fashion industry’s supply chain has come under the scrutiny of sustainable practices, and fashion brands are forced to shift their practices and follow alternative sustainable sourcing methods. As a consequence, companies using a classic ‘take-make-use-dispose’ linear model will disappear (Bhandari et al., 2022).

Fashion brands embrace different operations strategies, which can be centralized or decentralized operations, leading to different supply chain configurations. The fashion supply chain can be classified into three main categories (Figure 1):
Figure 1 - Supply Chain Structures for the Fashion Industry. Source: Fung et al. (2021, p.6).

- Vertically integrated structure: vertical integration of product development processes within one fashion company;
- Production outsourcing structure: outsourcing property. The fashion brand does not own the manufacturing facilities, but it outsources the material sourcing and production activities. Only the product design is centralized. This structure can be expanded through globalization.
- Decentralized structure: it is largely used by brands by offering diversified products.

In this paper we study the second type of supply chain, the Production outsourcing structure. (Fung et al., 2021).

To achieve sustainable fashion, cooperation among all members within the product development processes is central and supply chains are the main openings to sustainability (De Aguiar Hugo et al., 2021).

1.6.5 Drivers and barriers

The shift from traditional business models with a linear ‘take-make-use-dispose’ vision to sustainable sourcing models, brings several barriers and challenges that must be recognized and envisioned (Bhandari et al., 2022). Several studies have researched the drivers, barriers and models for sustainability in the fashion industry (Todeschini et al., 2017; Barbosa-Póvoa et al., 2018), but they do not focus specifically on sustainable sourcing but examining sustainability as a complete subject. Furthermore, other researchers of sustainable sourcing focused on limited fashion industry’s sectors as textile, luxury, slow and fast fashion (Brewer, 2019; Chan et al., 2020; Koep et al., 2021), global location (Nayak et
al., 2019; Galli and Bassanini, 2020; Zhang et al., 2021) or on specific fashion organizations (Aftab et al., 2018; Bae, 2019; Javed et al., 2020). There is a gap in sustainability research about the barriers that may preclude the effective implementation of sustainability practices in the fashion industry (Bhandari et al., 2022). In general, the industry is defined by fragmented and often global supply chains, differentiation advantages based on product style and short product life cycles, therefore the industry is acknowledged as a challenge sector for sustainability (Bhandari et al., 2022).

The fashion industry includes not only clothing, but various sectors as apparel, jewelry and cosmetics. Therefore, this diversity of products highlights that the fashion supply chain is composed of buyers' material procurements from different suppliers, production, logistics and transportation, distribution, retailers, and customers (Bhandari et al., 2022). Hence, transparency in the supply chain has a key role in validating the basis of sustainable materials (Bhandari et al., 2022).

Textile waste is a huge problem related to the fashion industry, and this can be generated mostly during textiles and clothing production processes, in the form of yarn, fibers, and fabric residues. Moreover, there are high levels of pre-consumption waste generated because garments are damaged, defective or unsold (De Aguiar Hugo et al., 2021).

As mentioned, supply chains in the fashion industry are complicated, and globalization becomes a critical factor for sustainability, as it is problematic to identify all the suppliers in a “chain that has several layers” (De Aguiar Hugo et al., 2021). Another barrier or obstacle for sustainability is the lack of knowledge in the sector government policies. In fact, the system is too complex, and the installation prices are very high, which have prevented fashion companies and manufacturers from embracing alternative energy solutions. Moreover, government certifications that are central for sustainability are viewed in a negative way as they are too expensive (De Aguiar Hugo et al., 2021). An additional important barrier is reduced consumption and production, due to the high competition and the increase in prices, which does not necessarily lead to a reduction of environmental impacts. This is because consumers are aware of sustainable products but are still more focused on more affordable products (De Aguiar Hugo et al., 2021).

Many drivers have been studied that lead into a Sustainable fashion. First, governmental and policy requirements are also drivers since companies cannot discharge ethical and environmental obligations. Furthermore, certifications are becoming substitutes for supplier assessment (De Aguiar Hugo et al., 2021). Second, alternative business models and economic gains from sustainable production measures can provide economic advantages. For example, green initiatives can generate more revenues by increasing cost savings, reducing energy consumption, recycling fibers and materials and reducing packaging waste. Third, the increased consumer awareness on sustainability and environmental issues is a key driver for fashion brands. This is mostly seen with the use of recycling materials, which had a positive effect on customers' purchase intentions (De Aguiar Hugo et al., 2021).
2. Theories

2.1 The Triple Bottom Line

The correlation between sustainable fashion and the TBL is a critical challenge, especially concerning the sustainable fashion supply chain, which must take into consideration all the TBL elements. This means that all the participants of the supply chain (designers, manufacturers, yarn suppliers, etc.) must cooperate and share the same sustainable values and goals (Fung et al., 2021). The triple bottom line (TBL) is a business concept that states that sustainability is divided in three areas: economic, social and environmental. The economic feature refers to the organization’s business practices and how they affect the economic system. Nevertheless, the goal of sustainability is to balance the earth resources which are limited, with the “long-term development of human society” (Fung et al., 2021). Thus, social and environmental considerations cannot be ignored. Moreover, in relation to sustainable fashion, companies must consider these three key areas through the whole fashion supply chain (Fung et al., 2021).

There are different challenges that fashion companies are facing in the three dimensions of TBL (Franco et al., 2020):

-   Social challenges: protect the well-being of employees and of the society. The former can be achieved by improving employees’ quality of life, the latter involves all the market, technological innovations, government regulations and policies.
-   Environmental challenges: preserve and ensure natural resources used, which could lead to higher costs of materials. These firms must identify new materials and natural resources or upcycle current materials.
-   Economic challenges: the challenge is to engage in innovative systems to produce, reuse and recycle materials.

Figure 2 shows the key steps of the Sustainable product development process combined with the TBL. In this paper we will focus only on three steps, namely Planning, Design and Manufacturing.

![Diagram of Sustainable Product Development Process - Triple Bottom Line (TBL)](image)

Figure 2 - Sustainable product development process - Triple Bottom Line (TBL). Source: Fung et. al (2021, p. 8).
Planning stage

All the actors need to work together and plan the product development strategies. Here, there is a strong connection between each step, and the action of one participant could lead to serious effects on the whole production development. For example, if there is a shortage or delay of materials, it will affect the fabric producer, garment maker and all the retailing schedules. Therefore, “detail-minded planning of business networks and collaboration” at the beginning is essential. In relation to the TBL, the business development stage is the most considered, followed by the environmental concern by planning the selection and use of sustainable materials. Lastly, human factors are explored and the corresponding social benefits that come from sustainable product planning. Thus, supplier collaboration is considered as a social assessment in the planning stage.

Design stage

This stage is central as it affects mostly the use of material and manufacturing methods. Sustainable design must at first generate economic benefits, by normally using a large volume of sustainable materials. During the material selections, there are some international guidelines and standards to follow, and the chosen materials must be certified as sustainable.

Manufacturing stage

Due to the everchanging requests, manufacturers need to be flexible and build good long-lasting relationships with the suppliers, upgrade their production processes, keep up with new technologies, and improve their infrastructure and facilities. Nevertheless, there is an increase of extra costs, which can be a barrier for participating in sustainable manufacturing. To overcome this issue, collaboration among different manufacturers with similar competencies can reduce the costs and environmental impacts. Moreover, such impacts can be achieved by using performance indicators and criteria.

2.2. Organizational change

Change is an ever-present element that affects all organizations (Todnem By, 2005). Organizational change appears as an intriguing and almost eroticizing stimulus for business (Wetzel & Van Gorp, 2014). The textile and apparel industry are closely tied to fashion trends and changes, it is an industry that can slowly make sustainable changes over time in the way they operate and do things regularly (Patora-Wysocka & Sułkowski, 2019). Furthermore, the growing interest of both consumers and companies to attain the holistic goal of sustainability has made the TBL theory very popular in a number of industries (Wiedmann & Lenzen, 2006, cited by Raj, Ma, Gam & Banning, 2017). The triple bottom line in the clothing and textiles supply chain is a universal method for building economic, social, and environmental resources while fostering sustainable livelihoods (Hiller Connell, & Kozar, 2017). Thus, organizational change linked to the TBL has become the new constant, and those organizations which do not keep up with current trends will find it progressively difficult to thrive, if not survive (Coleman & Thomas, 2017). An organization is a structured group of people who work together to achieve a common goal or purpose. Senior and Swailes (2016, p.3) defines organizations as “systems made up of formal aspects of management and operations which are heavily overlaid by informal aspects of life in organizations deriving from relations between people.”

Oreg, Michel, and Todnem By (2013) refer to Organizational change as any adjustment or alteration in the organization that has the potential to influence the organization’s stakeholders’ physical or psychological experience. These changes in an organization can include changes in structure, practices, job descriptions, and even geographical location. Mills, Dye and Mills (2009, p.4) also defines organizational change as “an alteration of a core aspect of an organization’s operation.” They
stated that this alteration of change can range from restructuring of a single department through to restructuring of an entire company. Organizational change can be initiated due to numerous factors. Lewis (2011, p26) suggested that the implementation of organizational change often involves processes of innovation, diffusion, and formal adoption. Changes can occur through intentional or unintentional innovation processes, which lead to the development of new approaches or activities. These changes can then be spread through diffusion processes, where important stakeholders or networked organizations select an idea and others in the network become aware of the choice, typically through communication in social networks (Lewis, 2011).

Leading organizational change is perhaps the most complex requirement facing today's leaders, to enact successful change, a structured series of phases or steps is recommended (Young, Spain, & Brennecke, 2022). In this research, the focus will be on highlighting Lewin's three-step model for change and Kotter's 8-step change model, amidst the numerous theories that have been suggested for change process.

Lewin's (1951) organizational change model is a widely used framework for understanding and managing change in organizations. Lewin's model emphasizes the importance of involving and engaging people in the change process, as well as providing support and communication throughout the process. It is a helpful tool for understanding the complexity of organizational change and ensuring that changes are effectively implemented and sustained over time. The model is based on the premise that change involves a process of unfreezing, moving, and refreezing.

The first stage of the model is unfreezing, which involves breaking down the existing status quo or current state of the organization. This can be done by increasing the awareness of the need for change, creating a sense of urgency, and encouraging individuals or groups to question and challenge the existing ways of doing things.

The second stage is moving, which involves implementing the actual change. This can involve introducing new systems, structures, processes, or behaviors that align with the desired state. During this stage, it's important to provide support, training, and communication to ensure that people understand and can adapt to the changes.

The third stage is refreezing, which involves stabilizing the new state and embedding the changes into the culture of the organization. This can involve reinforcing the new behaviors, systems, and processes and making them a permanent part of the organization.

The Kotter (1996) 8-Step Change Model (Figure 3) is a framework for managing and leading organizational change. By following these eight steps, organizations can effectively manage change and achieve their desired outcomes.
The eight steps are:

1. Establish a sense of urgency: Create a compelling reason for why change is necessary and communicate it to all stakeholders.
2. Form a powerful coalition: Build a team of influential people who can help you drive change and get buy-in from others.
3. Create a vision for change: Develop a clear and concise vision of what the future state will look like and how it will benefit the organization.
4. Communicate the vision: Use all available channels to communicate the vision to everyone in the organization.
5. Empower others to act on the vision: Provide the necessary resources, support, and training to enable others to act on the vision.
6. Create short-term wins: Celebrate early successes to build momentum and gain support for further change.
7. Consolidate gains and produce more change: Use the momentum from the early wins to drive further change and create a culture of continuous improvement.
8. Anchor new approaches in the organization's culture: Embed the changes into the organization's systems, processes, and culture to ensure they are sustained over the long term.

By following these eight steps, organizations can effectively manage change and achieve their desired outcomes.

2.3. Network theory

Network theory and organizational theory are intimately interconnected through the lens of organizational change and collaboration. Network theory provides a lens through which organizational change can be understood as a collaborative process, highlighting the interconnected relationships among stakeholders that influence the flow of resources and information, fostering innovation and sustainable business models, as seen in the fashion industry's reliance on networks to drive adaptive and transformative changes. Networks play a hugely important role in the success of businesses, and this is well recognized in the fashion industry, collaborations among all agents in a network, such as suppliers, distributors, customers and even competitors, can be drivers of innovative and sustainable business models in fashion (Eckert, Crommentuijn-Marsh, & Black, 2022). Organizing in networks offers significant benefits since various organizations possess diverse perspectives, abilities, and resources that can be shared and leveraged for collaborative problem-solving. Over the last three decades, there has been a significant surge in the attention towards networks and their functioning, which has led to the emergence of various collaborative, partnership-based, and "joined-up" arrangements based on network governance, which are considered as innovative approaches for conducting business across different sectors, including government, community, and private (Keast & Mandell, 2014). Organizations are embedded in networks of cooperative relationships that influence the flow of resources among them (Gnyawali, & Ravindranath, 2001).
Network theory can be applied in various industries, including the fashion industry. Here, network theory can be used to analyze the relationships and connections between individuals and organizations in the industry. According to Borgatti and Halgin (2011) a network consists of a set of actors or nodes along with a set of ties of a specified type (such as friendship) that link them. They further explained how these ties are interconnected through shared endpoints to form paths that indirectly link nodes that are not directly tied. The pattern of ties in a network yields a particular structure, and nodes occupy positions within this structure. Ashton (2006), cited by Eckert, Crommentuijn-Marsh, and Black (2022) proposes that we think of networks as based on social relationships and common values in which knowledge and products are shared among a wide range of participants.

Strength of weak ties (SWT) theory by Granovetter (1973) is a widely recognized network theory where he argues that weak ties between people are actually more important than strong ties in many situations, strong ties are important for social support and emotional validation, but weak ties are actually more important for accessing new information and opportunities. Granovetter (1973) research suggests that weak ties play an important role in social mobilization and collective action. This is because weak ties are often bridges that connect different social groups and allow information to flow across otherwise isolated networks. In situations where collective action is needed, weak ties may be the key to mobilizing a large and diverse group of people.

2.4. Theoretical framework

Figure 4 depicts the structure of the research that aims to explore various strategic approaches to sustainability by examining supply chain management (SCM) practices, including governance, NPD (new product development), sourcing, manufacturing and delivery.

![Figure 4 - Strategic approaches towards social and environmental sustainability. Source: Macchion et al. (2017, p. 13).](image)

The retail practice will not be considered in this research. The investigation also encompasses drivers, barriers, and contextual factors. The theoretical framework will be combined with the TBL framework (figure 5) and consists of distinct sections: an analysis of practices to identify and characterize strategic approaches to sustainability, and a consideration of drivers, barriers, and contextual factors to examine their impact on different strategic approaches to sustainability, encompassing social and environmental aspects.
3. Methodology

3.1 Research design

This research design will be a multi-case study that employs qualitative research methods. A case study approach is chosen, which is an empirical study that explores a present issue within the real-life context, and in order to understand the different challenges and their solutions it is necessary to utilize various sections of evidence, which can be gathered partially through observation (Yin, 2018). More precisely, in this paper we will conduct an holistic multiple-case study that investigates the problem formulation, following the recommendations of Yin (2018), who argues that in case the problem formulation is a “how or why” question, a multiple-case study is the perfect method to use, because it favors to reach the researched answers. Furthermore, “multiple-case studies are likely to be stronger than single-case studies” (Yin, 2018, p. 58). According to Hennink, Hutter and Bailey (2020) a qualitative method is a good approach that allows researchers to examine people’s experiences in detail, by identifying issues from the perspective of study participants and understanding the meanings and interpretation. Purposive sampling of different manufacturers in the Prato Industrial District will be selected for this study, all small family-based firms, and semi-structured interviews will be conducted with different figures from these companies. Semi-structured interviews are the preferred data collection method when the researcher's goal is to better understand the participant's unique perspective rather than a generalized understanding of a phenomenon (McGrath, Palmgren, & Liljedahl, 2019).

In this research paper, we will use primary data. Primary data Primary data is original raw data gathered with the purpose of providing material for a specific research project (Saunders et al., 2009). After considering the methods to collect data required for the development of the project, the conclusion was that conducting qualitative semi-structured interviews would be the most appropriate method to use as a primary source of information in the research..

We will conduct a thematic analysis, by identifying themes from transcriptions of recorded interviews and data gathered from reports and certifications documents. Using an inductive approach, themes will be then connected to the key theories that we will use and finally analyzed through thematic analysis.

3.3 Data collection Techniques

In order to improve the validity and reliability of this research Yin (2018), the data triangulation method has been chosen, which is “a validity procedure where researchers search for convergence among multiple and different sources of information to form themes or categories in a study” (Kaman & Othman, 2016, p. 351). In this paper, we used multiple data collection’s methods as semi-structured interviews and document analysis. This choice was made following Yin (2018) whose argumentation is that in order to have a real set of triangulated data, it is necessary to use more than a single source of evidence.

In total, 6 interviews were conducted, and they all took place as online video meetings and were conducted in Italian language. They have all been recorded, transcribed and translated into english. The interviewees were asked to sign a form of consent, which will be saved for 10 years. Furthermore, it was clarified that all personal information of the interviewee as well as all company information will remain anonymous. The interviews are used in this paper to explore how the sustainability
transition is practiced in the fashion supply chain in the Prato industrial district. Additionally, information regarding the companies’ organizational change processes and network have been gathered. Furthermore, the data will be used to identify barriers, drivers and practices of Sustainability in the fashion supply chain. The interview guide (Table 1) has been developed to explore the different perceptions and understanding toward Sustainability among the different actors.

Table 1 - Interview Guide - own creation

<table>
<thead>
<tr>
<th>Topic</th>
<th>Interview Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Information</td>
<td>1. Can you please present yourself, the company and your role?</td>
</tr>
<tr>
<td>Sustainability transition: definition of sustainability, perception and phases</td>
<td>2. How do you define Sustainability? Is it important for you as an individual? Is Sustainability important in your daily work?</td>
</tr>
<tr>
<td></td>
<td>3. How is Sustainability defined/perceived inside the company?</td>
</tr>
<tr>
<td></td>
<td>4. When did the company start using Sustainability strategies?</td>
</tr>
<tr>
<td>Barriers for Sustainability</td>
<td>5. What are the barriers for Sustainability in your company?</td>
</tr>
<tr>
<td>Drivers for Sustainability</td>
<td>6. What are the drivers for Sustainability in your company?</td>
</tr>
<tr>
<td>Sustainability practices</td>
<td>7. What are the Sustainability strategies and practices in the company?</td>
</tr>
<tr>
<td>Partners and collaborators</td>
<td>8. Do you have any strategic sustainable partner/collaborator?</td>
</tr>
</tbody>
</table>

The data gathered from the interviews, after being transcribed, have been summarized in different documents, see Appendix I for Interview 1 Company A as example. A coding table was created identifying each theme from each interview and will be presented in the Analysis section. After developing the codes, the data have been analyzed and coded based on the different themes extrapolated from the previously determined codes, by combining codes based on similarities companies and patterns among them. Finally, each researcher reviewed the data based on the defined themes and discussed and reviewed the work of the partner, in order to ensure trustworthiness, accuracy and integrity of the information.

3.3.1 Interviewee Selection

The interviewee selection process started by sending the request of collaboration to 30 different textile manufacturers, all small/medium family-based companies located in the Prato Industrial District area.
We received positive feedback from four companies. We conducted 6 interviews in total, between April and June 2023. The selected interview partners work on a managerial level in the production and commercial department of the company, and the individuals come from different companies, but are all located in the Prato Industrial District. They are all manufacturers of yarn or final knitted and woven products and the companies are all small-medium companies family conducted. Table 2 shows the interview summary:

Table 2 - Interviewees summary

<table>
<thead>
<tr>
<th>Interviewee name</th>
<th>Role</th>
<th>Company name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviewee 1</td>
<td>CEO</td>
<td>Company A</td>
</tr>
<tr>
<td>Interviewee 2</td>
<td>Sales Manager</td>
<td>Company A</td>
</tr>
<tr>
<td>Interviewee 3</td>
<td>Export Director</td>
<td>Company B</td>
</tr>
<tr>
<td>Interviewee 4</td>
<td>Administrator and textile expert</td>
<td>Company C</td>
</tr>
<tr>
<td>Interviewee 5</td>
<td>CEO</td>
<td>Company D</td>
</tr>
<tr>
<td>Interviewee 6</td>
<td>Commercial Manager</td>
<td>Company D</td>
</tr>
</tbody>
</table>

Interviewees 1 and 2 represent CEO and Sales Manager of Company A, Interviewee 3 is the Export Director of Company B, Interviewee 4 is the Administrator and yarn expert of Company C, and Interviewees 5 and 6 are the CEO and Commercial Director of Company D. Table 2 presents a summary over the interviewees and the companies they represent. To ensure anonymity, we will refer to the interviewees and their companies by number and letter.

3.4 Limitation and Delimitation

For this research different limitations are considered. First, it is recognized that the sample size of six interviews is small, therefore the findings cannot be generalized. Despite the fact that we sent the invitation to 30 companies, most of them did not reply or they were too busy to participate in the study, due to the high production season. To overcome this issue, we analyzed different documents and reports of the companies and certification entities. Second, the companies used are all located in the same area of Prato textile Industrial District and are all small-medium size companies family based. This could bring different social bias, because participants can present socially expected answers, rather than their real conclusions and they might use the same partners/suppliers. Third, the interviewer (one of the researchers) spoke the same language and had a working relation with all the subjects, and her own perspectives and bias might affect data’s interpretation, bringing eventual subjectivity in the analysis. Here, the interviews have been translated from the original language (Italian) to English, so both researchers could analyze the data and cross-combine their interpretation. Third, different interview appointments had been canceled and postponed from the interviewees part, due to busy schedules. Therefore, this extended the time used for this research.
3.5 Credibility and Ethical consideration

Research credibility followed different strategies. First, all the interviews have been recorded, contributing to the credibility of the study. The utilization of audio recordings guarantees precision and enables comprehensive examination of the information, fostering reliability and verifiability (Bryman, 2015, p. 402). Second, data triangulation has been used to strengthen the credibility of the research. Third, the ethical consideration relies on confidentiality, anonymity and informed consent. All the respondents of the research have been informed before the interviews about the confidentiality, anonymousness and all signed the Participation consent form, which will be saved for 10 years. The anonymity is central in this study, as the companies are all in the same geographical area and may have a coopetition (cooperative competition) relationship. Finally, a prevalent ethical consideration in qualitative studies pertains to the connection established between the researcher and the individual being interviewed. In this research, a prior working relationship was present between the interviewees and one of the researchers, which might create potential conflicting connections to the respondents. On the other hand, the working relation is not related to the research study. Hence, overall, this study can be considered ethical.
4. Object of the Study

This paper will use as case studies different knitwear manufacturers, a yarn mill and professionals in the Prato textile Industrial District (ID). Industrial districts are known for housing numerous small and medium-size enterprises in a particular industry, which are interconnected through intricate networks of economic and social relationships (Bressanelli et al. 2022). Prato textile ID emerged as a significant textile production center at the end of the 19th century. It specialized in producing regenerated wool from rags and had large vertically integrated companies manufacturing simple and undifferentiated products like plaids and military blankets. Alongside these large companies, smaller ones were established, focusing on specific phases of the textile production process. Following World War II, the large vertically integrated companies faced challenges in meeting the demand for lighter and more sophisticated textile products. As a result, the supply chain underwent a process of de-verticalization. Verticalized companies were gradually replaced by first-tier suppliers, who relied on a network of specialized phase suppliers. This new configuration allowed for higher volume and mixed flexibility, leading to the diffusion of process and stylistic innovation throughout the industrial district. From 1980 changing lifestyles, increased motorization, and home heating systems led to a demand for lighter fabrics, resulting in a decline in the demand for carded wool and negatively affecting approximately 37% of the firms in the district (Bressanelli et al. 2022). However, the Prato textile ID responded vigorously to this decline by diversifying its production to include fabrics made of cotton, linen, polyester, silk/linen blends, velvet, viscose, and more. The district also strengthened the service content of its offerings. As a result, the Prato ID successfully reorganized and repositioned itself from being known as the historic hub for wool "rags" to becoming a fashion district and obtain a significant economic growth in the finishing stages of production, an increase in the number of first-tier suppliers, and a substantial decrease in the number of suppliers involved in the upstream phases such as spinning and weaving. Overall, the number of companies operating in the Prato textile ID decreased from approximately 9,000 to 6,500, while the number of employees remained relatively stable, with over 40,000 people employed in the district (Bressanelli et al. 2022).

The Prato textile ID faced another significant setback starting in the 2000s, triggered by the effects of globalization and worsened by the global recession in 2008. Once again, this decline phase led to a significant loss of approximately half of the ID's employees (-51%) and companies (-52%) over a period of ten years (2001-2011). During this time, Prato experienced a wave of incoming migrants, particularly from China, who established numerous small companies. These companies sourced fabrics and yarns from outside the district and produced low-cost knitwear and ready-made garments (Bressanelli et al. 2022). While the district maintained a high level of flexibility and service for the fashion industry, it struggled to adequately compensate all actors in the local supply chain, particularly phase suppliers (Prato Chamber of Commerce, 2014). Moreover, the unique skills associated with textile processes were at risk as they were predominantly held by individuals close to retirement age, and a proper generational turnover was not occurring. Skilled Italian workers were being replaced by immigrant workers with limited experience, undermining the mix of shared language, values, meanings, and customs that typically contribute to the success of industrial districts. In 2020, the Prato ID was further impacted by the effects of the COVID-19 pandemic, leading to a decrease in industrial production of over 21% compared to 2019 (Confindustria Toscana Nord, 2021).
The supply chain (SC) structure in the Prato textile ID is an open multi-tier system characterized by de-verticalization and the division of labor among numerous phase suppliers and first-tier suppliers. First-tier suppliers are located within the district and are responsible for designing and engineering intermediate products, such as yarns or fabrics. They coordinate material and information flows of production processes outsourced to phase suppliers, who are highly specialized in specific phases of the production process. Cooperative norms and informal guarantees have also diminished due to shrinking margins. Interactions with phase suppliers tend to be on a transactional basis, and protecting stylistic innovation and achieving differentiation becomes challenging when first-tier companies share the same supplier base. Imitations are frequent, and first-tier suppliers often deploy their employees within supplier premises to control and coordinate the production process. As a result, the squeezed margins for first-tier suppliers negatively impact phase suppliers, many of whom struggle to survive. The majority of first-tier suppliers are too small to invest in marketing and product development, leading to difficulties in attracting large orders from top players in the fashion industry (e.g., 80% of fabric first-tier companies have a turnover below 10 million €) (Prato Chamber of Commerce, 2014).

In this paper, we will use different companies located in the Prato textile ID as cases to study the sustainability transition phenomena. Company A is a family company founded in 1968. They specialized in knitwear production for both men and women, and they kept investing in innovation and Sustainability, with attention to tradition and craftsmanship. Company B, is a yarn mill that was founded in the ‘60 and today the company is on its 5th generation of family members. The company focuses on Sustainability and in particular in traceability and transparency. Company C is a manufacturer of woven scarves and plaids, and they are focused on using only recycled materials and reducing to the bare minimum their production waste. Company D is a family based manufacturer of woven scarves and plaids, and they are focused as well on recycled materials and waste reduction.
5. Analysis

Through the following analysis knowledge about the Sustainable transition in the sustainable fashion supply chain shall be obtained. First, we will identify the different codes and themes from the different interviews and documents. Second, we will extrapolate all the empirical data for each theme. Third, they will be linked to the theories of organizational change and network theory. Finally, based on the previous analysis, we will adapt the theoretical framework and connect it to TBL.

Themes identification

The identification of each theme is done by using coding as a tool to identify the major concepts related to Sustainability transition. Coding themes are extrapolated from the interviews and different reports and documents collected. Once each theme is identified, a thematic analysis will be done, in order to relate each theme with the theories and TBL.

Open coding

The first step for extrapolating the main concept from interviews and documents is to disaggregate the data into conceptual units (open coding). The main idea is to go through each interview, separate it in paragraphs and assign to each a concept. Through this process the building of the concepts is conducted in parallel (Saunders, Lewis and Thornhill, 2009).

Each concept is based on the main concept of sustainability transition, organizational change and network theories described in the theoretical framework, which were adapted according to the interview’s outcome.

The results of the open coding are presented in Appendix II, Appendix III and Appendix IV.

Appendix II shows the different codes that have been extrapolated from each interview. Most of the codes have been identified in each interview, as the Company history and evolution, the definition of Sustainability and barriers. On the other hand, some codes have been identified only in single interviews as a timeframe for implementing sustainability strategies, figure sustainability strategies and the geographical influence on Customer Demand.

Appendix III shows the different codes that have been extrapolated from each report and certification. The two reports have in common the social responsibility, while the two certifications have most of the themes in common, with the difference in organic and recycled materials.

Appendix IV groups each code into the main theme. The themes identified, that will be used in the thematic analysis are the following:

- Company history and context
- Definition and perception of Sustainability
- Sustainability practices
- Sustainability barriers
5.1. Empirical Data

In this chapter, we extrapolated the empirical data from the interviewees and documents for each theme.

5.1.1. Company history and context

Each interview started with an introduction of the interviewee and product/commercial aspects of each company. All the interviewed companies are small-family firms that work in the fashion industry and the companies’ structure is described as having an horizontal approach, with employees handling multiple responsibilities.

The companies started in different historic times. For example, Company A started in the 1960s during the economic boom in Italy. The company specializes in knitwear and has evolved over the years with advancements in technology and machinery.

Interviewee 1 role in the company is both managerial and supervisory, ensuring the production processes run smoothly.

"It all started in the 60s, when there was the economic boom here in Italy...from the year '68 they moved from a small garage to a company where we are now." (Appendix I).

Company B is also a family-owned company in the fashion industry located in Prato, Italy. The company has a long history, starting from the end of the nineteenth century, and is now in its fifth generation. Initially, they dealt with fabrics but later transitioned to producing fancy yarns for knitwear, which is a niche segment.

"Our history starts from far away, starts from the end of the nineteenth century and we are therefore today, at the fifth generation that I, in fact, represent." (Company B, 2023d).

I emerged from the interviews the relevance of Prato, as it is a city well known for its textile industry and textile recycling.

Company C is a small textile company that specializes in producing scarves and plaid, but they can also manufacture other fabrics. The company aims to minimize waste and produce fabrics sustainably. The interviewee emphasizes the importance of sustainability and the need to move away from the use-and-throwaway mentality, acknowledging the detrimental impact it has had on the environment, especially with regards to pollution and waste.

Company D is also a small artisanal company, where “sustainability practices are not so easy to pursue” (Company D, 2023d), but they have started their sustainability practices since 2010 adapting to market’s requests.

5.1.2. Definition and perception of Sustainability

Different definitions of Sustainability emerged during the interviews.

It has been defined as a multifaceted concept that involves more than just reducing CO2 emissions. Interviewee 2 highlights the importance of sustainable practices, not only for the environment but also for cost reduction and enhanced brand image. He/she believes that sustainability is valued by both individuals and new generations, who have grown up with a focus on responsible behaviors.
"Surely for me as a person, it is an important value, but I think for all the new generations it is because we were born with this myth of sustainability." (Company A, 2023).

In fact, Sustainability is acknowledged as an essential issue for Company A. Interviewee 2 emphasizes that while some sustainable practices have been in place for a long time, the company now emphasizes and highlights them more explicitly due to the growing importance of sustainability in the fashion industry.

"Even for us, I repeat, as for many companies today, it has become a very important issue. We have put the magnifying glass emphasizing the sustainability discourse." (Company A, 2023).

Additionally, Interviewee 1 describes sustainability as a crucial aspect, especially in the current generation, to counter the impact of extreme consumerism and protect the environment. He/she emphasizes the importance of adopting green practices, reducing energy consumption, and minimizing waste. The company has embraced sustainability by installing a photovoltaic system, using renewable energy, and incorporating recycled yarns into their production.

"Our generation...understand that we must do something for the environment...70-80% of energy production we have...we do not have to buy it, but we are going to self-produce it...makes me so proud." (Appendix I).

Interviewee 3 defines sustainability as encompassing environmental, social, and economic aspects. While it is considered essential, he/she views it as a utopian concept, especially in the context of the fast fashion model prevalent in the industry.

"So let's say canonically sustainability is defined as environmental, social, economic sustainability. These are the three pillars that, willy-nilly, touch our daily lives every day. Economic sustainability, because it is the last, but also the first, that is, there can be no model of environmental sustainability and people if the business does not stand. It is a self-evident statement, but it is the basis of everything. Sustainability of people because it is today in Prato we take it for granted... In short, all the things we know as sustainability of people, that in Italy I can tell you that we do not even consider it then, and the last place falls because we have laws, we have a structure, a legislative structure, which imposes us and culturally we go in that direction and lastly, but which is the first when it comes to sustainability there is environmental sustainability..." (Company B, 2023d)

He/she highlights the importance of Sustainability in Business, in particular the growing significance of sustainability in the fashion industry, particularly in international markets such as Scandinavia, France, and the United States. It has become a vital element in discussions with customers, especially those from high-end markets.

"So for me, it is now an essential element of discussion, almost taken for granted. If you want to work in certain markets, including the Scandinavian market, the high market French, the American market, the concept of sustainability is essential." (Company B, 2023d).

From the Sustainability Report (Company B, 2023a), the company informs and trains its employees about sustainability activities through regular meetings and gatherings to stimulate research and innovation.

For Company C, Sustainability is perceived as a crucial concept in the fashion industry, and it involves working towards a global level of health and social well-being while avoiding behaviors that harm the environment. The interviewee acknowledges the challenge of finding a balance to continue operating in a healthy and sustainable manner. They highlight that sustainability should be pursued with practicality, considering the trade-offs involved in various aspects of production and recycling.

"The planet unfortunately can no longer sustain this type of mentality and behavior." (Company C, 2023).
Furthermore, the company has not yet installed photovoltaic panels due to the high costs involved. However, the interviewee has implemented solar panels at home, indicating a personal commitment to sustainability.

Company D provides a theoretical definition of Sustainability:

“In the environmental and economic sciences, sustainable development is the condition of development capable of ensuring the satisfaction of the needs of the present generation without compromising the ability of future generations to realize their own goals” (Company D, 2023d).

They did not provide a personal perception of Sustainability.

5.1.3. Sustainability barriers

Several barriers towards sustainability emerged.

Interviewee 2 mentions several barriers that hinder the company's sustainability efforts, particularly the high costs associated with certain sustainable practices. He/she highlights the difficulty in balancing sustainable choices with the company's financial constraints. Bureaucracy and lack of certifications are also cited as challenges.

"One of these barriers is precisely that the sustainable road becomes much more expensive and therefore you sometimes prefer to stay on the old or otherwise make choices that do not go in that direction." (Company A, 2023).

Moreover, the interviewee observes a significant increase in customer demand for sustainable products, especially those made from regenerated or recycled yarns. This demand has expanded not only from foreign customers but also from customers in Italy.

"I think there has really been an explosion of this demand from customers. Of these regenerated yarns, that is, until I joined the company or in any case that I have memory, the regenerated yarns, the recycled yarns were considered second-rate." (Company A, 2023).

Interviewee 1 cites the complex and expensive certification processes as a major hindrance, particularly the Global Recycled Standard (GRS) certification. He/she believes that the certification process should be more streamlined and driven by government or parastatal bodies to avoid ambiguity.

"The certificates or certification bodies...have 1000 requests for documents, bureaucracy...too many economic interests...a company like us could be more certified or sustainable than a certified one.” (Appendix I).

This is emphasized also from both Company B and C, where the high cost and complexities associated with obtaining and maintaining various certifications pose challenges for smaller companies like theirs. Furthermore, Interviewee 4 expresses concerns about the cost and effectiveness of certifications, considering them to be a significant expense for companies that eventually trickle down to the final consumer. He/she advocates for more practical and consolidated certifications at the European level to reduce redundancy and inefficiency.

"Certifications tend to be...a big hoax, a great scam.“ (Company C, 2023).

Certification and Accountability can be seen as barriers, in particular both GOTS and GRS Certifications (Company B, 2023c; Company D, 2023a, 2023b), because of the different requirements that cover the various aspects of production, including social and environmental criteria. Technical and productive limitations emerged as barriers, as some materials cannot be recycled due to technical reasons, and certain products may still contain harmful substances. Additionally, Interviewee 4 discusses the challenges faced by the textile industry, including the decline in spinning mills, increased costs, and the ignorance of some customers about sustainability issues.
"It is a disaster industrially speaking...if you only look at your garden then you do not get out."
(Company C, 2023)

Here he/she emphasizes the need for a global vision and collaboration to overcome these challenges.

5.1.4. Sustainability drivers

The main driver behind the company's sustainability initiatives is the ethical sense of responsibility towards the planet. Additionally, sustainability is seen as a means to gain a competitive advantage and attract customers who value ethical parameters and sustainable practices.

"Surely the basic ethical sense, in the sense that nowadays it is unfounded. In all of them, I think the speech, however, to be a little more responsible, to be a little more towards the planet." (Company A, 2023).

An important driver is the customer’s demand for sustainable products, especially those made from regenerated or recycled yarns. This demand has expanded not only from foreign customers but also from customers in Italy.

"I think there has really been an explosion of this demand from customers. Of these regenerated yarns, that is, until I joined the company or in any case that I have memory, the regenerated yarns, the recycled yarns were considered second-rate." (Company A, 2023).

Additionally, the main drivers for Company B are market demand, ethical values of the family, and partnerships with proactive suppliers and collaborators who propose sustainable solutions "For us, it is not a daily process, because we can only do it when we design the collections. However, when every six months we approach the collection, it is the approach, that is, trying to look for new suppliers, trying to understand production efficiency... Let's say that it is a bit like the district of Prato itself that historically is a partner. And that to sell, to increase sales, one also looks for stimuli, that is, he creates stimuli and therefore we say that more or less these are these. Then Confindustria Toscana Nord, then the association of industrialists." (Company B, 2023d).

Furthermore, there is recognition of the growing desire for sustainability among individuals and companies but it is noted that the cost of sustainable practices remains a significant challenge. The interviewee hopes that sustainable options will become more affordable and encourages continuous progress towards sustainability.

"Because then, I repeat, the costs of raw materials, many times it must necessarily cost more and inevitably, for example, paper costs more than plastic unfortunately, and therefore as long as it will be so, if they do not intervene in some way to help companies continue to do well then there will be a bit of a stalemate." (Company B, 2023d).

Environmental and Social Responsibility are both central for Company B, in particular related to Carbon footprint reduction and certification and accountability. In fact, they are committed to build a better future for everyone by using 100% clean certified electricity produced from renewable sources (Company B, 2023c).

"Everyone is committed to being able to achieve this type of goal...of 100% recycling." (Interview 4, Company C)
Global awareness of environmental issues is an additional driver. In fact, customers increasingly request recycled materials, and companies strive to meet these demands by offering sustainable products. The interviewee emphasizes the need for collaboration among major brands and research institutions to develop innovative solutions and promote sustainability in the fashion industry.

### 5.1.5 Sustainability Practices

Different strategies are implemented to reach sustainability.

For example, Company A adopts a range of strategies to enhance sustainability, including evaluating sustainable alternatives in their production processes and using regenerated or recycled yarns based on customer demand.

"These are certainly the strategies that are adopted within the company in a practical way to make it more and more sustainable." (Company A, 2023)

Furthermore, another practice used is selling production waste to other companies for reuse. The company also plans to make future changes, such as using electric or hybrid company cars and replacing lighting with LED to reduce energy consumption.

"In recent years we have put a condensing boiler...are all small steps, little things...the big thing we did is the photovoltaic system...we are producing about 100-120,000 kilowatt hours...consumes about 70,000." (Appendix I)

For Company B the implementation of sustainability strategies has been gradual, starting from introducing recycled cotton in 2018. They have been exploring various alternatives, like using botanical dyes and working towards producing yarns with organic components.

"We started in 2018 by introducing recycled cotton... This was our experiment. We say that we are continuing to perpetuate stronger. For the rest, we are trying to work on raw materials." (Company B, 2023d)

Furthermore, the company had plans to launch a one-off clothing line with unique and exclusive products made from their unused stock. This project aimed to reduce waste and provide customers with sustainable and exclusive options.

"Then during the pandemic, in collaboration with two producer friends, we developed this circular economy project. Prototypes were made, but we did not go further; we had just reached the launch phase, but we got stuck because then fortunately on one side and unfortunately for the project everything started again..." (Company B, 2023d)

Transparency is a central topic for this company, as it directly relates to relevant information made available to all parties and actors in the value chain in a standardized manner, enabling common understanding, accessibility, clarity, and comparison. Transparency is the necessary prerequisite to ensure traceability of products, processes, and suppliers within our value chain (Company B, 2023a). Furthermore, the Company has Environmental Sustainability as it is committed to reducing its environmental impact through monitoring and continuous improvement. This involves compliance with regulations, innovation, reducing pollutants, and adopting sustainable practices. Such practices are (Company B, 2023a, 2023b):

- **Chemical Risk Management**: The company has defined macro-objectives for reducing the environmental impact related to the use of harmful chemicals in production processes. It adopts a chemical risk management system and aligns with the MRSL ZDHC (Zero Discharge of Hazardous Chemicals) standards.
- **Wastewater Quality**: focus on monitoring and improving the quality of wastewater related to its production processes
- **Legislative Compliance**: The company seeks to comply with legislation by aligning with partners and suppliers who share the same values and objectives and can meet market requirements.
Sustainable Material choices: The company prefers raw materials with lower environmental and social impacts, such as recycled or regenerated materials, certified and traceable materials, and those connected to sustainable initiatives.

Sustainable Design: the company considers the environmental impact from the design phase, focusing on sustainable and circular design principles.

Energy and Resource Efficiency: The company aims to reduce energy and water consumption, as well as CO2 emissions, by seeking productive and organizational solutions that increase efficiency in production processes.

Waste Management: Proper waste management and promoting reuse and recycling practices are priorities for the company.

Internal and external dissemination: The company ensures that the policy is known and pursued at all levels within the organization. It also prepares tools to disseminate sustainability goals to customers, suppliers, associations, communities, and public institutions to raise awareness of sustainability issues.

Renewable Energy: The company's choice to use renewable energy sources and its partnership with Dolomiti Energia showcase the significance of transitioning to clean energy to combat climate change and ensure a sustainable future.

Carbon Footprint Reduction: The specific data presented regarding the amount of CO2 avoided each month illustrates the company's efforts to reduce its carbon footprint. This theme highlights the importance of tracking and mitigating greenhouse gas emissions.

Social Responsibility: The company's decision to use clean energy and contribute to a better future for the next generations suggests a commitment to social responsibility. By choosing environmentally friendly practices, the company aims to make a positive impact on society as a whole.

Certification and Accountability: The mention of the Energy Services Operator's certification and Guarantees of Origin (GO) for the electricity supply highlights the company's commitment to accountability and transparency. This theme emphasizes the importance of ensuring the authenticity and traceability of renewable energy sources.

The role of Prato in the textile industry is important to understand, as it is defined as a world leader in textile recycling, and many textile companies in the area are already committed to sustainability. They focus on recycling fabrics and fibers, and in some cases, even garments are regenerated, washed, and put back on the market with minor repairs. Companies aim to minimize waste and landfill usage by repurposing production waste, ensuring that almost everything is selected and separated for recycling or reusing.

"We always try not to send anything to the landfill, so everything is selected." (Company C, 2023)

Company D perceives sustainability compatible with the artisanal process of their products, paying attention to correctly recycling all the material used. They started sustainability practices in 2010 and since that time they source sustainable materials, both recyclable and recycled and they choose certified contractors, such as finishing which has started a sustainability process with water monitoring and the use of harmful chemicals.

Moreover, they do not use any "wet" process in the company and we try to recycle as much as possible all the material we produce (collection of paper, plastic, etc.).

An interesting point is the disposal of residual weaving yarns: these are sold to a company that frays them and makes them into massive felts that are also used under the road surface as reinforcement (Company D, 2023c)

From the GOTS and GRS certification (Company B, 2023c; Company D, 2023a, 2023b) emerged the following Sustainability practices that both Company B and D follow:

- Global Textile Standard (GOTS) Certification: The main theme is GOTS certification, which stands for the Global Organic Textile Standard. This standard outlines requirements for the organic status of textiles and covers various aspects of production, including social and
environmental criteria. The document confirms that both Companies A and B have been audited and found to be in conformity with GOTS Version 6.0:2020.

- Global Recycled Standard (GRS) Certification: The primary theme revolves around the GRS certification, which stands for Global Recycled Standard. This standard outlines requirements for tracking and verifying the use of recycled materials in products and covers various stages of production.
- Organic Material and composition: The document emphasizes the use of organic materials, including Organic Hemp, Organic Cotton, and Organic Flax (Linen), which are used in the production of home textiles and worn accessories. These materials adhere to specific material composition percentages, ensuring the organic nature of the final products.
- Recycled Material composition: The document highlights the use of recycled materials in the production of textiles. Various percentages of recycled post-consumer and pre-consumer materials, such as wool, polyamide, and mixed fibers, are mentioned. These materials are used in the creation of both home textiles and worn accessories.
- Product categories and variations: The certified products fall under two primary categories: Home textiles (including blankets, bedspreads, and quilts) and Worn accessories (such as scarves, shawls, and veils). These categories exhibit various material compositions, blending organic fibers like cotton, hemp, and flax (linen), sometimes mixed with other components like wool and viscose.
- Certified processes: The certified organization is involved in various processes related to the production of the mentioned products. These processes include Preparatory (PR0022), Weaving (PR0033), Manufacturing (PR0016), and Finishing (PR0012). The organization may also engage subcontractors for some of these processes.
- Made with organic: The concept of "Made with organic" is highlighted, indicating that some products are not 100% organic but contain a significant organic content. These products include a blend of organic cotton, organic flax (linen), and wool in different percentages.
- Certification Standards Criteria: The certificate refers to the audit criteria, including the GRS 4.0:2017 standard and Content Claim Standard 3.0:2022. Additionally, the Textile Exchange Standards Claims Policy V1.1 is mentioned.

5.1.6. Sustainability Partners

Different strategic partners and their importance emerged. For Company A the electricity supplier Dolomiti Energia is a strategic partner, who ensures that 100% of the energy used comes from renewable sources. Additionally, they work with suppliers who share their sustainability principles.

"Then apart from the suppliers that I repeat some dyeing, some spinning more than others, maybe they pay attention to this issue and then maybe provide you with certifications rather than." (Company A, 2023)

Furthermore, they work with spinning mills to obtain sustainable yarns, and the company seeks to source materials from a quality production chain that follows ethical practices. The company values ethical treatment towards animals and prefers to work with suppliers who share the same values.

"Spinning mills where we always go to buy sustainable yarns...materials that come from a quality production chain...ethics towards animals...is becoming increasingly popular." (Appendix I)

For Company B the strategic partners are the certifiers, because without them they could not certify their materials. Furthermore, dyeing company, their contractors, who sometimes “come out with proactive ideas” (Company B, 2023d), and the whole Prato district.
“So let's say that it is a bit like the district of Prato itself that historically is a partner. And that to sell, to increase sales, one also looks for stimuli, that is, he creates stimuli and therefore we say that more or less these are these” (Company B, 2023d).

Regarding both GOTS and GRS reports (Company B, 2023c; Company D, 2023a, 2023b) the certifications are issued by ICEA and licensed by Textile Exchange. The accreditation number of the certification body (IOAS; Accreditation Number: 26) and the inspection body (ICEA) are provided. The document mentions the name of the auditor involved in the certification process. Furthermore, the GOTS certification is issued by a specific certification body, with its logo and accreditation number mentioned. This body is accredited by IOAS, indicating its authority to certify organizations according to GOTS standards.

Additionally, Company B fosters collaboration with partners who share the same social objectives and verifies their proper implementation within partner companies (Company B, 2023a).

Furthermore, Confindustria Toscana Nord, then the association of industrialists. Then during the pandemic, in collaboration with two producer friends, they developed this circular economy project that they would like to implement further, but are lacking more strategic partners to cover the role.

“The project is still there and has its validity and if and if we could find someone who follows it, who deals with the stylistic part, marketing and communication. (Company A, 2023)

Company C is collaborating with the Politecnico di Milano on a project to reuse leather from bags for shoes. The goal is to work with major brands to develop sustainable products. The interviewee highlights the importance of strategic partnerships to further sustainability initiatives.

"We are fine-tuning...to be able to start deepening this project." (Company C, 2023).

Lastly, Company D uses different partners as the company that buys their residual weaving yarns, who frays them and makes them into massive felts that are also used under the road surface as reinforcement.

5.2. Analysis

The further step is to recognize the relationships between concepts and theories (Saunders, Lewis and Thornhill, 2009).

Table 3 - Themes connection with Organizational change and Network Theory

<table>
<thead>
<tr>
<th>Theme</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company history and context</td>
<td>Organizational change</td>
</tr>
<tr>
<td>Definition and perception of sustainability</td>
<td>Organizational change &amp; Network theory</td>
</tr>
<tr>
<td>Sustainability Practices</td>
<td>Organizational change &amp; Network theory</td>
</tr>
<tr>
<td>Sustainability barriers</td>
<td>Organizational change &amp; Network theory</td>
</tr>
<tr>
<td>Sustainability drivers</td>
<td>Organizational change &amp; Network theory</td>
</tr>
<tr>
<td>Sustainability partners</td>
<td>Network theory</td>
</tr>
</tbody>
</table>

As shown in table 3, the different themes are directly connected with the theories of organizational change and Network theory.

5.2.1. Company history and context

This theme is related to the first stage of Lewin’s model (Lewin’s, 1951), the unfreezing stage, which can be done by increasing the awareness of the need for change and encouraging individuals or groups to question and challenge the existing ways of doing things. In fact, the theme involves examining how the company has transformed over time, including changes in its structure, strategies, and culture. Furthermore, the specific description of the person’s role in the company is relevant to analyze in an
organizational context as it focuses on understanding how individuals' roles and responsibilities within
the company may change during the implementation of sustainability initiatives.

5.2.2. Definition and perception of sustainability

How sustainability is perceived and defined is also part of the unfreezing step of organizational
change (Lewin’s, 1951) as it involves defining and incorporating sustainability principles and
practices within the organization and the different perceptions and understanding of it.
From the interviews emerged also the importance of Sustainability within the company and this
suggests a connection with both organizational change and network theory. In fact, It involves
recognizing the significance of sustainability and may lead to changes in the organization's strategies,
processes, and relationships with internal and external stakeholders. This is connected to Kotter’s
(1968) 8-Step Change Model, and in specific the first step of establishing a sense or urgency, by
creating a reason for why change is necessary and communicating it to all stakeholders. Thus, the
perception of sustainability within the company involves understanding how different stakeholders
perceive the importance of sustainability within the company, which may influence the organization's
strategies, decision-making processes, and relationships. This involves setting timelines and
milestones for implementing sustainability strategies within the organization and understanding the
whole industry commitment towards a sustainable shift. Moreover, the differing views of
Sustainability within the Company involve managing and addressing different perspectives and
opinions regarding sustainability within the organization.

5.2.3. Sustainability practices

The moving stage of Lewin’s model involves implementing the actual change and the different
sustainability practices are directly related to this, because developing and implementing sustainability
strategies within the organization, involves obtaining certifications to demonstrate the organization's
commitment to sustainability. Furthermore, studying the current sustainability practices within the
organization implicates examining and assessing the organization's current sustainability practices and
identifying areas for improvement or expansion. On the other hand, future sustainability practices can
be connected to both organizational change and network theory. It involves developing and planning
future sustainability strategies within the organization, which may require changes in processes,
structures, and relationships within the network.
Among the different sustainability practices, the use of recycled materials within the organization’s
processes may require changes in behavior, supply chain practices, relationships with suppliers and
collaboration with external partners. Furthermore, waste management can affect how resources are
allocated, it may require changes in the different processes and affect collaboration with external
partners.

5.2.4. Sustainability barriers

This theme is connected to both organizational change and network theory as addressing the barriers
that hinder the organization's ability to embrace sustainability requires changes in internal processes,
structures, and relationships with external stakeholders. It is connected with both the mentioned
unfreezing stage (Lewin, 1951) and Black’s (2022) definition of networks as social relationships and
common values in which knowledge and products are shared among a wide range of participants.
Different challenges and trade-offs associated with implementing sustainability initiatives within the
organization emerged, at different levels and processes and identifying and addressing the barriers that
hinder the organization's ability to embrace sustainability may require changes in internal processes,
structures, and relationships with external stakeholders.
Among the different barriers the most relevant that emerged are the following:

- Customers Demand for certifications: which involves understanding customer demands for
  sustainability certifications and how these demands may influence the organization's
  relationships and interactions within the network. Following Hugo (2021) certifications, that
are central for sustainability, are viewed in a negative way as they are too expensive, and in fact prices and bureaucracy are the emerging topics.

- Sustainability Strategies and Certifications: Again certification emerged as a barrier that manufacturers must encounter, and involves developing and implementing sustainability strategies within the organization, which may also involve obtaining certifications to demonstrate the organization's commitment to sustainability.
- Challenges and future prospects: This theme is more aligned with both organizational change and network theory. It involves examining the challenges the organization faces in achieving sustainability and exploring future prospects for sustainability initiatives, which may require changes in processes, structures, and relationships within the organization and the network.
- Geographical Influence on Customer Demand: This theme can be connected to both organizational change and network theory. It involves understanding how the geographical location of the organization and its customers may influence customer demand for sustainability and how this demand may require changes in the organization's strategies, processes, and relationships within the network.

5.2.5. Sustainability drivers

This theme involves understanding the factors that drive sustainability within the organization and how these drivers may influence the organization's strategies, decision-making processes, and relationships within the network. Here, again the role of the customers' demand for sustainability and certification emerged, as they are both a barrier and a driver towards sustainable change. Additionally, the geographical Influence on Customer Demand involves understanding how the geographical location of the organization and its customers may influence customer demand for sustainability and how this demand may require changes in the organization's strategies, processes, and relationships within the network.

Among the different drivers for sustainability, two of them are relevant to mention:

- Recycling and Waste Reduction: This theme can be connected to both organizational change and network theory. It involves implementing new practices and processes within the organization to promote recycling and waste reduction, which requires changes in behavior and may also involve collaboration with external partners.
- The industry commitment to Sustainability is linked to both theories, as understanding such commitment may influence the organization's strategies, partnerships, and collaboration within the network.

5.2.6. Sustainability partners

Strategic partners and collaborators relate to network theory as it involves identifying and engaging strategic partners and collaborators who share the organization's sustainability goals and can contribute to the network's overall sustainability efforts. In particular, the Strength of weak ties (SWT) theory by Granovetter (1973) is connected as weak ties play an important role in social mobilization and collective action. This is because weak ties are often bridges that connect different social groups and allow information to flow across otherwise isolated networks. In this case, the different strategic partners and collaborators are the weak ties in the supply chain.

5.3. Adapted Framework

In reference to the empirical data and analysis, we adapted the SCM framework (Macchion et al. 2027) and connected it with the TBL. This is because in order to emphasize the Sustainability transition in the fashion industry, it is central to connect the strategic approaches undertaken by the
different companies with the Triple Bottom Line. As a result, we drew the Manufacturing strategic approach toward social and environmental sustainability (Figure 5).

![Diagram of Manufacturing strategic approach toward economic, social and environmental sustainability]

Figure 5 - Manufacturing strategic approach towards economic, social and environmental sustainability. Own creation.

Here, we highlighted the different themes connected with the manufacturing processes:

- **Actors:** Yarn mills and knitwear/woven manufacturing companies.
- **Governance:** Certifications have a central role.
- **Source:** material sourcing and origin; transparency; partners; different practices.
- **Make:** manufacturing processes and practices.
- **Drivers:** all the different drivers had been divided into economic, social and environment.
- **Barriers:** all the different barriers had been divided into economic, social and environment.
6. Discussion

The fashion industry is evolving rapidly in response to global environmental concerns and changing consumer preferences. The analysis delved into the dynamics of sustainability within small-family companies in Italy (Company A, B, C, and D) operating within the fashion industry, each with distinct historical backgrounds and unique approaches to sustainability. By exploring their historical context, definitions of sustainability, drivers, barriers, and implemented practices, the analysis provided a comprehensive understanding of sustainable efforts within the context of these firms.

6.1. Historical Context and Company Profiles

The four interviewed companies (Company A, B, C, and D) in the Italian fashion industry have distinctive histories, ranging from being established during the economic boom in the 1960s (Company A) to being fifth-generation businesses dating back to the late nineteenth century (Company B). These firms specialize in knitwear, scarves, and artisanal products. It is notable that the companies share a common characteristic of utilizing a horizontal organizational structure, where employees assume multifaceted roles. Their presence in the textile-rich city of Prato further underscores their commitment to the fashion industry.

The examination of company history and context is foundational to initiating the process of organizational change. By tracing the evolution of these small-family firms in the fashion industry, it becomes evident that organizational change is a continuous process driven by historical, economic, and technological factors. Lewin's model of change emphasizes the importance of unfreezing existing norms and encouraging a reevaluation of established practices. In the context of company history, this translates into questioning traditional methods and encouraging a mindset open to embracing sustainability. The horizontal structure of these firms, where employees handle multiple responsibilities, can also be seen as a reflection of a changing organizational culture to accommodate sustainability practices.

6.2. Perceptions and Definitions of Sustainability

The interviewees offered diverse perspectives on sustainability. For Interviewee 2 of Company A, sustainability is perceived as a fundamental value that aligns with the ethos of new generations. Interviewee 1 of the same company emphasizes sustainability's role in countering consumerism's detrimental effects. Interviewee 3 of Company B encapsulates sustainability as a multifaceted concept encompassing environmental, social, and economic dimensions. Company C’s representative sees sustainability as a means to achieve global well-being, while Company D adopts a theoretical definition.

The analysis reveals that sustainability is perceived as multifaceted, encompassing environmental, social, and economic dimensions. This aligns with Lewin's model, where the unfreezing stage involves creating a sense of urgency to motivate change. The different definitions of sustainability among interviewees reflect the need to establish a shared understanding of the concept within the organization, which is crucial for successful implementation. Moreover, the idea of sustainability being embraced by new generations speaks to the diffusion of innovation theory within network theory. New generations are more likely to adopt and promote sustainability practices, and this diffusion can accelerate changes within the organizational culture.

6.3. Sustainability Drivers and Barriers

Sustainability drivers emerge as ethical responsibility, customer demand, market expansion, and collaboration. The ethical sense of responsibility towards the planet is a significant driver, highlighting the growing awareness of environmental issues. Moreover, customer demand, especially for products made from recycled materials, drives firms to innovate and offer sustainable options.
Collaboration emerges as a crucial factor, with companies partnering with certifiers, universities, and other industry stakeholders to develop sustainable solutions. Despite these drivers, barriers such as high costs, complex certification processes, technical limitations, and inadequate awareness among consumers hinder sustainable efforts.

Sustainability barriers intersect with both organizational change and network theory. Barriers often emerge when existing processes and structures resist change. Organizational change theory points to the need for overcoming resistance during the unfreezing stage, and network theory's concept of network density comes into play. The more densely connected an organization's network is, the greater the likelihood of facing resistance due to established norms and relationships. The emergence of bureaucracy, certification complexities, and resistance to change underscores the need for clear communication, support from strong ties, and leveraging weak ties to introduce novel perspectives.

Sustainability drivers align with Lewin's first step of creating a sense of urgency and initiating change. The increasing demand for sustainable products and changing customer preferences emphasize the urgency to incorporate sustainability within the organization's strategies. Network theory's concept of resource dependency is relevant here; organizations depend on external resources, and when customer preferences shift, the organization is compelled to adapt. The engagement of strategic partners and collaboration reflects the network's response to these drivers. These partners act as intermediaries between the organization and external resources, facilitating the adaptation to changing demands.

### 6.4. Sustainability Practices

The small-family fashion firms adopt diverse strategies to enhance sustainability. Company A focuses on implementing sustainable alternatives, using regenerated yarns, and promoting responsible supplier selection. Additionally, the company sells production waste to other firms for reuse. Company B gradually introduces recycled materials and explores sustainable dyeing processes. The company's circular economy project further exemplifies its commitment to sustainability. Company C collaborates with research institutions to reuse leather, and Company D integrates sustainable practices into its artisanal process, with a focus on recycling and responsible material sourcing.

The implementation of sustainability practices directly corresponds to Lewin's moving stage, where changes are executed. The strategies adopted by these companies, such as incorporating recycled materials and waste reduction practices, reflect the process of change in action. These practices require alterations in internal processes, supplier relationships, and collaboration with external partners. Network theory's concept of strong and weak ties becomes relevant here, as strong ties within the organization need to be adapted and reshaped to accommodate sustainability practices. Collaboration with external partners indicates the influence of weak ties, expanding the network's capability to introduce innovative practices.

### 6.5. Role of Partnerships

Strategic partnerships play a vital role in driving sustainability initiatives. In Company A, electricity supplier Dolomiti Energia ensures renewable energy supply, while strategic partners like spinning mills help source sustainable yarns. For Company B, partnerships with certifiers and contractors facilitate certification processes and promote innovative solutions. Company C's collaboration with an academic institution reflects the significance of external partnerships in advancing sustainable practices. These partnerships underscore the need for shared values and resources to achieve sustainability goals effectively.

Strategic partners and collaborators are pivotal within network theory. The strength of weak ties plays a significant role here, enabling knowledge and information exchange across different domains. These ties represent connections that bridge the organization to external networks, allowing the exchange of sustainability practices, innovative ideas, and resources. In the context of network theory, these partnerships contribute to the evolution of the network, influencing organizational change as they introduce new perspectives and practices.
This analysis underscores the evolving landscape of sustainability in small-family fashion firms. These companies navigate historical contexts, varying definitions, and complex challenges to integrate sustainability into their operations. While driven by ethical responsibility and market demand, barriers such as high costs and certification complexities pose challenges. Strategic partnerships and innovative practices play critical roles in overcoming these barriers. The insights from these companies offer a valuable lens into the intricate interplay between sustainable practices and the fashion industry's dynamics.

In summary, the connections between the analyzed themes and the theories of organizational change and network theory illustrate the dynamic interplay between internal organizational dynamics and external network influences. Lewin's model provides a structured approach to understanding how change is initiated, executed, and maintained within these small-family fashion firms. Network theory complements this by highlighting how external partnerships, collaborations, and weak ties contribute to the adoption and diffusion of sustainability practices. The discussion underscores the importance of understanding the synergies between these theories to effectively drive and navigate sustainability-oriented organizational change within a broader network context.
7. Conclusion and Future Research

7.1. Conclusion
The exploration into sustainability dynamics within small-family fashion firms operating in the Italian fashion industry has revealed a multifaceted interplay between historical context, organizational change, network influences, and sustainability practices. Through interviews with representatives from four distinct companies, this study unveiled the evolution of these firms' histories, their diverse definitions and perceptions of sustainability, as well as the drivers, barriers, and practices they employ to pursue sustainable goals. This analysis contributes to the broader understanding of how economic, social, and environmental factors interact within the fashion industry to shape sustainable practices.

These small-family fashion firms, with unique historical backgrounds and products, showcased how organizational change is a continuous process driven by historical, economic, and technological forces. Lewin's model of change, specifically the stages of unfreezing and change, becomes evident as these companies reevaluate established practices and embrace sustainability as a new norm. Furthermore, the adoption of a horizontal organizational structure emphasizes the adaptability needed to accommodate sustainability practices within their operations.

The varying perceptions and definitions of sustainability among interviewees underscore its multifaceted nature, encapsulating environmental, social, and economic dimensions. Lewin's unfreezing stage aligns with the need to establish a shared understanding of sustainability within organizations. The diffusion of innovation theory within network theory is evident as new generations propel the adoption of sustainability practices, leading to shifts in organizational culture. Sustainability drivers, rooted in ethical responsibility, customer demand, market expansion, and collaboration, act as catalysts for change. These drivers resonate with Lewin's first step of creating a sense of urgency, as organizations strive to incorporate sustainability into their strategies. Meanwhile, barriers such as high costs, complex certification processes, and inadequate consumer awareness intersect with both organizational change and network theory. These barriers highlight the resistance that often accompanies change and emphasize the importance of effective communication and leveraging network ties to overcome challenges.

The implementation of sustainability practices aligns with Lewin's moving stage, where changes are executed. The strategies adopted, such as incorporating recycled materials and responsible sourcing, reflect the transformational process in action. These practices necessitate adjustments in internal processes, supplier relationships, and collaborations with external partners, illustrating the influence of strong and weak ties as discussed within network theory. Strategic partnerships play a pivotal role in advancing sustainable initiatives. These partnerships exemplify network theory's concept of strong and weak ties, facilitating the exchange of knowledge, innovative ideas, and resources across organizational boundaries. Collaborations with partners such as certifiers, suppliers, and academic institutions underscore the need for shared values and resources to achieve sustainability goals effectively.

7.2 Future Research
The findings from this analysis lay the groundwork for future research endeavors in several directions. Firstly, expanding the scope of study beyond small-family fashion firms to encompass a wider array of companies could provide a comprehensive understanding of sustainability practices across different
scales and contexts. Comparative studies across diverse sectors of the fashion industry, such as luxury and fast fashion, may uncover distinct challenges and opportunities related to sustainability adoption. The influence of digitalization and technological advancements on sustainability practices within the fashion industry remains relatively unexplored. Future research could delve into the integration of technologies such as blockchain, AI, and big data analytics to enhance transparency in supply chains and mitigate environmental impact.

Additionally, investigating the role of government policies, regulations, and industry standards in driving and shaping sustainable practices in fashion manufacturing could offer valuable insights. This exploration could shed light on the external factors that significantly influence organizational change and the adoption of sustainable practices. Moreover, a longitudinal study tracking changes in perceptions, practices, and organizational culture over time could provide insights into the evolution of sustainability efforts within the fashion industry. This longitudinal perspective could further illuminate the interplay between generational shifts, consumer preferences, and organizational strategies.

In conclusion, this analysis offers a comprehensive exploration of sustainability dynamics within the context of small-family fashion firms. The connections between historical context, organizational change, network theory, and sustainability practices provide valuable insights into the evolving landscape of sustainable fashion manufacturing along the TBL practices. The findings from this study pave the way for future research endeavors that can delve deeper into various aspects of sustainability practices, thereby contributing to the ongoing discourse on sustainability within the fashion industry.
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Appendix

Appendix I: Sample Interview Transcription

Interview Company A

April 20th 2023, 10:00

Transcript in original language (italian)

00:00:00 Interviewer

Ciao F., innanzitutto grazie per aver trovato il tempo per questa breve intervista. Come anticipato, io e la mia partner Sophie stiamo scrivendo la tesi con focus sulla Sostenibilità ed in particolare la transizione verso la Sostenibilità nell’industria di moda, in particolare nella produzione. Possiamo iniziare, puoi brevemente presentarti e un presentare l'azienda e il tuo ruolo e anche un po' la storia dell'azienda magari.

00:00:12 Interviewee

Bene, allora la storia. È nato tutto negli anni 60, quando c'è stato il boom economico qui in Italia, nella nostra Regione e nella nostra provincia era soprattutto il boom del tessile, e nello specifico della maglieria. Poi, infatti c'erano delle grossissime aziende nel dopoguerra che sono nate qui, in questa provincia e tutte nell'ambito del tessile, ma soprattutto nella maglieria, in particolare qui ad Agliana, Pistoia e Prato. Poi niente, mia mamma negli anni 60 iniziò a lavorare in una grossa azienda qui ad Agliana e da li diventò maestra e tecnica specifica nella confezione della maglieria e poco dopo con mio padre. Da fidanzatini iniziarono questa attività che negli anni 60 era un pochino più facile che adesso iniziare un'attività e farla evolvere. In effetti poi, insomma, i risultati poi venivano più velocemente e più facilmente e dall’anno ‘68 si trasferirono da un piccolo garage in un'azienda dove siamo ora. Inizialmente non avevamo macchinari, quando iniziò l'azienda avevamo solo il reparto confezione, con una ventina di donne che lavoravano nel reparto confezione, poi negli anni inizio anni 80, iniziammo a comprare anche i macchinari, sempre poi più tecnologici per arrivare fino ad adesso. Erano macchinari dove partivamo dal tessuto, dovevamo poi fare il taglio a mano e fare la confezione, erano un pochino più spartani di adesso. Ora è molto più specifico, specializzato. E niente, Poi, era soprattutto un'azienda adibita e sempre portata a fare l'export, non il mercato italiano, ma sempre un export in Germania, paesi Scandinavi e molto Francia. E poi negli anni si è evoluta anche prima di tutto come macchinari sempre più specializzati, quindi meno operatori che dovevano stare sotto la macchina a controllare le macchine. Poi abbiamo acquistato altre due macchine che sono più programmate per fare maglia sia tecnicamente più evoluta ma anche più indipendente dall'umano, dall'operatore, ma basandosi sul programma. Chiaramente il programmatore prepara il programma con il computer, che viene trasferito poi alla macchina. L'operatore naturalmente deve sempre controllare, ma il lavoro che fa il macchinario però, insomma, è molto più leggero del lavoro rispetto a 30 anni fa. Comunque ci si è evoluta in tutti i sensi. Questa azienda, anche con l'ecosostenibilità. Se tu volevi fare un riferimento anche a quello.

00:04:00 Interviewer

Ok, il tuo ruolo. Adesso hai preso tu il posto dei genitori?
00:04:05 Interviewee

Allora diciamo che dalla fine degli anni 90 in poi ho iniziato a inserirmi nelle nell'azienda con vari ruoli, inizialmente un po’ più attivo nel magazzino, nella produzione e per fare un po’ di ossa, poi pian piano il mio ruolo si sta insomma spostando verso un ruolo più dirigenziale, anche se poi sinceramente questo lavoro ha bisogno sempre di una persona che vada a controllare nei vari laboratori come tessitute, confezione o lavanderie, per andare a vedere il prodotto. Come si sviluppa nei vari procedimenti, per stare un pochino a guardare e a controllare che il prodotto sia fatto come vuoi, ecco. Praticamente la mia attività è sia dirigenziale che di controllo.

00:05:13 Interviewer

Beh, quello è importante. Adesso parlando alla sostenibilità. Come definisci la sostenibilità e come viene percepita per te, quanto è importante per te come persona? Ma poi anche per l'azienda, per il tuo lavoro di tutti i giorni.

00:05:34 Interviewee

La sostenibilità è importante perché noi abbiamo vissuto in una generazione di consumismo estremo negli anni 60, 70, 80 e 90, poi siamo arrivati ora al punto che dagli inizi degli anni 2000 è diventato molto più importante essere verdi, nel senso come animo. La nostra generazione, io ho cinquant'anni, è la prima forse che comprendiamo questo impatto e capiamo che dobbiamo fare qualche cosa per l'ambiente e nell'attività nostra. Per l’ambiente ci sono varie cose, come meno consumi energetici e meno spreco e noi abbiamo adottato, infatti questa visione, anche perché 12 anni fa abbiamo installato l'impianto fotovoltaico e la nostra attività, il nostro prodotto in pratica utilizza le risorse energetiche naturali e quindi è già un buon passo perché il 70-80% della produzione di energia celi'abbiamo, non la dobbiamo acquistare, ma la andiamo ad autoprodurre. Quindi i nostri macchinari quando producono un capo lo fanno con l'energia solare, questo a me rende tanto orgoglioso e mi fa sentire un pochino meglio. Però poi mi piace anche come visione. In più qui la nostra zona è specializzata nel riciclaggio delle materie prime. Da cent'anni penso che sia storica come attività, e negli ultimi anni abbiamo anche avuto molte molte scelte di filato riciclato. Qui in zona Prato abbiamo decine di aziende che producono filati ecologici, vuol dire che routilizzano il materiale, cioè dai maglioni. Eh, non so come poter dire, ma a fine attività di una famiglia vengono gettati in un deposito dove vengono raccolte tutte le maglie, solamente le maglie, e poi vengono suddivise nei colori, nelle varie qualità, dalla lana, acrilico, viscose vengono suddivise, poi vengono riprodotti i filati da questi maglioni. Noi andiamo a riacquistare filati nuovi però, fatti da vestiti vecchi.

00:08:44 Interviewer

E sono tendenzialmente mi hai detto maglioni post consumo, quindi arrivano dai privati, dalle persone che poi non usano più, giusto?

00:08:52 Interviewee

Sì, qui in Italia. Non so all'estero come funziona ma qui in Italia abbiamo dei depositi, dei contenitori che vengono messi in diverse zone dove le famiglie sanno che li possono buttare gli indumenti usati. Quindi non li buttano nella spazzatura residuo, diciamo normale, ma in questi contenitori dove poi vengono acquistati da delle aziende. Quindi queste aziende che
cosa fanno? Riprendono i maglioni da poter riutilizzare subito, fanno un procedimento di sterilizzazione e poi vanno in stireria, vengono ricontrollati e ripuliti e vengono rivenduti come capi usati ai mercati, negozi o centri specializzati.

Se invece i capi non sono abbastanza integri, vengono messi nell'altro processo, cioè nel processo di riutilizzo delle materie prime. Quindi da questa maglia che ho io indosso vengono trinciate tutte le fibre e diventano nuove fibre più corte naturalmente, quindi meno resistenti. Però sono possibili per rifare una nuova filiera di materia. La mia maglia è diventata in pratica una nuova materia prima.

00:10:51 Interviewer

Ma per quello che riguarda invece magari gli avanzi, ma sì, gli sprechi che avete voi della produzione, quelli vengono riutilizzati in qualche maniera?

00:11:01 Interviewee

Sì, allora i fondi cono, i teli sciupati che vengono fuori dalla macchina e tutto quello che abbiamo di residuo e che non vendiamo, paghiamo un'azienda che viene a ritirare tutto questo. Abbiamo dei contenitori dove una volta ogni 3 4 mesi vengono a ritirare questi prodotti che non sono riutilizzabili nel ciclo produttivo.

00:11:35 Interviewer

Ok e loro poi sai cosa fanno di questi materiali?

00:11:39 Interviewee

Allora fuori li rivendono a delle aziende che acquistano materie prime per fare filato per tessuto o per altre cose, dipende. Quindi tutto viene riutilizzato, non viene bruciato, non viene polverizzato, cioè viene riutilizzata questa materia per fare materie prime e riciclo. Io intendo sempre lana o acrilico che vengono ricavati da questi prodotti.

00:12:25 Interviewer

Ok, quanto avete iniziato a effettuare questo?

00:12:33 Interviewee

Da sempre però è cambiato, perché? Fino a 3, 4 anni fa c'erano proprio delle aziende private che andavano ad acquistare o a prendere gratuitamente queste materie dagli avanzi di produzione, che possono essere fondi cono di filato o tessuto. Poi queste aziende andavano a scegliere a seconda del materiale, facevano già la selezione, cioè l'acrilico, lo buttavano da una parte, lana da una da un'altra, e poi le rivendevano come acrilico o lana etc. alle aziende che utilizzavano queste materie per andare a rifare il filato. Poi, negli ultimi tre anni è cambiato perché queste aziende non dovevano avere 1000 certificazioni, quindi ora sono aziende più parastatali, diciamo dove c'è di mezzo sempre o la regione o la provincia e acquistano queste materie per poi lucrare anche loro.

00:13:53 Interviewer
Quando l’azienda ha cominciato ad essere più sostenibile?

00:14:04 Interviewee

Noi nel 2009 abbiamo installato il fotovoltaico e poi l'utilizzo di filati riciclati, più o meno su quel periodo lì. Mentre per quanto riguarda gli scarti di produzione, sono sempre stati venduti ad altre aziende, non sono mai stati gettati nella spazzatura normale. Ma è perché qui in zona Prato, abbiamo la tradizione del riutilizzo e da più di cent'anni ci sono tante aziende che fanno il carbonizzo, cioè dai vari prodotti misti vanno ad eliminare le parti sintetiche in modo da far rimanere solo la lana. Quindi qui abbiamo una tradizione molto molto importante su questo riutilizzo dei materiali, che sono sostenibili, riciclati. Per quanto riguarda i filati riciclati, ne abbiamo sempre utilizzati in piccola parte, perché fino a 7-8 anni fa erano visti come un prodotto di seconda o terza scelta. Quindi noi non riuscivamo a vendere un prodotto fatto con filati riciclati, perché i clienti non lo vedevano come un buon prodotto di prima qualità lo metteva sempre in secondo piano. Poi negli ultimi 5 anni c’è stata una crescita esponenziale nella richiesta di questi filati sostenibili e ora, anche se hanno un costo medio basso questi filati, hanno un valore un po’ più alto a livello di etica.

00:16:26 Interviewer

Avete riscontrato delle barriere per riuscire a essere più sostenibili?

00:16:44 Interviewee

Ma io l'unica cosa che posso vedere negativa, anzi, ne vedo diverse in questo senso è che i certificati o gli enti certificatori che possono essere ora quelli del GRS, per esempio, hanno 1000 richieste di documenti, di burocrazia e poi alla fine è, secondo me detta brutta, solamente una tangente perché ha un costo troppo alto essere certificati. Poi alla fine un’azienda come noi potrebbe essere più certificata di altri che hanno solo un piccolo ufficio e collaborano con 1 o 2 aziende fuori che sono certificate GRS, loro sono GRS. Insomma, mi sembra che ci sia troppa burocrazia e troppi interessi economici su questi certificati, cosa che magari un'azienda come noi può essere più certificata o sostenibile di una certificata e questo ti voglio fare un po’ capire.

00:18:14 Interviewer

Ok, quindi dici che, come barriera per le certificazioni, è più il costo? Questi certificati vengono richiesti da dai clienti, cioè voi li vedete una cosa necessaria o no e perché?

00:18:33 Interviewee

Ah, e non è mai, non è necessaria. A parte che per essere certificati GRS che vuole dire Global Recycled Standard c’è un ente che segue tutta la pratica di me azienda che fa la richiesta e devo essere sottoposto a varie verifiche e vari standard qualitativi o di produzione. Però il problema qual è che questo GRS? Il certificatore. Per esempio, io ho un po’ produzione, di tessitura, un po’ di confezione, un po’ di stiro internamente. Ci sono aziende come la mia che si chiamano maglificio e che vendono lo stesso prodotto, sono magari un ufficio e che possono essere più facilmente certificati e di me che hanno un ufficio e non hanno molto burocrazia perché non hanno da far controllare il reparto tessile macchine, reparto confezione, reparto stiro. E loro che magari trovano un produttore che ha un certificato mezza fasulla ha già il certificato in mano perché è troppo facile in quella maniera. Io invece ho
molto più burocrazia perché ho un deposito e lo dovrei dividere rispetto a materie riciclate con quelle nuove. Dovrei fare la tessitura con loro. Non mi ricordo che cosa mi chiesero, ma insomma ho un pacco di fogli, così da riempire. Secondo me non ha neanche senso. E questo vale per tutte le certificazioni anche GOTs, per esempio. Tutte le altre certificazioni sono una tendenza. Ho visto aziende che con un pochino di malizia e di furbizia, sono riuscita ad avere il certificato. Insomma io trovo questa cosa delle certificazioni un po' ambigua. Poi il discorso è che oltre a essere io certificato di GRS dovrebbe essere vabbè, il filato che acquisto, ma anche il cliente finale a cui vendo senzò non posso mettere il bollo di certificato GRS. Insomma, cercano di mantenere una cosa che dovrebbe essere seguita, secondo me più dal governo o da enti parastatali che enti privati.

00:21:47 Interviewer

Capisco cosa intendi. Ma dal punto di vista dei clienti, negli ultimi c'è più richiesta di certificazioni?

00:21:59 Interviewee

Si insomma, di richieste c'è ne sono tante, ma alla fine per poter metter il bolino GRS tutta la filiera deve essere certificata GRS e solo pochi clienti lo sono. Quindi per ora non è ancora obbligatorio, quindi va bene, sì. Per noi l'importante è far vedere che siamo un'azienda che segue abbastanza la sostenibilità, che ci sta attenta e acquista filati riciclati e certificati.

00:22:58 Interviewer

Ok. Come driver, motivazione, per la sostenibilità, tu mi hai detto che per te personalmente è importante e per la tua generazione. Voi come azienda comunque avete sempre voluto essere sostenibili. Ci sono altre motivazioni particolari che vi hanno spinto a fare determinate scelte che potrebbe essere non so i clienti in generale o il mercato oppure se avete o state pianificando magari altri tipi di strategie che possono essere sostenibili?

00:23:28 Interviewee

No a livello di sostenibilità quando cambieremo le auto aziendali magari le acquisteremo elettriche o ibride. Poi stiamo cambiando internamente tutte le luci e le abbiamo messe tutte a LED. Quindi anche quando c'è un po' di manutenzione da fare o cambiamenti da fare nei vari punti luce lo andremo a fare a LED anche lì, ottenendo un risparmio energetico notevole. Negli ultimi anni abbiamo messo una caldaia a condensazione che anche lì si risparmia molto gas. Sono tutti piccoli passettini, piccole cose che ti portano poi a dimezzare gli sprechi. La cosa grossa che abbiamo fatto è l'impianto fotovoltaico, abbiamo fatto un buon passo perché lì stiamo producendo circa 100-120.000 chilowattora e ne consumiamo sui 70.000. E in questo periodo ci ha aiutato molto perché non abbiamo speso, abbiamo speso tre volte tanto, però non quanto si poteva spendere senza averlo. Perché prima un'azienda come questa, ora è difficile fare i paragoni, però si spendeva su 1.000 € circa di energia elettrica al mese all'incirca, mentre negli ultimi 8 mesi abbiamo speso 2008 €. Però se non avessimo avuto l'impianto fotovoltaico molto probabilmente prima si sarebbe speso 3000€ e poi si andava a spendere 10.000€. Tra l'altro, 12 anni fa abbiamo fatto l'impianto, poi due anni fa, in periodo Covid, ne abbiamo approfittato per rimettere tutto a nuovo, cioè pannelli, abbiamo ricomprato completamente nuovi pannelli perché dopo un certo periodo di tempo hanno una produzione minore, quindi abbiamo già rinnovato nuovamente tutto l'impianto.

00:26:47 Interviewer
Eh, OK e l'ultima domanda è se nella vostra strategia di sostenibilità avete dei partner, collaboratori.

00:27:01 Interviewee

Si, allora le filature dove andiamo ad acquistare sempre i filati sostenibili, nel senso riciclati. Ora la sostenibilità è anche utilizzare i materiali buoni. Nel senso, non è solo utilizzare materiali riciclati, ma anche utilizzare materiali che vengono da una catena produttiva di qualità, dove c'è anche un senso etico nel fare certe scelte produttive, magari un processo di tosatura più sostenibile e rispettoso verso gli animali che è una richiesta sempre dei clienti, è una cosa che sta prendendo sempre più piede. Ciò è l'etica verso gli animali mi sembra che stia prendendo piede ed è giusto che ci sia. Altri collaboratori sono parte dei produttori, noi facciamo parte della catena produttiva. Per esempio, se io penso alla produzione fatta in India, per esempio, o in Cina, molti clienti scandinavi per quello che mi riguarda, non vogliono più lavorare lì per anche come vengono trattati i lavoratori. Mentre noi qui siamo un'azienda con 14 persone e la maggior parte lavora qui da 20 anni. Ognuno lavora le 8 ore, a volte se hanno necessità certe volte di andare coi figli o con la famiglia per cose familiari lo fanno, siamo un'azienda molto aperta, siamo come una famiglia. Qui siamo un'azienda in cui i dipendenti stanno più che bene, penso.

00:29:30 Interviewer

Ok io non ho più altre domande. Grazie per il tuo tempo e per tutte le risposte.

00:29:47 Interviewee

Grazie a te. Ciao.

Interview 1

Company A

April 20th 2023, 10:00

Transcript translated in english

00:00:00 Interviewer

Hello F., first of all thank you for taking the time for this short interview. As anticipated, my partner Sophie and I are writing the thesis with a focus on Sustainability and in particular the transition to Sustainability in the fashion industry, in particular in production. We can start, you can briefly introduce yourself and an introduce the company and your role and also a little history of the company maybe.

00:00:12 Interviewee

Well, then the story. It all started in the 60s, when there was the economic boom here in Italy, in our region and in our province it was above all the boom of textiles, and specifically of knitwear. Then, in fact, there were very large companies in the post-war period that were born here, in this province and all in the textile sector, but above all in knitwear, in particular here in Agliana, Pistoia and Prato. Then nothing, my mother in the 60s began working in a large company here in Agliana and from there I became a teacher and specific technique in the
manufacture of knitwear and shortly after with my father. As sweethearts they started this activity that in the 60s was a little easier than now to start a business and make it evolve. In fact, then, in short, the results then came faster and easier and from the year ’68 they moved from a small garage to a company where we are now. Initially we did not have machinery, when the company started we only had the packaging department, with about twenty women working in the packaging department, then in the early 80s, we also began to buy machinery, more and more technological to get up to now. They were machines where we started from the fabric, then we had to cut by hand and make the packaging, they were a little more spartan than now. Now it is much more specific, specialized. And nothing. Then, it was above all a company used and always brought to export, not the Italian market, but always an export to Germany, Scandinavian countries and a lot of France. And then over the years it has evolved even first of all as increasingly specialized machinery, therefore fewer operators who had to stay under the machine to control the machines. Then we bought two other machines that are more programmed to knit both technically more advanced but also more independent of the human, the operator, but based on the program. Clearly the programmer prepares the program with the computer, which is then transferred to the machine. The operator of course must always check, but the work that the machine does, however, is much lighter than the work compared to 30 years ago. However, it has evolved in every sense. This company, also with eco-sustainability. If you wanted to make a reference to that too.

00:04:00 Interviewer

Ok, your role. Now you have taken the place of the parents?

00:04:05 Interviewee

So let's say that from the end of the 90s onwards I started to insert myself in the company with various roles, initially a little more active in the warehouse, in production and to make some bones, then slowly my role is moving towards a more managerial role, even if then honestly this job always needs a person who goes to check in the various laboratories how to weave, packaging or laundries, to go and see the product. How it develops in the various procedures, to stay a little bit to watch and check that the product is made as you want, here. Practically my business is both managerial and controlling.

00:05:13 Interviewer

Well, that's important. Now let's talk about sustainability. How do you define sustainability and how is it perceived for you, how important is it for you as a person? But then also for the company, for your everyday work.

00:05:34 Interviewee

Sustainability is important because we lived in a generation of extreme consumerism in the 60s, 70s, 80s and 90s, then we have now reached the point that since the early 2000s it has become much more important to be green, in the sense as soul. Our generation, I am fifty years old, is perhaps the first that we understand this impact and understand that we must do something for the environment and in our business. For the environment there are various things, such as less energy consumption and less waste and we have adopted, in fact, this vision, also because 12 years ago we installed the photovoltaic system and our business, our product in practice uses natural energy resources and therefore it is already a good step because 70-80% of energy production we have. We do not have to buy it, but we are going to self-produce it.
So when our machines produce a garment they do it with solar energy, this makes me so proud and makes me feel a little bit better. But then I also like it as a vision. In addition, our area here specializes in the recycling of raw materials. For a hundred years I think it has been historic as a business, and in recent years we have also had many many choices of recycled yarn. Here in the Prato area we have dozens of companies that produce ecological yarns, it means that they reuse the material, that is, from sweaters. Eh, I don't know how to say, but at the end of a family's activity they are thrown into a warehouse where all the sweaters are collected, only the sweaters, and then they are divided into colors, in various qualities, from wool, acrylic, viscose are divided, then the yarns from these sweaters are reproduced. We go to buy new yarns though, made from old clothes.

00:08:44 Interviewer
And they tend to tell me post-consumer sweaters, so they come from private individuals, from people who no longer use, right?

00:08:52 Interviewee
Yes, here in Italy. I don't know abroad how it works but here in Italy we have deposits, containers that are placed in different areas where families know that they can throw away used clothes. So they do not throw them in the residual garbage, let's say normal, but in these containers where they are then purchased by companies. So what do these companies do? They take back the sweaters that can be reused immediately, make a sterilization process and then go to ironing, are rechecked and cleaned and are resold as used garments at markets, shops or specialized centers.

If, on the other hand, the garments are not intact enough, they are put into the other process, that is, in the process of reusing raw materials. So from this mesh that I wear, all the fibers are cut and new fibers become shorter naturally, therefore less resistant. But they are possible to remake a new chain of matter. My jersey has practically become a new raw material.

00:10:51 Interviewer
But as far as leftovers are concerned, but yes, the waste that you have of production, are those reused in some way?

00:11:01 Interviewee
Yes, then the funds cone, the wasted sheets that come out of the car and everything we have of residue and that we do not sell, we pay a company that comes to collect all this. We have containers where once every 3 4 months they come to collect these products that are not reusable in the production cycle.

00:11:35 Interviewer
Ok and then you know what they do with these materials?

00:11:39 Interviewee
Then outside they sell them to companies that buy raw materials to make yarn for fabric or other things, it depends. So everything is reused, it is not burned, it is not pulverized, that is, this
material is reused to make raw materials and recycle. I always mean wool or acrylic that are made from these products.

00:12:25 Interviewer

Ok, how much did you start doing this?

00:12:33 Interviewee

But it has always changed, why? Until 3, 4 years ago there were private companies that went to buy or take these materials for free from production leftovers, which can be yarn cone or fabric bottoms. Then these companies went to choose according to the material, they already made the selection, that is, acrylic, they threw it on one side, wool on one from another, and then resold them as acrylic or wool etc. to companies that used these materials to go and remake the yarn. Then, in the last three years it has changed because these companies did not have to have 1000 certifications, so now they are more parastatal companies, let's say where there is always the region or the province and they buy this material and then they sell it too.

00:13:53 Interviewer

When did the company start to be more sustainable?

00:14:04 Interviewee

In 2009 we installed photovoltaics and then the use of recycled yarns, more or less around that time there. While as for production waste, it has always been sold to other companies, it has never been thrown in the normal trash. But it is because here in the Prato area, we have the tradition of reuse and for more than a hundred years there have been many companies that make carbonizzo, that is, from the various mixed products they go to eliminate the synthetic parts so as to keep only the wool. So here we have a very, very important tradition about this reuse of materials, which are sustainable, recycled. As for recycled yarns, we have always used a small part of them, because until 7-8 years ago they were seen as a second or third choice product. So we could not sell a product made with recycled yarns, because customers did not see it as a good quality product always put it in the background. Then in the last 5 years there has been an exponential growth in the demand for these sustainable yarns and now, even if these yarns have a medium-low cost, they have a slightly higher value in terms of ethics.

00:16:26 Interviewer

Have you encountered barriers to being more sustainable?

00:16:44 Interviewee

But the only thing I can see negative, indeed, I see several in this sense is that the certificates or certification bodies that can now be those of the GRS, for example, have 1000 requests for documents, bureaucracy and then in the end it is, in my opinion called ugly, only a bribe because it has a cost too high to be certified. Then in the end a company like us could be more certified than others who only have a small office and collaborate with 1 or 2 companies outside that are GRS certified, they are GRS. In short, it seems to me that there is too much bureaucracy and too many economic interests on these certificates, something that
maybe a company like us can be more certified or sustainable than a certified one and I want to make you understand a little.

00:18:14 Interviewer

Ok, so you say that, as a barrier to certifications, it's more the cost? These certificates are requested by customers, i.e. do you see them as necessary or not and why?

00:18:33 Interviewee

Oh, and it's never, it's not necessary. Apart from that to be GRS certified which means Global Recycled Standard there is a body that follows all the practice of me company that makes the request and I must be subjected to various checks and various quality or production standards. But what is the problem with this GRS? The certifier. For example, I have a little production, some weaving, some packaging, some ironing internally. There are companies like mine that are called knitwear factory and that sell the same product, they are maybe an office and that can be more easily certified and than me who have an office and do not have much bureaucracy because they do not have to control the textile machine department, packaging department, ironing department. And they who maybe find a manufacturer who has a half-fake certificate already has the certificate in hand because it is too easy in that way. I, on the other hand, have much more bureaucracy because I have a deposit and I would have to divide it with respect to recycled materials with new ones. I should do weaving with them. I don't remember what they asked me, but in short, I have a pack of papers, so to fill. It doesn't even make sense to me. And this applies to all certifications including GOTs, for example. All other certifications are a trend. I have seen companies that with a little bit of malice and cunning, I managed to get the certificate. In short, I find this thing of certifications a bit ambiguous. Then the speech is that in addition to being certified by GRS should be oh well, the yarn I buy, but also the end customer to whom I sell otherwise I can not put the GRS certificate stamp. In short, they try to maintain something that should be followed, in my opinion more by the government or by parastatal bodies than private entities.

00:21:47 Interviewer

I see what you mean. But from the point of view of customers, in the last few years there is more demand for certifications?

00:21:59 Interviewee

Yes, in short, there are many requests, but in the end in order to put the GRS stamp the whole supply chain must be GRS certified and only a few customers are. So for now it's not mandatory yet, so that's fine, yes. For us, the important thing is to show that we are a company that follows sustainability enough, that pays attention to us and buys recycled and certified yarns.

00:22:58 Interviewer

Ok. As a driver, motivation, for sustainability, you told me that for you personally it is important and for your generation. However, you as a company have always wanted to be sustainable. Are there other particular reasons that led you to make certain choices that could be customers in general or the market or if you have or are planning maybe other types of strategies that can be sustainable?
00:23:28 Interviewee

No in terms of sustainability when we change company cars maybe we will buy them electric or hybrid. Then we are changing all the lights internally and we have put them all to LED. So even when there is a bit of maintenance to do or changes to be made in the various light points we will go to do it with LEDs there too, obtaining considerable energy savings. In recent years we have put a condensing boiler that also saves a lot of gas. They are all small steps, little things that then lead you to halve waste. The big thing we did is the photovoltaic system, we made a good step because we are producing about 100-120,000 kilowatt hours and we consume about 70,000. And in this period it has helped us a lot because we have not spent, we have spent three times as much, but not as much as we could have spent without having it. Because before a company like this, now it is difficult to make comparisons, but it was spent on about € 1,000 of electricity per month approximately, while in the last 8 months we spent € 2008. But if we had not had the photovoltaic system most likely first we would have spent € 3000 and then we went to spend € 10,000. Among other things, 12 years ago we made the plant, then two years ago, in the Covid period, we took advantage of it to put everything back to new, that is, panels, we bought completely new panels because after a certain period of time they have a lower production, so we have already renewed the whole system again.

00:26:47 Interviewer

Eh, OK and the last question is whether you have partners, collaborators, in your sustainability strategy.

00:27:01 Interviewee

Yes, then the spinning mills where we always go to buy sustainable yarns, in the sense recycled. Now sustainability is also about using good materials. In the sense, it is not only using recycled materials, but also using materials that come from a quality production chain, where there is also an ethical sense in making certain production choices, perhaps a more sustainable and respectful shearing process towards animals that is always a request of customers, is something that is becoming increasingly popular. That is, ethics towards animals seems to me to be taking hold and it is right that there is. Other collaborators are part of the producers, we are part of the production chain. For example, if I think of the production made in India, for example, or in China, many Scandinavian customers as far as I am concerned, no longer want to work there because of how workers are treated. While here we are a company with 14 people and most have been working here for 20 years. Everyone works 8 hours, sometimes if they need sometimes to go with their children or family for family things they do it, we are a very open company, we are like a family. Here we are a company where the employees are more than fine, I think.

00:29:30 Interviewer

Ok I don't have any more questions. Thank you for your time and for all the answers.

00:29:47 Interviewee

Thank you. Hello.
### Appendix II - Interview code identification.

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<tr>
<th>Codes from Interview 1 - Company A</th>
<th>Code from Interview 2 - Company A</th>
<th>Codes from interview 3 - Company B</th>
<th>Codes from interview 4 - Company C</th>
<th>Codes from Interview 5 - Company D</th>
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### Appendix III - Reports codes Identification

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