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Case Studies

How vertical integration through M&A supports sustainable development: the case of Pattern Group

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Abstract. In recent decades, the textile industry has faced major sustainability challenges, including high environmental impact, intensive use of natural resources and unethical working conditions along the supply chain. In response to these challenges, luxury companies are increasingly paying attention to the sustainability of their supply chains, also employing upstream integration strategies. This article analyses the case of the Pattern Group to understand how vertical integration, achieved through mergers and acquisitions (M&A), can foster sustainable development in the luxury textile sector. Based on a qualitative approach, the research examines the Pattern Group's acquisitions through M&A, specifically focusing on their impact on sustainability's economic, social and environmental dimensions. The results show that vertical integration through M&A allows for greater control of the supply chain, stimulates sustainable innovation, preserves craftsmanship skills and creates an aggregation of companies that can strengthen the international competitiveness of a specific area.

Keywords: supply chain, sustainable development, luxury textile, merger and acquisition, sustainability.

1. INTRODUCTION

The textile industry, a key pillar of the global economy, is worth an estimated USD 1.3 trillion and employs over 300 million workers (Ellen MacArthur Foundation, 2024). However, its rapid expansion characterised by the doubling of textile fibre production between 2000 and 2022 has led to serious environmental and social consequences (European Parliament, 2023). Every year, the textile industry generates millions of tonnes of waste, contributes to water pollution and produces significant carbon emissions (Abbate et al., 2023; European Environment Agency, 2023; Sole 24 Ore, 2024). Luxury fashion, despite its focus on quality craftsmanship and exclusivity, is not immune to these issues (López et al., 2023; Mosca & Chiudano, 2024). Using high-impact materials such as leather and the dependence on suppliers in regions with less stringent labour regulations further aggravate sustain-

ability challenges in the high-end textile market (Brun & Karaosman, 2020). In response to these challenges, some authors suggest that if luxury companies want to become sustainable, they must establish a sustainable supply chain by showing increasing control over suppliers (Arcuri & Giolli, 2022; Karaosman et al., 2017). The luxury industry's current supply chains are long and fragmented, which complicates the management of the three pillars of sustainable development (Bubicz et al., 2021; Huq et al., 2016). As supply chains grow longer and more complex, interactions between stakeholders diminish, making it increasingly difficult to monitor compliance with ethical standards (Bubicz et al., 2021; Wilhelm et al., 2016). Among the others, Arcuri and Giolli (2022) highlight that vertical upstream integration offers a potential solution, enabling luxury companies to meet the growing demand for being more sustainable while remaining competitive in an increasingly eco-conscious market. Lopez et al. (2023) also suggest that vertical integration across the luxury brand value chain indicates efforts toward more sustainable production.

However, although existing research demonstrates the positive impact of upstream vertical integration on environmental performance (Arcuri & Giolli, 2022; Karaosman et al., 2020; Lopez et al., 2023), further studies are needed to explore how luxury companies can afford vertical integration and share these benefits along the supply chain (Athwal et al., 2019; Kunz et al., 2020). This study aims to fill this gap, using the compelling single case study of Pattern Group to explore vertical integration through merger and acquisition (M&A) in the Italian textile sector.

Data were collected through primary sources, including interviews with key Pattern Group stakeholders, and secondary sources, such as academic literature, industry reports and financial statements (Eisenhardt & Graebner, 2007; Yin, 2003). The analysis is framed within the Triple Bottom Line (TBL) framework (Elkington, 1994; 2018), assessing how Pattern Group's integration efforts through M&A have contributed to economic, social, and environmental sustainability.

The findings of this study offer valuable insights for managers in the textile industry, particularly within the luxury segment, who seek to balance economic growth with sustainability goals. These findings suggest that vertical integration through M&A emerges as a key strategic approach to enhancing sustainability across complex supply chains. It facilitates the preservation of high-quality standards and accelerates the adoption of sustainable materials and technologies, thereby fostering product innovation and reducing environmental impact.

2. LITERATURE REVIEW

2.1. Sustainable development

The concept of sustainable development was first introduced in the Brundtland Report where it is defined as “*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*” (Brundtland 1987, p. 8). Basically, this means making sure that the current population's needs are met without denying future generations the same opportunities. To achieve this goal, it is crucial to quantify the resources available today and to take immediate steps to ensure their long-term conservation. The management of a resource is considered sustainable only if, knowing its regenerative capacity, it is not exploited beyond a certain limit, thereby allowing for its complete renewal (Velenturf & Purnell, 2021).

However, the definition of sustainability provided by the Brundtland Report leads to unresolved questions. On the one hand, it offers general guidelines for identifying present and future needs, but on the other hand, it does not provide concrete directions on the technologies and resources required to meet those needs (Hart, 1995; Starik & Rands, 1995). This lack of clarity in promoting more sustainable behaviours was addressed, among others, by Elkington (1994; 2018), who established the concept of sustainable development through the TBL framework. This framework defines sustainable development as the balance among economic, social, and environmental dimensions, promoting fair and lasting relationships with stakeholders. By integrating these three elements, the TBL model encourages organisations to adopt a more holistic approach to decision-making, aligning themselves with broader social and environmental goals. This approach shifts the focus from mere financial success to the long-term sustainability of business practices (Norman & MacDonald, 2004; Weisenfeld & Hauerwaas, 2018). For this reason, many companies, especially those in challenging industries like textiles where environmental degradation, poor working conditions, and resource scarcity present significant obstacles, use the TBL framework to guide their sustainability path (Hiller Connell & Kozar, 2017).

2.2 Challenges for sustainable development in the luxury clothing textile industry

The textile sector is one of the pillars of the world economy, with an estimated value of USD 1.3 trillion and over 300 million workers employed throughout the production chain (Ellen MacArthur Foundation, 2024).

Between 2000 and 2022, global production of textile fibres doubled from 58 to 116 million tonnes, with a projected growth to 147 million tonnes by 2030 (European Parliament, 2023).

Despite the economic importance of the textile sector, the growing demand for clothing products, coupled with the reduction of the average life of clothes by 36%, results in negative consequences for both the environment and society (Gualdi, 2020). This overproduction and rapid consumption of clothing generates millions of tonnes of textile waste every year, a significant percentage of which is sent to landfills, incinerated or exported, while only a small portion is recycled (Bosch Meier et al., 2024). In addition to its environmental impacts, the textile industry also negatively affects society. Indeed, the pursuit of unrealistic production targets and the promotion of underpaid contracts are harmful to workers, who operate in precarious conditions and with daily wages often below the poverty line (Annapoorni, 2017). Despite their emphasis on craftsmanship and quality, even textile companies that operate in the luxury market, produce a significant environmental footprint (Brun & Karaosman, 2020). Leather production, for example, requires vast amounts of water and energy and generates harmful chemical waste, like the chromium used in tanning processes poses significant environmental risks due to its toxic nature. Furthermore, the use of rare and exotic materials for producing luxury apparel items puts additional strain on endangered species and fragile ecosystems (Brun & Karaosman, 2020). Particularly, luxury companies face significant challenges in their long and fragmented supply chain, resulting in obstacles in harmonising the three dimensions of sustainable development (Abbate et al., 2023). The luxury brand supply chain counts an overwhelming presence of small and medium companies with limited human and financial resources (Saccani et al., 2023). As the supply chain grows longer and more complex, communication between stakeholders decreases, making it increasingly difficult to monitor compliance with sustainable principles (Bubicz et al., 2021; Wilhelm et al., 2016; Karaosman et al., 2020). Moreover, in the long supply chain, many companies rely on subcontractors in countries with weak labour laws, which often leads to the exploitation of workers who endure poor working conditions, long hours, and low wages, starkly contrasting with the luxury brands' polished image (Karaosman et al., 2017; Holmqvist & Kowalkowski, 2023). In response to these challenges, luxury brands are increasingly recognizing the need to enhance their supply chain practices by adopting increasing control over suppliers (Karaosman et al., 2017). Scholars emphasize that

buyers have a responsibility to support their sub-suppliers directly by acknowledging and rewarding the social and environmental efforts of sub-suppliers and providing them with opportunities for learning and growth (Fontana et al., 2024).

2.3. Growth through integration in the luxury clothing textile industry

Among the strategies to improve supply chain sustainability in the luxury market, vertical integration is gaining increasing attention. As noted by MFF Ballestri of Intesa Sanpaolo: "Acquisitions in the supply chain are a trend. They enable the preservation of know-how while addressing size challenges" (Milano Finanza, 2024). This strategy is not new for luxury brands. Over the past three decades, the luxury sector has experienced a progressive process of concentration in which major players have promoted their growth by integrating other companies and brands to form large, diversified groups controlling numerous high-end brands (Som & Blanckaert, 2015). These integration processes, primarily executed through M&A are designed to create cost synergies in areas such as logistics, operations, information technology, and financial and resource management (Mosca, 2018). However, large conglomerates that initially focused on integration strategies to gain cost reduction are now shifting towards upstream expansion strategies to improve environmental sustainability, product quality, and customer responsiveness (Arcuri & Giolli, 2022). Recently, by fostering strong relationships based on trust and collaboration, large firms have worked closely with their suppliers to transfer innovations and resources throughout the supply chain, enabling the adoption of sustainable practices and effective resource sharing (Karaosman et al., 2020). In addition, Lopez et al. (2023) argue that vertical integration throughout the luxury brand value chain reflects a commitment to more sustainable production practices, not only in big conglomerates but also in the case of a single brand. For example, Chanel's M&A strategy focuses on vertical supply chain integration and innovation in sustainable materials. Chanel has reported acquiring or participating in 47 companies (mainly small factories and specialists vital for supplying its luxury products) to gain a competitive advantage in accessing high-quality materials while ensuring the sustainability and traceability of raw materials (Deloitte, 2023).

However, even if studies and reports acknowledge that upstream integration has a positive impact on environmental performance (Arcuri & Giolli, 2022; Deloitte 2023; Karaosman et al., 2020; Lopez et al., 2023), a gap

still exists in understanding how vertical integration contributes to sustainable development along the supply chain (Athwal et al., 2019; Kunz et al., 2020). This article aims to bridge that gap through a case study of an Italian company that has initiated an integration process in Italy with a strong focus on sustainability, addressing the following research question: “*How can vertical integration through M&A contribute to sustainable development?*”.

3. METHODOLOGY

To address the research question, the authors employed a qualitative methodology using a single, in-depth case study to examine a specific phenomenon (Eisenhardt & Graebner, 2007; Siggelkow, 2007; Yin, 2014). This approach allows researchers to gain insights into complex situations (Stake, 1995) within a defined context (Eisenhardt et al., 2016). Moreover, the single case study method is especially effective for answering ‘how’ and ‘why’ questions (Yin, 2014), as in our case.

The authors structured their research methodology in three phases (Stake, 1995). In the first exploratory phase, they gathered information from secondary sources, such as news in scientific journals, newspapers, magazines, databases and websites. According to previous studies, a literature review can achieve the same goal as the real-life context (Yin, 2014; George & Bennett, 2005). The main objective of this phase was to gather information on sustainable development in textiles, challenges and best practices with a focus on integration strategies through M&A. By examining newspapers, websites and other secondary sources of information, several target companies were identified. Among the different companies identified, the authors selected Pattern Group, as the main representative company in the luxury textile industry to analyse the case, considering the numerous acquisitions Pattern Group has pursued since 2014 and the success of these in terms of revenue (+33.14% revenue in 2023 compared to 2022).

In the second phase, primary data were collected. The authors were invited to visit the company in person, at its headquarters in Collegno, where they were able to meet the company’s CEO and an AI technician, who were interviewed based on a protocol of questions defined from the analysis of the literature on sustainable development and M&A. The interview was organised in a semi-structured form to allow the interviewee to provide additional useful information on the acquisitions and their contribution to the three areas of sustainable development.

The interview was recorded and transcribed by one author and then analysed independently by the authors,

intending to reduce subjectivity in the interpretation of the data. The individual interpretations of the results were then compared.

In the third phase, the study also made use of other data sources, including company financial statements, information published on Pattern Group’s website and on authoritative business and finance (Sole 24 Ore, Financial Times) or industry websites (Pambianco News; Fashionnetwork).

Triangulation of the data helped the authors to improve the comprehensive nature of the information (Eisenhardt, 2016) and the degree of accuracy of the study results (Yin, 2003). Finally, the authors analysed all collected data with special reference to the sustainable development framework (Elkington, 1994; 2018), which served as a framework to assess how integrations contributed to sustainable development in the luxury fashion textile sector.

4. CASE STUDY

4.1. *The origins of Pattern: a vertically integrated company in the menswear sector.*

Pattern S.r.l. was founded in 2000 resulting from the merger of two business units with complementary expertise. The first unit was dedicated to the design, styling, prototyping and production of patterns and garments, together with other textile products. The second unit focused on the development and production of patterns and sizing systems for clothing. These units were originally part of Pattern Immobiliare S.r.l. and Pattern Production S.r.l., both owned by Fulvio Botto and Francesco Martorella, expert pattern makers at Gruppo Finanziario Tessile, the largest clothing company in Italy until the late 1990s.

The founders’ strategic vision was to create a new company operating in the B2B apparel design sector, capitalising on the vast experience the two founders had acquired working with national and international fashion houses. More specifically, the founders’ objective was to market a vertically integrated business model to offer a complete range of services from design and engineering to prototyping, sample creation and garment production for international luxury brands. Initially, the company focused on men’s fashion design, expanding in 2005 to include women’s collections. In 2009, Pattern S.r.l. opened a new production facility in Collegno, near Turin, to support its future expansion lines. Subsequently, in 2014, it acquired the majority of the Esemplare brand, a non-profit organisation, formerly owned by Riese S.p.a., which is committed to “*dedicate all its*

profits to the realisation of projects aimed at transmitting and preserving the savoir-faire of Italian fashion, creating a link between the knowledge of past generations and the potential of future generations” (Esemplare, 2024).

4.2. Pattern Group: integrations and the birth of the Italian luxury design and manufacturing hub

Since 2017, Pattern has committed to a structured growth path that led in 2020 to the creation of the Pattern Group, known as “The Italian luxury design and manufacturing hub” (Table 1). The group operates in all major product categories of the B2B luxury textile sector, covering the entire supply chain from research and engineering to production.

The upstream integration process through M&A began with the acquisition of Roscini Atelier, a Spello-based company known for its collaborations with some of the most prestigious fashion brands, specialising in the production of made-to-measure and ready-to-wear garments for women. The acquisition was aimed at relaunching the Roscini Atelier in decline while preserving its craftsmanship skills.

In 2020, Pattern acquired a majority stake (51%) in Società Manifattura Tessile (SMT), a company founded in 2000 in Spello that specialises in the production of luxury knitwear. SMT is strongly focused on R&D and technologies, and its acquisition provides the group with the best-performing knitting technology according to customer requests.

Subsequently, 2021 was a crucial year for Pattern’s expansion. In July, the company acquired a majority stake in Idee Partners, based in Scandicci (Florence), the heart of Italian luxury leather goods. Idee Partners stands out for its support of brands in the design, development and production of luxury accessories, particularly handbags and small leather goods, offering innovative, high-quality solutions. In 2021, Pattern acquired Petri & Lombardi, also based in Scandicci and specialising in the production of high-end leather accessories. The company built a reputation for the craftsmanship of its products, collaborating with international luxury brands and boasting extensive experience in working with leather and creating exclusive bags and accessories. In the same year, Pattern finalised its acquisition of D’Ambrosio Confezioni, a company established in the 1980s in Nola, located in the province of Naples. This acquisition enhances the group’s expertise in high-end Made in Italy tailoring specialisation.

In 2022, the acquisition of Zanni S.r.l., based in Borzonovo Val Tidone (Piacenza), was an important stra-

tegic move for Pattern. Zanni S.r.l., which specialises in the production of high-quality luxury knitwear, is recognised for the craftsmanship and precision of its knitwear and contributes to Pattern’s expansion and consolidation with a focus on sustainable innovation.

Also in 2022, Pattern further strengthened its position with the acquisition of RGB S.r.l., a company based in Bregnano (Como), which specialises in the development of technical garments with a strong focus on innovation, the use of advanced materials and state-of-the-art processes.

In the same year, Pattern made three other strategic acquisitions: Dyloan Bond Factory, Shapemode and D-House. Dyloan Bond Factory, based in Chieti, is a company specialising in advanced clothing manufacturing technologies, such as thermoforming and ultrasonic welding, eliminating traditional seams and improving garment functionality and design. This acquisition strengthens Pattern’s technological know-how, with a focus on research and development of special processes and semi-finished products, and the expansion of production capacity between the Chieti and Villamagna plants, which specialise in the manufacture of outerwear, outerwear and jersey.

Milan-based Shapemode, a company specialising in digital innovation and the development of 3D design and additive manufacturing (3D printing) technologies applied to fashion and design, is another significant acquisition. Finally, the acquisition of Milan-based D-House Urban Laboratory, a technological innovation centre focused on advanced solutions for fashion and design, consolidated Pattern’s commitment to the integration of innovative and sustainable technologies. D-House promotes cross-sector collaborations and fosters the development of cutting-edge technologies, improving production efficiency and promoting sustainability in the luxury fashion industry.

Finally, Pattern consolidated its integration plan in 2023 with the acquisition of Nuova Nicol S.r.l. and Umbria Verde. Nuova Nicol S.r.l., based in Treviso, Veneto, specialises in the production of high-quality clothing and accessories, with a strong focus on innovation and craftsmanship. This acquisition positions Pattern even more strongly in the luxury fashion market, strengthening Pattern’s reputation as a responsible and sustainable innovator.

Umbria Verde, a company specialising in the production of environmentally sustainable fabrics and materials using ecological agricultural practices and processing, integrates a supply of sustainable and innovative materials to enrich Pattern’s offering and meet the growing demand for sustainable fashion.

Table 1. Pattern Group acquisitions from 2013 to 2023.

Year	Acquisition	Activities
2017	Roscini Atelier	Womenswear engineering & prototyping
2020	SMT	Luxury knitwear prototyping and production
2021	Ideas Partners	Leather goods development and production
2021	Petri & Lombardi	Leather production
2021	D'Ambrosio packaging	Womenswear lightweight production
2022	Zanni	Whole Garments knitwear
2022	RGB S.r.l.	Bag Manufacturer
2022	Dyloan Bond Factory	Innovation and outerwear and down production
2022	Shape mode	Industrial design studio specialising in additive manufacturing
2022	D-House	Group R&D
2023	New Nicole	Women's knitwear production
2023	Umbria Green	Luxury Knitwear Production

As of 2024, following the various M&A, the Pattern Group comprises 12 companies across 13 locations in 7 regions of Italy. These companies operate in key luxury goods categories – including men's and women's fashion, clothing and accessories, textiles, knitwear, and leather goods – covering the entire process from research and design to production. The group reported a turnover of 145.6 million euros and an operating profit of 23.4 million euros.

5. PATTERN GROUP'S M&A CONTRIBUTIONS TO SUSTAINABLE DEVELOPMENT

The analysis of Pattern Group reveals that vertical integration through M&A leads to a sustainability-focused approach aimed at enhancing the resilience of its textile supply chain while addressing environmental, social, and economic challenges. Through M&A, Pattern has strengthened its ability to monitor and optimise the entire supply chain, fostering transparency and promoting environmental and social responsibility while ensuring economic sustainability. Specifically, Pattern Group's upstream vertical integration through M&A contributes to sustainable development by addressing four key dimensions: control of the supply chain, development of sustainability-oriented technologies, the protection and enhancement of craft skills while fostering the development of new skills, and the establishment of a critical mass to maintain the sector's competitiveness.

5.1. Control over the supply chain

The M&As conducted by Pattern have led to a more effective and integrated control of the textile supply chain, to responsibly manage environmental and social risks. Through M&A, Pattern has consolidated its ability to monitor and optimise the entire supply chain, promoting transparency and sustainability. The due diligence practices extended to all acquired companies allow Pattern Group to guarantee fair working conditions and adequate wages to all members of the supply chain, in alignment with the SA8000 international standards. As Luca Sburlati stated: “*We continue to invest in sustainability and control of the supply chain, we are one of the few companies to have all locations, from leather goods to ready-to-wear and knitwear, SA8000 certified*”. In addition, supply chain control allows Pattern to actively involve its suppliers (who are now part of the Pattern Group) in decarbonisation and emission reduction targets, promoting responsible use of resources such as water, energy and materials. These activities are periodically monitored to verify regulatory requirements and compliance with sustainability criteria. Along these lines, Pattern asked the acquired companies to set up the figure of Chemical Manager within their production sites, with the task of leading the implementation of a chemical management system in line with the principles of the ZDHC protocol, which allows the monitoring, assessment and management of the chemical risk linked to the use of hazardous chemicals in the production processes of the entire supply chain. The strength of this project is the sharing of a univocal protocol, guidelines and unified tools within the supply chain, which is of fundamental importance to achieve shared and measurable environmental impact reduction objectives. In addition, Pattern has promoted the adoption of circular economy models among the acquired companies, creating closed loops where end-of-life products are returned and recycled into new products. This approach not only reduces waste but encourages more efficient and sustainable resource management.

5.2. Development of sustainability-oriented technologies

Pattern Group's organisational model exploits the synergies created between the companies in the group to develop sustainability-oriented know-how and technologies. The different companies work together in a structured way to stimulate innovation, research and practical solutions, meeting the challenges of an increasingly demanding market to implement technological innovations for sustainability in products and semi-finished products.

For example, through the integration of Società Manifattura Tessile (S.M.T.), Zanni Maglieria and Nuova Nicol S.r.l., Pattern has built the luxury Knitwear Hub, a cohesive ecosystem of companies united in the pursuit of excellence and innovation. By collaborating and sharing resources, the hub can offer innovative, high-quality knitwear solutions that meet the needs of sustainability in the high-end market. Zanni Maglieria brings to the Luxury Knitwear Hub a rich heritage and solid technical excellence, thanks to its specialisation in the production of seamless garments using SHIMA SEIKI WHOLEGARMENT® technology, while S.M.T.'s dedicated R&D department also promotes innovations to the other members of the hub.

5.3. Protecting and enhancing craft skills and developing new skills

In the past, the choices of large fashion houses to delocalise production to developing countries have favoured the creation of an extended supply chain, sometimes in conflict with the need to preserve the priceless heritage of skills synonymous with Made in Italy.

Pattern's strategy of acquiring, through a structured M&A process, several Italian textile excellences contributes to social sustainability, ensuring the preservation and enhancement of artisanal skills, combining them with the most advanced technologies such as digital engineering and 3D prototyping: *"After consolidating a resilient supply chain focused on ready-to-wear, leather goods and knitwear through strategic acquisitions [...] we are ready to [...] invest in Italian excellence, integrating an additional set of technical excellence skills in knitwear."*

Furthermore, in enhancing craft skills with technology, the Pattern Group also pays special attention to the issue of generational turnover, acting as a catalyst for young people to join all the factories that are now part of the group. *"In all our hubs we have Academies, where the first hires have already begun,"* emphasises CEO Sburlati. *"The wind is changing: more and more young people are approaching this world and understand the value of craftsmanship, which today is increasingly hybridised with technology."*

In this context, the acquisition of Dyloan Bond Factory is a significant example of how Pattern has contributed to social sustainability both by safeguarding craftsmanship and promoting new skills among young people. This operation has enabled Pattern to expand its presence in Abruzzo, a region of strategic importance for the fashion industry, where there is, however, the risk of a generation gap due to retirements and a shortage of adequately trained staff. To counter this risk, Pattern has entered into a partnership with a local school and

launched its own Academy, to train future professionals in the sector and prevent the disappearance of the Abruzzo textile district and its unique craft heritage.

In addition, Pattern has promoted the creation of Academies for the development of digital skills to support craftsmanship within the companies integrated into the group. By taking a structured approach and offering diverse courses, the Academies ensure that employees are equipped with the necessary skills and knowledge, nurturing a culture of continuous improvement and excellence within the Group.

5.4. Regional growth synergies

Pattern Group's textile supply chain integration strategy also promotes sustainable development in terms of economic growth of the Italian districts and helps to maintain jobs.

Unlike the French textile supply chain model, which presents greater consolidation due to the presence of large industrial groups that can exploit economies of scale and superior bargaining power, the Italian textile supply chain is characterised by significant fragmentation, with difficulties in accessing credit, investing in research and development, negotiating with large counterparts and internationalisation.

In this scenario, the Pattern Group proposes itself as a catalyst to unite companies in the textile sector, overcoming the structural limitations of small and medium-sized Italian companies through the creation of a critical mass capable of competing on a global level. The aim is to create synergies that enable companies to overcome their limits and achieve an international competitive dimension. Specifically, Pattern Group has organised production in Italy according to district macro-aggregations, physically grouping knitwear and leather goods activities in specific areas to exploit synergies of skills and resources. An example of this strategy is the "Knitwear Valley", an area specialising in the design and production of luxury knitwear, located between Reggio Emilia, Modena and Bologna. This aggregation strategy is closely linked to sustainability, as it generates resource efficiency and creates favourable conditions for a positive impact on employment, helping to preserve and create skilled jobs in the Italian textile sector.

However, Pattern Group's CEO points out that, given the creation of district macro-aggregations, there are still many difficulties in Italy in terms of public funding for fast-growing SMEs and the lack of a strategic vision at the national level. Moreover, the fashion industry has to face important cultural and technological changes to fully embrace sustainability.

6. MANAGEMENT DISCUSSIONS AND IMPLICATIONS

In recent decades, the luxury sector has undergone a profound evolution, characterised by a growing interest in vertical integration. The Pattern case demonstrates how the growth strategy based on M&A, historically used to reduce costs (Mosca, 2018), is an effective solution to address the environmental, social and economic challenges that characterise the textile industry. In particular, Pattern Group offers an example of how vertical integration in the luxury industry can contribute to sustainable development by promoting the environmental, social and economic sustainability of the supply chain (Table 2). Considering environmental sustainability, the Pattern case analysis highlights that upstream integrations can improve the control over the supply chain, optimising operational efficiency and ensuring high-quality standards by promoting the adoption of stringent ESG standards throughout the supply chain to reduce emissions and waste (Arcuri & Giolli, 2022). Furthermore, the Pattern case highlights that a further contribution to sustainability in M&As along the textile supply chain lies in synergies dedicated to the development of sustainable technologies (Karaosman et al., 2020). Acquired companies collaborate by pooling expertise to implement sustainable-oriented innovations that improve products and processes through advanced technologies such as blockchain and 3D printing.

Another relevant implication of M&As in the Pattern case concerns social sustainability. Vertical integration preserves artisanal skills, safeguarding the cultural heritage and local traditions of companies in the supply chain that are in danger of disappearing and also promotes the development of skills among employees and facilitates the entry of young people into the artisanal world. This approach creates a bridge between tradition

and innovation, which is crucial in the luxury market where quality and originality are essential and reflects an attempt to preserve Italian craftsmanship and traditional skills while integrating innovative technology (Fontana et al., 2024). This not only maintains a link with the sector's artisanal roots but also encourages the development of new know-how that can meet the needs of a rapidly evolving market.

Then, vertical integration also creates a critical mass of skills and resources that strengthens the sector's competitiveness at the global level. This not only positively impacts employment but also fosters economic growth in Italian manufacturing districts, enhancing their dynamism and resilience in the international market, and allowing them to better navigate the challenges posed by long and fragmented supply chains (Saccani et al., 2023).

Ultimately, this study highlights the importance of vertical integration for sustainable development, offering relevant insights for both companies and policymakers. On the one hand, it provides a road map for textile companies to contribute to sustainability through M&A. On the other hand, Pattern Group can be seen as a reference for industrial policies to support the textile supply chain and protect the Made in Italy label. In particular, this case can lead policymakers to understand the need for incentives to favour strengthening local supply chains and protecting manufacturing traditions in knowledge-intensive sectors such as luxury textiles.

7. LIMITATIONS AND FUTURE RESEARCH AGENDA

The study offers an in-depth analysis of the Pattern Group case, providing a detailed understanding of corporate dynamics related to M&A and sustainabil-

Table 2. M&A and sustainable development

Dimensions	Factors	Sustainable development pillar
1. Control over the supply chain	Shared processes for transparency and monitoring the sustainable performance of the supply chain	Environmental Pillar Social Pillar
2. Development of sustainability-oriented technologies	Co-creation of cutting-edge technologies for sustainable production (e.g. blockchain) Co-development of new know-how	Environmental Pillar
3. Protection and enhancement of craft skills	Managing training programs to support generational changes and improvement of workers' skills	Social Pillar
4. Regional growth synergies	Creating synergies to improve the district's competitive dimension Creating favourable conditions for a positive impact on economic growth in an area	Social Pillar Economic Pillar

ity. However, the focus on a single case study may limit its generalisability. It would be advisable to extend the research to other companies to confirm the validity of the results in a broader context.

Furthermore, while the study focuses on intra-supply chain takeovers and integration, it does not delve into the role of multistakeholder collaborations (with NGOs, local governments or research institutions) in enhancing sustainability impact. A more detailed analysis of such collaborations would provide a more comprehensive view of the link between M&A and sustainability.

Finally, the study mainly considers the Italian context, while the inclusion of acquisition and integration cases in other markets (e.g. Asian or American) would enrich the understanding of the global dynamics of sustainability in M&A transactions, considering different regulations and corporate cultures.

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