Fashion waste management: a sustainability Maturity Model

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Abstract: The textile industry, a significant player in the global economy, is at a crossroads between production efficiency and environmental responsibility. It causes 20 % of global wastewater, 10 % of carbon emissions and 92 tons of wastes per year: every second, a rubbish truck full of textiles is dumped in landfills or incinerated. Who are the main actors? Do companies know the waste amount they produce? How do they dispose of it? Despite the urgent need for transparent and sustainable supply chains within the sector, in the actual literature there is a lack of tools to address these questions. To fill this gap, this study proposes a Sustainability Waste Maturity Model (SWMM) for the textile industry. The maturity model methodology assesses and enhances organizational processes through defined levels; it benchmarks the current states, identifies improvement areas, and guides toward higher efficiency, aiding in achieving strategic goals. The SWMM is focused on sustainability within the fashion industry, investigating critical areas such as environmental impact, waste management, sustainable design, sustainable supply chain, policies and regulations, reverse logistics, innovation and research, and collaborations and partnerships. It offers a framework for assessing and improving sustainability practices according to the maturity level along with the best practices. By fostering a deeper understanding of their sustainability and waste management maturity, companies can better align their strategies with environmental objectives, thus making a significant contribution to promote the industry shift towards more responsible and eco-friendly operations.

Keywords: Waste management, Sustainability, Maturity Model, Fashion and Textile industry

1. Introduction

In the contemporary landscape of global industries, the fashion sector stands out not only for its cultural and economic significance but also for its substantial environmental footprint. As an industry valued at over $2.5 trillion, fashion is a powerful global force, but its sustainability challenges are increasingly under examination (Euromonitor International, 2022). Among the most pressing issues is the waste generated - estimated at a staggering 92 million tons annually - a figure projected to surge as consumer demand continues to escalate (Dory, 2018). This waste encompasses not only post-consumer garments, but also pre-consumer waste, including fabric scraps and manufacturing byproducts, that contributes significantly to environmental degradation. Moreover, the fashion industry's environmental impact extends beyond waste. It is a major consumer of water, utilizing approximately 79 billion cubic meters per year, and it is responsible for approximately 10% of global carbon emissions, exceeding the aviation and maritime industries combined (Centobelli, Abbate, Nadeem, & Garza-Reyes, 2022). The extensive use of chemicals in dyeing and fabric treating further impacts its ecological footprint, leading to water pollution and affecting aquatic and human life (Guillot, 2024). The pervasive culture of fast fashion - characterized by rapid production cycles and low-cost garments, intensifies these issues, by promoting a disposable attitude towards clothing and by driving excessive consumption and waste (Bick, Halsey, & Ekenga, 2018). Given the magnitude of these challenges, there is an urgent need for a paradigm shift towards sustainability within the industry. Adopting circular economy principles, investing in innovative materials, and embracing transparency are not merely optional, but imperatives for the industry's long-term viability. For example, having a model to measure sustainability in the textile industry enables companies to assess and understand the environmental impacts of their operations. A standard measurement tool facilitates the monitoring and the improvement of internal processes, but it also allows transparent communication with external stakeholders like consumers and investors about progress and objectives. Furthermore, a defined model promotes a common language that aids in internal and external benchmarking, helping companies to compare themselves against competitors and industry standards. From the best of authors knowledge, although there are various studies and tools on sustainability measurement in the most recent academic literature, the specific application in the textile sector focused on waste management seems to be missing. For this reason, this work presents a Sustainability Waste Management Maturity model (SWMM) for the textile industry, aiming at mapping current practices, set improvement baselines, and drive strategic decision towards sustainability. The rest of the paper is structured as follows: section II presents the literature review, section III illustrates the applied methodology, the framework used as reference and the main features; section VI highlights the application outcomes, and, lastly, Conclusions present research limitations and potential future works.

2. Literature Review

The review began seeking for very specific researches focused on the main topic, i.e. models to assess sustainable practices and waste management within the textile sector; however, since nothing similar emerged, the authors proceeded backwards in searching for evaluation models applied to any industrial sectors. For this reason, the section describes an overview of the most relevant works about sustainability models, relaxing the constraint of sector specificity. Therefore, five main works are detailed, and, at the end, a critical comparative analysis is conducted to highlight their strengths and limitations. The first one, the Environmental Management Maturity Model (EMMM) has been crafted through an iterative process, beginning with interviews and workshops in Basque Country, and enriched by further surveys and interviews in Spain, Italy, and UK. The final model delineates six maturity stages - ranging from meeting legal requirements to becoming a leading green company - each one defined by specific elements like policies, tools, and behaviors. This research underscores that environmental management progresses through distinct stages across all industrial sectors, offering a structured pathway for companies to enhance their environmental performance (Ormazabal, Viles, & Sarriegi, 2017). The Eco-Efficiency Maturity Model (EEMM) highlights that manufacturing companies' approaches to environmental performance are often scattered, with a focus on product life-cycle assessments or process-level eco-efficiency improvements. From the authors perspective, there is a recognized need for better integration of bottom-up and top-down strategies, along with enhanced methods for assessing and attributing the impacts of the improvements. The study aims at investigating how eco-effectiveness can be better linked with eco-efficiency practices by assessing the maturity level of these practices (Litos, Patsavellas, Afy-Shararah, & Salonitis, 2022). The Business Sustainability Maturity Model (BSMM) integrates sustainability into business practices, emphasizing stakeholder engagement and strategic use of technology across six key areas: social, ecological, economic, spatial, institutional-political, and cultural sustainability. This model allows firms to individually evaluate their position across five levels of sustainability maturity, from "ad hoc" to "high performance sustainability net", enabling them to construct tailored strategies within their network of relationships to progress towards higher sustainability stages. However, the model results to be complex and challenging for practical implementation, particularly for smaller firms with limited resources. Additionally, the dynamic and evolving nature of sustainability concepts may require constant updates to the model to stay relevant (Cagnin, Loveridge, & Butle, 2005). Another study, Reverse Logistics Maturity Model (RLMM), conducted in Colombia, focuses on the application of a Sustainable Waste Maturity Model for small and medium-sized enterprises (SMEs) in the plastics sector. The main objective of the study was to assess the maturity levels of reverse logistics practices within selected enterprises and their contribution to sustainable solid waste management. The researchers adapted an existing maturity model to evaluate how prepared SMEs in the central and southern regions of Colombia are to implement reverse logistics. The work ranged SMEs maturity levels from naïve to immature. The outcomes resulted in a relatively early stage of the reverse logistic development capabilities within these firms, and other key results also highlighted the need for a more holistic approach in organizational strategies to enhance decision-making processes related to reverse logistics (Peña-Montoya, Bouzon, & Torres-Lozada, 2020). Finally, the Sustainability Maturity Model for micro, small and medium-sized enterprises – MSMEs – (SMM) provides a comprehensive analysis of a sustainability maturity model based on a data analytics evaluation approach. The primary objective of the study was to create a maturity model that helps MSMEs assessing their level of implementation regarding sustainability strategies and practices. This model integrates critical factors such as environmental knowledge management, environmental strategies and good practices, and environmental management systems into its framework. The researchers adapted and applied this model to evaluate MSMEs across various sectors in Colombia. The model uses a four-level qualitative scale and it employs supervised classification algorithms to categorize companies through data analysis techniques. The application of this model revealed that: 6% of the evaluated companies were at an insufficient level of sustainability maturity, 31% were at an initial level, 45% at a developed level, and only 18% at a consolidated level. The results suggest that a significant proportion of MSMEs still has considerable chances for improvement in order to integrate environmental, social, and economic dimensions to enhance their sustainability practices effectively (Vásquez, et al., 2021). To compare the main features of the existing models, in the following tables (Table 1 and Table 2), each one of them is explored in terms of its objectives, dimensions, maturity levels, evaluation methodology, adaptability, and validation, by highlighting their strengths and limitations.

Table 1: Objectives, dimension, and maturity levels

Model	Objective	Dimension	Maturity Levels
EMMM	Environmental excellence management	7	6
EEMM	Ecological efficiency of business processes	3	5
BSMM	Corporate sustainability (economic, environmental and social aspects)	7	5
RLMM	Sustainable solid waste management	8	4

SMM	Sustainability for MSMEs	3	4

Table 2: Methodology, sector, application

Model	Methodology	Sector	Application
EMMM	Interviews and surveys	Cross-sector	19 interviews with managers and workshop
EEMM	KPI measurement	Chemicals conversion, drinks bottling, and metallic frames fabrication	3 companies
BSMM	KPI measurement	Cross-sector	NA
RLMM	KPI measurement	SMEs from any industrial sector	10 collaborators responded to the semi-structured interviews
SMM	Interviews and surveys	Manufacturing, services & trade, and construction and civil works	327 Colombian MSMEs

The detailed models, derived from the current literature review, vary in their complexity, scope and applicability in different sectors, reflecting all the requirements of companies in sustainability and environmental management. The comparison underlines the absence of a universal approach, indicating the need to customize the model to effectively assess and improve corporate maturity in sustainability and environmental practices. Therefore, this paper aims at creating a maturity model related to waste management within the fashion industry.

3. Methodology

A maturity model is a widely used technique that is proved to be valuable to assess business processes, as it represents a path towards an increasingly organized and systematic way of doing business. It helps organizations identifying their current level of maturity and provide a roadmap for improvement. These models typically structure maturity across several levels, ranging from initial or ad-hoc practices to optimized processes. Each level describes specific achievements and capabilities that must be reached before moving to the next, higher, level. In particular, the SWMM is a framework developed for the textile sector that aims at improving sustainability and, in particular, waste management. The model takes its architecture from the Logistic Maturity Model (LMM) (Battista & Schiraldi, 2013), which is based on four main interdependent pillars:

- Modelling Framework: it is the reference model for logistic processes, that describes the main logistics process areas and assigns to each a specific multilevel structure of processes and sub-processes, if needed.
- Maturity Framework: it is the core of the model, as it employs a maturity scale ranging from a basic level, where logistics processes needs are just recognized, to an optimal level, where they are fully optimized. This framework guides companies in defining and implementing strategies to achieve predetermined goals. The structuring into levels allows the identification of operational gaps and the planning of targeted interventions aiming at reaching the next improvement level.
- Performance Framework: which is the measurement system required to perform the quantitative assessment of the logistics areas, processes and sub-processes. It involves selecting the most suitable set of performance indicators from several defined options, tailored to assess various aspects of the key process area, again, from basic process management to optimization. By using specifically selected indicators, it is possible to evaluate the effectiveness of logistic processes, such as cost reduction or resource optimization, and facilitates proactive and informed management responses.
- Improvement System: it represents a set of Best Practices (BP), real-life examples and metrics aimed at continuous process improvement. It enables companies to guide the implementation of the most effective changes through a detailed analysis that links maturity scores with corresponding performance indicators, best practices, and corporate actions.

The SWMM is grounded in extensive empirical research and a synthesis of existing maturity models across different industries, as described in section 2, adapted to reflect the actual sustainability challenges in the textile sector. The model provides a comprehensive set of criteria that define maturity scores, from initial recognition of sustainability as a strategic necessity, to the integration of advanced, innovative waste management practices that promote circular economy principles. Thus, it can be used as a tool for companies that aim to build a solid strategy around sustainability, as it outlines a roadmap for continuous improvement. As mentioned before, the model follows the four pillars suggested in the LMM (Battista & Schiraldi, 2013), with the exception of the Performance Framework, since the questions related to each achievement are often difficult to translate and quantify into KPIs, and, the overall processes in the sector are still actually missing quantitative markers to monitor (Garcia-Torres, Rey-Garcia, & Albareda-Vivo, 2017).

For practical reasons and space constraints, authors have not reported the entire model in this section, but an indepth detail of main contents is provided in the following section, and an extract is available in Appendix A.

3.1 SWMM Modelling Framework

The proposed Modelling Framework stands out for its detailed analysis across eight key process areas, aimed at comprehensively highlighting sustainability and waste management in the sector. These macro areas have been adapted from an existing sustainability framework (Poli, Piermattei, Schiraldi, Spataro, & Uffreduzzi, 2014) to the fashion industry. For a greater level of detail, each key process area has been divided into different sub-processes, as listed below:

1. Environmental Impact: this section outlines a strategic vision for long-term environmental impact reduction in textile production, by emphasizing:
    - greenhouse gas emissions;
    - energy consumption;
    - water resource management.
2. Treatment and Disposal: it deepens for innovative and environmentally responsible processes for textile waste management, by investigating:
    - identification and classification of waste;
    - upstream waste reduction;
    - treatment of chemical and hazardous waste;
    - technologies for waste treatment.
3. Sustainable Design Circular Economy: this key process area aims to establish a new product design by considering not only the aesthetic and functional value, but also their complete feasibility with recyclable materials. It includes:
    - recycling-oriented design;
    - reuse and upcycling strategies in design.
4. Sustainable Supply Chain: the fourth section examines corporate sustainability goals, ensuring operational efficiency and ethical compliance throughout the value chain. Practices focus on minimizing environmental impact, enhancing material traceability, promoting social responsibility, and fostering sustainable innovation. Sub-processes targeted for this area are:
    - materials and raw materials selection;
    - transport and logistics;
    - product lifecycle management.
5. Policies and Regulations: it investigates the compliance readiness with respect to environmental policies, textile regulations, and international laws, by emphasizing proactive commitment to sustainability. It involves aligning operations with legal standards and internal training to uniform adherence; the related sub-process is named as "alignment and compliance".
6. Reverse Logistics: it explores how companies manage product returns, maximizing value recovery and minimizing environmental impact. It aligns with sustainability goals by handling returns and end-of-life products through recycling or reuse. Sub-processes recall:
    - collection and aggregation of textile waste;
    - treatment and recycling;
    - reuse and repair.
7. Innovation and Research: this area aims to foster a culture of continuous innovation and applied research in the textile sector, by enhancing processes and products for long-term sustainability and technological advancement. Activities include:
    - development of new materials;
    - recycling and reuse technologies;
    - sustainable treatments and finishes.
    - partnerships with suppliers and manufacturers;
    - collaborations with government agencies and Non-Governmental Organization (NGO).

Hence, SWMM is composed of 158 achievements distributed across the twenty-one sub-processes, matched according to the respective maturity level.

3.2 SWMM Maturity Framework

Like the LMM (Battista & Schiraldi, 2013), SWMM also uses a 5-Level maturity staircase. From the lower to the higher maturity level, there is:

- Level 1 – Initial: this level represents the initial phase of sustainability and waste management, where practices are partially in place and not managed.
- Level 2 – Managed: at this level, the company is aware of the need; it is implementing specific actions to address the issues, but they are neither formalized nor standardized. Therefore, the approach remains reactive; initiatives are often a response to urgent problems or regulatory requirements, rather than part of a proactive strategy.
- Level 3 – Defined: the company has developed and implemented a formal framework to manage sustainability, that is an integral part of daily operations. The waste management strategy is more proactive, and an alignment begins to emerge between sustainability practices and broader business objectives.
- Level 4 – Controlled: the company adopts a strategic and systematic approach by monitoring and standardizing relevant sustainability indicators and practices.
- Level 5 – Strategic: the organization reaches advanced optimization achievements for addressing sustainability issues and waste management, with the overall practices fully integrated into the corporate strategic vision. Innovation in sustainability is a driving force that brings value, not only to the company, but also to the whole textile industry, as the organization

has become a leading focal point for the sector.

3.3 SWMM Improvement System

After mapping the sustainability processes onto the SWMM modelling framework and calculating the maturity scores for each process or sub-process, the company can outline a roadmap for improvement. The related actions are customized according to the specific needs and goals, and they are designed to address weakness areas identified through maturity analysis, leading to measurable improvements. In the SWMM, there are 158 corporate actions, one for each question/achievement, aimed at supporting and defining practical advices to progress towards more advanced stages of maturity.

To summarize, as stated above, the SWMM introduces a total of 158 achievements in eight areas, twenty-one sub-processes, and other 158 best practices. This structure allows a company to easily:

- Assess the comprehensive maturity level and score for a specific process or sub-process: by determining the accomplishments achieved or those still pending, a company can gauge its sustainability proficiency, pinpoint its shortcomings, and recognize areas for potential enhancement.
- Identify the most appropriate actions, according to the associated best practices, that design the improvement roadmap; the management, in this way, can prioritize the solutions and easily implement quick wins.

4. SWMM Application

The SLMM has been applied to a fashion company to test its potential and effective implementation. The respondent brand operates within the luxury sector with a strong identity in design and high fashion production; the objective of the application consists of evaluating how sustainable practices are integrated in a high-end context, where the product quality is mandatory. To administer the SWMM, a questionnaire, built on an Excel worksheet, has been used, since it proved to be an easily accessible and practical method for the respondent, as well as for the authors, since it also facilitates data aggregation and analysis. Each spreadsheet stands for a process and each sub-process consists of a specific section containing title, description, and, in columns, the maturity level corresponding to the achievement, the response (yes/no); finally there is a column dedicated to any additional comments. The algorithm to fulfil the spreadsheet follows the guidelines described below:

- if the answer is affirmative "Yes", the organization meets the criteria or practices for that maturity level, so it continues with the analysis at the other levels. Sometimes, SWMM sub-processes may require positive responses to several questions at the same level to proceed to the next one.
- if the answer is negative "No", the organization does not meet the criteria yet, so it stops to the previous level of maturity for that sub-process.

The mechanism of evaluation and classification into specific maturity stages is summarized in Figure 1:

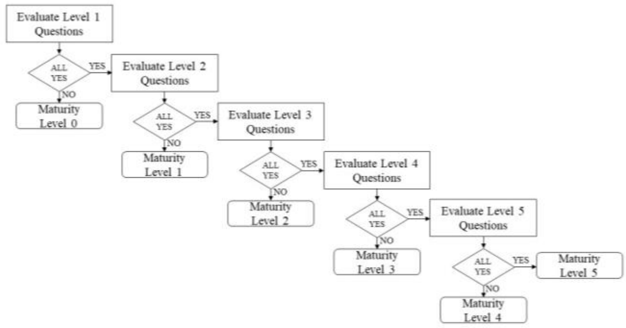

Figure 1: ISO CD 22549-2.2:2019

After data collection, the focus shifts to the results analysis; therefore, in order to clearly define the scores identified, it is necessary to adopt a suitable nomenclature, suggested by Di Luozzo et al (2021), to explain the used formulas:

- *i*: describes the indexing of the individual achievements;
- *j*: describes the indexing of the individual sub-processes;
- *k*: describes the indexing of the individual maturity levels;
- *z*: describes the indexing of the individual key process area;
- N: represents the total number of achievements N_i, the total number of sub-process N_j and, finally, N_z specifies the total number of key process areas;
- x_{ijk}: represents the binary variable (0, 1) expressing the value obtained by the organization for the achievement *i* for process *j* and level *k*.

With this assumption, three indicators are identified relating to achieved maturity levels, respectively referring to sub-process (MLP), key process area (MLA) and overall company maturity (MLO):

$$MLP_{jz} = \frac{\sum_i \sum_k x_{ijk}}{N_i} \quad (1)$$

$$MLA_z = \frac{\sum_j MLP_j}{N_j} \quad (2)$$

$$MLO = \frac{\sum_z MLA_z}{N_z} \tag{3}$$

To show the results of the application, even partially, due to space constraints, the outcome of the interview with the company top management is given below, with a graphical radar-chart representation.

Table 3: Application outcome per key process area and sub-process

Key Process Area	Sub-process	Maturity Level	Average
Environmental impact	Greenhouse gas emission Energy consumption Water resources management	2 2 3	2,33
Waste treatment and disposal	Identification and classification of waste Upstream waste reduction Treatment of chemical and hazardous waste Technologies for waste treatment	2 3 2 2	2,25
Sustainable design circular economy	Recycling oriented design Reuse and upcycling strategies in design Reuse and repair	2,5 1 3,5	2,33
Sustainable supply chain	Selection of materials Transportation and logistics Product life cycle management	4 3 3	3,33
Policies and regulations	Alignment and compliance	4	4
Reverse logistic	Collection and aggregation of textile waste Treatment and recycling	1 2,25	1,75
Innovation & research	Development of new materials Recycling and reuse technologies Sustainable treatments and finishes	3 1,67 3	2,556
Collaboration & Partnership	Partnership with suppliers and manufactures Collaboration with Government agencies and NGOs	4 2	3

To summarize the outcome, by considering the average maturity level per key process area, about the as-is scenario, a spider chart is reported in Figure 2.

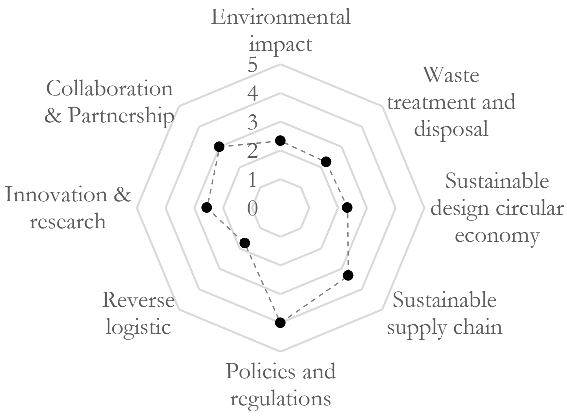

Figure 2: Average result per Key Process Area

According to the result, it would be easy to notice that the MLO for the respondent company is 2,7; however, this indicator is able to give a general overview with respect to the processes covered, but it could be negatively affected by activities with a low score that do not represent company's core business. For example, in the specific case, the "Reuse and upcycling strategies in design", had a significantly negative impact on the MLO. The questions - and thus the requirements to be fulfilled - concerning that sub-process encourage the reuse of textiles through creative design, by transforming waste or used garments into new high-quality products and by developing collections based on upcycling. However, a company with a high-spirited target consumer who consider the quality of craftsmanship and raw materials crucial when purchasing, might not aim at this. For the same reasons, the whole key process area "Reverse logistic", also had a very negative impact on the MLO, with an average value equal to 1,75. Therefore, it is extremely important to always customize the analysis according to the specific business needs. After the current maturity profile definition, together with company's top management, it was possible to define a roadmap and improvement strategies to be implemented to reach the desired 'to-be' scenario. In this case, the focus was on the first two areas, respectively "Environmental impact" and "Waste treatment and disposal", so, following the related best practices and actions, it was suggested to the company to start a careful examination of its consumption, through an energy audit by mapping energy flows and identifying the main sources of waste while installing sustainable energy equipment and low consumption lighting. For the second area, the prompted approach was identifying and classifying waste with an advanced labelling system, such as RFID codes for tracking and managing waste. These needs were matched by specific actions collected in an effective roadmap that allow the company to progress its overall SWMM score.

5. Conclusion

The Sustainable Waste Maturity Model (SWMM) proposed in this paper represents a step forward towards a more conscious and sustainable textile sector. The analysis of the works related to other industries allowed the definition of detailed achievements through which textile companies can evaluate and enhance the sustainability of their operations. Through an assessment process consisting of 158 questions, including best practices and actions, the organizations can systematically advance in effective sustainability goals and waste management techniques. The path outlined in the SWMM offers a roadmap for improvement, from defining the starting state to achieving advanced targets, as evidenced by model application into a luxury textile company. However, this work sets only the groundwork for further development in this area: for example, future research can be focused on extending the application across a broader spectrum of business realities. This would help identify similarities and divergences within the textile industry, clustering organizations according to their chosen business models to potentially identify standard patterns based on common macroscopic characteristics. At the end, this would suggest companies a potential standard impact of their supply and waste chains based on their cluster results. Having a benchmark would be useful both for companies which aim at improving their processes, and for stakeholders to effectively address key responsibilities.

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Appendix A. SWMM

For the sake of brevity, in the following section, just one key-process area of the SWMM is shown, the second one, about waste management and disposal; the choice fell on this area because it is one of the most representative of the model itself in order to understand the amount of waste produced by companies.

2. Waste treatment and disposal

2.1 Identification and classification of waste

Process	Maturity grid	Questions
P2.1.1	1	Is there an informal collection or a basic list of all types of textile waste generated by the production activity?
P2.1.2	2	Is a documented system implemented that tracks and categorizes the different types of textile waste produced?
P2.1.3	3	Is there a consolidated and formally documented operational process that ensures standardized and systematic classification of all textile waste produced?

P2.1.4	3	Is there specific training for employees on waste classification?
P2.1.5	4	Are regular analyses conducted to improve waste classification?
P2.1.6	5	Is waste classification integrated with advanced technologies (e.g., AI or IoT)?

2.2 Upstream waste reduction

Process	Maturity grid	Questions
P2.2.1	1	Is there an initial awareness of the need to reduce waste?
P2.2.2	2	Are there informal systems in place to track the amount of waste produced?
P2.2.3	2	Have basic practices been introduced to reduce upstream waste?
P2.2.4	3	Are there defined and documented processes for waste reduction?
P2.2.5	4	Is the effectiveness of waste reduction practices measured?
P2.2.6	4	Are continuous improvements in place for waste reduction? (e.g., application of the Lean Six Sigma methodology)
P2.2.7	5	Is there a specialized team that not only monitors trends and innovations in the textile sector for sustainable development but also evaluates them in collaboration with top management for integration into the strategic business plan and the creation of specific business cases?

2.3 Treatment of chemical and hazardous waste

Process	Maturity grid	Questions
P2.3.1	1	Are the various types of waste generated recognized?
P2.3.2	2	Is there a system in place that allows for the tracking and formal review of chemical and hazardous waste flows to ensure compliance with current regulations?
P2.3.3	3	Have standardized procedures been formalized and are they fully operational to ensure the systematic management and complete documentation of all chemical and hazardous wastes produced by the organization?
P2.3.4	4	Are regular audits conducted of chemical waste management practices to assess and improve safety and compliance?
P2.3.5	5	Does the company invest in innovative technologies for the treatment and minimization of chemical and hazardous waste?

2.4 Technologies for waste treatment

Process	Maturity grid	Questions
P2.4.1	1	Has the company evaluated the basic technologies at its disposal and their effectiveness for the treatment of textile waste?
P2.4.2	2	Are the flows of the main textile waste mapped and the technologies required for their treatment identified?
P2.4.3	2	Has a tracking process for these waste flows been implemented?
P2.4.4	3	Have standardized processes for the treatment of textile waste been formalized, approved, and integrated into the daily operation of your company?
P2.4.5	3	Has personnel been designated responsible for managing these processes?
P2.4.6	4	Are advanced technologies used for the treatment of textile waste?
P2.4.7	4	Are regular evaluations of the performance of these technologies carried out?
P2.4.8	5	Is the company a leader in adopting innovative technologies for the treatment of textile waste?
P2.4.9	5	Is there ongoing evaluation and updating of these technologies based on the latest innovations?