Framing Sustainability in Ethical Fashion: A Lexicometric Analysis of French Brand Communication

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Published: July 15, 2●25

Abstract

Sustainability has become a central theme in contemporary fashion branding, yet the ways in which companies articulate their commitments can vary significantly. This study examines how French ethical fashion brands construct their discourse on sustainability through linguistic choices, focusing on terminology, conceptual associations, and emotional framing. Using a lexicometric approach, we analyze a corpus of brand communications through word frequency analysis, co-occurrence heatmaps, and sentiment analysis. The findings reveal that sustainability discourse is structured around key themes such as materials, transparency, and cultural identity, with a strong emphasis on traceability and responsible production. Despite expectations of aspirational messaging, neutral sentiment dominates, suggesting a preference for factual, credibility-driven communication over overt emotional appeal. The study also highlights how labels and certifications play a pivotal role in reinforcing sustainability claims, though they may also serve as marketing tools rather than verifiable indicators of corporate responsibility. Additionally, the absence of key terms like "upcycling" suggests that linguistic choices shape how sustainability practices are framed and understood within the French ethical fashion industry. These insights contribute to a broader discussion on how sustainability is communicated in fashion branding and raise questions about whether changing geopolitical dynamics and increasing environmental awareness will influence the evolution of these narratives in the future.

Keywords: Sustainability; Ethical Brands; Fashion Industry; Lexicometry; Fashion Discourse.

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Introduction

Over the past decades, the fashion industry has faced significant scrutiny due to its environmental and social impact. Scandals such as the collapse of the Rana Plaza factory in 2013[1] and Chanel's deforestation for a fashion show in 2018[2] have highlighted systemic issues, forcing the industry to rethink its approach to responsibility.[3] This shift has been further pushed by growing societal awareness, rooted in ecological and social consciousness. As a result, green, ethical, and sustainable fashion has gained traction at various levels. Sustainability and social responsibility have become strategic elements for fashion companies as they undergo ecological transitions. Established brands tend to integrate sustainability into their corporate-level discourse, whereas newcomers in the market often differentiate themselves by incorporating ecological values into their core identity, often supported by sustainability certifications. This dual trend reflects the shifting priorities of markets and consumers who increasingly demand transparency and alignment with sustainable values.

This paper examines the impact of sustainable fashion on the corporate discourse of French ethical brands through a pragmaterminological and discursive approach.[4] Specifically, we analyze brands reviewed by *Marques de France*, a platform that defines itself as *"guide du Made in France"* ("guide to Made in France") and that *"référence les acteurs qui mettent en valeur la fabrication française et qui font la France de demain"* ("lists the stakeholders who highlight French manufacturing and shape the France of tomorrow"). Using a corpus of web pages from thirteen selected brands (*Patine, Esquif, Plus de Pulls, Loom, Eros et Agape, Marianne by Marie Jordane, Montlimart, Saint Lazare, Carloscarlos Maison, GentleFactory, Facettes, Rosaé Paris,* and *Thelma Rose*), we conduct a lexicometric analysis to explore terminological choices and their functioning within corporate discourse. This analysis focuses on identifying the most representative terms circulating in the online communication of these sustainable brands, with particular attention to key terms serving as markers of specific cultural adaptations. Additionally, we examine how individual brands leverage these terms to reflect their unique cultural and strategic positioning. A qualitative and comparative analysis follows, aimed at uncovering the communication strategies employed to construct brand identity in terms of ethics and sustainability.

The rest of this article is structured as follows. First, we position the discussion within the broader context of sustainable fashion and corporate communication by briefly reviewing relevant literature (Section 2). Second, we present the methodological framework and tools used for this study, explaining how lexicometric analysis can help uncover strategic linguistic choices (Section 3). Third, we analyze the results of the corpus study, discussing the implications of term usage and brand-specific strategies (Section 4 and Section 5). Finally, we conclude by reflecting on the broader implications of this research for the study of sustainability discourses and offering suggestions for future work in this field (Section 6).

Sustainable Fashion and Corporate Communication

Over the past few decades, studies on environmental communication have undergone significant development, expanding their scope of investigation and shifting the focus from strictly ecological issues to organizational practices and Corporate Social Responsibility (CSR), as well as to the analysis of environmental representations in the media, the phenomenon of greenwashing, and the assessment of related

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1. Nora Lohmeyer and Elke Schüßler, "Rana Plaza as a threat to the fast fashion model? An analysis of institutional responses to the disaster in Germany" in *Eco-friendly and fair* (London: Routledge, 2018), 3–14.

2. "Forêt désenchantée: quand Chanel abat des arbres pour quelques heures de défilé," France Nature Environnement, news article, accessed June 8, 2025, https://fne.asso.fr/actualites/foret-desenchantee-quand-chanel-abat-des-arbres-pour-quelques-heures-de-defile.

3. Majdouline Sbai, *Une mode éthique est-elle possible?* (Paris: Rue de l'échiquier, 2018).

4. Dardo de Vecchi and Valérie Delavigne, eds., *Termes en discours* (Paris: Presses de la Sorbonne Nouvelle, 2021); Rachele Raus, *La terminologie multilingue: La traduction des termes de l'égalité H/F dans le discours international* (Bruxelles: De Boeck, 2013).

risks and controversies.[5] In the last thirty years, in particular, interdisciplinary approaches and reflections have intersected, enabling the integration of different theoretical and methodological perspectives. These converging lines of research have fostered a growing interest in the study of participatory dynamics, the mechanisms of diffusion and circulation of environmental discourses, the role of communicative devices, and audience reception processes.[6] This discursive and communicative field tends to be shaped across different languages by a series of constantly evolving terms and concepts, such as "environment", "nature", "ecology", "sustainable development", "sustainability", "social and environmental responsibility" and "transition", which define its contours and dynamics, ultimately becoming specific objects of investigation and research.[7]

Until just a few years ago, sustainability was not a central element in fashion industry communication. Today, however, it is considered a key factor in addressing the sector's challenges and critical issues. As briefly mentioned in the introduction, the numerous scandals that have shaken the fashion system,[8] together with the growing ethical and environmental awareness in 21st-century society (fueled in part by various civil society initiatives such as Fashion Revolution, Remake Our World, and Greenpeace's Fashion Pact, to name a few) have reshaped the communication strategies of its actors (groups, brands, etc.), forcing them to integrate environmental issues and communicate their sustainability practices. However, research in the field of Fashion Studies has highlighted that the ecological transition in fashion is particularly complex to achieve (and, consequently, to communicate) not only due to production-related challenges (such as raw material sourcing and processing), but also because of the underlying processes involved in enhancing its material and immaterial heritage. These processes require a rethinking of existing models and a cultural, economic, and political shift on a global scale.[9]

Oscillating between the risk of greenwashing or hushwashing and a genuine commitment to sustainability, sustainable fashion communication today represents a crucial challenge in a sector that, particularly in its fast fashion iteration, has a negative impact on ecosystems and environmental resources.[10] A recent Greenpeace report, titled *Greenwash Danger Zone. Ten Years After Rana Plaza, Fashion Labels Conceal a Broken System*, highlighted numerous critical issues related to the sustainability claims made by brands. The report denounces the use of "green" labels that lack independent verification, the absence of third-party oversight, poor supply chain traceability, and the use of misleading terminology to describe recycling, circularity, and sustainability practices.[11] This dynamic not only undermines consumer trust but also risks solidifying a communication model focused solely on constructing a positive brand image rather than driving a genuine transformation of production processes that require fundamental rethinking. To address these challenges, institutional actors are attempting to steer the sector toward greater transparency, ensuring that corporate sustainability policies do not become mere marketing operations that strip the concept of its deeper and more authentic meaning.

5.   Solange Tremblay, Nicole D'Almeida, and Thierry Libaert, eds., *Développement durable. Une communication qui se démarque* (Montréal: Presses de l'Université du Québec, 2018).

6.   Thierry Libaert, ed., *La communication environnementale* (Paris: CNRS Éditions, 2016); Andrea Catellani, Céline Pascual Espuny, Pudens Malibabo Lavu and Béatrice Vigouroux, "Les recherches en communication environnementale," *Communication*, Vol. 36, no. 2 (2019), https://journals.openedition.org/communication/10559.

7.   Andrea Catellani, Céline Pascual Espuny, Pudens Malibabo Lavu and Béatrice Jalenques Vigouroux, "Les recherches en communication environnementale," *Communication*, Vol. 36 no. 2 (2019), https://journals.openedition.org/communication/10559; Vincent Balnat and Gérard Christophe, eds., *Néologie et environnement*, *Néologica*, Vol. 16 (2022).

8.   Naomi Klein, *No Logo: Taking Aim at the Brand Bullies* (Toronto: Knopf Canada, 1999); Audrey Millet, *Le livre noir de la mode. Création, production, manipulation* (Paris: Éditions Pérégrines, 2021).

9.   Emanuela Mora, Agnès Rocamora, and Paolo Volonté, "On the Issue of Sustainability in Fashion Studies," *International Journal of Fashion Studies*, Vol. 1 no. 2 (2014): 139–147, https://doi.org/10.1386/infs.1.2.139_1.

10.   Adriana Davidescu, Eduard Mihai Manta and Cristina Maria Geambasu, "A Bibliometric Analysis of Greenwashing, Hush Washing, and Social Washing," in *Greening Our Economy for a Sustainable Future*, ed. S. Grima et al. (Elsevier, 2024): 107–125.

11.   Greenpeace Germany, *Greenwash Danger Zone. 10 years after Rana Plaza fashion labels concesl a broken system*. Report Greenpeace, Berlin, 2023. https://www.greenpeace.de/publikationen/Greenpeace_Report_Greenwash_Danger_Zone.pdf.

At the European level, the *EU Strategy for Sustainable and Circular Textiles*,[12] presented in 2022 by the European Commission "to implement the commitments of the European Green Deal, the Circular Economy Action Plan, and the European Industrial Strategy", aims to reduce the environmental impact of the textile sector by promoting sustainability throughout the entire production process and encouraging responsible consumption models. In addition to this document, further regulatory measures have been introduced to make the sector more sustainable and transparent. *The Green Claims Directive* (2023)[13] seeks to ensure more careful and reliable communication regarding the environmental claims of products. It is based on scientific criteria, consistency, accessibility, and comparability of the information provided, as well as clarity and truthfulness of claims, thus avoiding vague statements, complex technical jargon, and misleading or deceptive declarations. The directive's goal is to "protect consumers and companies from greenwashing and enable consumers to contribute to accelerating the green transition by making informed purchasing decisions based on credible environmental claims and labels."

From the perspective of consumer protection, it is also important to mention the *Empowering Consumers for the Green Transition Directive* (2024),[14] which addresses communication practices by encouraging the use of precise or at least "scientifically proven" terminology:

> Annex I to Directive 2005/29/EC should also be amended to prohibit the making of a generic environmental claim without recognised excellent environmental performance which is relevant to the claim. Examples of generic environmental claims include 'environmentally friendly', 'eco-friendly', 'green', 'nature's friend', 'ecological', 'environmentally correct', 'climate friendly', 'gentle on the environment', 'carbon friendly', 'energy efficient', 'biodegradable', 'biobased' or similar statements that suggest or create the impression of excellent environmental performance. Such generic environmental claims should be prohibited when recognised excellent environmental performance cannot be demonstrated.

At the same time, the *Corporate Sustainability Reporting Directive* (2023)[15] requires all publicly listed companies to report on their environmental impact through the publication of detailed reports in compliance with the *European Sustainability Reporting Standards* (ESRS). The objective is to ensure more transparent and responsible communication, reducing the risk of greenwashing and providing stakeholders with reliable information on the sustainable practices adopted by companies. This effort is further reinforced by the recent *Corporate Sustainability Due Diligence Directive* (CSDDD),[16] which came into effect in 2025. The directive requires fashion industry companies to identify and mitigate negative environmental and social impacts throughout the entire supply chain. This obligation necessitates the implementation of monitoring systems and the publication of detailed reports to demonstrate the effective application of environmentally and socially responsible practices.

Within this increasingly complex regulatory framework, various initiatives have emerged to "regenerate" the communication paradigm of sustainability in the fashion industry. This paradigm primarily unfolds along several key directions:

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12. "EU Strategy for Sustainable and Circular Textiles," European Commission, policy document, accessed June 8, 2025, https://environment.ec.europa.eu/publications/textiles-strategy_en.

13. "Proposal for a Directive on Substantiation and Communication of Explicit Environmental Claims," European Commission, legislative proposal (COM/2023/166), accessed June 8, 2025, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52023PC0166.

14. "Directive (EU) 2024/825 of the European Parliament and of the Council of 28 February 2024," Official Journal of the European Union, legal text, accessed June 8, 2025, https://eur-lex.europa.eu/eli/dir/2024/825/oj.

15. "Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022," Official Journal of the European Union, legal text, accessed June 8, 2025, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32022L2464.

16. "Directive (EU) 2024/1760 of the European Parliament and of the Council of 13 June 2024," Official Journal of the European Union, legal text, accessed June 8, 2025, https://eur-lex.europa.eu/eli/dir/2024/1760/oj/eng.

- The concept of *ethical fashion*, which references virtuous models and moral principles, often constructing a narrative aimed at strengthening brand reputation without implementing concrete changes;

- The concept of *Corporate Social Responsibility* (CSR), which extensively employs its rhetorical framework to legitimize environmental strategies and highlight the efforts made;

- The concept of *consumer responsibility*, which places particular emphasis on encouraging responsible consumption practices (such as reuse and recycling), effectively shifting the burden of environmental commitment from the company to the consumer.[17]

If the communication strategies deployed range from awareness to manipulation, on the one hand, promoting a rethinking of the fashion system through ethical and ecological lenses, while on the other, reducing sustainability to mere aesthetic sublimation, then the discourse of sustainable fashion today emerges in all its contradictions. These include greenwashing, the reduction of sustainability to a fleeting trend, and the illusory empowerment of the consumer, which often translates into a delegation of responsibility rather than genuine agency. However, sustainable fashion communication also presents itself as a powerful tool for fostering a true cultural transition, capable of transforming lifestyles and consumption behaviors toward greater responsibility and awareness. The need to reorient communication in the sector toward systemic change and sustainability (given that the fashion industry neither complies with the Sustainable Development Goals (SDGs) set by the 2030 Agenda nor significantly contributes to the implementation of international climate agreements) led to the recent publication of *The Sustainable Fashion Communication Playbook* (2023).[18] This handbook, developed by the United Nations Environment Programme (UNEP), the United Nations Framework Convention on Climate Change (UN Climate Change), and the Fashion Industry Charter for Climate Action (Fashion Charter), aims to provide a concrete framework for "those communicating directly with individual consumer audiences about the fashion sector. This incorporates a wide range of roles and practitioners [...]", as it recognizes the essential role of communication as a driving force in responding to the climate crisis:

> The Sustainable Fashion Communication Playbook acknowledges the cultural influence the fashion sector has through its storytelling and visual language. It presents the need to direct such efforts towards sustainable and circular solutions as a creative opportunity, and provides a much needed framework when policies around how to communicate environmental claims increasingly come into force.[19]

Starting from the idea that this field is often underestimated, the document emphasizes the opportunity to leverage communication for "shifting the narratives", influencing consumer perception and behavior to promote new virtuous models. It highlights the central role of communication in countering harmful phenomena such as greenwashing and overconsumption. Three main levels of action for sustainable fashion communication are thus defined:

- transparency of information (*Foundation Level*),

- the cultural influence fashion can exert by creating narratives centered on circularity and projecting new imaginaries for a fairer and more sustainable future (*Build Level*),

- political and corporate action to influence public debate and support specific regulations (*Advocacy*).

Most importantly, the document identifies eight fundamental principles for ethical and responsible communication in fashion, ranging from verifiable data and clarity of information to the elimination

17. Eleni Mouratidou and Andrea Catellani, "Discours, représentations et figurations 'écoresponsables'," *Recherches en communication*, Vol. 55 (2023): 1–9, https://ojs.uclouvain.be/index.php/rec/article/view/76293.

18. United Nations Environment Programme (UNEP), *The Sustainable Fashion Communication Playbook* (2023), https://wedocs.unep.org/bitstream/handle/20.500.11822/42819/sustainable_fashion_communication_playbook.pdf?sequence=3.

19. UNEP, *The Sustainable Fashion Communication Playbook*, 2.

of messages promoting excessive consumption, the promotion of circular models, inclusive storytelling, and active public engagement to foster change.

If the goal of this "ready-to-use" tool is to redefine language and narratives in the fashion sector so that it can effectively serve as the driver of a "Fashion Revolution" accelerating socio-cultural change on both individual and collective levels, it is particularly relevant to examine how environmental communication in fashion has integrated these guidelines. The focus will be on how specific communication and discursive strategies are implemented, considering that "as much for multinational organisations as small and medium enterprises (SMEs) — recognising that speed of adoption and support required will vary."[20]

In the following sections, we will explore the paradigm of sustainable fashion through its lexical and discursive realization and its integration into organizational communication channels (such as corporate websites) to assess its contribution to this shift in narratives and the renewal of fashion imaginaries.

Methodological Framework and Tools

The objective of this study is to analyze how French ethical fashion brands formulate their corporate discourse around sustainability through specific terminologies.[21] To achieve this, we leveraged statistical techniques alongside lexicometric analysis to identify patterns and strategies in linguistic choices. This section details the methodological framework, the tools employed, and the analytical techniques used.

As mentioned, our corpus comprises texts from the websites of thirteen French brands curated by *Marques de France*, including *Patine, Esquif, Plus de Pulls, Loom, Eros et Agape, Marianne by Marie Jordane, Montlimart, Saint Lazare, Carloscarlos Maison, GentleFactory, Facettes, Rosaé Paris*, and *Thelma Rose*. The companies referenced by this platform are not primarily selected based on their size, but rather according to three specific criteria: French origin, local production or assembly, and headquarters located in France. Additionally, according to the platform's representatives, "fabriquer en France" means that these companies adhere to *"une démarche éthique et responsable, grâce aux nombreuses normes environnementales et sanitaires française et européenne"* ("an ethical and responsible approach, thanks to the numerous French and European environmental and health standards"). The texts were extracted from sections explicitly addressing sustainability (e.g., "About Us," blogs, and product descriptions) using Sketch Engine.[22] After pre-processing (removal of irrelevant elements such as menus, footers, and duplicates), the corpus was organized by brand, allowing a comparative analysis of terminological choices. The corpus contains about 25,500 words.

This study follows a three-tiered approach: first, a word frequency analysis, followed by a co-occurrence analysis, and finally, a sentiment analysis. Each of these steps contributes to a broader understanding of how sustainability is framed, not only in terms of which words appear most frequently, but also how they interact with each other and what emotional tone they convey.

The first step in our analysis is to determine which words appear most frequently in the corpus, providing an overview of the key themes that brands emphasize in their sustainability communication. To ensure accuracy, we preprocess the text by applying lemmatization, which reduces words to their base form so that variations (such as *vêtements* and *vêtement*) are counted together. Proper nouns, particularly brand names and geographical locations (*Paris*, *France*), are preserved to maintain their distinct identity in the analysis. Additionally, stopwords (high-frequency function words with little semantic value) are removed to focus attention on meaningful content. Once the text is preprocessed, word frequencies are computed and visualized using a word cloud, where the most frequently used words appear larger. This method provides an immediate sense of the dominant vocabulary used by brands and offers a starting point for deeper analyses.

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20.   UNEP, *The Sustainable Fashion Communication Playbook*, 2.

21.   Dardo de Vecchi and Valérie Delavigne (eds.). *Termes en discours* (Paris: Presses de la Sorbonne Nouvelle, 2021)

22.   Sktech Engine is a specialized tool for conducting lexicometric analyses: https://www.sketchengine.eu.

While word frequency analysis highlights the prevalence of individual terms, it does not capture the associative patterns between them, which words tend to appear together, and how brands construct meaning through these pairings. To address this, we apply co-occurrence analysis, which maps out the relationships between terms by examining their proximity within the text. Using a document-term matrix (DTM), we compute the number of times two words appear in the same textual context, generating a co-occurrence matrix where each entry represents the frequency with which two terms are linked. This allows us to visualize semantic structures within sustainability discourse, illustrating which ideas brands associate most closely. The resulting heatmap highlights these relationships, with darker intensities indicating stronger connections between terms. This method provides valuable insights into how sustainability is framed. For instance, it can reveal whether transparency-related terms (such as *étiquette*, referring to product labeling) are closely associated with sustainability indicators like *recycler* or *bio*, suggesting an emphasis on traceability and certifications. Similarly, the pairing of geographic terms like *Paris* with sustainability concepts might indicate that brands are integrating eco-consciousness into their broader cultural and luxury identity. By structuring these relationships, co-occurrence analysis allows us to move beyond individual word choices and understand the conceptual architecture of brand messaging.

To complement these two lexical analyses, we conduct a sentiment analysis to assess the emotional tone of sustainability discourse. While frequency and co-occurrence methods focus on the presence and relationships of words, sentiment analysis explores how these words are framed, that is, whether sustainability is presented in a neutral, positive, or negative manner. Each phrase is assigned a polarity score, ranging from -1 (negative sentiment) to +1 (positive sentiment), with scores close to zero indicating neutrality. Since our corpus consists largely of informative texts (brand descriptions, sustainability commitments, and specifications about materials), we anticipate a predominance of neutral sentiment, as we expect brands to prioritize credibility and transparency over overt emotional appeals. To ensure consistency, we apply sentiment analysis to the lemmatized version of the corpus, reducing linguistic variability while preserving the underlying meaning. Sentiment scores are then aggregated both across the entire corpus, to observe general trends, and at the brand level, to compare differences in tone among different companies. These variations in sentiment can reveal whether certain brands favor a pragmatic and factual tone, while others lean into aspirational and engaging language to frame sustainability as a lifestyle choice. The sentiment distribution is visualized through a histogram, illustrating the overall balance of neutral, positive, and negative sentiment across the corpus. Additionally, a table summarizing brand-level sentiment scores allows for comparisons between companies, providing insights into how different brands position themselves within the sustainability discourse.

By combining these three analytical approaches, we are able to examine sustainability discourse from multiple angles. The word cloud identifies dominant themes, the co-occurrence heatmap reveals how brands structure their messaging by linking key concepts, and the sentiment analysis uncovers the emotional tone of this communication. Together, these methods offer a comprehensive view of how sustainability is framed, not only in terms of what brands say, but also how they structure their discourse and how they shape its emotional impact. This methodology ensures a robust, data-driven approach to understanding sustainability communication in ethical fashion, providing insights into both linguistic strategy and brand positioning within a rapidly evolving industry.

Results

The word cloud offers a general overview of the linguistic patterns within the corpus, highlighting the themes that brands appear to prioritize in their communication. This visualization reveals the key terms that brands use to shape the narrative around sustainable fashion. (Fig. 1)

Expectedly, terms like "*vêtement*" (clothing) and "*matière*" (material) dominate the word cloud, stressing their pivotal importance in the discourse. Clothing is not presented simply as a product but as the outcome of deliberate, ethical material choices and sustainable practices. This emphasis on materials is reinforced by the prominence of words like "*coton*" (cotton) and "*laine*" (wool), which reflect how
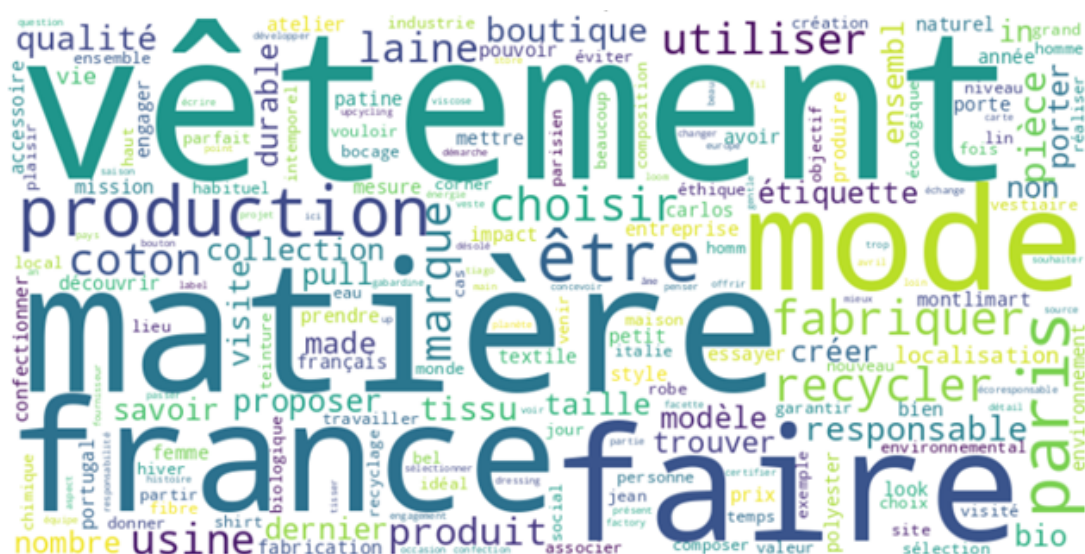
Figure 1: Word cloud of most frequent lemmas

brands showcase the environmental credentials of their fabrics. These terms highlight the industry's commitment to sourcing and utilizing sustainable materials, reinforcing their eco-conscious image.[23]

The significance of sustainability is further evident in terms such as "*recycler*" (to recycle), "*durable*" (sustainable), and "*responsible*" (responsible). These words suggest that brands are incorporate environmental considerations into their identity, as they present themselves as agents of change. The inclusion of "*bio*" (from "*biologique*", biological, better translated as organic) strengthens this narrative, appealing to consumers who prioritize organic materials and minimal environmental impact in their purchasing decisions.

The word cloud also highlights the integration of cultural and geographic identity into sustainability narratives. Terms like "*France*" and "*Paris*", as well as "*Italie*" to a smaller extent, appear frequently, revealing the intention of brands to tie their mission to traditional heritage and craftsmanship. This association allows brands to leverage the global reputation of Paris and French fashion as symbols of quality, authenticity, and sophistication. In doing so, sustainability becomes more than an ethical commitment; it is framed as a reflection of cultural refinement and aesthetic excellence.

Transparency and ethical practices are another recurring theme in the word cloud. Words like "etiquette" (label), "*qualité*" (quality), and "*production*" reflect the industry's focus on providing consumers with detailed information about their materials, certifications, and processes.

Another striking aspect of the word cloud is the prominence of action-oriented terms such as "*faire*" (to make), "*produire*" (to produce), and "*choisir*" (to choose). These terms suggest that brands are positioning themselves as active contributors to sustainability, emphasizing deliberate decisions in their processes. This language stresses agency and may resonate with consumers seeking brands that demonstrate leadership in addressing environmental challenges.[24]

In conclusion, the emphasis on materials, transparency, and cultural identity reflects an industry striving to balance eco-consciousness with the aesthetic and cultural prestige of French fashion. This dual focus

23.   Silvia Blasi, Lorenzo Brigato and Silvia Rita Sedita, "Eco-Friendliness and Fashion: Perceptual Attributes of Fashion Brands — An Analysis of Consumers' Perceptions Based on Twitter Data Mining," *Journal of Cleaner Production*, Vol. 240 (2019): 118701, https://doi.org/10.1016/j.jclepro.2019.118701.

24.   Erick Kauffmann et al., "Managing Marketing Decision-Making with Sentiment Analysis: An Evaluation of the Main Product Features Using Text Data Mining," *Sustainability*, Vol. 11, no. 15 (2019): 4235, https://doi.org/10.3390/su11154235.

allows brands to resonate with both the ethical and aspirational values of their audience. While the word cloud provides only a high-level perspective on linguistic trends, it also lays the foundation for deeper considerations. Later, the co-occurrence heatmap will reveal how these key terms interact with one another, offering a more nuanced view of the relationships between concepts. Similarly, the sentiment analysis will explore how these terms are emotionally framed, shedding light on how brands balance factual communication with aspirational messaging.

Building on the findings from the word cloud, the lemma co-occurrence heatmap provides a deeper, more structured understanding of the relationships between key terms in the corpus. While the word cloud highlighted the prominence of central themes such as sustainability, transparency, and identity, the heatmap digs deeper into how these concepts interact. (Fig. 2)
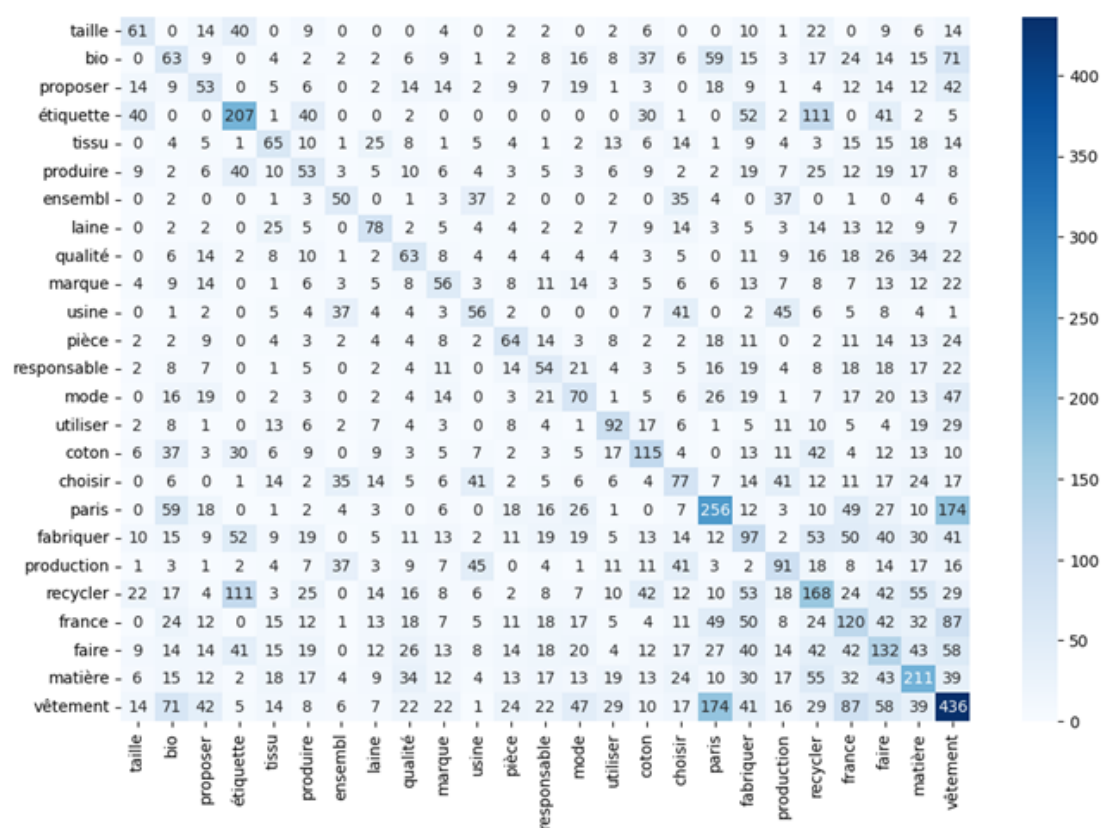

Figure 2: Lemma co-occurrence heatmap

As seen in the word cloud, "*vêtement*" (clothing) emerged as the prevailing term, and the heatmap confirms its central role in the discourse. It co-occurs strongly with terms such as "*matière*" (material), "*faire*" (to make), and "*recycler*" (to recycle), reflecting the industry's efforts to present clothing not merely as a product, but as the result of deliberate, ethical choices in materials and processes. The relationship between "*matière*" (material) and "*recycler*", in particular, reinforces the emphasis on circular economy principles, where recycled materials and sustainable practices take center stage in the narrative.

The importance of cultural and geographic identity in the fashion industry, which was highlighted in the word cloud through terms like "*Paris*" and "*France*", is confirmed by the heatmap. These terms frequently co-occur with concepts like "*mode*" (fashion) and "*vêtement*", suggesting that brands are leveraging French heritage to enhance their credibility. In the context of sustainability, both "Made in France" and "Made in Italy" emerge as production models that combine craftmanship, high-quality

materials, and more responsible processes. In particular, the reuse of textile waste from Italian luxury brands has become a strategy for promoting circularity and reducing waste, transforming premium materials into new high-value products while ensuring a more efficient use of resources. At the same time, the "Made in France" label emphasizes the promotion of short supply chains, encouraging eco-design practices and responsible production while capitalizing on the collective perception of France's long-standing heritage in luxury craftsmanship. The frequent co-occurrence of "*bio*" with "*Paris*" further highlights this alignment, suggesting that brands are merging eco-conscious practices with the allure of Parisian elegance to appeal to both ethical and aspirational values.

Another important connection revealed by the heatmap is between "*étiquette*" (label) and "*recycler*". This pairing most likely underscores the pivotal role that product labels play in bridging the gap between sustainable production and consumer perception. Labels act as tangible markers of transparency, communicating key information about recycled materials, certifications, or eco-friendly practices. This reflects a trend observed in the word cloud, where transparency emerged as an underlying theme. By using labels to convey sustainability credentials, brands foster trust and reinforce their commitment to accountability and responsibility. However, as has been observed, labels can also be misused as a marketing tool, serving promotional purposes without necessarily corresponding to verified or substantiated claims.

The heatmap also highlights the action-oriented language that was prominent in the word cloud. Terms like "*faire*", "*produire*", and "*choisir*" (to make, to produce, to choose) frequently appear alongside sustainability-related concepts, suggesting that brands showcase an active participation in driving change. However, it has also been observed that this emphasis on corporate sustainability efforts can lead to a shift in responsibility toward consumers, placing strong emphasis on individual choices while downplaying the impact of companies' own production strategies.[25]

While the word cloud provided a broad overview of linguistic trends, the heatmap offers a closer look at the interplay between these themes. The connections it reveals help to contextualize how brands structure their narratives. Together, these tools highlight the dual focus of sustainable fashion communication: a commitment to eco-consciousness and a celebration of cultural and aesthetic heritage. Ultimately, the heatmap reinforces the central argument of the analysis: that the intersection of sustainability, transparency, and identity is not only a key component of fashion communication but also a powerful tool to create compelling narratives that resonate with consumers' ethical values and aspirational desires.

The sentiment analysis of the sustainable fashion corpus offers a nuanced perspective on how brands craft their narratives, revealing a careful balance between neutrality, positivity, and the occasional aspirational messaging. Following the findings from the word cloud and co-occurrence heatmap, which emphasized themes of sustainability, transparency, and cultural identity, the sentiment analysis adds another layer by exploring the emotional tone embedded in the language. (Fig. 3)

The histogram of sentiment distribution reveals a clear pattern: the majority of phrases cluster around neutral sentiment, with smaller but meaningful shifts toward positivity and almost no presence of negativity. This predominance of neutrality reinforces the idea that brands prioritize clarity and factual communication in their messaging. The neutral tone helps to establish trust and credibility, creating a foundation that allows brands to present their sustainability efforts as transparent and reliable. Neutrality, in this context, is most likely not a lack of engagement but a deliberate strategy to educate consumers about processes, materials, and certifications without resorting to excessive emotional appeals or overstated claims.

At the same time, the presence of positive sentiment, while less pronounced, adds depth to the message. Words like "*durable*" (sustainable), "*responsable*" (responsible), and "*qualité*" (quality) carry inherent positivity, reflecting how brands frame sustainability as a desirable lifestyle choice. This positivity often

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25. Katherine White, Rishad Habib and David J. Hardisty, "How to SHIFT Consumer Behaviors to Be More Sustainable: A Literature Review and Guiding Framework," *Journal of Marketing*, Vol. 83, no. 3 (2019): 22–49, https://doi.org/10.1177/0022242919825649.
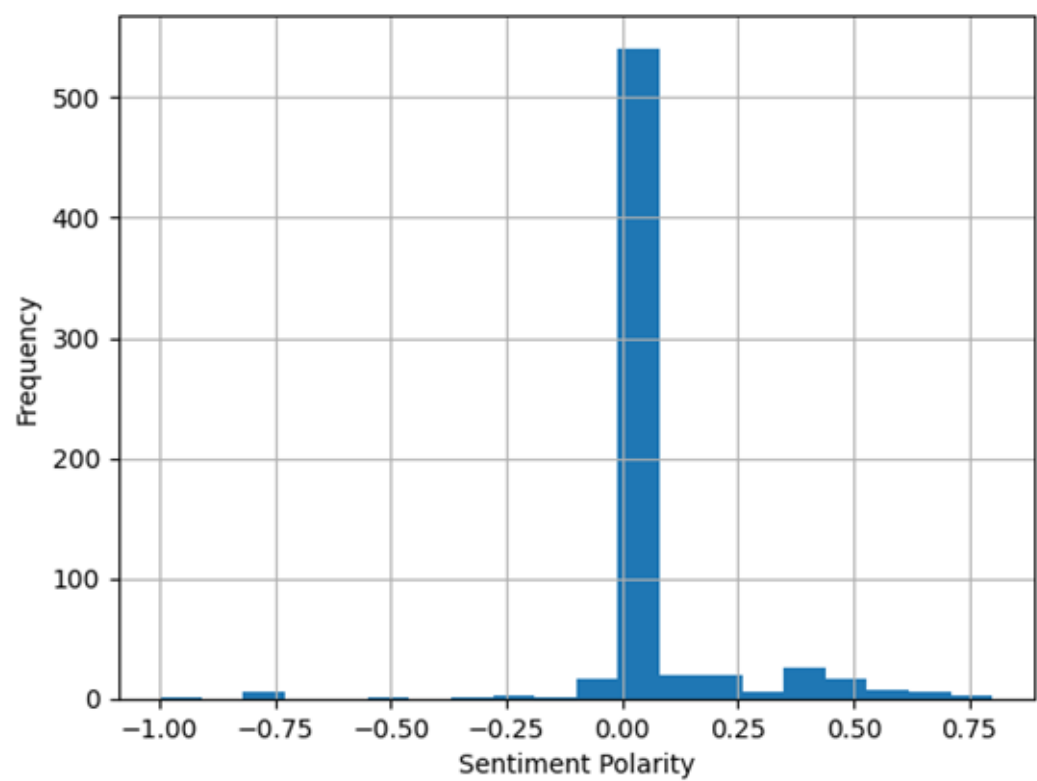
Figure 3: Sentiment distribution

intersects with themes highlighted in the heatmap, such as the cultural weight of French heritage or the innovative use of recycled materials.

Interestingly, negative sentiment is almost entirely absent, which aligns with the broader findings from the heatmap and word cloud. Brands seem to consciously avoid language that might evoke discomfort or guilt, even when addressing pressing environmental issues like waste or overproduction. Instead, challenges seem to be reframed in constructive terms, emphasizing solutions and progress. This strategic avoidance of negativity reflects an industry-wide effort to inspire engagement and optimism, aligning sustainability with hope and possibility rather than critique or alarmism. (Table 1)

Table 1

Brand	Sentiment Score
Patine	-0.0406
Esquif	0
Plus de pulls	0.0078
Loom	0.0316
Eros et Agape	0.0375
Marianne by Marie Jordane	0.0411
Montlimart	0.0435
Saint Lazare	0.0467
Carloscarlos Maison	0.0819
GentleFactory	0.0844

Brand	Sentiment Score
Facettes	0.0871
Rosaé Paris	0.1217
Thelma Rose	0.1705

The analysis of individual brand sentiment scores adds further nuance to these trends.[26] Brands such as Thelma Rose, Rosaé Paris, and Facettes, which exhibit higher positive sentiment, appear to lean into emotionally resonant language to connect with their audience. Their messaging likely ties sustainability to luxury and elegance, aligning with the themes of cultural identity and refinement emphasized in the word cloud and heatmap.

In contrast, brands like Patine and Esquif, which maintain more neutral or slightly negative scores, seem to favor a pragmatic tone. Their language might emphasize transparency and straightforwardness over emotional engagement, appealing to consumers who value detail and accountability. The majority of brands, such as Montlimart, Saint Lazare, and GentleFactory, fall into a middle range, where they balance professional, neutral messaging with occasional aspirational touches, reflecting a carefully calibrated tone that avoids excessive positivity while maintaining credibility.

When considered alongside the word cloud and heatmap, the sentiment analysis highlights the interplay between linguistic frequency, conceptual relationships, and emotional tone. Neutrality dominates as a foundation for factual storytelling and trust-building, while positivity is selectively woven in to inspire and connect with aspirational values. The near absence of negativity further underscores the strategic depth of sustainable fashion communication, where language is used to reframe challenges and present solutions in an optimistic light.

Ultimately, this analysis reinforces the idea that language is not merely a tool for describing sustainability but a powerful medium for shaping how it is perceived and valued. By balancing neutrality with occasional moments of positivity, brands create narratives that resonate with consumer values while maintaining their credibility. The diversity in sentiment across brands reflects the flexibility of this approach, showing that sustainability can be framed in multiple ways, whether pragmatic, aspirational, or a blend of both, depending on the audience and the brand's unique identity. Together, these findings demonstrate the strategic sophistication of sustainable fashion communication in navigating the delicate balance between information, inspiration, and trust.

Discussion

The analysis of sustainability discourse among French ethical fashion brands reveals a highly structured and strategic use of language. The combination of word frequency analysis, co-occurrence analysis, and sentiment analysis provides a comprehensive understanding of how brands articulate their sustainability commitments, how key concepts interact, and how they frame their messaging emotionally.

One of the most striking findings is the predominance of neutrality in sentiment analysis, which contrasts with the expectation that sustainability discourse might lean more heavily on aspirational or emotionally engaging language. While some brands do incorporate positive sentiment, the overall tendency is to prioritize clarity and factual communication, suggesting an emphasis on transparency and credibility over overt persuasion. We can also consider that, as suggested by *The Sustainable Fashion Communication Playbook*, companies adopt a cautious approach to avoid accusations of greenwashing, framing their commitments to sustainable development as a form of rationalization. This reinforces the idea that, within the ethical fashion sector, sustainability is framed as a responsibility rather than a selling point driven by emotional appeal.

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26. As explained in Section 3, sentiment scores range from -1 to 1, where negative values indicate a more critical or neutral-pragmatic tone, scores around 0 suggest an objective or factual approach, and positive values reflect a more aspirational or engaging tone.

The word cloud and co-occurrence heatmap further highlight the centrality of materials (*matière*, *coton*, *laine*) and processes (*recycler*, *produire*, *étiquette*), underscoring how sustainability is predominantly communicated through concrete actions rather than abstract commitments. This aligns with broader industry trends, where brands increasingly focus on traceability and supply chain transparency to meet consumer expectations. However, it is interesting to note that certain terms, such as "upcycling," are entirely absent from the discourse, despite their relevance in sustainable fashion. This omission could be attributed to its status as an Anglicism, with French brands favoring terms such as *"surcyclage"* or, more frequently, *"recyclage valorisant"* to describe circular practices.[27] The absence of a universally adopted equivalent for *"upcycling"* in French raises questions about how linguistic choices influence the accessibility and reception of sustainability narratives among consumers.

The heatmap also reveals a strong link between labels (*étiquette*) and sustainability claims (*recycler*), reinforcing the role of labeling in communicating eco-responsibility. Labels appear to act as a tangible bridge between brand commitments and consumer perception, a finding that aligns with previous studies highlighting their importance in fostering trust. However, as noted, labels can also be a site of potential communicative abuse, serving as a marketing tool rather than a reflection of verified environmental responsibility. This suggests that, while transparency is a core part of sustainability messaging, its effectiveness is contingent on the credibility of the information provided.

Another key takeaway is the action-oriented language observed in the corpus, with frequent use of verbs like *"faire"* (to make), *"produire"* (to produce), and *"choisir"* (to choose). This suggests an attempt by brands to frame themselves as active participants in sustainability efforts. However, as previous literature has pointed out, this emphasis on action can also result in a transfer of responsibility to consumers, shifting the focus from corporate accountability to individual decision-making.[28] By highlighting the role of consumers in choosing sustainable options, brands may minimize the impact of their own production strategies, subtly redirecting attention away from the systemic challenges that shape the fashion industry's environmental footprint.

A final key finding concerns the integration of cultural and geographic identity into sustainability discourse. The strong association between *"Paris"* and sustainability-related terms suggests that brands are capitalizing on France's cultural heritage to reinforce the credibility of their eco-responsible claims. The frequent co-occurrence of *"bio"* with *"Paris"* illustrates how brands position organic materials as part of a broader luxury and refinement narrative, merging ecological consciousness with the prestige of French fashion, and obviously "made in France". This approach reflects a well-established trend in ethical branding, where sustainability is framed not just as an environmental imperative but as an extension of artisanal excellence and national identity.

Conclusion and Future Directions

The findings of this study confirm that sustainability in French ethical fashion branding is framed through a discourse that balances transparency, cultural identity, and action-driven narratives. While neutral sentiment dominates, select brands strategically integrate aspirational language to elevate sustainability as part of a desirable lifestyle. However, the absence of certain key terms, such as "upcycling", suggests that linguistic choices may shape how sustainability concepts are communicated and understood. Moreover, the strong link between labels and sustainability claims raises further questions about the boundary between transparency and marketing rhetoric, particularly in an industry where greenwashing remains a critical concern.

Future research could explore how these findings compare to sustainability discourse in other linguistic and cultural contexts, particularly regarding terminological differences in how circular economy practices are framed. Additionally, a deeper examination of how consumers interpret and respond to dif-

27.   Maria Margherita Mattioda and Vanessa Gruber, "La langue de la mode entre internationalisation et francisation institutionnelle: Le cas de la mode durable," *Synergies Italie*, Vol. 18 (2022): 115–134.

28.   White, Habib and Hardisty, "How to SHIFT Consumer Behaviors."

ferent sustainability narratives could provide further insights into the effectiveness of brand communication strategies. Understanding the interplay between corporate responsibility and consumer agency remains a crucial area of inquiry, particularly as ethical fashion continues to evolve in response to shifting consumer expectations and regulatory pressures.

Another interesting avenue for future research would be to examine how sustainability discourse in ethical fashion evolves over time in response to shifting geopolitical dynamics and growing environmental concerns. As regulatory frameworks tighten and consumer expectations around transparency and corporate responsibility continue to rise, brands may need to adapt their messaging to maintain credibility and relevance. Additionally, global events, such as supply chain disruptions, climate-related policies, or changes in international trade agreements, could influence how sustainability is framed, potentially leading to a stronger emphasis on local production, circular economy strategies, or regenerative practices. The heightened sensitivity toward environmental issues may also encourage brands to move beyond the predominantly neutral tone observed in this study, incorporating more proactive or even urgent language to align with broader climate action movements. Longitudinal studies examining whether and how these narratives shift over time could offer valuable insights into the evolving role of sustainability in fashion branding and corporate communication.

Finally, although this study has focused exclusively on the verbal dimension of brand messaging, it is important to acknowledge that strategies for constructing aspiration, style, status, and brand sincerity, are often conveyed through visual and figurative codes (such as graphic design, images, and symbols). Integrating a multimodal analysis that also considers these visual and plastic elements would represent an interesting avenue for future research, especially in a field like fashion, where visual aesthetics play a central role.

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