

The faster the better? Comparing sustainability performance information in fast and luxury fashion.

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The Faster the Better? Comparing Sustainability Performance Information in Fast and Luxury Fashion

Abstract

Purpose: Fashion brands, including fast and luxury segments, receive harsh criticism for engaging in unethical practices such as poor working conditions and environmental damage. As a result, fashion supply chains are pressured by stakeholders to publicly disclose internal supply chain performance information and to show a high level of supply chain transparency. This paper compares supply chain transparency in fast and luxury fashion in Europe.

Design/methodology/approach: By applying the maturity curve of fashion supply chain transparency, developed by Muratore and Marques (2022), the websites of 20 fast and 20 luxury fashion brands were analysed and classified as Opaque, Translucent or Transparent.

Findings: Despite its reputation, fast fashion demonstrated higher levels of transparency as compared to luxury fashion. Luxury fashion only performed better in terms of the accessibility of sustainability information. Luxury brands avoided disclosing key transparency information, suggesting that they may be operating in contradiction to that which is inferred on their websites.

Originality: The findings of the study shed light on the sustainability credentials of the fashion industry, which has potential to influence purchase intentions of consumers, particularly millennials and Generation Z. Implications for practice are developed to highlight how fashion can improve its supply chain transparency.

Keywords: Fashion Supply Chain, Supply Chain Transparency, Fast Fashion, Luxury Fashion, Europe

1. Introduction

Against the backdrop of the climate crisis, the fashion industry is facing increasing pressure to implement practices to improve sustainability performance through Supply Chain Transparency (SCT). We acknowledge that the SCT concept has been awarded multiple definitions by scholars. In this study SCT is used as an umbrella term comprising the disclosure of accessible information, traceability concerning the environmental and working conditions under which a product has been produced and traded, and a company's purchasing practices (Egels-Zandén *et al.*, 2015). A company's failure to implement SCT practices risks damaging its reputation, financial performance, and long-term success (Merlo *et al.*, 2018) and increases the probability of facing legal challenges if it fails to comply with information disclosure regulations. A range of stakeholder groups (including customers, governmental organisations and non-governmental organisations (NGOs)) are increasingly pressurising companies to implement practices that disclose SCT information (Marshall *et al.*, 2016).

Fashion supply chains (SC) are no exception and are under constant pressure to improve SCT (Muratore and Marques, 2022). Comprised of two defined segments, fast and luxury, the fashion industry is characterised by different business objectives, SC dynamics and consumer bases (Neumann *et al.*, 2020). Indeed, while fast fashion is known for its rapid production cycles, affordability, and customer driven SCs (Fraser and van der Ven, 2022), luxury fashion is predominantly focused on producing high quality and unique apparel items (Kapferer and Bastien, 2012). Fast fashion has always faced severe sustainability criticism due to its questionable environmental and labour practices (Kumar *et al.*, 2022). Luxury sustainable fashion, described by some as an oxymoron, is receiving increased attention as millennials and Generation Z consumers state that they are willing to pay more for 'green luxury' (Carranza *et al.*, *in press*). Research highlights how sustainable attributes lead to higher purchase intentions in fashion products (Grazzini, 2021) and so for fast and luxury fashion it would follow that demonstrably sustainable garments are desirable to consumers.

Whilst the presence of unsustainable practices across fashion SCs generally leads companies not to disclose any SC information (Jestratišević *et al.*, 2020), there is limited research comparing SCT in fast and luxury fashion. Further research is required to examine whether criticisms directed towards the sustainability shortcomings of fast and, increasingly, luxury fashion are borne out empirically. To examine the current sustainability practices of the fashion

industry in more detail, this study applies the maturity curve of fashion supply chain transparency, developed by Muratore and Marques (2022), to compare the SCT practices of fast and luxury fashion brands that have their headquarters in Europe; a geographical area that is significantly invested in the apparel sector.

The paper is organised as follows: the literature review examines fashion SCs and considers SCT in fast and luxury fashion. Next, the methodology section articulates the research design, including data collection and data analysis, as well as the sample of fashion companies that were analysed. Empirical findings are then presented that compare SCT across fast and luxury fashion. Finally, the implications of the findings are discussed with respect to the fashion industry.

2. Literature Review

2.1 Fashion Supply Chains

Prior to the Industrial Revolution and the advent of clothing made using machinery, clothes were considered amongst a person's most valuable possessions (Crane, 2000). Brand new clothes were the preserve of the wealthy, with most people wearing used handed down garments (Ertekin and Atik, 2015). Cloth was frequently used as a substitute for gold and acted as a form of currency (Stallybrass, 1993) and garments, such as a working-class man's suit, were expected to last his lifetime (Crane, 2000). The mechanisation of garment production, inferior fabric quality and poor clothing construction have contributed to the decreased longevity of garments over the past 200 years and in consequence clothes have gradually lost their economic importance (Crane, 2000; Fletcher 2010). What has emerged prominently and significantly during this time period is fashion as an institution, regulating cyclical changes in dress and instigating a system of rules based on approval and acceptance (Ertekin and Atik, 2015).

Regardless of the focus of fashion (e.g. fast or luxury), all textiles are produced by SCs that often comprise multiple SC actors (Jones, 2002), with the downstream dominated by larger, powerful fashion retailers with an international presence (Olhager and Selldin, 2004). Conversely, upstream generally comprises numerous small manufacturing firms that have very limited power and control over the activities of the chain (Stengg, 2001). Until relatively

recently, fashion retailers worked directly with manufacturers, utilising centralised purchasing and extensive negotiations around prices, quality of goods, and delivery deadlines (Bruce and Moger, 1999). Globalisation, and the quest for SC optimisation, has introduced more intermediaries and has enabled brands to source international raw materials as well as to move the manufacturing process to countries where labour costs are low (Popp, 2000; Jones, 2002). Operationalising such practices can be profitable, however it poses SCT challenges (Garcia-Torres *et al.*, 2019; Khurana and Ricchetti, 2016; Perry *et al.*, 2015). For example, fashion SCs can be complex to manage due to short product life cycles, significant volatility and low predictability of demand (Bruce *et al.*, 2004; Christopher *et al.*, 2004; Fernie and Sparks, 1998).

2.2 Fast and Luxury Fashion Supply Chains

The term fast fashion refers to a customer-driven business strategy that focuses on developing an effective SC to meet consumer demand by quickly manufacturing on-trend garments (McNeill and Moore, 2015). Such garments are often copies of the most popular designs and styles from fashion magazines and fashion shows (Binet *et al.*, 2019; Christopher *et al.*, 2004). Fast fashion SCs are therefore structured in a way that enables speed; shortened production lead times, faster inventory turnover and high order fulfilment (Barnes and Lea-Greenwood, 2006). Achieving speed in this context is complex, and a high level of SC responsiveness and efficiency is required. Therefore, fast fashion SCs implement SCM strategies such as Just-in-Time sourcing (Bruce *et al.*, 2004), quick response systems (Fernie and Azuma, 2004; MacCarthy and Jayarathne, 2010), agile (Bruce *et al.*, 2004) and lean (Camargo *et al.*, 2020); all of which are valuable techniques to develop a competitive edge in the market. To keep costs low, SCs are horizontally integrated and often exploit manufacturing capabilities located overseas where the wages of garment workers are below what would be considered a ‘living wage’ (Bick *et al.*, 2018), which is not without controversy (Ray, 2022).

For example, in satisfying cost requirements, manufacturing practices may trade-off ethical conditions (McMaster *et al.*, 2020). Garment workers in low-cost manufacturing can work in unfavourable conditions, which include environmental pollution, health risks and human rights violations (Bick *et al.*, 2018). Moreover, the operations utilised to create fast fashion clothing are not sustainable, nor are the materials used; approximately 60% of clothing is made from petroleum and 30% is made from cotton (Ting and Stagner, 2023). The production of textile

fibres has one of the largest negative environmental impacts because it uses vast amounts of natural resources (Kumar *et al.*, 2022); more than 250,000 litres of water and 65,000 kilowatt hours of power are needed to turn a tonne of cotton into usable fabric (Garg, 2019). Almost 75% of this water is used simply to wash, bleach and dye the fabric (Garg, 2019), while the production of plastic fibres into textiles requires a significant amount of petroleum, which releases extremely hazardous pollutants such as volatile organic compounds, particulate matter and acid gases (Luz, 2007). Substantial ethical and environmental concerns are therefore often associated with the production of fast fashion.

In contrast to fast fashion, luxury fashion SCs are characterised by a limited number of SC actors (Zhang *et al.*, 2020). SC performance focuses on achieving excellent product and service quality whereby the control or reduction of costs are not key SC objectives (Kapferer and Bastien, 2012). Luxury fashion SCs are generally vertically integrated with the end-to-end control needed to ensure product quality and availability upstream and direct customer relationships downstream (Brun *et al.*, 2008). Luxury brands often own all of their manufacturing facilities, distribution channels and directly operated stores, which are all generally located in the country where the brand was founded (Caniato *et al.*, 2011). As an impact of globalisation, however, luxury brands have begun to expand their SCs by operating in countries other than that of the brand's origin, or by acquiring raw materials from a different country to where the final garment is produced (Arcuri and Giolli, 2022; Shen *et al.*, 2020), thus utilising horizontally integrated SCs (Robinson and Hsieh, 2016). Core competencies, such as the design phase, are kept in-house to ensure compliance with brand image and customer requirements, leaving only the non-critical, and most labour-intensive operations to be outsourced (Brun *et al.*, 2008).

Historically, luxury fashion SCs were rarely directly associated with environmental and social sustainability concerns due to their emphasis on distinctive, valuable, and rare materials that provide the buyer with the “dream element” (Yang *et al.*, 2017; p2). The conditions under which luxury garments have been produced or traded were therefore considered as secondary (Alabbasi, 2016). However, the sustainability credentials of luxury fashion has recently received increased attention due to shifting societal standards and consumer expectations (Winston, 2016; Campos Franco *et al.*, 2020). Luxury fashion is also experiencing increased pressure from fast fashion, due to its ability to offer increased product variety, worldwide sourcing and downward pricing pressure (Perry *et al.*, 2015). Indeed, luxury SCs are not

without sustainability scandals, with recent research showing how luxury brands have been destroying unsold inventory (causing waste and pollution during manufacturing) and exploiting workers for decades (Campos Franco *et al.*, 2020; Lembke, 2017). The increased focus on luxury fashion has thus highlighted concerning environmental and social practices.

2.3 Supply Chain Transparency and the Fashion Industry

SCT enables stakeholders to “see further” along a SC (Carter and Rogers, 2008, p. 370) by providing available and accessible information (Gardner *et al.*, 2019). For SCT to be effective, information is shared across all tiers of a SC to permit the tracking of a product (Doorey, 2011; Montecchi *et al.*, 2021; Ospital *et al.*, 2023). This perspective follows the line of reasoning according to which transparency equates to traceability (Sunny *et al.*, 2020). Motivations for SCT include preventing SC sustainability failures and incentivising consumers’ purchasing intentions (Garcia-Torres *et al.*, 2022). In addition, higher levels of SCT have been linked to more favourable market responses (Doorey, 2011; Egels-Zandén *et al.*, 2015) as transparency can enhance a company’s brand image and reputation, which in turn may result in a competitive edge in the market (Francisco and Swanson, 2018; Kajla *et al.*, 2023). In providing accurate information about a SC, companies make available the conditions under which goods are produced and traded which may garner consumer trust and support (Sodhi and Tang, 2019). The disclosed information does not necessarily have to be positive to increase consumer trust; even genuine negative information disclosure demonstrates the company’s honesty and transparency (Kalkanci *et al.*, 2016).

Whilst SCT has many advantages, its realisation poses several challenges. Acquiring precise data about all SC actors is a challenging, lengthy and expensive task (Foerstl *et al.*, 2015; Shao *et al.*, 2018), with some actors unwilling to share competitive information (Hannibal *et al.*, 2022; Montecchi *et al.*, 2021; Sodhi and Tang, 2019). This lack of sharing often results in poor SC information disclosure beyond Tier 1 of many SCs (Nimbalkar *et al.*, 2013). When sharing sustainability information, firms typically share that which is positive and exclude anything negative (Chen *et al.*, 2015; Macready *et al.*, 2020). Disclosing information thoroughly and openly (particularly as regards SC environmental and social performance) presents the risk of eliciting unfavourable reactions from customers, governments and investors, which may result in damaging reputation and market competitiveness (Gardner *et al.*, 2019; Gualandris *et al.*,

2015). However, failing to fully disclose pertinent information may be disadvantageous in terms of accountability to prospective investors (Chen *et al.*, 2015; Macready *et al.*, 2020). Moreover, despite the presence of new technologies to track and share SC information (Montecchi *et al.*, 2021), many actors are not technologically developed, and may be unwilling or unable to invest significant capital to integrate these technologies into their SCs (Sunny *et al.*, 2020; Gligor *et al.*, 2022).

The interest in SCT within the fashion industry has accelerated in recent years. In parallel with ethical scandals, the increasing environmental impact of the industry on climate change is raising concerns among stakeholders, including consumers, governmental organisations and NGOs, who are asking for higher levels of SCT (Brun *et al.*, 2020). Consumers are putting pressure on fashion brands through their shopping choices by increasingly purchasing clothes produced under sustainable and ethical conditions (Schäfer, 2023). Governments exert pressure on companies to disclose information through the arrangement of regulations and laws aimed at ensuring sustainable SCM (Nath *et al.*, 2021). While SCT in the fashion industry is receiving increasing attention from scholars, there are a dearth of studies comparing the SCs of fast and luxury fashion in Europe. This paper therefore investigates, and compares, SCT in both luxury and fast fashion supply chains.

3. Methodology

We apply the maturity curve of fashion supply chain transparency, developed by Muratore and Marques (2022), to compare SCT in fast and luxury fashion. The original study by Muratore and Marques (2022) examined 20 Brazilian fashion brands and found heterogeneity in terms of the fashion brands' sustainability practices. We examine 40 European brands and extend the work of Muratore and Marques (2022) by offering a segmented analysis of fast and luxury fashion. The original framework is adapted to include a quantitative dimension which permits comparison between and within the fast and luxury segments. Muratore and Marques (2022) developed 5 Analytical Questions (AQs) to guide their study. In adopting a quantitative approach to data analysis, we have removed the original AQ1 (*what are the words used to communicate sustainability?*) as this was not the focus of our analysis, and retain the original 4 AQs with minimal changes (see Table 1 for details). In replicating Muratore and Marques' (2022) study, we address recent calls to continually validate SCM knowledge (Gattiker *et al.*,

2022; Pagell, 2021; Davis *et al.*, 2023). As with the original study, and given the sensitive nature of SCT as highlighted earlier, this research utilises publicly available secondary data that is published by the brands under examination. Research using secondary data is reliable as the data analysed are available in a form that may be checked relatively easily by others (Descombe, 2017), which means that the data and research findings are more open to public scrutiny.

[INSERT TABLE 1 HERE]

Non-probability sampling was used for this study (Vehovar *et al.*, 2016) with 20 fast fashion and 20 luxury fashion companies across Europe selected for analysis. Historically, Europe has produced some of the most significant textile innovations alongside some of the leading global fashion brands. The European fashion industry generated €448,151,310,000 in 2023, with an expected annual growth of 2.29% (Statista, 2023). As per the original study by Muratore and Marques (2022), to be included in the study all companies had to be participants of the Fashion Transparency Index (FTI) (Fashion Revolution, 2023). For fast fashion companies to be included in this study, they had to be headquartered in Europe and have more than 250 employees. For luxury fashion companies to be included, they had to have a European headquarters, have more than 250 employees and have been present at least once in either the Milan or Paris Fashion Week in the years 2022 and 2023. Large fashion companies were selected over smaller ones as their SCs are more likely to have multiple tiers and therefore have more information available online. In this sense, companies with more than 250 employees were considered as large enterprises (as suggested by Lukács (2005)). Table 2 shows the companies chosen for each segment with their relevant headquartered location and number of employees.

[INSERT TABLE 2 HERE]

3.1 Data Collection and Analysis

As with the original study, and to explore how fast and luxury fashion companies communicate and disclose information about their SCs to their stakeholders, publicly available documentation was collected from their websites (Muratore and Marques, 2022). Data were collected between June-August 2023. This documentation included (where available) the

company's sustainability strategy, supplier lists (including the names of the suppliers and their main duties within the SC), audit results, and procurement practices. Collecting data from self-reported information on company websites is a method that has been proven to be effective in previous studies including Marshall *et al.* (2016), Mollenkopf *et al.* (2022) and Jose and Lee (2007).

Guided by the AQs, each company was categorised according to a level of SCT as per the maturity curve of fashion supply chain transparency (Muratore and Marques, 2022). In developing this maturity curve, Muratore and Marques (2022) drew on Lamming *et al.* (2001) and the transparency metaphor, which alludes to the geological characteristics of how light permeates materials. The three classification categories are Opaque (1), Translucent (2) and Transparent (3). In building on and augmenting the original study, we focus on quantitative data to enable each category to correspond with a numerical score to facilitate the identification of the final level of transparency across the four AQs. The original study focused on qualitative data and we wished to extend this work by enabling each company to be assessed in terms of an overall level of transparency across all 4 AQs. Table 3 details the 4 AQs that were used in the analysis alongside the relevant transparency classification and associated score.

[INSERT TABLE 3 HERE]

4. Findings and Discussion

Table 4 shows the results of the 40 fashion companies across the 4 AQs, with the scores relating to the transparency classification of Opaque (1), Translucent (2) or Transparent (3). This scoring offers an extension to the work of Muratore and Marques (2022) as it adds a quantitative dimension to the original qualitative framework.

[INSERT TABLE 4 HERE]

4.1 Accessibility of Sustainability Performance Information (AQ1)

When observing the four criteria that have an impact on SCT, AQ1 (*the accessibility of sustainability information*) showed the highest scores. Only 3 fashion brands' websites failed

to include any sustainability information, which corresponds to 7.5% of all companies analysed. Similarly, 42.5% of all fashion companies scored 2 (Translucent) meaning that the word “sustainability” was not available on the first page of their website, but sustainability information was available on the second or third page visited. Each of these companies organised the sustainability information on their website in different ways; for example, some companies included it in their ‘About us’ page, whereas others placed it in their ‘The Company’, ‘Corporate’, or ‘Modern Slavery Act’ pages, showing a lack of consistency across brands. Half of the companies (50%) scored 3 (Transparent) in this AQ, meaning that it only took 1 click to find the sustainability information, as the word “sustainability” was present on the first page of their website. This demonstrates that half of the fashion companies are deliberately making sustainability information easily accessible on their websites as part of their transparency objectives. The high percentage of brands in the Translucent and Transparent classifications (92.5% in total) confirm the findings from previous studies, with Hosseini *et al.*, (2018) stating that information accessibility is a primary requirement for achieving a high degree of SCT.

Fast fashion and luxury fashion companies scored similarly on this AQ, although luxury brands demonstrated slightly better accessibility to sustainability information, with 55% of luxury fashion companies being classified as Transparent compared to only 45% of fast fashion brands. Additionally, in the fast fashion segment, 2 companies scored 1 (Opaque), whereas only 1 luxury company was classified as Opaque. A particularly interesting finding is that even though some companies belong to the same company group, they scored differently on this AQ. For example, Zara, Stradivarius, Bershka, and Pull and Bear all belong to the Inditex group; however, 3 of these companies scored 2 (Translucent) on this AQ, but Stradivarius’s sustainability information was not found, and they therefore only scored 1 (Opaque).

4.2 Traceability of Suppliers (AQ2)

AQ2 assessed the level of traceability across the company’s SC. Most fashion companies (57.5%) scored 1 (Opaque) for this AQ, meaning that they either did not disclose a supplier list at all, or they only disclosed their Tier 1 suppliers. The 8 fast fashion companies that were classified as Opaque either did not publicly disclose their supplier list, or only disclosed the bare minimum (i.e. their Tier 1 suppliers). Conversely, of the 15 luxury fashion brands that are

classified as Opaque in this AQ, only 1 brand (Valentino) disclosed their Tier 1 suppliers, while the rest have not publicly disclosed any information on their suppliers. To be categorised as Translucent, companies must disclose their Tier 2 supplier list as a minimum (Khurana and Ricchetti, 2016); this is because the first stages of the production of fashion items usually occur in suppliers' facilities where regulations are not respected. Therefore, these suppliers are usually non-compliant with the minimum standards that the fashion company requires (Labowitz and Baumann-Pauly, 2014).

For this AQ, fast fashion companies performed better, as they disclosed more supplier information than their luxury counterparts. Indeed 35% of fast fashion companies scored 3 (Transparent) for this AQ compared with 20% of luxury companies. Similarly, only 40% of fast fashion brands scored 1 (Opaque) compared to 75% of luxury fashion companies. This shows that while there is still a long way to go for these companies to be considered transparent, fast fashion companies are perhaps nearer this goal than their luxury counterparts.

4.3 Audit Results Disclosure (AQ3)

AQ3 concerns the level of disclosure of audit results. Across all 40 fashion companies 2.5% scored 3 (Transparent), 52.5% scored 2 (Translucent) and 45% scored 1 (Opaque). It is no surprise that most companies scored Translucent, as companies tend to frequently cite the term "supplier audit result" in their reports; however, most of the time the information disclosed within these reports lacks detail, as it only mentions the amount of suppliers audited (including a percentage or number of suppliers compliant and non-compliant).

Fast fashion companies performed better on this AQ, showing that they are better at disclosing more detailed audit results than luxury brands. 65% of fast fashion companies scored 2 (Translucent) or above when compared to 45% of luxury brands, whilst only 35% of fast fashion companies scored 1 (Opaque) compared to 55% of their luxury counterparts. In fact, the only brand that scored 3 (Transparent) for this AQ was OVS, a fast fashion brand. OVS was the only fashion company that publicly evaluated each supplier separately according to some defined criteria; this demonstrates real commitment in disclosing detailed information. Therefore, the results show that fashion companies generally tend to only vaguely disclose audit results (if at all), possibly with the aim of keeping their SC information private.

4.4 Purchasing Practices Disclosure (AQ4)

This AQ (which focused on the companies' level of disclosure of their purchasing practices) showed the second-best scores across all 40 fashion brands; across the 40 fashion companies, 27.5% of companies scored 1 (Opaque), 35% scored 2 (Translucent) and 37.5% scored 3 (Transparent), showing that there is a relatively equal spread among the companies.

However, there are clear differences between fast fashion and luxury fashion brands for this AQ; 50% of luxury fashion brands were classified as Opaque (1) on this AQ (as they either did not publicly publish their Purchasing Code of Conduct or it only contained general information for the buyer-supplier relationship), whilst only 5% of fast fashion brands were classified in this way. In fact, a high proportion of fast fashion brands (50%) were classified as Translucent (as they disclosed at least one detailed purchasing practice and demonstrated an improvement towards achieving transparency), whilst 45% of them were classed as Transparent (as they disclosed at least two detailed purchasing practices in their purchasing code of conduct). In comparison, only 20% and 30% of luxury fashion companies scored 2 (Translucent) and 3 (Transparent) respectively. This suggests that fast fashion companies can be considered more progressive when it comes to disclosing their purchasing practices, while the majority of luxury fashion companies tend to be more secretive. Most luxury brands only tend to disclose a general supplier code of conduct, as this has become common practice; however, this is still considered a basic practice that companies use in an attempt to make themselves appear to be more transparent than they really are (Khurana and Ricchetti, 2016; Mejias *et al.*, 2019).

4.5 Companies that scored 1 (Opaque) across all AQs

One company (Max Mara) has been classified overall as Opaque, as they scored 1 across all the 4 AQs due to a general lack of information about sustainability on their website. This finding is supported by the Fashion Revolution Index, which classified Max Mara as one of the least transparent companies that they have ever researched (Feldner-Busztin, 2022).

4.6 Companies that scored 3 (Transparent) across all AQs

Only 1 company has been classified overall as Transparent (having scored 3 across all 4 AQs). This company is OVS, a fast fashion brand. Since OVS is the only company that scored the maximum across the board, it is important to understand why they performed so well. OVS's sustainability information was very easy to access, with the word "sustainability" present on the first page of their online store. Moreover, it demonstrated high traceability across its SC by disclosing lists of suppliers up to Tier 3, something that is crucial when attempting to track where the fashion items are produced and under what conditions. Furthermore, OVS was the only company that disclosed detailed results of its audits (AQ3) by scoring its suppliers publicly based on clearly defined criteria. Lastly, OVS disclosed 3 detailed purchasing practices in its purchasing code of conduct, making it Transparent about its supplier relations. All of this suggests that OVS scored 3 (Transparent) across all four AQs due predominantly to its commitment to disclosing detailed information to its stakeholders, making them feel more engaged with the operation of their SC.

4.7 Comparison between fast and luxury fashion

Overall, fast fashion companies scored Opaque 18 times, Translucent 36 times, and Transparent 26 times, whereas luxury fashion companies scored Opaque 37 times, Translucent 22 times, and Transparent 21 times. This shows that neither segment can be classified as Transparent overall, as fast fashion companies scored mostly in the Translucent classification and luxury companies scored mostly in the Opaque classification. However, the above shows that fast fashion companies outperformed their luxury fashion counterparts, highlighting that fast fashion companies appear to be more effective at implementing SCT than luxury brands. This is also made noticeable by the fact that fast fashion brands performed better than luxury brands in 3 out of the 4 AQs. The only area where luxury fashion companies outperformed fast fashion brands was regarding the accessibility of their sustainability information (where 11 luxury brands scored 3 compared to 9 fast fashion brands); while this is undoubtedly crucial to achieving SCT, it is considered by some as only the first step in achieving a deeper level of transparency (Hosseini *et al.*, 2018). The results therefore show that luxury fashion brands focus on making sustainability information more easily accessible whilst avoiding disclosing private detailed information about their SC, such as the supplier list or the supplier audit results. It could therefore be suggested that some luxury companies are promoting sustainability information on their websites which is not necessarily as accurate as might be inferred.

The results also suggest that all fashion companies in the study have begun engaging more in transparency by disclosing information. However, it is clear that both fast fashion and luxury fashion companies have room for improvement in terms of their level of SCT; only 1 company out of 40 was classified as fully Transparent, suggesting that the majority of fashion companies in the study should consider increasing their levels of SCT.

5. Implications and Conclusions

This study has compared the degree of SCT in fast and luxury fashion brands across Europe. The findings have shown that while there are positive signs of companies engaging in transparency activities, it is clear that there is still a long way to go for this industry in terms of SCT. This finding is in line with that of the original study by Muratore and Marques (2022) who found that sustainability advancement in the fashion industry is limited and heterogeneous. In applying the maturity curve of fashion supply chain transparency (Muratore and Marques, 2022) to our sample, our quantitative analysis suggests slightly improved findings than that of the original study that focused on Brazilian fashion brands. The original study found a reasonable level of traceability, however there were significant shortcomings in terms of disclosure of supplier sustainability conditions and purchasing practices. Our findings paint a slightly more optimistic picture, with half of the companies scoring the maximum of 3 for accessibility of sustainability information and all of them communicating their sustainability credentials in some form. This differs from the Brazilian sample whereby for some brands there was no sustainability information at all. As with the original study, there was a reasonable level of traceability, however supplier lists beyond Tier-1 were markedly lacking. For disclosure of audit results and purchasing practices, the results were mixed yet slightly more positive than those of the original study. However, whilst these findings may be slightly more encouraging than the original study, it is important to note that across all AQs there were high numbers of Opaque and Translucent scores. This has significant implications for the fashion industry, particularly if, as previously noted, consumers are seeking assurance of sustainability credentials to influence their purchase intentions (Grazzini, 2021).

When comparing fast fashion with luxury fashion, the results showed that fast fashion companies demonstrate higher levels of SCT across all 4 AQs used in the study. While this may seem a surprising outcome, it shows that fast fashion companies' increased willingness to

embrace SCT is beginning to pay dividends in terms of being able to evidence transparency. It also suggests that luxury fashion companies are more wary of sharing detailed information about their SCs; perhaps these brands have more to lose by being Transparent, either in terms of losing their competitive advantage, or even being found to be less sustainable than they are publicly claiming.

The study offers the following recommendations that can be used to improve the SCT of the fashion industry. Firstly, the scoring system developed to assess the 40 fashion companies in this study can be utilised by other fashion companies to evaluate and benchmark against their closest competitors, as well as the company that has obtained the highest SCT score. This scoring system may also give fashion brands ideas for how to improve their current level of SCT; be that through making their sustainability practices more accessible, increasing the level of traceability along their SCs, conducting additional audits and disclosing more information around their results, and/or making more of their purchasing practices publicly available.

Secondly, the findings suggest a requirement for SCT to be placed squarely on the fashion industry's continuous improvement agenda. In order to demonstrate SCT, companies should not consider transparency initiatives as time-bound but rather accept that they are part of a continuous improvement process (Fraser *et al.*, 2020; Adhi Santharm and Ramanathan, 2022). Key Performance Indicators (KPIs) can be utilised, allowing companies to evaluate current status, pinpoint areas for improvement, and maintain a competitive plan for development (Shahin and Mahbod, 2007). Such an intervention is equally applicable to both fast and luxury fashion. Strong SC relationships enable trust-based information-sharing practices which are vital for improved SCT. To achieve this, top management commitment, leadership, and trust are required (Brun *et al.*, 2020), in addition to sufficient investment in supplier development activities (Touboullic and Walker, 2015). As fashion SCs are characterised by high complexity (due to the increasing number of suppliers upstream in the chain), achieving public information disclosure is often difficult (Egels-Zandén *et al.*, 2015). Increased supplier involvement can be helpful in addressing this complexity (Xu *et al.*, 2019). Such stronger relationships encourage open and honest discussions across the entire SC, creating a mutual understanding of the importance of SCT that aims to improve all actors' willingness as regards long-term engagement in improving transparency (Tsai and Ghoshal, 1998). Luxury fashion brands are likely to have an advantage in building stronger relationships with suppliers when compared to their fast fashion counterparts as they traditionally utilise vertically integrated SCs.

Finally, it is recommended that fashion companies partner with NGOs and academia, an approach that has consistently been shown to improve SCT practices across the whole SC (Chen *et al.*, 2017; Islam and van Staden, 2022). These types of partnerships regularly establish guidelines for increasing the sustainability standards of fashion company operations; indeed, the pressure from NGOs (Govindan *et al.*, 2021; Meixell and Luoma, 2015) and academia (Hanieh *et al.*, 2015) has been shown to positively impact sustainable development and significantly improve SCT. The detailed guidelines created by these partners enables a more straightforward implementation of SCT practices, as fashion companies are given clearer direction on the steps to take (Boydell and Rugkåsa, 2007). It is likely that luxury fashion brands will find it easier to achieve these partnerships due in part to their higher profiles. There is also the potential for NGOs and academia to refuse to partner with fast fashion brands due to their perceived reputation for engaging in unethical practices (Liu *et al.*, 2020).

Whilst this study highlights sustainability shortcomings in fast and luxury fashion, it is not without its limitations. We acknowledge that the findings of the study are solely based on the information disclosed by the fashion companies on their individual websites. The accuracy and credibility of this data has not been empirically tested by this study, and as such could be explored further in future research to assess whether the data that companies disclose on their websites is accurate and reliable. Similarly, while the study utilised quantitative data to provide a numerical score for each company's level of transparency across the four AQs, this scoring method does not produce statistically significant results. We used quantitative data in this way to provide a concise summary of a large amount of information, making the information more accessible and understandable to the reader (Cooksey, 2020, p61); however, we appreciate that in doing this there is a risk of data oversimplification, with individual nuances and variability having the potential to be concealed (Ma, 2020). Nevertheless, quantitative data like these are seen as a strong starting point for more complex statistical analysis in future studies (Fulk, 2023; Tabachnick and Fidell, 2019, p53). Future research could therefore build on our results and utilise methods such as questionnaire surveys with the fashion companies identified here to produce statistically significant insight on the specific reasons for their current levels of SCT. Another suggested avenue would be to assess how much SCT influences the purchase intentions of consumers of fashion products (particularly millennials and Generation Z); participants could first be asked how likely they were to purchase from the companies identified in this study before being shown the results of this study. Participants could then be

asked how likely they would be to buy from each company now knowing the SCT practices of each company, with the results highlighting how important SCT is to consumers' purchasing intentions. Finally, while all of the selected fashion companies in this study operate on a global scale, each of them has its headquarters in Europe. This is justified because the majority of the major fashion brands were founded in Europe. However, this selection limits the generalisability of the findings to broader contexts. A potential future research avenue would be to conduct a similar study in different geographical areas to encompass a more diverse range of companies and further our understanding of SCT in the fashion industry. Such studies could also compare the current status of SCT in fast and luxury fashion companies across different continents.

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Tables

Original Analytical Questions	Revised Analytical Questions
<i>AQ1. What are the words used to communicate sustainability?</i>	<i>Not used.</i>
<i>AQ2. How accessible is the firm's sustainability information?</i>	<i>AQ1. How easily accessible is the company's performance information about sustainability?</i>
<i>AQ3. What is the level of traceability along the supply chain?</i>	<i>AQ2. What is the level of traceability along the company's supply chain?</i>
<i>AQ4. What is the level of disclosure of supplier sustainability conditions (particularly audit reports)?</i>	<i>AQ3. What is the level of disclosure of audit results?</i>
<i>AQ5. What is the level of disclosure regarding purchasing practices?</i>	<i>AQ4. What is the level of disclosure of purchasing practices?</i>

Table 1. Analytical Questions used to Guide the Research

Brand Name	Headquarters	Number of Employees	Fashion Segment
Zara	Spain	174,000	Fast Fashion
H&M	Sweden	106,522	Fast Fashion
New Look	United Kingdom	9,800	Fast Fashion
Stradivarius	Spain	10,000	Fast Fashion
Bershka	Spain	18,917	Fast Fashion
Reserved	Poland	1,037	Fast Fashion
OVS	Italy	7,000	Fast Fashion
C&A	Belgium and Germany	50,000	Fast Fashion
Primark	Ireland	72,000	Fast Fashion
Boohoo	United Kingdom	2,352	Fast Fashion
PrettyLittleThing	United Kingdom	2,700	Fast Fashion
Calzedonia	Italy	40,740	Fast Fashion
United Colors of Benetton	Italy	1,500	Fast Fashion
Mango	Spain	14,082	Fast Fashion
River Island	United Kingdom	10,632	Fast Fashion
Next	United Kingdom	43,040	Fast Fashion
Kiabi	France	10,000	Fast Fashion
Bonprix	Germany	2,500	Fast Fashion
Matalan	United Kingdom	13,000	Fast Fashion
Pull and Bear	Spain	3,000	Fast Fashion
Balenciaga	France	2,559	Luxury Fashion
Louis Vuitton	France	147,715	Luxury Fashion
Gucci	Italy	19,492	Luxury Fashion
Valentino	Italy	3,484	Luxury Fashion
Moncler	Italy	6,310	Luxury Fashion
Ermenegildo Zegna	Italy	6,500	Luxury Fashion
Hermès	France	19,686	Luxury Fashion
Dior	France	12,849	Luxury Fashion
Fendi	Italy	3,911	Luxury Fashion
Hugo Boss	Germany	6,930	Luxury Fashion
Prada	Italy	13,186	Luxury Fashion
Bottega Veneta	Italy	2,728	Luxury Fashion
Saint Laurent	France	4,433	Luxury Fashion
Armani	Italy	7,309	Luxury Fashion
Dolce & Gabbana	Italy	3,150	Luxury Fashion
Burberry	United Kingdom	8,804	Luxury Fashion
Chanel	United Kingdom	20,847	Luxury Fashion
Salvatore Ferragamo	Italy	3,887	Luxury Fashion

Max Mara	Italy	5,500	Luxury Fashion
Versace	Italy	1,500	Luxury Fashion

Table 2. Sample Profile

Analytical Questions (AQs)	Transparency Classification		
	<i>Opaque</i> (Score 1)	<i>Translucent</i> (Score 2)	<i>Transparent</i> (Score 3)
1. How easily accessible is the company's performance information about sustainability?	Information not found	Information found within 2/3 Clicks	Information found within 1 Click
	Sustainability information was not mentioned in the company's store website.	Sustainability information was available but it was not straightforward to find it.	The word 'Sustainability' was available on the first page of the company's store website and the sustainability information was found easily
2. What is the level of traceability along the company's supply chain?	Not found / Tier 1 suppliers in the list	Tier 1 and Tier 2 suppliers in the list	3+ Tiers suppliers in the list
	Company did not disclose their supplier list or Companies disclosed their supplier list with information of Tier-1 suppliers only	Company disclosed their supplier list with information on at least one Tier-2 supplier	Company disclosed their supplier list with information on at least one Tier-3 supplier
3. What is the level of disclosure of audit results?	Not found	Audit results: general information disclosed	Audit results: detailed information disclosed
	Company did not disclose information regarding the audit results of their suppliers	Company disclosed general audit results such as percentage of suppliers audited and main non-compliances	Company disclosed audit results by giving a score to each supplier audited and for each item evaluated
4. What is the level of disclosure of purchasing practices?	Not Found / Purchasing Code of Conduct presents only general information	Purchasing Code of Conduct presents 1 detailed purchasing practice	Purchasing Code of Conduct presents at least 2 detailed purchasing practices
	Purchasing Code of Conduct not publicly published or Purchasing Code of Conduct only contains general information for the buyer-supplier relationship	The Purchasing Code of Conduct of the company is presented in detail; it includes 1 purchasing practice among: -Payment schedule -Check supplier capacity -Adherence to international standards -Overtime control	The Purchasing Code of Conduct of the company is presented in detail; it includes at least 2 purchasing practices among: -Payment schedule -Check supplier capacity -Adherence to international standards -Overtime control

Table 3. Detailed Map of Analytical Questions with Relevant Supply Chain Transparency Classification

Fashion Brand	AQ1 – How easily accessible is the company’s performance information about sustainability?	AQ2 – What is the level of traceability along the company’s supply chain?	AQ3 – What is the level of disclosure about audit results?	AQ4 – What is the level of disclosure of purchasing practices?
Zara	2	1	2	2
H&M	3	2	2	3
New Look	3	3	2	3
Stradivarius	1	1	2	2
Bershka	2	1	2	2
Reserved	2	1	2	3
OVS	3	3	3	3
C&A	3	3	1	3
Primark	2	1	1	2
Boohoo	3	2	2	2
PrettyLittleThing	3	2	2	2
Calzedonia	2	3	1	2
United Colors of Benetton	3	3	2	3
Mango	3	3	1	3
River Island	3	1	1	2
Next	2	3	2	3
Kiabhi	1	1	2	1
Bonprix	2	2	1	2
Matalan	2	2	1	3
Pull and Bear	2	1	2	2
Balenciaga	2	1	1	1
Louis Vuitton	3	1	2	3
Gucci	2	3	2	1
Valentino	2	1	1	1
Moncler	3	1	2	3
Ermenegildo Zegna	3	3	1	1
Hermès	3	1	2	1
Dior	3	1	2	3
Fendi	3	3	2	3
Hugo Boss	3	2	1	2
Prada	3	3	1	2
Bottega Veneta	3	1	1	1
Saint Laurent	3	1	2	1
Armani	2	1	2	1
Dolce & Gabbana	2	1	1	1
Burberry	2	1	1	3
Chanel	2	1	2	2
Salvatore Ferragamo	3	1	1	3
Max Mara	1	1	1	1
Versace	2	1	1	2

Table 4: Findings Showing Level of Transparency for each Fashion Brand as per Analytical Questions (1 = Opaque, 2 = Translucent, 3 = Transparent)