



Sufficient consumption as a missing link toward sustainability: The case of fast fashion

Beatriz Garcia-Ortega^{a,*}, Javier Galan-Cubillo^b, F. Javier Llorens-Montes^c,
Blanca de-Miguel-Molina^a

^a Department of Management, Universitat Politècnica de València, Camí de Vera s/n, 46022, Valencia, Spain

^b Doctoral Program in Business Management, Universitat Politècnica de València, Camí de Vera s/n, 46022, Valencia, Spain

^c Department of Business Administration, University of Granada, Paseo de Cartuja s/n, 18071, Granada, Spain

ARTICLE INFO

Handling Editor: Cecilia Maria Villas Bôas de Almeida

Keywords:

Fast fashion
Sufficient consumption
Sustainability
Business strategy
Anti-consumerist washing
Circular economy

ABSTRACT

The fashion industry has been driven by limitless consumption-led growth spearheaded by companies in the fast fashion segment, with a dominant business model based on massive accelerated demand, production, consumption, and disposal. Despite companies' efforts to decouple the pursuit of growth from its negative impacts, a more sufficiency-driven approach seems imperative to curb consumerism and contribute more effectively to sustainability. This study draws on the literature to build a three-pillar framework of potential strategies to enable fashion companies to foster sufficient consumption and reduce dependence on the sale of new items, with benefits expected for both consumers and companies. Subsequently, it uses multiple case study to examine qualitatively the annual reports issued during 2013–2014 and 2020–2021 by a sample of ten top companies in this segment. The goal is to assess whether these companies are embracing such strategies, what (if any) evolution occurs between these two periods, whether the 2030 Agenda with its SDG12 'Responsible consumption and production' plays a mediating role in their adoption, and what is the logic behind such evolution. The results show that, although such adoption is gaining momentum, companies tend first to embrace strategies with less impact on their traditional modus operandi. Further, the laxity of SDG12 enables companies to profess commitment even when not addressing any of the strategies to foster sufficient consumption. This study aims to give actors critical awareness of this issue and provide practical guidance for managers to adopt and combine these strategies decisively to fully embrace the principles of circular economy and a more holistic approach to sustainability. It also advises companies to avoid the risk of 'anti-consumerist washing'—a newly identified variant of greenwashing—and proposes to study a 'hierarchical pyramid of business strategies to rationalize consumption'.

1. Introduction

Led by global brands in a dynamic competitive market (Gazzola et al., 2020), the fashion industry carries very significant weight in the global economy. Also exploitative, fashion is one of the most relevant sectors in addressing sustainability. It is embedded in the dominant consumption-led growth paradigm (Cohen et al., 2017), with a predominantly wasteful linear economy model consisting of mass accelerated production, consumption, and disposal (Brydges, 2021). Despite companies' tremendous efforts to decouple growing production from its negative impacts, fashion is one of the most resource-consuming and

polluting industries (Niinimäki et al., 2020; Bick et al., 2018), with cumulative effects that may extend over centuries. It depletes limited resources such as raw materials, freshwater, land, and energy, and uses hazardous chemicals and plastic microfiber that pollute water and often end up in oceans. Finally, it generates more greenhouse gases worldwide than international flights and maritime shipping combined, and has other negative impacts related to working conditions and social inequalities (Niinimäki et al., 2020; Bick et al., 2018). Worse, such negative impacts disproportionately affect emerging countries, where most of the production occurs (Khurana and Muthu, 2022).

Reversing this situation requires a more ambitious holistic approach

* Corresponding author.

E-mail addresses: beagaror@doctor.upv.es (B. Garcia-Ortega), jagacu@doctor.upv.es (J. Galan-Cubillo), florems@ugr.es (F.J. Llorens-Montes), bdemigu@omp.upv.es (B. de-Miguel-Molina).

<https://doi.org/10.1016/j.jclepro.2023.136678>

Received 30 August 2022; Received in revised form 24 February 2023; Accepted 3 March 2023

Available online 4 March 2023

0959-6526/© 2023 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

to companies' circular economy strategies (Bjørnset et al., 2021). Fashion companies have focused more on social and operational issues, responsible procurement and supply chain management, production, and operations. They do this through strategies such as energy efficiency and eco-design to reduce resource consumption, eliminate hazardous substances, and recycle. They have paid less attention, however, to responsible consumption of their products via eco-efficient use (Niinimäki et al., 2020) or more moderate consumption through a sufficiency-driven approach (Bocken and Short, 2016). Companies should focus more on internal loops in the circular economy, addressing responsible consumption of their products and extending products' duration in use, slowing internal loops before downgrading, recycling, or disposal. Lengthening the time products are in use—and at the same level of use—moderates the pace of demand, production, and consumption of new resource-intensive products, slowing the resource loop and negative impacts (Bocken and Short, 2016). For example, extending the average life of clothing by nine months would reduce carbon emissions, water use, and waste generation by around 30% (Clothes, 2017). Yet so-called fast fashion firms appear to be moving in precisely the opposite direction, inducing repeated buying of new products and disposal of 'old' ones (Joy et al., 2012). They spearhead runaway consumerism through their design agility, supply chain efficiency, low prices, and further interaction with their consumers on the Internet and social networks (Buzzo and Abreu, 2019).

The 2030 Agenda for Sustainable Development's action plan—whose list of Sustainable Development Goals (SDGs) went into effect January 1, 2016—attempts to balance economic, societal, and environmental issues. It includes SDG 12 'Responsible Consumption and Production' and a political Declaration endorsed by 193 countries. This milestone is accelerating initiatives in the public domain, with many countries fitting their policies to this framework and adopting it as a social contract (Boto-Álvarez and García-Fernández, 2020). Born March 14, 2019 under the umbrella of the 2030 Agenda, the United Nations Alliance for Sustainable Fashion initiative aims to reduce the negative environmental and social impacts of fashion due to procurement of raw materials, production, distribution, consumption, and disposal. Similarly, international organizations such as the European Union are leading initiatives to achieve a more sustainable fashion industry inspired by the 2030 Agenda. Examples are the "New Circular Economy Action Plan" and the "EU Strategy for Sustainable Textiles." At the same time, multiple scholars have sharply criticized the 2030 Agenda and its SDGs. Among other reasons, they cite the Agenda's inconsistencies, misidentification of the root causes of systemic problems in the prevailing growth paradigm, lack of specificity, and need for more specific targets, monitoring, and sanction mechanisms (e.g., Macellari et al., 2021; Sachs, 2017; Gasper et al., 2019). These criticisms may delay the private domain's adoption of initiatives needed to fight consumerism and foster more sufficient consumption.

In this context of challenges to the 2030 Agenda and subsequent public initiatives, we believe it is extremely important to investigate the framework of potential strategies by which fashion companies can foster more sufficient consumption patterns as one missing link in achieving sustainability. We must examine whether top firms in the fast fashion arena, with their traditional business concept fostering runaway consumerism, are evolving toward a more sufficiency-driven approach that embraces such strategies, as well as the mediating role of the 2030 Agenda and the logic governing adoption of these strategies.

We thus pose the following research questions: (RQ1) What potential strategies for fashion companies can mitigate existing consumerism and decouple it from these businesses' economic results? (RQ2.1) Through which strategies (if any) are top fashion companies in the fast fashion segment fostering sufficient consumption to achieve a more sufficiency-driven approach? (RQ2.2) What is the evolution (if any) of the strategies adopted under the 2030 Agenda framework and subsequent initiatives in the public domain? (RQ2.3) What is the mediating role of the 2030 Agenda, with its SDG12 'Responsible Consumption and Production', and

the logic behind this evolution or lack of it?

To further contextualize this research and address the first research question, Section 2 introduces sufficient consumption, presents fast fashion firms as icons of dominant consumerism, and develops a framework with three main pillars to classify potential strategies enabling fashion companies to mitigate consumerism and decouple it from their economic results, with benefits expected for companies and consumers. Section 3 describes the data and methodology followed to answer the second set of research questions. We analyze publicly available corporate social responsibility, sustainability, or integrated reports from 2013/2014 and 2020/2021 of a sample of ten top firms related to fast fashion and considered as benchmarks in their segment. Section 4 presents and discusses the results, and Section 5 explains the conclusions, including the main implications and contributions. Finally, Section 6 discusses the study's limitations and future research lines. Despite the importance of fighting exacerbated consumerism and promoting responsible consumption of fashion, this study is to our knowledge the first to focus primarily on this issue from this perspective and with this approach and scope.

The study's industry and managerial implications include a critical review to increase fashion companies' and their senior management's awareness of the need to foster sufficient consumption and decouple consumerism from business economic results to achieve better prospects for the firm and shared benefit with society. In this respect, we provide practical guidance to inspire managers on potential beneficial strategies and synergies they may trigger or further explore, and benefits that can be achieved and emphasized in their communication. Our findings may also help consumers and investors appraise companies from this perspective and make better-informed decisions, and help governments and other actors promote more sustainable consumption patterns.

The study's theoretical implications advance the literature by identifying sufficient consumption as a missing link in full adoption of principles of circular economy and a more holistic approach to sustainability in the fashion industry. The proposed framework may serve as a foundation for further scholarly research and enrichment through extrapolation to other segments and industries. We also warn companies of the risk of falling into 'anti-consumerist washing', a newly identified form of greenwashing. Finally, given the assortment of strategies and the proposed differences in their effectiveness, we recommend research on a new 'hierarchical pyramid of business strategies to rationalize consumption'.

2. Literature review

2.1. Sufficient consumption

Our society has been operating as an open system on a finite planet (Worrell and Carreon, 2017), with consumption patterns exceeding planetary limits. The dominant profit- and growth-oriented neoliberal capitalism assumes ever-increasing demand, production, and consumption (Jackson, 2009; Gasper et al., 2019). Governments, firms, and the global economy have been relying on ever-growing consumption, sustained by obsolescence more or less actively planned or fostered, with little promotion of sustainable lifestyles (Windsor, 2018) or internalization of environmental and social costs by businesses (Kallis, 2017). Overconsumption is a major sustainability challenge in the fashion industry (Armstrong et al., 2015). Although companies and their top management are increasingly aware of the negative social and environmental impacts of their products and services (Zhang et al., 2018), they generally hide behind the mantra of 'sustainable growth' (Gasper et al., 2019) permeating the 2030 Agenda. Gasper et al. (2019) argue that the targets and indicators formulated in SDG 12 'Responsible consumption and production' are overly vague and insufficiently ambitious, conditioned by the interests of business lobbies that influence narratives of sustainable growth with governments' acquiescence.

Against the consumption-led growth model, keeping products in use

has been identified as ‘the most effective method of reducing the impact of the clothing industry on the environment’ (McLaren et al., 2016:1). The essence of eco-efficient product use is extending utilization to maximize product value and the resources involved before deciding to scrap products for recycling or waste (Ellen MacArthur Foundation, 2017; Fletcher, 2012). In the best scenario, much of an item’s value is lost even when it is recycled (Ellen MacArthur Foundation, 2017). A more responsible consumption pattern—keeping products in use and moderating acquisition of new items—would increase retention of their value, slow the flow of resources, and reduce waste (Bocken et al., 2016), promoting greater sustainability.

The sufficiency-driven approach argued by a stream of scholars (e.g., Bocken and Short, 2016; Freudenreich and Schaltegger, 2020; Gorge et al., 2015) advocates changing users’ lifestyles by ‘satisfying ‘needs’ rather than promoting ‘wants’ and fast-fashion’ (Bocken and Short, 2016:43). More sufficient consumption, which reassesses personal needs to avoid excess consumption (Gossen et al., 2019), reduces overall resource usage, waste, and other negative impacts to contribute to staying within planetary limits while improving human well-being and fighting social inequalities. Achieving this vision implies embracing a more steady-state or slowed-down economy (Washington and Twomey, 2016), radically opposing the dominant capitalism leveraged in consumerist culture and perpetual pursuit of growth. Even if implemented progressively, this transformation requires overcoming a range of extremely challenging economic, institutional, cultural, social, and practical barriers (Veleva, 2021; Niinimäki et al., 2020). It is a difficult task for companies, given the highly competitive business environment, pressure to maximize short-term shareholder value, concerns about uneven and global effects of stagnation or degrowth, and the problem of price affordability (Bocken and Short, 2016; Niinimäki et al., 2020).

2.2. The fashion industry and consumerism

The fashion industry has been paradigmatic of the ever-growing consumption-led capitalist model. Fashion gathers and leads some of the most common types of obsolescence across sectors; people buy massive amounts of fashion items and discard them quickly. Fashion items stand out among domestic items for their strong aesthetic, and social qualities, such as expressing image, status, values, or identity (Ellen MacArthur Foundation, 2017). Similarly, low durability (premature wear) and deterioration of aesthetics (e.g., discoloration) are common types of physical obsolescence, which fosters rapid discard and disposal (Ellen MacArthur Foundation, 2017).

Fast fashion and discount retailing retrofit each other as icons of this consumerist model, offering low-priced yet stylish clothing with double-quick production and consumption (Ozdamar Ertekin and Atik, 2015; Niinimäki et al., 2020; Gazzola et al., 2020). Garments go out of style rapidly, and companies constantly introduce new latest-trend collections, often on a weekly or even daily basis (Cline, 2013), supported by agile design teams and efficient flexible supply chains (Sellitto et al., 2022). Combined with production in low-cost developing countries and increased sales volumes, such practices encourage price reduction, while cost pressure simultaneously brings social challenges, such as child labor or substandard working conditions.

Furthermore, the irruption of the Internet and social networks has encouraged fast fashion (Buzzo and Abreu, 2019), facilitating and multiplying possibilities for contact, promotion, and interaction with consumers. Bombardment by successive assortment changes in fashionable designs, attractive prices, and intense interaction with customers, combined with dominant conventional marketing to promote materialism and consumerism (Frick et al., 2021; Sellitto et al., 2022), fuels emotional obsolescence and a ‘disposable’ mentality.

Fletcher (2010), a promoter of the slow fashion movement opposing fast fashion, postulated that users should seek satisfaction by using rather than purchasing and highlighted the importance of providing timeless seasonless models to counter fast fashion’s continuous supply of

inexpensive new style trends, which foster consumerism. Slow fashion advocates facilitating consumers’ purchase of higher-quality products to be worn and valued longer (Magnuson et al., 2017; Fletcher, 2012).

2.3. A framework for fashion firms to promote sufficient consumption

The ‘Don’t buy this jacket’ campaign launched by the company Patagonia in 2011 is an iconic, groundbreaking marketing initiative to promote sufficiency-driven consumption (Hwang et al., 2016). Fashion industry firms may adopt business model innovations and other strategies to extend products’ use intensity and rationalize consumption, while still creating economic value and generating new revenue streams. Business model innovations are changes in the way companies create, deliver, and capture value, and evolve their value proposition and competitive strategy (Bocken et al., 2014). These innovations can, however, sometimes be difficult to implement (Teece, 2010), especially when innovations oppose mainstream business logic. Such opposition occurs, for example, when the consumerist model of companies offering fast fashion confronts the need to foster sufficient consumption. Bold far-reaching business initiatives, including those most contrary to companies’ *modus vivendi*, appear decisive in reducing their dependence on consumerism and its negative impacts, as such initiatives can capture opportunities and survive emerging threats (Bucherer et al., 2012).

According to Global Fashion Agenda (2020), 71% of consumers are willing to invest in higher-quality clothing and bid for alternative models such as rental, resale, or refurbishment. Other studies suggest, however, that consumers generally rank durability and repairability of fashion items—unlike other products—as unimportant (European Commission, 2018), probably because they do not expect to wear items for long. It is thus necessary to change consumers’ mentality, and companies can contribute decisively to this change through their value proposition and promotion, as occurred with Patagonia. The positive impact of sustainability strategies depends largely on companies’ ambition and success in conception and implementation, as well as on existing infrastructure and consumer awareness of and engagement in more sustainable practices (Johnson and Plepys, 2021; Khitous et al., 2022). Social exchange theory argues that consumers are motivated by the benefits they expect to obtain from their behavior and actions (Harrigan et al., 2018), making it essential that these strategies are consumer-oriented and that companies communicate their benefits properly.

To identify and classify business strategies potentially applicable and specific to fashion companies in fighting consumerism—including business models decoupled from sales of new items—we started from the sufficiency-driven framework (Bocken and Short, 2016). We enriched this framework with our literature database and studies extracted from the Web of Science (WoS) search engine. Our search identified titles, abstracts, and keywords containing “sustainable fashion,” “consumerism,” “overconsumption,” “consumption,” “obsolescence,” “business models,” “business strategies,” “slow fashion,” “fast fashion,” “sufficiency,” “circular economy,” and variants, through different search combinations. We also used Google’s general search engine to explore other publications and company websites. After progressive assessment and screening, we obtained relevant works to identify, describe, and classify the potential strategies. Fig. 1 displays the result, a classification of strategies divided into three dimensions labeled ‘Design for durability’, ‘Alternative product/service systems’, and ‘Fair promotion and information’. The figure also provides a description of each dimension and possible benefits for consumers and companies, as well as relevant works for each strategy.

By analogy with the three pillars for sustainability (Purvis et al., 2019), these company strategies may be represented as a three-pillar framework for sufficient consumption (Fig. 2).

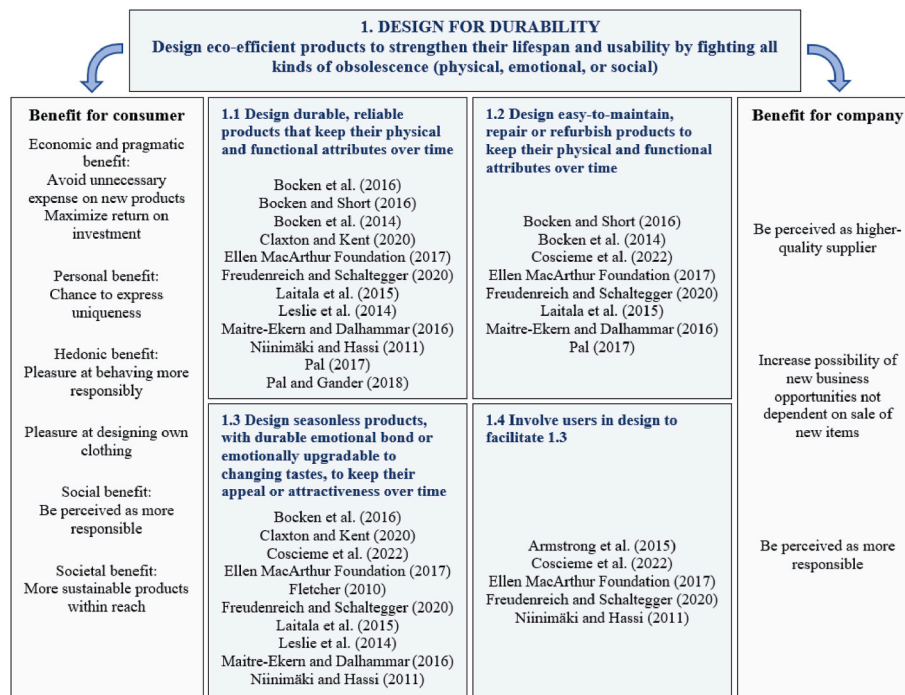


Fig. 1. Strategies identified to promote sufficient consumption(Armstrong et al., 2016; Arrigo, 2021; Claxton and Kent, 2020; Coscieme et al., 2022; Global Fashion Agenda,; Iran and Schrader, 2017; Jung and Jin, 2016; Laitala et al., 2015; Lee et al., 2021; Leslie et al., 2014; Maitre-Ekern and Dalhammar, 2016; Niinimäki and Hassi, 2011; Pal, 2017; Pal and Gander, 2018; Pedersen and Netter, 2015).

3. Material and methods

After identifying and classifying the potential strategies from the literature review, we addressed the second research question by selecting a sample of ten leading firms commonly related to fast fashion from ‘The FashionUnited Top 200 Index’ and that had published annual reports in the periods analyzed. This index ranks the largest listed companies in the apparel and fashion industry worldwide (Fashion-United, 2022). The companies chosen serve as benchmarks to help create the conditions for other companies in the fast fashion segment to engage in more sustainable practices.

The data source was the sample companies’ publicly available annual corporate social responsibility, sustainability, or integrated reports for 2013/2014 and 2020/2021. We chose these years to evaluate the companies’ adoption of the strategies identified and detect any progress within the 2030 Agenda and subsequent initiatives in the public domain.

Table 1 lists the ten companies comprising the sample, their position in the ranking, country, and market capitalization in 2022.

This study is both descriptive and exploratory, and examines a range of companies over the two above-mentioned time intervals. Most previous studies exploring this segment, such as case studies from different perspectives, have considered only one or two companies, and none has analyzed ten. Despite the effort of examining up to ten companies, our sample permits broader depiction and identification of global patterns, thus avoiding a major weakness of case studies. This multiple case study approach—multiple in both number of companies and inclusion of several countries—is appropriate for examining relatively novel, contemporary, and evolving events (Yin, 2009) and facilitates a more grounded generalizable outcome (Eisenhardt and Graebner, 2007).

Together, the authors analyzed the full reports of these companies through direct reading, seeking clues to adoption of the identified strategies and their connection to the 2030 Agenda or other reasoning. Strategy adoption was assessed using three possible categories with the following assignment criteria.

- Present (‘+’): company reports its adoption
- Absent (‘o’): no mention of its adoption
- Against (‘-’): company reports adopting the opposite

We complemented qualitative assessment with similarity analysis using the Jaccard distance, which measures the dissimilarity between sample sets, in the two time periods, establishing two categories (adoption/non-adoption of a strategy) and seeking similarities in firms’ adoption of strategies. The Jaccard distance between each pair of firms was calculated as the sum of mismatches (adoption vs. non-adoption and vice versa), divided by the sum of mismatches plus the number of positive matches (adoption vs. adoption). We used RStudio software, version 2022.07.2, with libraries ‘prabclus’, ‘plot.matrix’, and ‘RColorBrewer’.

4. Results and discussion

Fig. 3 depicts the results of assessment for each company and the time interval examined for adoption of strategies promoting sufficient consumption.

Fig. 4 presents the Jaccard distance matrix for 2020–2021.

Values close to 0 indicate less distance (more similarity) between pairs of firms in the strategies adopted, and the closer the values to 1, the greater the dissimilarity between pairs. The Jaccard matrix obtained for the first period was not relevant due to the low number of initiatives adopted and was thus omitted.

4.1. Strategies adopted to foster sufficient consumption (RQ2.1)

The ten firms in the sample were found to trigger at least one strategy related to sufficient consumption in 2020/2021, still far from comprehensive adoption of the various strategies identified within their reach. The Jaccard distance matrix (Fig. 4) shows uneven distribution among companies in general but similarities among H&M, C&A, and Bestseller. These three companies embraced the most alternative product/service

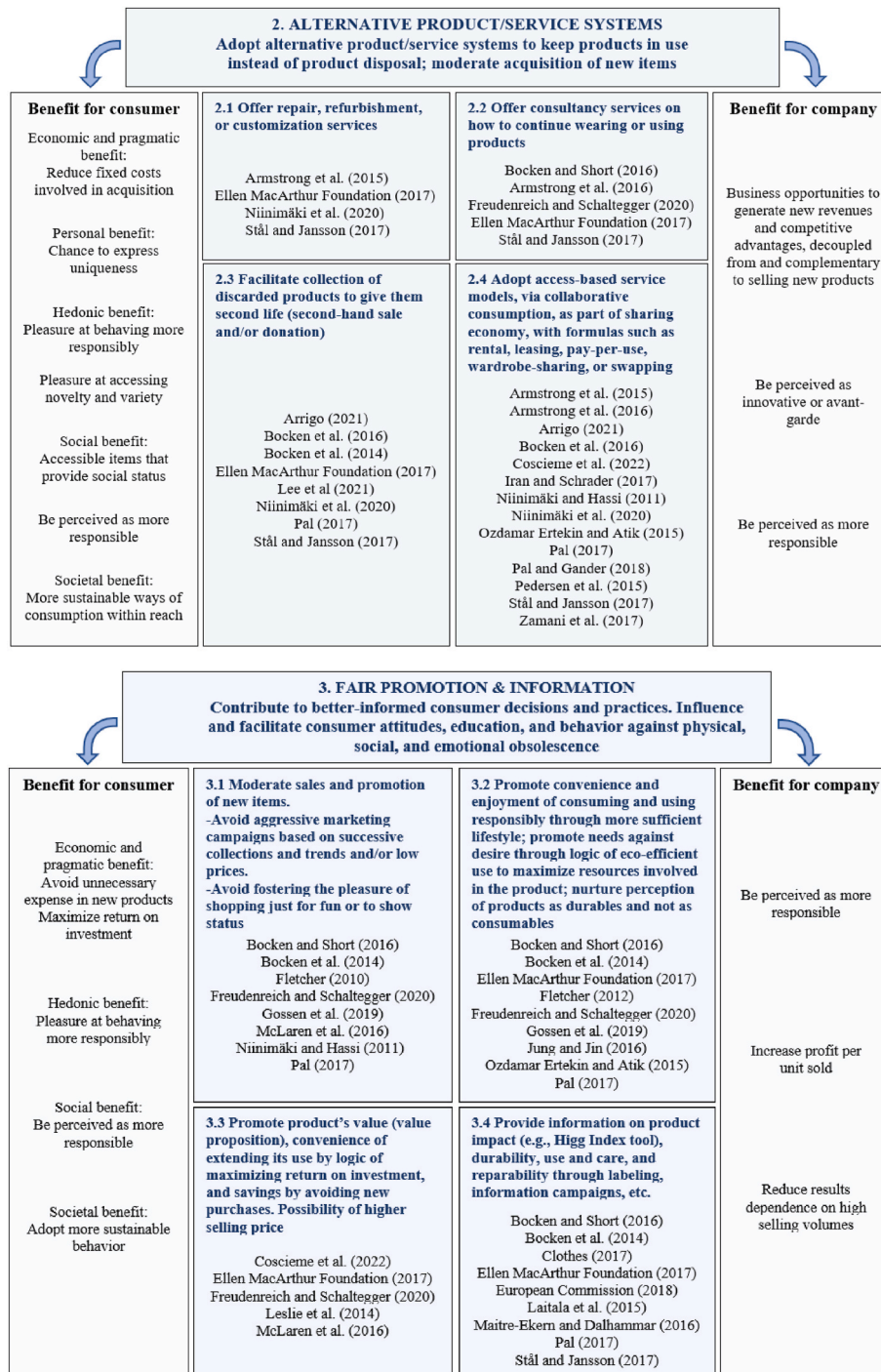


Fig. 1. (continued).

systems and are three of the four companies reporting the most initiatives and widest adoption across the three pillars. At the other extreme, Mango and ASOS had the lowest range of adoption.

Examination of the first pillar of the proposed framework shows that designing products with durable and reliable physical and functional attributes (1.1) was the only strategy broadly adopted in the sample, embraced by seven firms. The other three firms did not adopt any strategies within this set. Furthermore, barely two firms mentioned designing products that were easy-to-maintain, repair, or refurbish (1.2) or designing seasonless products that had a durable emotional bond or were emotionally upgradable (1.3). Furthermore, three firms embraced two or more strategies within this set. Fast Retailing and Bestseller

adopted two strategies each, and only Inditex adopted all identified strategies and embraced all of the strategies in one pillar. Yet Inditex rarely developed the other two sets of strategies and did not mention exploring services to decouple its dependence on new item sales, even reporting the opposite in two fair promotion strategies.

As to the second pillar, H&M and C&A advanced most in exploring alternative product/service systems, embracing three of the four strategies. Only H&M, C&A, and Bestseller mentioned offering repair or customization services (2.1) and exploring access-based service models (2.4). No firm in the sample provided consultancy services on how to continue wearing or using products (2.2)—one of the potential strategies ignored. Apart from the widely adopted strategy of collecting

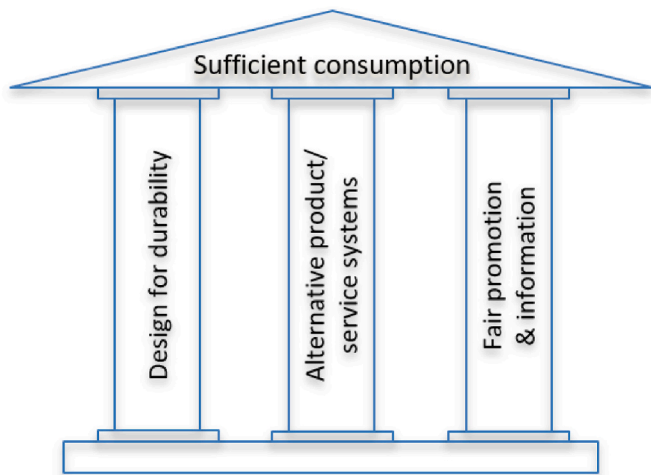


Fig. 2. Three pillars promoting sufficient consumption.

Table 1
List of companies.

Company	Rank	Country	Market cap.
Inditex	#6	Spain	\$67.17 b
Fast Retailing	#15	Japan	\$55.37 b
H&M	#18	Sweden	\$15.4 b
Next	#34	UK	\$7.39 b
C&A	#37	Netherlands	\$6.97 b
Lojas Renner	#44	Brazil	\$5.62 b
Bestseller	#60	Denmark	\$3.70 b
GAP	#68	USA	\$3.14 b
Mango	#78	Spain	\$2.78 b
ASOS	#164	USA	\$0.60 b

Source: FashionUnited (2022).

discarded products for a second life (2.3), most companies in the sample had not initiated alternative business models that were less dependent on new product sales. These companies may be late in their attempts to decouple their economic results from new article sales.

As to the third pillar, four companies failed to address any of its strategies, and the only initiative adopted by more than half the firms was providing information on product impact, durability, use, and care (3.4). It was also significant that none of the firms in the sample mentioned aiming to moderate sales and promotion of new items (3.1), while one explicitly sought the contrary. Only one company explicitly promoted the advisability of responsible use and consumption through more sufficient lifestyle (3.2), and two firms communicated in the opposite, in line with the findings of Frick et al. (2021) and Gossen et al. (2019). Similarly, only two firms promoted product value and the advisability of extending product use (3.3). These firms also barely adopted the third pillar—a far cry from decisively promoting sufficient consumption.

Overall, the most extensive initiatives were collection of discarded products for a second life (2.3) (nine firms); design of durable and reliable products (1.1) (seven firms); and providing information on product impact, durability, use, and care (3.4) (six firms). The other strategies were barely present. Only half the companies embraced one or

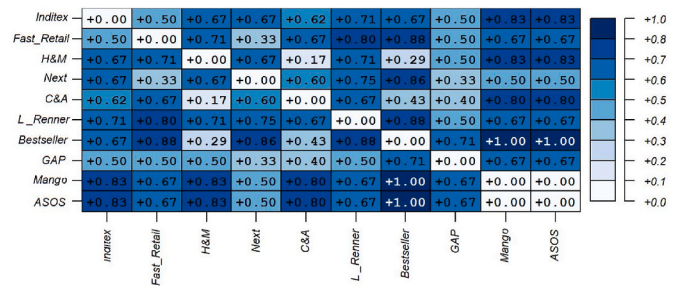


Fig. 4. Jaccard distance matrix 2020–2021.

Strategy description	Inditex		Fast Retailing		H&M		Next		C&A		Lojas Renner		Bestseller		GAP		Mango		ASOS		
	2013/14	2020/21	2013/14	2020/21	2013/14	2020/21	2013/14	2020/21	2013/14	2020/21	2013/14	2020/21	2013/14	2020/21	2013/14	2020/21	2013/14	2020/21	2013/14	2020/21	
Design for durability	1.1 Design durable, reliable products that keep their physical and functional attributes over time	o	+	+	+	o	+	o	+	+	+	o	o	o	+	o	+	o	o	o	o
	1.2 Design easy-to-maintain, repair or refurbish products to keep their physical and functional attributes over time	o	+	o	o	o	o	o	o	o	o	o	o	o	+	o	o	o	o	o	o
	1.3 Design seasonless products, with durable emotional bond or emotionally upgradable to changing tastes, to keep their appeal or attractiveness over time	o	+	o	+	+	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
	1.4 Involve users in design to facilitate 1.3	o	+	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
Alternative product/service systems	2.1 Offer repair, refurbishment, or customization services	o	o	o	o	o	+	o	o	o	+	o	o	o	o	o	o	o	o	o	o
	2.2 Offer consultancy services on how to continue wearing or using products	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
	2.3 Facilitate collection of discarded products to give them second life (second hand sale and/or donation)	+	+	+	+	+	+	+	+	o	+	o	+	+	o	+	+	o	+	+	+
	2.4 Adopt access-based service models, via collaborative consumption, as part of a sharing economy, with formulas such as rental, leasing, pay-per-use, wardrobe-sharing, or swapping	o	o	o	o	o	+	o	o	o	+	o	o	o	+	o	o	o	o	o	o
Fair promotion & information	3.1 Moderate sales and promotion of new items. -Avoid aggressive marketing campaigns based on successive collections and trends and/or low prices -Avoid fostering the pleasure of shopping just for fun or to show status	-	-	o	o	o	o	o	o	o	o	o	o	o	o	o	-	o	-	o	o
	3.2 Promote convenience and enjoyment of consuming and using responsibly through more sufficient lifestyle; promote needs against desire through logic of eco-efficient use to maximize resources involved in the product; nurture perception of products as durables and not as consumables	o	-	o	o	o	-	o	o	o	o	o	+	o	o	o	o	o	o	o	o
	3.3 Promote product's value (value proposition), convenience of extending its use by logic of maximizing return on investment, and savings by avoiding new purchases. Possibility of higher selling price	o	o	+	o	+	+	o	o	o	o	o	o	o	+	o	o	o	o	o	o
	3.4 Provide information on product impact (e.g. Higg Index tool), durability, use and care, and reparability through labeling, information campaigns, etc.	+	+	o	o	+	+	o	o	+	+	o	+	+	o	+	o	o	o	o	o

Fig. 3. Assessment results.

more strategies in each of the three pillars, and six companies mentioned three strategies or fewer. Finally, Bestseller was the only firm to adopt half the strategies in every pillar. These results indicate substantial room for progress.

4.2. Evolution of strategies (RQ2.2)

Adoption at the departure point, 2013/2014, was poor, with four companies facilitating collection of discarded products to give them a second life (2.3) as the only related strategy. Overall, companies ticked only 15 boxes of 120 in 2013/2014, as opposed to 36 in 2020/2021. These results still indicate great potential for improvement globally, as the best cases were three firms embracing half the initiatives while six firms still reported only three or fewer. Evolution was uneven across the sample, although we observe significant progress in several aspects. Inditex, for example, did not mention any strategy related to design for durability (1.1–1.4) in 2013/2014. H&M, C&A, and Bestseller all began to address repair or customization services and explore access-based service models (2.1 and 2.4), accompanied by other initiatives in 2020/2021. They also generally paid more attention to designing products with durable, reliable physical and functional characteristics (1.1) and increased their focus on providing information on product impact, durability, use, and care (3.4). In another positive result, only one company continued to refer explicitly to continuously promoting successive collections (3.1) in 2020/2021, as opposed to three firms in 2013/2014. The progress observed suggests an incipient transition toward a slower fashion concept (Fletcher, 2010). Considering that companies fix their positions based on inter-organizational dynamics and observation of competitors (Stål and Jansson, 2017), this transition may become a trend in the segment in coming years.

On the negative side, from the perspective of sufficient consumption, four companies showed little or no progress in adopting strategies, and three barely addressed one or two of the identified strategies in 2020/2021. Among these strategies, facilitating collection of discarded products to give them a second life (2.3) was the only initiative adopted extensively across the sample. Seven companies adopted it in 2013/2014, and it remained the most extensively adopted in 2020/2021. Mango is a good example of failure to focus on sufficient consumption. In recent years, the company has made tremendous efforts to improve its circular strategies, mitigating its negative impact and closing the loop of material resources. Yet in 2020/2021, Mango had hardly addressed collection of products for donation combined with recycling as the only initiative to slow inner loops in the circular economy.

4.3. The mediating role of the 2030 Agenda in the evolution of strategies and its logic (RQ2.3)

A first group of five firms (Inditex, Next, Lojas Renner, Bestseller, Mango) adopted the 2030 Agenda as a framework for their sustainability policies and repeatedly mentioned their commitment to the SDGs. Four of the five connected SDG12 on sustainable consumption and production to one of the strategies embraced on sufficient consumption, but they embraced different strategies. Inditex connected sufficient consumption with 3.4, Lojas Renner with 3.2, Bestseller with 2.4, and Mango with 2.3. This difference may be interpreted as casual matching merely to check the box for compliance with this SDG. Next was the only company in this group that established no links. In connecting SDG12 to responsible sourcing, production, and recycling, Next exemplifies how firms can show commitment to SDG12 without addressing responsible consumption at all, due to the mix and derivatives of concepts articulated in the SDG and its lack of more specific targets and indicators, as Gasper et al. (2019) argue.

A second group of four companies (H&M, C&A, GAP, ASOS) generally mentioned aligning their sustainability policies with the SDGs but did not relate any strategies promoting sufficient consumption to SDG12. Finally, Fast Retailing made only brief mention of the SDGs and

did not link them to any strategy related to sufficient consumption.

Further, with the exception of Fast Retailing, all companies in the sample explicitly framed each strategy aiming at sufficient consumption in their commitment to a circular economy generally, within their efforts to become more environmentally friendly, whereas strategy 2.3 also involved helping vulnerable groups. Connection to the circular economy and firms' reporting on certain strategies related to slowing internal loops indicates these companies' general awareness of the need to attend to sufficient consumption as distinct from other more developed efforts, such as closing the loop by recycling. We must look elsewhere to explain why these companies, despite their progress, are still not leveraging many strategies within their reach to foster sufficient consumption. Despite growing pressure and scrutiny from the different stakeholders, these companies can probably continue to exploit their traditional *modus vivendi* due to the laxity of the 2030 Agenda and subsequent initiatives in the public domain.

When assessing the evolution of strategy adoption, we can infer that companies tend first to adopt strategies that align better with their core business or affect it less. Two clear examples are not moderating sales and promotion of new items (3.1) and not directly promoting a more sufficient lifestyle (3.2). These examples clash with the fast fashion concept, which offers successive collections at affordable prices to foster new purchases. Pioneering approaches to reducing apparel consumption, like Patagonia's, prioritize these strategies. In addition to identifying synergies with other circular strategies (Bocken et al., 2016), we argue that there are significant synergies between the strategies proposed in the framework and that their comprehensive and complementary adoption is necessary to improve their impact on more sufficient consumption. For instance, companies may design physically durable products (1.1), but this strategy will not be very effective in promoting sufficient consumption unless accompanied by an emotional connection to the product (1.3, 1.4), by consumer awareness of sustainable consumption practices (3.1–3.4), or by a change in companies' business models to maximize products' utilization throughout their useful life (2.1–2.4).

Further, the positive impact of some strategies on the way specific strategies are devised and combined with others may be contested. Take, for example, the most widely adopted strategy in both periods (2.3). Since collection points are mostly in shops, companies can use this strategy to attract customers to their premises, urge them to empty their closets, and encourage purchase of new replacement items (Stål and Jansson, 2017). Alternatively, same collection points could offer repair or refurbishing services (2.1) at competitive prices to avoid downgrading the product to second use and substitute purchase. Again, this strategy could become just another way to attract customers to stores and induce consumption of new items if not accompanied by other strategies, such as fair promotion and information, the third pillar of the proposed framework.

4.4. 'Anti-consumerist washing'

Not adopting most of the identified strategies—or, worse, continuing in the opposite direction—reduces the effectiveness and credibility of companies' actions to achieve sufficient consumption. The current concept of a consumer-side "attitude-behavior-gap" (Antonetti and Maklan, 2015) applies to companies that play with this ambiguity. Our findings could thus be interpreted as showing that companies merely tick the box for some initiatives without resolutely and effectively pursuing more sufficient consumption. Such a result would indicate that they are still far from reconsidering their current business model, which might soon go 'out of fashion' and affect their prospects. Such companies risk increasingly conscious stakeholders (Ellen McArthur Foundation, 2017) perceiving their initiatives as mere window dressing. We coin the term 'anti-consumerist washing' to describe this as a type of corporate washing, which may damage reputation or trust (Kim et al., 2015; Wagner et al., 2009). Following the definitions of other forms of

corporate washing identified in the literature—such as greenwashing, CSR-washing, bluewashing, or SDG-washing (e.g., de Freitas Netto et al., 2020; Heras-Saizarbitoria et al., 2022)—a firm's anti-consumerist washing may be defined as *its symbolic rather than substantive commitment and behavior to fight consumerism in order to appear committed to the cause, executed through misleading presentation or promotion of cosmetic or dressing gestures, to create an overly positive image, gain legitimacy, and protect its 'business as usual' or 'modus vivendi' without actually undertaking the far-reaching transformation of its business approach and strategies needed to promote more responsible sustainable consumption of its products and achieve significant, relevant advance in sustainability*. Based on the proposed definition, anti-consumerist washing is a variety of greenwashing in which a firm presents its business activities as sustainable by addressing certain initiatives, related in this case to fighting consumerism.

A more benevolent interpretation of the results is that these companies are at the beginning or in the middle of transition and need more time to explore, develop, and combine the strategies within their reach effectively. Between these two interpretations, one might argue that firms are taking positive steps but at different and questionable speeds. Subsequent monitoring of these companies' strategies over time will provide further clues to their actual intention and commitment to sufficiency.

Overall, the outcome mirrors the 2030 Agenda and the concept of sustainable development it has embraced, which assumes the need for growth that feeds on consumerism and lacks ambition. It also reflects ambiguity in the formulation of SDG12, with its targets and indicators. SDG12 enables companies to report positively and express commitment to SDG12 without tackling consumerism decisively, making little or no reference to a few strategies for sufficient consumption.

5. Conclusions

Fast fashion business models have traditionally depended on and actively fostered consumerism, accelerating resource flows with negative impacts that are difficult to balance, despite efforts to improve production, logistics, operations, or end-of-life.

Potential strategies enabling these companies to pursue more sufficient consumption patterns contradict the foundations of their model. In the context of a finite planet with increasingly clear limits, however, businesses are increasingly held accountable for their social and environmental performance and ethical behavior. Companies should thus rethink business through a more holistic approach to sustainability, including bold far-reaching initiatives contrary to their *modus vivendi*, paying more attention to internal loops in the circular economy and leveraging more sustainable consumption patterns. They must also achieve a complex balance, continuing to compete to win space in the market and obtain economic results.

In this vein, this paper contributes a preliminary framework structured by three sets of potential strategies fashion companies can use to foster sufficient consumption and reduce their economic dependence on consumerism and sale of new items, with benefits expected for both consumers and companies.

Based on this framework, this study investigates whether top players in the fast fashion segment are embracing such strategies, what evolution has occurred from 2013 to 2014 to 2020–2021, whether the 2030 Agenda with its SDG12 'Responsible consumption and production' plays a mediating role, and what is the logic behind such evolution or lack of it. The results show that, five years after establishing the SDGs, some business initiatives for more sufficient consumption of products are gaining momentum within companies' circular economy. However, companies tend first to address strategies with less impact on their 'business as usual', and even the firms that have progressed that farthest are still far from making a strong bid for sufficiency. These firms thus risk falling into our newly introduced form of greenwashing, 'anti-consumerist washing', while trying to squeeze their existing model

based on (over)consumption-led growth as long as possible. The 2030 Agenda has been criticized for not tackling some systemic problems associated with pursuit of consumption-led growth and for its lack of specificity (Gasper et al., 2019; Sachs, 2017), permitting companies to demonstrate apparent commitment to SDG12 through uneven, limited, or no adoption of these strategies.

As to industry and managerial implications, because top management involvement is critical to implementing innovative strategies and business models (Bucherer et al., 2012), this paper stresses the importance of fashion companies and their top management accelerating the crucial transition to a more sufficiency-driven approach. To inspire and induce practice, the three-pillar framework and the results' discussion provide practical guidance to foster sufficient consumption by exploring the proposed strategies, their combination, and synergies, with shared benefits that companies can achieve and highlight in their communication.

Furthermore, this paper aims to accelerate awareness of sufficiency's importance to society. Individuals must have critical consciousness of the consequences of their consumption behavior and of companies' strategies, and governments and other entities must facilitate a context that favors more sufficient consumption patterns.

Finally, the proposed three-pillar framework, together with the implications of the results, establishes a theoretical foundation to assist academics in investigating and enriching further initiatives and innovations by which companies can foster sufficient consumption and advance their approach to sustainability in this and other fashion segments and industries.

6. Limitations and future research

First, this study only analyzes content voluntarily disseminated by companies in their annual reports. Although the study still clearly identifies companies' strategies and a wide implementation gap, future research could advance knowledge, especially on promotion, by analyzing companies' websites and social media channels. Examining other information sources, such as interviews with senior managers, would also enable further exploration of the mechanisms, motivations, drivers, and barriers top executives face in implementing such strategies.

Second, this study examines a sample of top fashion companies related to fast fashion. Future research could adopt this approach to assess other fashion segments and sectors, especially other resource-intensive ones, and gauge results. It could also address the role of governments and other entities in providing background to help companies better develop the required strategies.

Third, our research reinforces the literature arguing that products-as-service models may reduce individual acquisition of new items and its subsequent negative impact, although the benefits are not always evident (e.g., Zamani et al., 2017). The costs involved and the sustainability impact of extending use or reusing a product should be also considered (Freudenreich and Schaltegger, 2020). In addition, Frick et al. (2021) propose that avoiding aggressive marketing campaigns is even more effective than promoting sufficiency lifestyles. Following the "waste hierarchy pyramid" of Bocken and Short (2016), it would be of interest for research to explore a 'hierarchical pyramid of business strategies to rationalize consumption', assessing possible variations depending on the fashion segment and addressing strategies' synergies and relative impact through life cycle assessment (e.g., Johnson and Plepys, 2021). Such assessment could help companies to prioritize and combine adoption of strategies, while aiding governments' cooperation with companies and other actors to create suitable conditions to favor sufficient consumption.

Another interesting line of research could examine other sectors from the perspective of the newly introduced concept 'anti-consumerist washing' and deepen understanding of this concept's definition, mechanisms, and implications.

Lastly, the proposed three-pillar framework enabling fashion companies to foster sufficient consumption provides a starting point for scholars to investigate, refine, and identify further strategies and innovations, and to extend and adapt this framework to other industries. Adopting the approach of [Bocken and Short \(2016\)](#), who study companies considered models for their sustainability initiatives, could help identify the latest innovations and further enrich the proposed framework.

Funding

This research was supported by the Ministry of Science and Innovation of the Government of Spain (State Program to Promote Scientific-Technical Research and its Transfer: Research Project PDI2021.124396NB.I00) co-funded by the European Regional Development Fund (European Union).

Funding for open access charge: CRUE-Universitat Politècnica de València.

CRedit authorship contribution statement

Beatriz Garcia-Ortega: Conceptualization, Formal analysis, Investigation, Methodology, Project administration, Supervision, Writing – review & editing. **Javier Galan-Cubillo:** Data curation, Conceptualization, Investigation, Methodology, Visualization, Writing – original draft. **F. Javier Llorens-Montes:** Investigation, Methodology, Funding acquisition, Validation. **Blanca de-Miguel-Molina:** Validation, Investigation, Methodology, Software.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

References

- Antonetti, P., Maklan, S., 2015. How categorisation shapes the attitude-behaviour gap in responsible consumption. *Int. J. Mark. Res.* 57 (1), 51–72. <https://doi.org/10.2501/IJMR-2015-005>.
- Armstrong, C.M., Niinimäki, K., Kujala, S., Karell, E., Lang, C., 2015. Sustainable product-service systems for clothing: exploring consumer perceptions of consumption alternatives in Finland. *J. Clean. Prod.* 97, 30–39. <https://doi.org/10.1016/j.jclepro.2014.01.046>.
- Armstrong, C.M., Niinimäki, K., Lang, C., Kujala, S., 2016. A use-oriented clothing economy? Preliminary affirmation for sustainable clothing consumption alternatives. *Sustain. Dev.* 24 (1), 18–31. <https://doi.org/10.1002/sd.1602>.
- Arrigo, E., 2021. Collaborative consumption in the fashion industry: a systematic literature review and conceptual framework. *J. Clean. Prod.* 325, 129261 <https://doi.org/10.1016/j.jclepro.2021.129261>.
- Bick, R., Halsey, E., Ekenga, C.C., 2018. The global environmental injustice of fast fashion. *Environ. Health* 17 (1), 1–4. <https://doi.org/10.1186/s12940-018-0433-7>.
- Bjørnset, M.M., Skaar, C., Fet, A.M., Schulte, K.Ø., 2021. Circular economy in manufacturing companies: a review of case study literature. *J. Clean. Prod.* 294, 126268 <https://doi.org/10.1016/j.jclepro.2021.126268>.
- Bocken, N.M., De Pauw, I., Bakker, C., Van Der Grinten, B., 2016. Product design and business model strategies for a circular economy. *J. Ind. Prod. Eng.* 33 (5), 308–320. <https://doi.org/10.1080/21681015.2016.1172124>.
- Bocken, N.M., Short, S.W., 2016. Towards a sufficiency-driven business model: experiences and opportunities. *Environ. Innov. Soc. Transit.* 18, 41–61. <https://doi.org/10.1016/j.eist.2015.07.010>.
- Bocken, N.M., Short, S.W., Rana, P., Evans, S., 2014. A literature and practice review to develop sustainable business model archetypes. *J. Clean. Prod.* 65, 42–56. <https://doi.org/10.1016/j.jclepro.2013.11.039>.
- Boto-Álvarez, A., García-Fernández, R., 2020. Implementation of the 2030 agenda sustainable development goals in Spain. *Sustainability* 12 (6), 2546. <https://doi.org/10.3390/su12062546>.
- Bucherer, E., Eisert, U., Gassmann, O., 2012. Towards systematic business model innovation: lessons from product innovation management. *Creativ. Innovat. Manag.* 21 (2), 183–198. <https://doi.org/10.1111/j.1467-8691.2012.00637.x>.
- Brydges, T., 2021. Closing the loop on take, make, waste: investigating circular economy practices in the Swedish fashion industry. *J. Clean. Prod.* 293, 126245 <https://doi.org/10.1016/j.jclepro.2021.126245>.
- Buzzo, A., Abreu, M.J., 2019. Fast Fashion, Fashion Brands and Sustainable Consumption. In: *Fast Fashion, Fashion Brands & Sustainable Consumption*. Springer, pp. 1–17. https://doi.org/10.1007/978-981-13-1268-7_1.
- Claxton, S., Kent, A., 2020. The management of sustainable fashion design strategies: an analysis of the designer's role. *J. Clean. Prod.* 268, 122112 <https://doi.org/10.1016/j.jclepro.2020.122112>.
- Cline, E.L., 2013. *Overdressed: the Shockingly High Cost of Cheap Fashion*. Penguin.
- Clothes, W.V.O., 2017. *The Cost of UK Fashion*. WRAP.
- Cohen, M., Brown, H.S., Vergragt, P.J., 2017. *Social Change and the Coming of Post-consumer Society*. Routledge.
- Coscieme, L., Manshoven, S., Gillabel, J., Grossi, F., Mortensen, L.F., 2022. A framework of circular business models for fashion and textiles: the role of business-model, technical, and social innovation. *Sustain. Sci. Pract. Pol.* 18 (1), 451–462. <https://doi.org/10.1080/15487733.2022.2083792>.
- de Freitas Netto, S.V., Sobral, M.F.F., Ribeiro, A.R.B., Soares, G.R.D.L., 2020. Concepts and forms of greenwashing: a systematic review. *Environ. Sci. Eur.* 32 (1), 1–12. <https://doi.org/10.1186/s12302-020-0300-3>.
- Eisenhardt, K.M., Graebner, M.E., 2007. Theory building from cases: opportunities and challenges. *Acad. Manag. J.* 50 (1), 25–32. <https://doi.org/10.5465/amj.2007.24160888>.
- Ellen MacArthur Foundation, 2017. *A New Textiles Economy: Redesigning Fashion's Future*. Ellen MacArthur Foundation. <https://emf.thirdlight.com/link/2axvc/eob8zx-za4ule/@/preview/1?o>. (Accessed 27 August 2022). Accessed.
- European Commission, 2018. *Behavioural Study on Consumers' Engagement in the Circular Economy*. <https://data.europa.eu/doi/10.2818/956512>.
- FashionUnited, 2022. *FashionUnited Top 200 Index*. <https://fashionunited.com/i/top200>. (Accessed 6 December 2022). Accessed.
- Fletcher, K., 2010. Slow fashion: an invitation for systems change. *Fash. Pract.* 2 (2), 259–265. <https://doi.org/10.2752/175693810X12774625387594>.
- Fletcher, K., 2012. Durability, fashion, sustainability: the processes and practices of use. *Fash. Pract.* 4 (2), 221–238. <https://doi.org/10.2752/175693812X13403765252389>.
- Freudenreich, B., Schaltegger, S., 2020. Developing sufficiency-oriented offerings for clothing users: business approaches to support consumption reduction. *J. Clean. Prod.* 247, 119589 <https://doi.org/10.1016/j.jclepro.2019.119589>.
- Frick, V., Matthies, E., Thøgersen, J., Santarius, T., 2021. Do online environments promote sufficiency or overconsumption? Online advertisement and social media effects on clothing, digital devices, and air travel consumption. *J. Consum. Behav.* 20 (2), 288–308. <https://doi.org/10.1002/cb.1855>.
- Gasper, D., Shah, A., Tankha, S., 2019. The framing of sustainable consumption and production in SDG 12. *Glob. Policy* 10, 83–95. <https://doi.org/10.1111/1758-5899.12592>.
- Gazzola, P., Pavione, E., Pezzetti, R., Grechi, D., 2020. Trends in the fashion industry. The perception of sustainability and circular economy: a gender/generation quantitative approach. *Sustainability* 12 (7), 2809. <https://doi.org/10.3390/su12072809>.
- Global Fashion Agenda, McKinsey & Company, Fashion CEO agenda 2020: Covid-19 edition. [https://globalfashionagenda.org/download-resource/?file-name=CEO_Agenda_2020_COVID-19_Edition%20\(6\)&file-id=4117](https://globalfashionagenda.org/download-resource/?file-name=CEO_Agenda_2020_COVID-19_Edition%20(6)&file-id=4117). (Accessed 20 March 2022). Accessed.
- Gorge, H., Herbert, M., Özçağlar-Toulouse, N., Robert, I., 2015. What do we really need? Questioning consumption through sufficiency. *J. Macromarketing* 35 (1), 11–22. <https://doi.org/10.1177/0276146714553935>.
- Gossen, M., Ziesemer, F., Schrader, U., 2019. Why and how commercial marketing should promote sufficient consumption: a systematic literature review. *J. Macromarketing* 39 (3), 252–269. <https://doi.org/10.1177/0276146719866238>.
- Harrigan, P., Evers, U., Miles, M.P., Daly, T., 2018. Customer engagement and the relationship between involvement, engagement, self-brand connection and brand usage intent. *J. Bus. Res.* 88, 388–396. <https://doi.org/10.1016/j.jbusres.2017.11.046>.
- Heras-Saizarbitoria, I., Urbiet, L., Boiral, O., 2022. Organizations' engagement with sustainable development goals: from cherry-picking to SDG-washing? *Corp. Soc. Responsib. Environ. Manag.* 29 (2), 316–328. <https://doi.org/10.1002/csr.2202>.
- Hwang, C., Lee, Y., Diddi, S., Karpova, E., 2016. Don't buy this jacket": consumer reaction toward anti-consumption apparel advertisement. *J. Fash. Mark. Manag.* <https://doi.org/10.1108/JFMM-12-2014-0087>.
- Iran, S., Schrader, U., 2017. Collaborative fashion consumption and its environmental effects. *J. Fash. Mark. Manag.* 21 (4), 468–482. <https://doi.org/10.1108/JFMM-09-2016-0086>.
- Jackson, T., 2009. *Prosperity without Growth: Economics for a Finite Planet*. Routledge.
- Johnson, E., Plepys, A., 2021. Product-service systems and sustainability: analysing the environmental impacts of rental clothing. *Sustainability* 13 (4), 2118. <https://doi.org/10.3390/su13042118>.
- Joy, A., Sherry Jr., J.F., Venkatesh, A., Wang, J., Chan, R., 2012. Fast fashion, sustainability, and the ethical appeal of luxury brands. *Fash. Theory* 16 (3), 273–295. <https://doi.org/10.2752/175174112X13340749707123>.
- Jung, S., Jin, B., 2016. From quantity to quality: understanding slow fashion consumers for sustainability and consumer education. *Int. J. Consum. Stud.* 40 (4), 410–421. <https://doi.org/10.1111/ijcs.12276>.

- Kallis, G., 2017. Radical dematerialization and degrowth. *Philos. Trans. R. Soc. A-Math. Phys. Eng. Sci.* 375 (2017), 20160383 <https://doi.org/10.1098/rsta.2016.0383>.
- Khitous, F., Urbinati, A., Verleye, K., 2022. Product-Service Systems: a customer engagement perspective in the fashion industry. *J. Clean. Prod.* 336, 130394 <https://doi.org/10.1016/j.jclepro.2022.130394>.
- Khurana, K., Muthu, S., 2022. Are low-and middle-income countries profiting from fast fashion? *J. Fash. Mark. Manag.* 26 (2), 289–306. <https://doi.org/10.1108/JFMM-12-2020-0260>.
- Kim, H., Hur, W.-M., Yeo, J., 2015. Corporate brand trust as a mediator in the relationship between consumer perception of CSR, corporate hypocrisy, and corporate reputation. *Sustainability* 7 (4), 3683–3694. <https://doi.org/10.3390/su7043683>.
- Laitala, K.M., Boks, C., Klepp, I.G., 2015. Making clothing last: a design approach for reducing the environmental impacts. *Int. J. Des.* 9 (2), 93–107.
- Leslie, D., Brail, S., Hunt, M., 2014. Crafting an antidote to fast fashion: the case of Toronto's independent fashion design sector. *Growth Change* 45 (2), 222–239. <https://doi.org/10.1111/grow.12041>.
- Lee, S.E., Jung, H.J., Lee, K.-H., 2021. Motivating collaborative consumption in fashion: consumer benefits, perceived risks, service trust, and usage intention of online fashion rental services. *Sustainability* 13 (4), 1804. <https://doi.org/10.3390/su13041804>.
- Macellari, M., Yuriev, A., Testa, F., Boiral, O., 2021. Exploring bluewashing practices of alleged sustainability leaders through a counter-accounting analysis. *Environ. Impact. Assess.* 86, 106489 <https://doi.org/10.1016/j.eiar.2020.106489>.
- Magnuson, B., Reimers, V., Chao, F., 2017. Re-visiting an old topic with a new approach: the case of ethical clothing. *J. Fash. Mark. Manag.* 21 (3), 400–418. <https://doi.org/10.1108/JFMM-10-2016-0091>.
- Maitre-Ekern, E., Dalhammar, C., 2016. Regulating planned obsolescence: a review of legal approaches to increase product durability and reparability in Europe. *Rev. Eur. Community Int. Environ. Law* 25 (3), 378–394. <https://doi.org/10.1111/reel.12182>.
- McLaren, A., Goworek, H., Cooper, T., Oxborrow, L., Hill, H., 2016. The effect of consumer attitudes on design for product longevity: the case of the fashion industry. *Design Research Society* 10, 3831–3846. <https://doi.org/10.21606/drs.2016.456>.
- Niinimäki, K., Hassi, L., 2011. Emerging design strategies in sustainable production and consumption of textiles and clothing. *J. Clean. Prod.* 19 (16), 1876–1883. <https://doi.org/10.1016/j.jclepro.2011.04.020>.
- Niinimäki, K., Peters, G., Dahlbo, H., Perry, P., Rissanen, T., Gwilt, A., 2020. The environmental price of fast fashion. *Nat. Rev. Earth Environ.* 1 (4), 189–200. <https://doi.org/10.1038/nature01096>.
- Ozdamar Ertekin, Z., Atik, D., 2015. Sustainable markets: motivating factors, barriers, and remedies for mobilization of slow fashion. *J. Macromarketing* 35 (1), 53–69. <https://doi.org/10.1177/0276146714535932>.
- Pal, R., 2017. Sustainable design and business models in textile and fashion industry. In: Muthu, S. (Ed.), *Sustainability in the Textile Industry*. Textile Science and Clothing Technology. Springer, Singapore. https://doi.org/10.1007/978-981-10-2639-3_6.
- Pal, R., Gander, J., 2018. Modelling environmental value: an examination of sustainable business models within the fashion industry. *J. Clean. Prod.* 184, 251–263. <https://doi.org/10.1016/j.jclepro.2018.02.001>.
- Pedersen, E.R.G., Netter, S., 2015. Collaborative consumption: business model opportunities and barriers for fashion libraries. *J. Fash. Mark. Manag.* <https://doi.org/10.1108/JFMM-05-2013-0073>.
- Purvis, B., Mao, Y., Robinson, D., 2019. Three pillars of sustainability: in search of conceptual origins. *Sustain. Sci.* 14 (3), 681–695. <https://doi.org/10.1007/s11625-018-0627-5>.
- Sachs, W., 2017. The Sustainable Development Goals and Laudato si': varieties of post-development? *Third World Q.* 38 (12), 2575–2587. <https://doi.org/10.1080/01436597.2017.1350822>.
- Sellitto, M.A., Valladares, D.R.F., Pastore, E., Alfieri, A., 2022. Comparing competitive priorities of slow fashion and fast fashion operations of large retailers in an emerging economy. *Global J. Flex. Syst. Manag.* 23 (1), 1–19. <https://doi.org/10.1007/s40171-021-00284-8>.
- Stål, H.I., Jansson, J., 2017. Sustainable consumption and value propositions: exploring product-service system practices among Swedish fashion firms. *Sustain. Dev.* 25 (6), 546–558. <https://doi.org/10.1002/sd.1677>.
- Teece, D.J., 2010. Business models, business strategy and innovation. *Long. Range Plan.* 43 (2–3), 172–194. <https://doi.org/10.1016/j.lrp.2009.07.003>.
- Veleva, V., 2021. The role of entrepreneurs in advancing sustainable lifestyles: challenges, impacts, and future opportunities. *J. Clean. Prod.* 283, 124658 <https://doi.org/10.1016/j.jclepro.2020.124658>.
- Wagner, T., Lutz, R.J., Weitz, B.A., 2009. Corporate hypocrisy: overcoming the threat of inconsistent corporate social responsibility perceptions. *J. Market.* 73 (6), 77–91. <https://doi.org/10.1509/jmkg.73.6.77>.
- Washington, H., Twomey, P., 2016. *A Future beyond Growth*. Routledge.
- Windsor, D., 2018. Environmental Dystopia versus Sustainable Development Utopia: Roles of Businesses, Consumers, Institutions, and Technologies, *Social Innovation and Sustainable Entrepreneurship*. Edward Elgar Publishing, pp. 9–24. <https://doi.org/10.4337/9781788116855.00007>.
- Worrell, E., Carreon, J.R., 2017. Energy demand for materials in an international context. *Philos. Trans. R. Soc. A-Math. Phys. Eng. Sci.* 375 (2017), 20160377 <https://doi.org/10.1098/rsta.2016.0377>.
- Yin, R.K., 2009. *Case Study Research: Design and Methods*. Sage.
- Zamani, B., Sandin, G., Peters, G.M., 2017. Life cycle assessment of clothing libraries: can collaborative consumption reduce the environmental impact of fast fashion? *J. Clean. Prod.* 162, 1368–1375. <https://doi.org/10.1016/j.jclepro.2017.06.128>.
- Zhang, W., Guo, J., Gu, F., Gu, X., 2018. Coupling life cycle assessment and life cycle costing as an evaluation tool for developing product service system of high energy-consuming equipment. *J. Clean. Prod.* 183, 1043–1053. <https://doi.org/10.1016/j.jclepro.2018.02.146>.