SUSTAINABILITY LABELLING IN FASHION

MANIPULATING CONSUMER ENGAGEMENT

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Abstract

This paper analyses the impact of persuasive technologies in sustainable fashion. The analysis focuses on this sector as it shows certain ambiguities that pose significant risks for digital consumers. The main controversial aspect concerns sustainability labels and the rationale behind their implementation. This controversy appears extremely compromising when it meets the functioning of the digital world. The persuasion provided by digital technology becomes ethically problematic for some specific digital consumers. By analysing consumer preferences, the paper affirms that agents with a weak preference for sustainable fashion risk being manipulated by PTs. However, manipulating individuals in their garment choices raises ethical concerns related to the formation and expression of people's identities.

Keywords: *AI; Digital Technologies; Sustainability; Consumer Behaviour; AI Ethics*

INTRODUCTION

The concept of sustainability is ever more important in the fashion industry and has been playing an increasing role in consumers' clothing purchasing decisions. This trend has been growing positively since the 1990s. However, despite such an increase in attention towards sustainability, mainly verged as environmental sustainability, only around 10% of the current clothing market is dedicated to sustainable fashion (Jacobs et al., 2018). Even if people express sensitivity to sustainability and show a growing interest in sustainable fashion, their purchasing decisions do not reflect this inclination (McNeill & Moore, 2015). The causes of this phenomenon are multiple and include economic, cultural and behavioural factors.

There is a clear asymmetry between consumers' attitudes towards sustainability and their purchasing behaviour. This discrepancy is defined in the literature as the 'attitude-behaviour gap', whereby many consumers recognize the importance of environmentalism and agree with the principles of sustainability but their purchasing actions do not reflect this ethical awareness (Wiederhold & Martinez, 2018). Addressing this gap requires a holistic approach that involves not only consumers but also companies, governments and the other key players in the fashion industry. Furthermore, the gap highlights the complexity of consumption dynamics and the need for more effective strategies to promote sustainability in the fashion industry.

The paper aims to analyse these aspects of sustainable fashion by relating them to the

mechanisms underlying digital platforms. The analysis delves into the consumption patterns of sustainable fashion and the impact that persuasive technologies (PTs) have in influencing consumers' behaviours. With the overarching goal of highlighting the potentially adverse effects of PTs, the paper's objective is to demonstrate how these technologies can significantly impact the formation of consumer identities within the sustainable fashion sector. To show the different implications of PTs influences, the paper draws on the insights from the theory of consumer preferences. The paper states that PTs in the sustainable fashion field create the possibilities for the formation of people's controversial self-identity representations.

The paper is structured as follows. After this introduction, section 2 delves into various aspects of sustainable fashion, elucidating how apparel can demonstrate to be sustainable. This section focuses on the importance of sustainability labels. Section 3 introduces what PTs are and analyses the role they play in influencing users' fashion choices. This section shows the implications of the functioning of PTs on two different types of consumers: those who make purchases following the criterion of sustainability and those for whom sustainability represents just one of the many factors that play a role when buying a fashion product. Section 4 concludes by detailing some final remarks highlighting how dangerous preferences' manipulation is related to fashion items.

SUSTAINABILITY LABELS IN FASHION CONSUMPTION

WHAT DOES 'SUSTAINABILITY LABEL' MEAN?

The gap between attitude and behaviour poses a significant challenge in sustainable fashion marketing. In order to address this issue, several marketing strategies grounded in the theory of nudging have emerged. Indeed, by fostering an attitude in favour of sustainability, consumers can be gently influenced to a deeper understanding of the importance of ecological choices, which will consequently be reflected in purchasing decisions. In this sense, sustainability labels represent precisely that gentle push that could lead consumers towards sustainable fashion products. The sustainability label is the main mark that allows to verify the sustainability of a garment. These labels represent a method to simplify purchasing processes and at the same time help consumers make sustainable choices. Sustainability labels help consumers identify sustainable products and at the same time influence their purchasing behaviour (Thøgersen et al., 2012).

It is worth noting that just as the importance of sustainability in the fashion sector has increased in recent years, sustainability labels have become ever increasingly common. These labels can be marks approved by third parties who verify their truthfulness, as well as private marks, i.e., certifications produced by the clothing manufacturers themselves (Fig. 01). The change in attention towards sustainability verified in recent years is also demonstrated by the change in the label's meaning that occurred in recent years. Recently the term sustainability label has replaced that of eco-label. The latter used to refer to labels that provide specific information on the environmental performance of a product, the former has a broader meaning and also includes the concept of social sustainability, in addition to environmental sustainability.

Therefore, sustainability labels are the primary method developed by the sustainable fashion industry to align consumers' preferences and behaviours. These labels provide a direct indication of a product's sustainability, encouraging consumers to make informed choices. In this way, labels act as a nudge, indirectly guiding consumer behaviour without imposing specific decisions. Sustainability labels capture consumers' attention and translate people's environmental sensitivity into purchasing choices. It is then not surprising that with the recent increase in consumer interest in the environment sustainability labels have become one of the distinctive and popular elements in the fashion industry (Gossen et al., 2022).

CLASSIFICATION OF SUSTAINABILITY LABELS

According to the International Organization for Standardization (ISO), the market is mainly dominated by three types of labels: (i) labels verified by third parties, which certify compliance with predetermined sustainability requirements; (ii) private labels, which are based on self-declarations by the producers themselves and do not require verification by a third party; (iii) labels that serve for exchanging sustainability information regarding products among businesses and mandates independent verification by a third party (ISO, 2016; ISO, 2018). With increasing consumers' environmental awareness, private labels have been enjoying growing popularity.

	
Third-party label: the Global Recycle Standard ensures the content of recycled materials in their products, both intermediate and finished, the maintenance of traceability throughout the entire production process, restrictions in the use of chemical products and compliance with environmental and social criteria in all phases of the production chain from the recycling of materials, to the subsequent manufacturing phases, up to the labelling of the finished product.	Private label: FairWertung - the German Fair Recycling Federation - is a network of non-profit organisations and social enterprises that comply with criteria laid down by FairWertung itself for a fair collection and marketing of second-hand clothes.

Fig. 01

However, despite this classification, labels present several problematic aspects. First, we should note that due to the increasing attitude to sustainability a multitude of new labels constantly emerge escaping any ISO classifications, thus creating an immense heterogeneity of sustainability labels on the market (Minkov et al., 2020). Secondly, sustainability can refer to different meanings: it can be social, environmental, economical, energetically, etc. Furthermore, the concept of sustainability does not necessarily concern the entire production process of clothes. It can only refer to one phase of the production process. For these reasons, the comparison between sustainability labels is difficult. They can refer to different phases of the production cycle of a garment and focus on specific and different sustainability aspects. To make an example, let's mention the well-known sustainability label, the Carbon Trust, renowned for assessing the quantity of greenhouse gas emissions generated during the production process of a specific item. It is clear that comparing this label to another focusing on the percentage of recycled materials would make no sense and be misleading for consumers.

In addition, there is the need to mention that in the realm of digital fashion, a third label emerges to convey the sustainability of a garment. Specific to online retailing, sustainability tags, which are markers designed to highlight compliance with the products' sustainability, can be considered a type of sustainability label. These tags can be based both on the very sustainability labels of the products (when present) and on certifications provided by the same retail platform in which the product is on sale. Therefore, these tags can represent a sustainable label verified by third parties (e.g. the Amazon Climate Pledge Friendly), a private label self-certified by the company manufacturing the product, or they can be a self-certification affixed by the retailing platform. The presence of sustainable tags indicate also that digital platforms recognise the growing importance of the sustainability concept among consumers.

It is essential to underline that the sustainability tags system is extremely useful for digital retailing, as it offers consumers an even quicker and more intuitive method to identify sustainable products during their purchases. This system not only simplifies the search for eco-friendly items but contributes to raising consumer awareness of the importance of sustainability in the fashion sector. At the same time, its implementation is also advantageous for retailers, as it offers them a more efficient and cheaper way than physical labels to communicate their commitment to sustainability, thus improving the brand's and platform's reputation.

However, it is important to consider that the introduction of sustainability tags increases the ease of greenwashing practices. These include misleading advertising linked to logos, labels and environmental sustainability certifications, without a real commitment from the brand to reduce the environmental impact of its products. Therefore, while sustainability tags offer undoubted

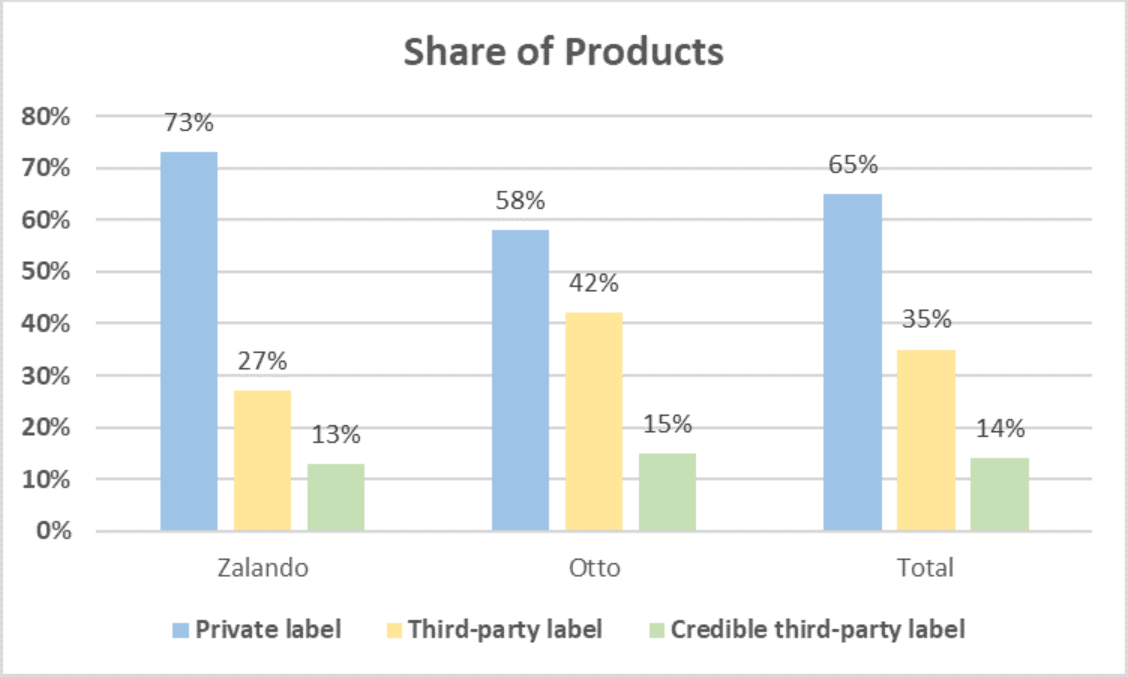

Fig. 02

advantages in terms of transparency and accessibility of information, consumers must remain aware of the possibility of encountering sustainability claims not supported by actual sustainability-oriented corporate actions and policies.

SUSTAINABILITY LABELS ISSUES

The vast diversity of labels and tags has a significant impact on consumers. Only a minority of individuals can navigate between the multiple types of labels and distinguish their peculiarities (Hwang et al., 2015). Due to the great heterogeneity of sustainability labels available, people often find themselves confused and this inevitably creates trust issues towards the very labels (Grunert et al., 2014). In addition to such great heterogeneity, a second aspect that entails confusion among consumers derives from the multiplicity of sustainability aspects to which the labels refer. As explained above, this makes it difficult for consumers to accurately assess the sustainability of products. As a result, consumers feel undecided and insecure in their purchasing choices, compromising trust in the decision-making process and generating a further need for clarity and transparency from manufacturers and retailers. Finally, a third confusing aspect concerns the labels' credibility. An analysis of the credibility of sustainability labels and tags at the two leading online fashion retailers in Germany, Zalando and Otto, revealed that around two thirds of fashion items are marked with private labels, while only a third provides sustainability information approved by third parties (Gossen et al., 2022). And only 10 out of the 25 third-party labels identified could be defined as credible. Out of a total of 16,878 fashion products featuring a sustainability tag on Zalando and Otto, only 14% presented sustainability information considered credible (fig. 02). These findings raise significant concerns regarding the consistency and reliability of sustainability information expressed through labelling, highlighting the need for greater standardization and transparency in the sustainable fashion sector. Therefore, although labels are a tool designed to guide consumers towards more responsible choices, several problems lead people to ignore such labels rather than rely on them.

PTS, SUSTAINABILITY AND FASHION CONSUMERS

PTs represent an interactive technology capable of influencing a person's attitudes or behaviours (Fogg, 1998). One of the main aims of PTs is to offer a representation of reality that reflects users' values and beliefs to increase the time spent on digital platforms. PTs are based on artificial intelligence algorithms, which by collecting and classifying user preferences, are able to constantly suggest content in line with these preferences. The goal of PTs is to maintain user engagement as high as possible. Strengthening users' beliefs by making

people communicate within a closed system is an effective way to increase such engagement. Indeed, numerous social networks have proven to do so (Cinelli et al., 2021).
PTs are based on many different persuasive strategies. The Persuasive Design System framework identifies 28 strategies that are classified into four categories based on the type of task they aim at: primary task support, dialogue support, system credibility support, social support (Fogg, 2002). As shown by Adaji & Adisa (2022), in the literature about PTs to influence sustainable behaviours, 20 of these strategies mainly arise. Among these, 9 are the most common: reward, suggestion, self-monitoring, feedback, competition, reminders, social comparison, comparison in goal setting (fig. 03.a). It is important to observe that the technologies on which these strategies are applied are manifold. PTs can indeed be developed as mobile applications, IOT devices, serious games, web applications and virtual realities (fig. 03.b) (Adaji & Adisa, 2022).

PTS INFLUENCE

PTs exert a significant influence on people's choices and behaviours. The literature has widely analysed the types of influence exercised by PTs, defining them mainly in two ways. On the one hand, PTs influence is seen as beneficial as it helps people navigate through the vast amount of information present in the digital world, allowing them to avoid choice overload and decision fatigue. In a context where the enormous flow of online information could overwhelm users, the persuasive functioning of technologies is considered essential and advantageous. On the other hand, this persuasion is often seen as a type of negative influence as it is based on user preference profiling techniques and the reduction of available choice options. PTs filter out options for users, thus controlling what they see and read and how they behave.
PTs entail the creation of what in the literature has been defined as epistemic bubbles and echo chambers (Piazza & Croce, 2022). These are conditions whereby people are led to live in environments that constantly propose the same themes and make people interact mainly with individuals with whom they share the same preferences, interests and opinions. In the echo chambers, information and content are always in line with the user's interests. Such chambers and bubbles imply that existing ideas and opinions are amplified and reinforced as different perspectives are missing. Therefore, they contribute to

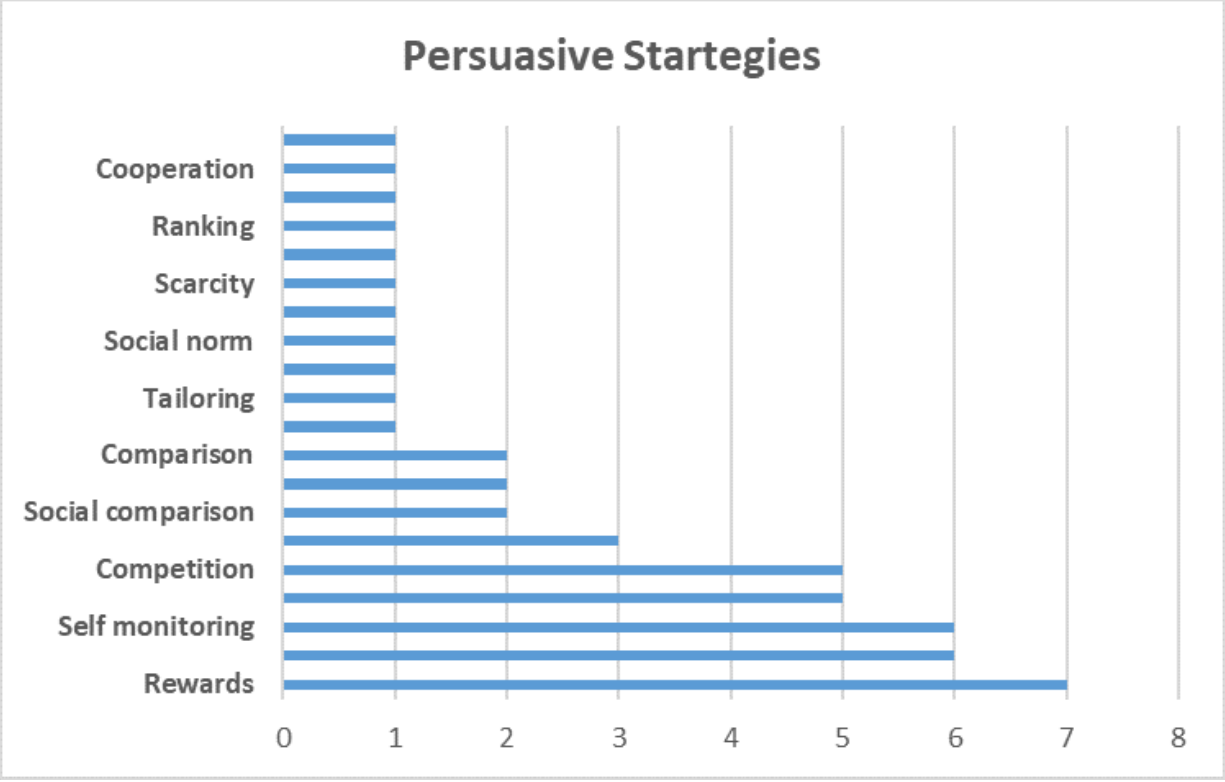

Fig. 3a

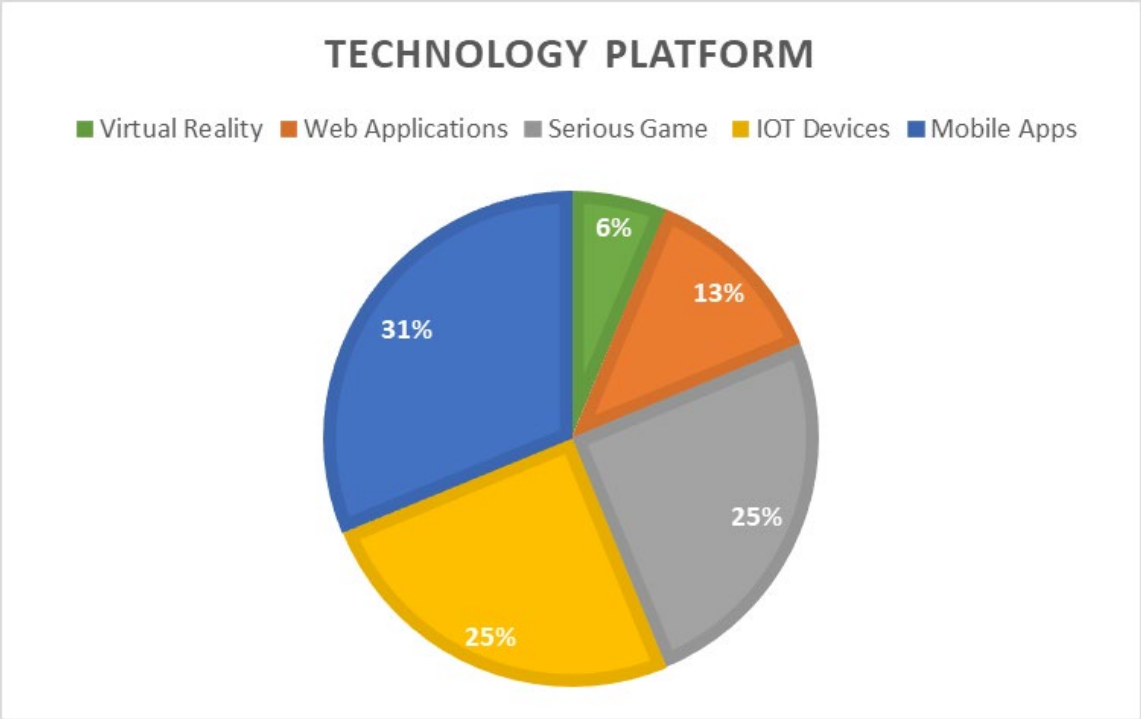

Fig. 3b

polarisation of pre-existing preferences (Sunstein, 2002). However, this mechanism presents the risk of preference manipulation. By determining and limiting the set of options from which users can choose, PTs imply predetermined decisions. According to this interpretation, PTs manipulate users, undermining their autonomy and freedom of choice.

SUSTAINABILITY AND CONSUMER'S PREFERENCES

As described above, consumers have an ambiguous attitude towards the sustainability principle. This section will refer to the consumer preference theory, according to which the agent presents a preference ordering of strong and weak relationships (Angner, 2016). Considering this theory allows us to understand how due to ambiguous sustainability market conditions, PTs can imply serious identity problems for certain types of consumers. Obviously, not all the neoclassical assumptions behind individual preference orderings are considered. In fact, here it is not necessary to consider preferences perfectly stable and rational, that is responding to the criteria of completeness, reflexivity, transitivity and continuity. The reference to the consumer preference theory only serves to assume that people show to some extent both well-defined (strong) and vague (weak) preferences. Strong preferences are characterised by a high degree of awareness in the individual. They can be the result of well-defined values, desires and goals and be pretty stable over time. On the contrary, weak preferences are less evident or less conscious in the individual but nevertheless exist and influence decisions. This distinction does not imply that strong preferences cannot change or mutate in different circumstances (Elster, 1983). It is simply an indicative description of people's awareness.

The growing percentage of consumption of sustainable products and the attitude-behaviour gap highlight that consumers show at least two different types of preferences for the sustainability principle. Some have a strong preference for sustainability and are those who are consciously guided by this principle in their fashion purchases. Others, instead, show a weak preference whereby sustainability represents just one of the various factors borne in mind when purchasing a garment. For the latter, sustainability is only one component (along with many others, such as price, style, availability, etc.) that determines the choice of one clothes over another. By weak preference, it is meant a preference for characteristics that are not directly sought by consumers but respond more to factors that, when encountered, play a role in the purchasing decision.

Therefore, it is plausible to think that only some consumers, those with a strong preference for sustainability, can navigate the great heterogeneity of labels. By being steered by the aim to wear

sustainable, they tend to understand what sustainability labels and tags means. It means that these people are willing to make the effort to understand which labels are reliable or not. These groups of consumers will be able to benefit positively from the influence of PTs.

Is it different for people with a weak preference for sustainability? Do PTs have a different impact on these consumers? It is possible to assume that offline a person with a weak preference for sustainability will not exclusively look for eco-friendly clothes since, as mentioned before, sustainability is not the main criterion guiding their choices. Such a person may occasionally come across items with sustainability labels and decide to purchase them. However, offline and online worlds present substantial differences. It happens online that PTs influence preferences in marked and targeted ways. As mentioned, digital platforms entail the phenomenon of epistemic bubbles and echo chambers. By definition, the echo chamber and filter bubbles involve repetition and amplification of information that reflects people's preferences, creating an environment in which individuals tend to be exposed to content that confirms and reinforces their pre-existing beliefs. Concerning sustainable clothes, this phenomenon is further fostered in online retailing where the number of sustainability labels is increased by the presence of tags.

PTs adapt and shape the shopping experience based on the user's preferences proactively presenting sustainable products that match their interests and behaviours. Indeed, through digital profiling techniques, contents that reflect preferences are constantly offered to users. In this context, even a person with a weak preference for sustainability will be exposed to a greater variety of eco-friendly options than offline and therefore be more likely to purchase sustainable clothing. This highlights the potential of PTs to change and influence the purchasing decisions of digital users. Necessarily, this underlines the importance of understanding how these technologies shape consumer behaviours in the digital environment.

To summarise, thanks to the presence of sustainability tags the quantity of online sustainability labels increases, thus users have more possibilities than offline to encounter sustainable fashion products. Furthermore, this possibility increases even further due to the functioning PTs which imply the phenomenon of echo chambers whereby once a preference has been expressed, it is repeatedly and intentionally proposed to users by the system. By being subject to this more than proportional exposure to sustainable fashion content compared to the offline world, it is plausible to think that consumers with a weak preference for sustainability will increase their purchases of sustainable products. Therefore, it is possible to conclude that PTs' functioning manipulates these consumers. Indeed, although there is no change in preferences, people who show a weak preference for sustainability will be more likely to buy and wear sustainable clothing. This is due exclusively to the PTs mechanism and the ambiguity concerning sustainability labels. This highlights the necessity to solve both the credibility and reliability issues of sustainability labels and to analyse the effect of PTs on consumer fashion preferences.

CONCLUSION

The paper analysed the implications of PTs on consumers with preferences for sustainable fashion items. It showed that PTs' mechanism is ethically problematic, especially in a sector where there is a lot of vagueness around the concept of sustainability. Starting from ambiguous market conditions, such as the credibility of sustainability labels and the attitude-behaviour gap, PTs' influence can be harmful not only because it is manipulative but also because by manipulating consumers it determines an asymmetry between how people think they represent themselves and who they actually are. Given the great heterogeneity of sustainability labels, the difficult understanding of their meaning and the discrepancy between attitude and behaviour among consumers regarding the concept of sustainability, the influence exerted by PTs can have extremely negative implications for people's identity formation and expression. Manipulation based on unreliable labels not only compromises consumers' autonomy to make informed decisions but also undermines their sense of identity and personal integrity. Furthermore, it creates a disconnection between the individual and their impact on the environment, as consumers may believe they are adopting sustainable behaviours when instead they could be contributing to environmentally harmful practices.

To avoid these problematic consequences, it is necessary for the sustainable fashion industry to eliminate the ambiguities that lie behind the concept of sustainability. It is crucial to promote the transparency and reliability of information on fashion sustainability to protect consumers'

autonomy and authenticity, as well as to promote a more responsible and aware consumer culture.

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CAPTIONS

[Fig. 01] Examples of third-party and private labels

[Fig. 02] Share of products with private and third party labels and percentage of credible third-party labels (results of Gossen et al. (2022) analysis about labels' credibility)

[Fig. 03a] PTs for Sustainability. Most used Persuasive Strategies in Sustainability

[Fig. 03b] PTs for Sustainability. Technology Platform used to implement persuasive strategies

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