

Green Fashion Consumption – a Review of the Literature

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Received: 23 August 2022, Accepted: 15 June 2023, Published online: 09 October 2023

Abstract

The environmentally conscious consumption of fashion products promotes the preservation of natural ecosystems for current and future generations. It may include the purchasing and use of textile products made from organic and sustainable materials, the repair, reuse and recycling of textile products, and the concept of slow fashion. The environmental aspects of fashion products have drawn the attention of both researchers and practitioners in recent years. As a result, many scientific papers have accumulated regarding this vital aspect of consumer behaviour.

This paper aims to provide an overview of the literature regarding consumer behaviour toward green fashion products, as well as to uncover and categorise significant driving factors, and in addition, identify the most critical barriers. After identifying the relevant literature, the study examines 104 articles published between 2011 to 2021 in high-quality, peer-reviewed scholarly journals.

Our results demonstrate that while most of the reviewed articles employ a quantitative survey questionnaire method to identify the drivers of green textile consumption, qualitative approaches are also used. Most authors utilise the theory of planned behaviour as a foundation of their research. This paper summarises the research problems covered by the selected articles, the theoretical frameworks, the methods used, and their essential findings. We also outline existing research gaps and suggest potential directions for future research. Since there are only a few review articles on green fashion consumption, our article provides an important new addition to the literature for the reference of future scholars.

Keywords

fashion consumption, sustainable development, green fashion, purchasing behaviour

1 Introduction

Sustainable development has garnered considerable attention from researchers in the last three decades. An essential aspect of sustainable development is sustainable consumption and production, which requires businesses to implement strategies so that consumers can follow sustainable behavioural patterns. The term "Sustainable Development" was introduced in the report titled "Our Common Future" prepared by the World Commission on Environment and Development (WCED, 1987). The report defined sustainable development as "that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). According to the United Nations General Assembly (WCED, 1987), sustainable development ensures economic advancement while safeguarding the natural environment and social welfare. It provides a basis for implementing environmental and social initiatives and policies. Scholars are increasingly addressing the topic of sustainability on a theoretical

level, while businesses and policymakers manage issues related to sustainability on a practical level. According to Hult (2011), an organisation can achieve market-based sustainability when it effectively connects itself through market-oriented product demands and demands of consumers and the preferences of various stakeholders concerned with economic, social, and environmental dimensions of social responsibility issues. When introducing the role of marketing, Hult (2011) acknowledges its unique position to shift attention from maintaining connections with customers to proactively managing a more extensive range of marketplace concerns due to the increased concentration on sustainability activities.

Goal 12 of the United Nations Sustainable Development Goals (SDG's), namely "Responsible Consumption and Production" has attracted a remarkable level of interest in recent years (Szlávik et al., 2005). It requires that both businesses and consumers pay more attention to

environmental considerations, focusing on long-term sustainability that is viewed as including the sustainable management and use of natural resources, the responsible management of chemicals and waste, and sustainable lifestyles (Köszeghy, 2004). According to Connolly and Prothero (2008), green consumption is a concept that holds consumers responsible for addressing the impact of environmental problems by adopting sustainable lifestyles, in ways that may involve using organic products and sustainable and renewable resources, as well as products with a long lifetime (Connell, 2011).

The garments industry is among the most polluting in the world with an estimated yearly consumption of 500,000 tons of microfibre and 93 billion cubic meters of water (Khitous et al., 2022). The garment sector is acknowledged as the second most resource intensive polluter behind the oil industry (Akhtar et al., 2012). Furthermore, it releases a significant volume of contaminated water and contributes by 8–10% of global carbon-dioxide emissions (Moran et al., 2021). Also, the textile industry significantly impacts society because of its highly complicated supply chains are characterised by fierce international competition, mass production, and fast consumption. It has significant impacts on the implementation of the Sustainable Development Goals, such as the expansion of the economy and the number of jobs, gender equality at work, the minimum wage structure, and the environment (Khan and Roy, 2023). The rapid rate of industrial growth and the need for more attention to compliance with social sustainability in emerging countries make it difficult to address workplace issues, including worker security and sanitation, along with workers' health (Kabir et al., 2019). Fast fashion, characterised by products moving very fast from design to retail stores with new collections being introduced continuously, also raises many environmental and social issues. While in 1975 34 million metric tons of textile fibres were manufactured worldwide, by 2020 this figure had more than tripled, reaching 109 million metric tons, with 146 million metric tons predicted for 2030 (Esbeih et al., 2021).

Consequently, green fashion is one of the most significant product categories from a sustainability point of view. According to one recent definition, fashion is how our garments convey and reflect our unique social perspective while connecting us to time and place (Fletcher, 2008). Green fashion is also called eco fashion (Strähle and Grünewald, 2017), which is linked to the environmental aspect of sustainable production and consumption (Lundblad and Davies, 2016), but, green fashion can also

be understood to cover a broad range of social concerns in fashion manufacturing and usage (Lee et al., 2012). There is a difference between fashion-conscious and green-conscious consumers. Fashion-conscious consumers discard garments more quickly with little moral consideration; however, these fashion conscious consumers are more willing to repair products that support their "fashion personality" (McNeill et al., 2020). On the other hand, Yan and Yazdanifard (2014) acknowledge that environmentally conscious consumers recognise the need to increase their consumption of green products.

A study by Gilg et al. (2005) found that consumers demand ethical, environmentally sound, and socially responsible products. Chan and Wong (2012) acknowledged that green clothing is sustainable because it uses natural resources and fibres and encourages ethical business practices that protect environmental resources. Niinimäki (2010) concluded that ethical commitments to clothing purchases and moral values are essential motivators for buying green clothing. This ethical commitment adds value to the product, resulting in longer product lifespans and thus better outcomes and a slower fashion cycle.

Consumers who are more concerned about the environment are much more prepared to spend on organic products (Sandra and Alessandro, 2021). Kang et al. (2013) revealed that product knowledge, perceived consumer effectiveness, and perceived personal relevance significantly impact young consumers' attitudes, subjective norms, and perceived behavioural control, influencing their purchase intentions for environmentally sustainable textiles and apparel. Lin (2010) demonstrated a link between consumers' environmentally friendly purchasing intentions and their purchases of organic clothing. Consumers who were ready to spend an extra amount on sustainable clothes were cautious about using chemicals in garment production, prioritised wool garments, and were interested in cotton production and its environmental consequences. In addition, these consumers are prepared to spend a higher price for green apparel and often examine the labelling while acquiring them. According to Ellis et al. (2012), consumers are ready to invest 25 per cent more just for sustainably grown cotton fabrics than for products produced from conventional cotton. In addition, green clothes were more attractive to customers who had previously purchased organic products and practiced environmentally beneficial behaviour.

In order to better understand consumer behaviour relating to green fashion products, our research aimed at providing a comprehensive review of the relevant literature. In

the next section we introduce our detailed research questions and the method we used to select the relevant articles and prepare the review. Then, we introduce our results focusing on the following topics: the research problems addressed by the authors of the selected articles; the theoretical underpinnings and methods used; and the major findings and future research directions identified by the authors. Finally, courtesy of our comprehensive review, we identify the most important findings of the literature relating to the consumption of fashion products and make suggestions for future research.

2 Research questions and method

Inspired by the importance of green fashion consumption and our limited understanding of the topic, this research seeks to summarise and assess the literature related to green and sustainable clothing consumption by addressing the following research questions:

- What are the general characteristics of the articles published in the literature?
- What are the specific research problems addressed by the authors and what theories and methods do they use?
- What are the major finding of the literature regarding green fashion consumption?
- What potential research directions emerge in this research area for the future?

Based on the initial literature survey, we found only a limited number of articles that provide a review of the existing literature or suggest future research directions based on state-of-the-art in the field. For example, Tey et al. (2018) explored the willingness to pay for sustainable apparel in 2018 using only 12 articles. Mukendi et al. (2020) reviewed the literature on sustainable fashion in 2020 by analysing a significantly larger sample of 465 papers and focusing on a much broader topic, where the results showed seven study streams that cover every discipline, to investigate whether consumer and organisational behaviour might be transformed for the future. They identified seven relevant scientific inquiry clusters: supply chains, social retail marketing (SRM), consumer behaviour, consumer practices and communities, social marketing interventions, future leaders, and sustainable business models. The objective of the present review falls within the scope of these two studies. It aims to explore the literature findings regarding the factors that influence sustainable clothing consumption.

The review focused on English language journal articles available in the Web of Science (WOS) database falling in the categories of economics, business, finance, social science, management, and environmental science. Since only very few, sporadic articles were published on the topic before 2011, we considered articles from a ten-year period between 2011 and 2021.

The research included three distinct stages:

1. Stage 1: Identifying the need for a review, setting the objectives of the research.
2. Stage 2: Identification of keywords and search terms, setting up of inclusion and exclusion criteria, data extraction and synthesis.
3. Stage 3: Data extraction and analysis.

In February 2021 we searched for relevant articles in the Web of Science (WOS) database using the following keywords:

- First, we executed our search using the keywords "Textile" and "Fashion". This search designated our subject area and provided 9944 articles.
- Next, and in order to make our database more relevant, we narrowed the 9944 articles by using the following keywords: "Green" OR "Sustainable" OR "Eco-friendly" OR "Environmentally Friendly" OR "Second-hand" OR "Recyclable". This search narrowed our database from 9944 to 809 articles.
- Finally, to focus our attention on the literature addressing the consumption patterns of textile products, we further narrowed the database by the following keywords: "Behaviour" OR "Intention" OR "Purchase" OR "Post-purchase" OR "Buy" OR "Reuse" OR "Repair" OR "Recycle" OR "Repurchase". This search yielded 150 articles.

After an initial review of the selected 150 articles, we identified those which are not directly related to our study area. These studies focused on Product-Services Systems, eco-labelling, Small and Medium Size Entrepreneurship (SME), advertisement of fashion products and employee motivation and are not concerned with our objective of analysing consumer motivations to consumer green fashion products.

This narrowing of the database resulted in the elimination of 46 articles that were not directly related to the topic of the study, which left us with 104 contributions that directly address the area of green and sustainable textile consumption. We adopted the PRISMA methodology from the study by Testa et al. (2021) to illustrate the review

protocol used to identify the relevant literature for analysis. The Selected articles were thoroughly analysed using a spreadsheet to record all relevant information such as research questions, theories, research methods, sample size, sampling methods, tools used to collect and analyse data, variables used, hypothesis, product type (clothing), geographical scope, major issues addressed, significant findings, research gaps, future research opportunities identified and recommendations by the authors.

3 Results of the research

3.1 General characteristics of the literature on green fashion

The number of articles describing the different aspects of green fashion consumption has increased significantly between 2011 and 2021. While only two papers were published at the beginning of the period in 2011, 29 articles were published in 2021 (Fig. 1). Most research on green and sustainable textile consumption was undertaken in the United States, South Korea, China, and India (Table 1).

Almost 60% of the identified articles were published in the "business economics" domain (Table 2). Still, other research areas such as engineering, ecology and social sciences are also represented (some articles are included under more than one category).

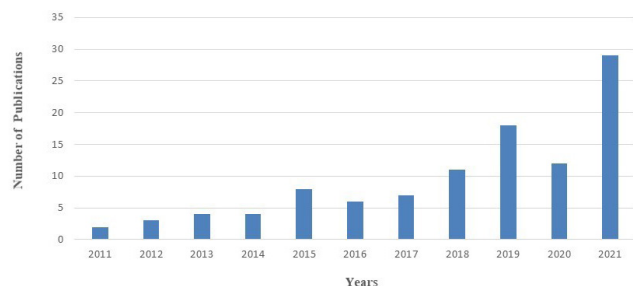


Fig. 1 Number of publications reviewed by year (2011-2021)

Table 1 Number of publications by country

| Country where research was conducted | Number of papers |
|--------------------------------------|------------------|
| United States of America | 18 |
| China | 13 |
| South Korea | 9 |
| India | 6 |
| Australia | 5 |
| England | 4 |
| Japan | 3 |
| Italy | 3 |
| Sweden | 3 |
| Germany | 2 |
| Other countries | 38 |

Table 2 Descriptive statistics of the reviewed articles

| Research areas (number of publication) | Journals (number of publications) |
|--|--|
| Business and Economics – 59 | Sustainability – 27 |
| Engineering – 9 | International Journal of Consumer Studies – 19 |
| Science & Technology and Other Topics: Engineering; Environmental Sciences & Ecology – 7 | Journal of Fashion Marketing and Management – 15 |
| Materials Science – 4 | Journal of Cleaner Production – 7 |
| Social Sciences – 2 | Sustainable Production and Consumption – 3 |
| Others – 23 | Business Strategy and the Environment – 3 |
| Publishers (number of publications): | Journal of Consumer Behaviour – 2 |
| MDPI – 28 | Others – 28 |
| Wiley – 25 | |
| Emerald Group Publishing – 22 | |
| Elsevier – 19 | |
| Sage – 3 | |
| Taylor & Francis – 2 | |
| Others – 5 | |

MDPI and Wiley have published the most articles in the database in the journals Sustainability, International Journal of Consumer Studies, Journal of Fashion Marketing and Management and the Journal of Cleaner Production. Some other journals which have published more than one paper in the domain of the research are: the Journal of Retailing and Consumer Services, International Journal of Retail Distribution Management and Fibres & Textiles in Eastern Europe, Clothing and Textiles Research Journal, Journal of Business Research while others only published one article (such as Social Behavior and Personality, Journal of Macro Marketing, Journal of the Textile Institute, Autex Research Journal, Corporate Social Responsibility and Environmental Management, Marketing Intelligence & Planning, Applied Sciences-Basel etc.)

3.2 Research problems, theories and methods used

3.2.1 Research problems addressed in the literature

After reviewing the selected articles, six distinct research topics emerged. Most articles focus on green and sustainable textile consumption (about half of all the articles). In contrast, others examine more specific behaviour related to textile consumption, as shown in Table 3.

According to our results, the concepts of slow fashion, collaborative fashion and circular fashion are gaining interest in the literature and concrete actions relating to these,

Table 3 Major research topics identified

| Research problems addressed | Number of articles |
|---|--------------------|
| General textile consumption | 68 |
| Circular fashion consumption (reuse, repair, and recycle fashion items) | 16 |
| Slow/fast fashion purchase behaviour | 7 |
| Collaborative fashion consumption (renting, swapping) | 6 |
| Second-hand clothing consumption | 7 |

such as the purchasing of second-hand fashion products and the reuse, repair, and recycling of garments. For instance, Legere and Kang (2020) investigated the function of self-concept as a motivator in choices regarding slow fashion. They used perceived self-enhancement benefits as a mediating variable between the dependent variable – behavioural intentions toward slow fashion – and the independent variables – effects of moral self-identity and proximity of apparel. The findings of their study suggest that customers' desires for transformation and self-enhancement by symbolic behaviour in social situations may be driving forces behind slow fashion consumption. Perceived benefits of self-improvement and behavioural intentions were directly influenced by symbolic moral identity, but not by internalised moral identity. Mohammad et al. (2021) conducted a study to investigate the mediating role of attitudes toward used clothing and the direct and indirect effects of electronic word of mouth (eWOM) on mindful consumption behaviour (MCB) in the context of sustainable clothing purchases. The findings of this study lend credence to the direct influence of eWOM on consumer involvement, awareness, and attitudes towards used clothing. The findings confirmed the link between MCB and consumer involvement, but they did not confirm the relationship between attitude and mindful consumption (MC). The study also supported the mediation role of consumer participation between eWOM and consumers' MCB, but it did not support the mediating role of attitude toward second-hand clothing. These tendencies may be able to balance or at least moderate the exponential rate of growth in the usage of textile products as experienced in developing countries in the last decades (Ekström and Salomonson, 2014).

3.2.2 Theoretical background of the reviewed articles

We have also assessed the theories used in the literature. The theory of planned behaviour (TPB) (used by 19 out of the 104 articles analysed) explains consumer behaviour regarding the consumption of green textile products.

The authors found that while TPB has clear benefits, it cannot fully explain the attitude-behaviour gap in the context of sustainable fashion (Wiederhold and Martinez, 2018). Furthermore, results generated using TPB may also be limited because they are based on buying intentions rather than actual purchase behaviour (Cowan and Kinley, 2014; La Rosa and Johnson Jorgensen, 2021).

The strongest indication of environmentally friendly buying behaviour in the future is one of the components of the theory of planned behaviour, namely attitude toward environmentally friendly clothing and social problems (Cowan and Kinley, 2014).

Vilkaite-Vaitone and Jeseviciute-Ufartiene (2021) employed TPB by using attitudes, subjective norms, perceived behavioural control and information provided as independent variables while examining textile recycling intentions. They concluded that the primary motivator for textile recycling in Lithuanian homes is perceived behavioural control. While perceived behavioural control, subjective norm, and attitude toward behaviour were all powerful determinants of behaviour, information provision turned out to be less important. In their study, the traditional framework of planned behaviour, rather than the extended model, was more suitable for estimating the willingness to recycle textile waste. The research by Cowan and Kinley (2014) used the theory of planned behaviour with independent variables: belief factors, normative influence factors, and perceived behavioural control factors to explain purchase intentions towards environmentally friendly apparel. The result showed that all these factors impact purchase intentions. Another research by Lang and Joyner Armstrong (2018) utilised the same theory. Their independent variable was fashion leadership, and the mediating variables were attitude, subjective norms, perceived behavioural control, and clothing renting and swapping was the dependent variable. They found a significant influence of fashion leadership on the purchase decision of clothing items. They also identified a positive relationship between the independent and mediating variables. These findings supported the hypothesis that fashion leadership with attitude and subjective norms are positively correlated with overall intention to adopt sustainable clothing product-service systems (CPSS). This study is unique in various ways, including the extension of the TPB model to include fashion leadership as an external component.

Iran et al. (2019) used the theory of planned behaviour and Hofstede's national cultural factors with independent variables: attitude, subjective norm, and perceived behavioural

control. The mediating variable was behavioural intention, and the dependent variable was collaborative fashion consumption. Their findings demonstrate that attitude, while social norms and perceived behavioural control are significant determinants of the willingness to adopt collaborative fashion consumption, perceived behavioural control does not have a direct impact on collaborative fashion consumption. They also demonstrated that the determinants of collaborative fashion consumption vary across different cultures, comparing Iran and Germany. In Tehran, for example, attitude is the most important factor affecting the intention to engage in collaborative consumption behaviour, whereas in Berlin, perceived behaviour control is the most significant predictor of this intention.

The second most often employed theory in the literature is the Theory of Reasoned Action (TRA) which was used by Hyllegard et al. (2012); Johnson et al. (2016); Lee and Huang (2021); Rausch and Kopplin (2021); Tena-Monferrer et al. (2022); Walker (2013); Xu et al. (2014) in their study. For instance, Xu et al. (2014) found that TRA can assist in identifying major changes in consumer clothing consumption patterns. They used this theory with the independent variables:

1. perceived values: economic value, hedonic value and uniqueness, environmental value,
2. perceived concerns and
3. subjective norm and dependent variable purchase intention towards second-hand clothing.

With these variables, the results of their study revealed considerable variations in young consumers' second-hand clothes consumption behaviour in the U.S. and China.

The Theory of Reasoned Action (TRA) was used by Rausch and Kopplin (2021), where perceived environmental knowledge and environmental concern influence the attitude, subjective norm and perceived behavioural control and purchase intention. The dependent variable of the research was purchase behaviour. The findings revealed that attitudes toward sustainable clothes had the most significant impact on willingness to purchase, while the perceived economic risk has no significant effect on this relationship. According to Walker (2013), TRA tends to focus on the attitude aspect, which can restrict predictive power.

Other theories used in the literature include the consumption value theory and Keller's customer-based brand equity theory employed by Wei and Jung (2017). The study was to identify the moderating role of face-saving, which is an essential motivation of Chinese consumers' intentions to

buy sustainable fashion products. Ramkumar et al. (2021) used commodity theory and social facilitation theory to analyse the cross-cultural impacts of brand status and social facilitators on improving customer perceptions of circular fashion products, demonstrating that South Korean consumers had a more positive attitude than Americans.

Jacobs et al. (2018) used the value-attitude-behaviour hierarchy in their research to analyse sustainable clothing. Their findings show that having a positive attitude towards social-ecological clothing standards, biosphere and philanthropic values, and an affinity for online and catalogue shopping help people buy more sustainable clothing. On the other hand, sustainable clothing purchase behaviour is impeded by egoistic and hedonic values and a preference for durable apparel. They did not find substantial effects of the suspected barriers, such as fashion consciousness and price sensitivity. The findings emphasise the need to shift attitudes and values toward sustainability and highlight the durability of sustainable apparel and its accessibility through retail outlets.

Hofstede's national cultural factors were employed by Iran et al. (2019); Su et al. (2019); Wang et al. (2021), and Fishbein's attitude theory was used by Su et al. (2019) using the independent variable: consumer's apparel sustainability knowledge, mediating variable: consumer's attitude and dependent variable: consumer's willingness to buy. The findings revealed that young Millennials' clothing sustainability awareness and personal beliefs have a favourable and considerable impact on customer attitudes toward sustainable clothes, which has a powerful and positive effect on consumer buying behaviour. Furthermore, a cross-cultural comparison identified similarities and differences among young Millennial consumers regarding their garment sustainability awareness and values.

Other theories employed include the knowledge-attitude-behaviour model and the attitude-behaviour-context approach by Dhir et al. (2021). Their research revealed that green clothes buying behaviour is positively connected with green trust, environmental attitude, and labelling satisfaction. Zhang et al. (2021) used the motivation—opportunity—abilities (MOA) theory. According to their findings, individual service providers' willingness to share depends on their tailored service capabilities, economic motivation, and perceived ease of use.

The theoretical frameworks help to better understand consumer intentions and behaviour regarding green fashion textile consumption. The strongest predictor of behaviour, according to the literature is behavioural

intention, which helps in the formulation of suggestions for the adaptation of sustainable textiles. The practical applications of the theories for the growth of green and sustainable fashion textiles concentrate on how green fashion producers may engage with and retain sustainable fashion customers. It would be important to further investigate and better comprehend consumer decisions and behaviour applying various theories that may identify different drivers of influencing consumers' green fashion consumption.

3.2.3 Research methods used

Most studies on green and sustainable textile consumption utilize quantitative research approaches (70 out of 104 articles), although qualitative research methods have also been used (26 articles), with some studies employing several diverse research approaches (8 articles).

Ekström and Salomonson (2014) followed qualitative research approaches in their work, and an exploratory qualitative study was done by Ruppert-Stroescu et al. (2015), qualitative semi-structured one-to-one interviews were conducted by Wiederhold and Martinez (2018). Quantitative research approaches were followed in La Rosa and Johnson Jorgensen's (2021) research and in Vilkaite-Vaitone and Jeseviciute-Ufartiene's (2021) research to identify the sustainable clothing purchase behaviour of consumers.

Different studies used various techniques to accomplish their research objectives. For instance, an experimental design was employed to measure consumers' purchase intentions in a survey by Rolling et al. (2021) when exploring how customer attitudes toward luxury brand and product use cases affect consumers' cognitive dissonance, which affects brand attitudes and purchase intentions. A self-administered online survey was carried out in different studies by Moon and Lee (2018). The authors conclude that the connection between environmentally friendly materials and a fast-fashion fashion brand is essential for consumers. Besides this, a relationship between the parent brand and the sustainable extension boundary. According to the findings, consumers' perceptions of the fit between the original fast fashion brand and the new sustainable line improve when they perceive an integration of sustainability aspects into fast fashion. Furthermore, consumers' evaluations of the extension line's cause-effectiveness worth and monetary value influenced the purchase intention and paying the higher price. This means that customers consider a fast-fashion brand's sustainable construction line more when they think a buying from the new sustainable line to be helpful to themselves and the community.

McNeill and Venter (2019) used in-depth interviews in their study to determine the critical reasons for and obstacles to collaborative fashion and clothing consumption. According to their findings, sustainable consumption's social and ethical implications are the least likely motivators for engaging in collaborative fashion consumption. In contrast, opportunities for individual identity expression are the most desired benefits. Face-to-face surveys were done by Şener et al. (2019) to identify features that impact consumers' expectations for slow fashion products and the implications of perceived value on customers' purchase intentions and willingness to spend at higher prices. The findings showed that customer value perception positively impacts purchase intent and readiness to pay higher costs.

Furthermore, customers who want to buy slow fashion clothing are ready to pay more than they would for other products. D'Souza et al. (2015) used an exploratory study in their research to investigate men's buying intentions towards eco-clothing by product attributes, environmental concerns, and responsible behaviour. The results showed that four critical variables with substantial impacts are environmental awareness, sustainable price, sustainable behaviour, and sustainable branding. Moon et al. (2015) conducted an exploratory survey questionnaire to evaluate consumers' overall pro-environmental behaviour and fashion consciousness and in-depth interview research to investigate the obstacles to the rising popularity of sustainable fashion from the viewpoints of industry experts. They conducted the study to explore ways to fill the gap between supply and demand for sustainable fashion. Five fashion professionals' perspectives were brought together to identify the primary impediments to popularisation and argue that being fashionable and ecologically conscientious are incompatible notions that cannot coexist.

3.3 Major findings of the literature

The literature review assists in the identification of the most important drivers of and barriers to consumer behaviour towards sustainable textile products, which we discuss in the following sections.

3.3.1 Factors influencing green fashion clothing consumption

Based on the assessment of the 104 articles in the sample, the most important drivers of consumers' green and sustainable textile consumption can be grouped into four categories as shown in Table 4.

Table 4 Drivers of consumers' green and sustainable textile consumption based on the reviewed articles

| Categories | Variables |
|------------------------------------|---|
| Personal and psychological factors | Social status, face-saving, Opportunities for individual identity expression, Attitude, Subjective norm, Perceived behavioural control, Past experiences, Fashion sensitivity, Emotional value, perceived consumer effectiveness and faith. |
| Product characteristics | Product value, price, type of products, brand, product quality, durability, brand image, and product re-design. |
| Broader benefits | Monetary, perceived customer value, Perceived novelty, perceived greenness, and perceived usefulness. |
| Knowledge and understandings | Environmental knowledge, Eco-fashion awareness. |

Personal and psychological factors

Personal and psychological aspects were the most often studied in the 104 articles. D'Souza et al. (2015) found four key variables: environmental concern, sustainable branding, sustainable pricing, and sustainable behaviour. But consumer perceived effectiveness and belief in those four were not essential factors. According to Kim et al. (2021), the emotional value had the most decisive influence, whereas economic uncertainty and performance risk did not affect product perceptions. Individualism was discovered to moderate the paths between perceptual and cognitive dimensions, product perceptions, product attitudes, and behavioural intention.

According to McCoy et al. (2021), attitude, subjective norms, perceived customer effectiveness, fashion leadership, and past environmental behaviour had a significant impact on the intentions of Gen Z consumers for using clothing rental services. The results of the study of Kim et al. (2020) confirm that social capital is an influential solid variable for the purchase intention of sustainable fashion products. This study used social media to explore the concept of sustainability with sustainable fashion goods. They presented a paradigm for using social capital in the social media context, like YouTube, to influence sustainability marketing. In the context of fashion this study looked at how social power, social interaction, and social capital influence consumers' purchasing intentions for sustainable fashion items. Diddi et al. (2019) argued that perceived value, acquisition from known sources, sustainability commitment, uniqueness, and lifestyle changes influence sustainable clothing consumption. For instance,

an intriguing finding was that the characteristics of slow fashion affect the customer concept of ethical quality (Reimers et al., 2016).

Several scholars conducted studies to identify consumer motivation to purchase sustainable textile products. One of the elements is the social status. The author explained that a person's social group can be separated into two categories: education and wage levels. These elements influence on the social status and this social status can significantly increase the likelihood of using environmentally friendly textiles. One's social status influences the possibility of using eco-friendly materials was found in a study (Zhang et al., 2021), opportunities for individual identity expression (McNeill and Venter, 2019), perceived customer value; has a favourable impact on the buying intention and readiness to pay greater prices (Şener et al., 2019), perceived behavioural control is major and others significant are attitude and subjective norms (Iran et al., 2019; Vilkaite-Vaitone and Jeseviciute-Ufartiene, 2021), face-saving which is a significant motivator for Chinese consumers to buy sustainable fashion items. Face-saving also reduced the impact of overall product value while increasing the effect of green value in anticipating purchasing trends.

Some other studies were conducted on personal norms and attitudes (Carfora et al., 2021; Johnson et al., 2016), egocentric appeals (Song and Kim, 2019), perceived enjoyment and social shopping value (Lang and Zhang, 2019), past green behaviour (Khare and Sadachar, 2017) and hedonic needs (Wang et al., 2021).

The most critical factors are attitude, subjective norm and perceived behavioural control, fashion leadership, age, income, social media, fashion leadership and knowledge about green textile products (Table 5) that positively impact green fashion consumption based on the literature by Becker-Leifhold (2018); Carfora et al. (2021); Cowan and Kinley (2014); de Lenne and Vandenbosch (2017); Johnson et al. (2016); Kang et al. (2013); La Rosa and Johnson Jorgensen (2021); Lang and Armstrong (2018); Lang and Joyner Armstrong (2018); McCoy et al. (2021) and Vilkaite-Vaitone and Jeseviciute-Ufartiene (2021). Table 5 is a summary of all factors impacting on green textile consumption behavior. Some other factors are peer influence, past green behaviour and knowledge (Khare and Sadachar, 2017), where past green behaviour and knowledge positively and peer influence negatively impacts green clothing consumption behavior. Some other factors have negative impacts which are informational provision (Vilkaite-Vaitone and Jeseviciute-Ufartiene, 2021), perceived behavioural control (Iran et al., 2019) and the effects

Table 5 Factors affecting green clothing consumption behaviour

| Articles | Theories used | Independent variables | Dependent variables | Relationship |
|---|--|---|--|--------------|
| Becker-Leifhold (2018); Carfora et al. (2021); Cowan and Kinley (2014); de Lenne and Vandenbosch (2017); Johnson et al. (2016); Kang et al. (2013); La Rosa and Johnson Jorgensen (2021); Lang and Armstrong (2018); Lang and Joyner Armstrong (2018); McCoy et al. (2021); Vilkaite-Vaitone and Jeseviciute-Ufartiene (2021) | | Attitude, subjective norm and perceived behavioural control influence, Fashion leadership, Age, Income, social media, | | Positive |
| Khare and Varshneya (2017) | Theory of planned behaviour | Past Green, Green apparel knowledge | Purchase intention | Positive |
| | | Peer influence | | Negative |
| Vilkaite-Vaitone and Jeseviciute-Ufartiene (2021) | | Informational provision | | Negative |
| Iran et al. (2019) | | Perceived behavioural control | | Negative |
| Rausch and Kopplin (2021) | | Consumers' green washing concerns, perceived aesthetic risk | | Positive |
| Legere and Kang (2020) | Self-concept theory | The effects of moral self-identity and proximity of clothing | Behavioural intentions toward slow fashion | Negative |
| | | The product value | | Positive |
| Wei and Jung (2017) | Consumption value theory, Keller's customer-based brand equity | Face savings with the product value | Behavioural intention | Positive |
| | | The green value | | Negative |
| | | Face savings with green value | | Positive |
| Salem and Alanadoly (2021) | Personality traits theory | Social media, Eco-friendly behaviour, and environmental concerns for fashion production | Word of mouth | Positive |

of moral self-identity and proximity of clothing (Legere and Kang, 2020). The study by Wei and Jung (2017) stated that the product value, face savings with the product value and green value have positive influence whereas green value has negative influence on the green clothing purchase behavior. Some other studies where consumers' greenwashing concerns, perceived aesthetic risk (Rausch and Kopplin, 2021) and social media, eco-friendly behaviour and environmental concerns for fashion production (Salem and Alanadoly, 2021) have positive influence on green clothing purchase behavior.

Product characteristics

D'Souza et al. (2015) found that four essential variables that strongly influence sustainable fashion clothing are product price, environmental consciousness, sustainable behaviour, and sustainable brand image. The product value is a vital product element that influences the consumption of green fashion consumption. According to Wei and Jung (2017), when purchasing sustainable fashion

products, Chinese consumers evaluate general product value but not green value; however, when it comes to face-saving, the role of the product's green value becomes more important.

Another important factor of product characteristics is price. Eze and Ndubisi (2013) said that higher prices trumped ethical considerations when buying green items, widening the gap between attitude and behaviour. Consumers with low price sensitivity are more likely to make green purchases. On the other hand, high price sensitivity has a detrimental impact on customers' green purchasing behaviour. As a result, it was found that high prices negatively impact green purchase intention and behaviour.

Some other studies were conducted on perceived consumer effectiveness, utilitarian value, and income greatly improved purchase probability for recycled products (Park and Lin, 2020), re-designing old clothes (Ruppert-Stroescu et al., 2015) and sustainable branding (D'Souza et al., 2015).

Broader benefits

Wei and Jung (2017) acknowledged that delivering distinct product value is crucial in developing customer value for slow fashion. Customer value positively influences consumers' buying intentions, as reported by Jung and Jin (2016). Parent brand, cause-effectiveness value and monetary value; the match between environmentally sustainable items and a fast fashion brand of textile products is significant for fashion customers. Furthermore, a close fit between the parent brand and the sustainable extension line boosts consumers' impressions of the original brand and the sustainable extension line (Moon and Lee, 2018).

Some other studies concentrated on the quality and uniqueness of the textile products (Song and Kim, 2018) and functional, financial, symbolic, aesthetic, environmental and social/ethical aspects of clothing (Rahman and Koszewska, 2020), perceived novelty, perceived greenness and perceived usefulness (L. Chen et al., 2021).

Knowledge and experience

A study by Dhir et al. (2021) revealed that green trust, labelling satisfaction, and environmental attitude were positively correlated with green clothing purchase decisions. Moreover, green trust, environmental concern, and environmental perspective facilitate some of the suggested associations, whereas age and gender moderate the correlation between environmental issues and environmental consideration. According to the findings, quality expectations and purchasing intention were typically lower for apparel than for durables and fast-moving consumer product bundles (Magnier et al., 2019). Previous environmentally responsible behaviour inspired the purchase of sustainably sourced clothing. Surprisingly, green clothing awareness and social influences did not affect natural clothing purchasing behaviour (Khare and Varshneya, 2017).

Some factors influence purchase motivations which are associated with ecological perceptions, ecological awareness and knowledge, social pressure to respond in an environmentally responsible manner, ecologic feelings, perceived environmental consequences, previous purchases of ecologically responsible apparel, affordability, and expenses of environmentally responsible clothing (Cowan and Kinley, 2014).

Other studies demonstrated the importance of apparel sustainability knowledge and personal values (Su et al., 2019), green knowledge (Khare and Kautish, 2021), environmental awareness (Polajnar Horvat and Šrmpf Vendramin, 2021), and attitude towards sustainable textile products (Rausch and Kopplin, 2021) and awareness of eco-fashion (Cairns et al., 2022).

3.3.2 Barriers to green fashion consumption

Several barriers to consumer purchasing intentions for sustainable clothing can be identified based on the literature.

Price, affordability, awareness, transparency, appearance, and inertia are all barriers to a more sustainable fashion consumption. The influence of each element on customer buying behaviour may be of importance to clothing manufacturers and retailers, who must apply techniques to facilitate sustainable and environmental clothing purchases while focusing on lowering these barriers (Wiederhold and Martinez, 2018).

According to the study by McNeill and Venter (2019), the social and ethical impacts of sustainable consumption habits are the lowest motivating factors within this group's (young women) interaction with participatory consumers' purchase concepts. Others are price sensitivity (Jacobs et al., 2018), high price, lack of information, as well as knowledge and abilities (W.-K. Chen et al., 2021; Kreuzer et al., 2019), perceived economic risk (Rausch and Kopplin, 2021), low price of new products (Cox et al., 2013), social risk and performance risk (Lang and Zhang, 2019).

3.4 Potential directions for future research

This study's final aspect was to examine the research gaps and future research directions available to researchers.

The empirical examination of most studies dealing with the topic is confined to consumers from a few countries, as shown when introducing the descriptive characteristics of the sample articles. Since there may be significant differences between how people in different countries and cultures behave, research should extend to other regions, as well as cross-cultural investigation is necessary to improve the generalisability of the results (Kang et al., 2013).

Future research should also compare young and older generations' behavioural patterns (Legere and Kang, 2020). Some studies have already focused on demographic factors such as gender. Researchers believe that the study of young female consumers can add to our understanding of sustainability practices in fashion consumption (Becker-Leifhold and Iran, 2018; McNeill and Venter, 2019). A study on the male segment has already produced helpful suggestions for marketers and advertisers (D'Souza et al., 2015). More research on other demographic variables is necessary to clarify the relationship between price, emotional and purchasing attributes, and long-term consumption (Haines and Lee, 2022).

A study by Žurga et al. (2015) suggests that a good understanding and forecasting of consumer recycling behaviour can be achieved by exploring proper psychographic

features. Future studies incorporating additional cognitive, affective, and motivational aspects may provide new insight into the fundamental factors that make socially responsible consumption advantageous (Park and Lin, 2020). In addition, some research concentrates on the eco-fashion of textile products, which can provide designers with perspectives on developing sustainable designs suitable to the customer base far beyond trends demanded by the apparel market (Şener et al., 2019).

Research findings already provide essential insight into engagement in sustainable consumption and the purchase intentions towards sustainable products, forming the basis for additional research. These studies also act as a base for academics, as existing literature focuses mainly on consumer interests in sustainable practices rather than consumer attitudes toward their behavioural patterns (La Rosa and Johnson Jorgensen, 2021; Wiederhold and Martinez, 2018). Since the study of alternative solutions to clothing consumption is still in its early stages, there will be a need for additional academic studies in this area. A further cross-cultural survey, for example, could be executed to include more purchasers (Iran et al., 2019).

Neumann et al. (2021) and Su et al. (2019) investigated younger Millennials, but additional studies may use a more diverse sample group based on geographic location and educational background to support the findings. There has been little empirical study into the impacts of gender and age on sustainable and non-sustainable clothing. This study focused on multiple dimensions and aspects of clothing. Rahman and Koszewska (2020) suggested that more investigations into consumer-centric perspectives on sustainable practices are required. The inquiry by Shrivastava et al. (2021) represents a valuable theoretical foundation for understanding consumer preferences in the acceptance of clothing sustainable practices through circular fashion. It would be fascinating to see how customers of Facebook and other social media sites react to the studies.

The results of a study by Magnuson et al. (2017) suggest that consumer perception of socially responsible clothing may be based on the circumstances; therefore, investigations are required in different attitude scenarios to quantify the same constructs used in the study. This study used a comprehensive perspective, defining it in terms of price, time, and effort, and discovered that it significantly impacted customer perceptions of ethical clothes. In this study, slow fashion was determined to be one of the most significant influencers on customer attitudes toward ethical apparel. However, it should be noted that

this operationalisation may have led to respondents seeing it as more of a conventional concept than a moral concept. Gazzola et al. (2020) suggested that continuous studies should enhance the participant representative sample through different communication channels, not just online networks, in determining this concept in a broader sense, considering other segments of society.

To summarise our findings, we can identify several research gaps and further research opportunities as shown below:

- There are very few studies comparing green textile consumption to the consumption of other products, which calls for a new comparative analysis in the future.
- The selected research articles widely utilise the Theory of Reasoned Action and the Theory of Planned Behaviour. As a result, scientists should apply these theories to further green fashion consumption studies, as the wider application of these theories may yield a better understanding of consumers' behaviour.
- Several important aspects of textile consumption are still largely unexplored. Researchers should therefore emphasise emerging areas of fashion consumption such as fast fashion, slow fashion, second-hand fashion, and activities such as recycling, reusing, repairing etc. In addition, research regarding the post-purchase behaviour of fashion consumers is also scarce since most studies focus on the initial purchase decision. So, research on consumers' post-purchase intention and behaviour towards textile fashion products can be explored.
- More cross-cultural research is required to understand cultural and geographical differences in green fashion consumption.
- The consumer perspective should be linked to the policy and corporate aspects of green fashion consumption since solutions can only be identified and implemented with the cooperation of the different spheres of society.

4 Conclusion and managerial implications

In this paper, we introduced the results of a review of the literature regarding green fashion consumption. We attempted to demonstrate the state of the art of the literature relating to this important domain of human consumption and identify the most prevalent research areas and methods used. The bibliometric study performed covered 104 articles indexed by the Web of Science database published between 2011 and 2021.

The findings revealed the primary driving factors behind green fashion consumption and the research gaps as well as potential research opportunities.

We demonstrated that in 2021, the number of publications on sustainable fashion textile consumption increased dramatically as compared to the previous year. The United States and China have done the most study on this, whereas Europe has done less. However, because Europe has one of the largest textile markets, more research on the various European countries would be desirable. We assessed the topics addressed by the selected articles and discovered that half of them were about textile consumption in general, while others were on circular fashion consumption (reuse, repair, and recycle fashion items). However, there were few studies on other aspects of textile consumption. As a result, academics can focus on other issues such as slow/fast fashion apparel, second-hand clothing, and so on. As the theory of planned behaviour and the theory of reasoned action have been utilised in the majority of the papers, researchers can use this theoretical framework to continue working on other areas of sustainable textile use. Furthermore, whereas 70 of the publications employed a quantitative technique, researchers can apply additional methodologies such as qualitative and mixed approaches to gain a better knowledge of sustainable textile consumption intentions and behaviour.

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