

## Systematic Review of Consumer Behavior Research in the Context of Green Apparel

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### Abstract

The United Nations Conference on Trade and Development (UNCTD) found that fashion is the second most polluting industry in the world. To reduce the negative impact of the fashion industry on the environment, green apparel has become a new trend. Now, green apparel has been an area of interest in consumer research. However, there is a lack of systematic review of consumer behaviour research on green apparel. By searching and collecting data from Scopus, a peer-review paper database, this study analysed past research focus on consumer behaviour in the context of green apparel to form a comprehensive review. After conducting thematic analysis, five major themes in this area were sorted: pre-purchase, purchase, post-purchase, advertising, and consumer awareness. Based on thematic analysis, feasible future research directions were suggested. The results of this review offer several theoretical implications for green apparel research and provide insights that can guide firm management in green apparel sales.

**Keywords:** Consumer Behavior, Green Apparel, Purchase Intention, Systematic Review

### Introduction

Growing environmental concerns have led to a global focus on the production and promotion of environmentally friendly products. The fashion industry, including apparel, has become a significant area of environmental concern, prompting increased attention to the creation and marketing of sustainable and eco-friendly clothing (Khare & Sadachar, 2017; Chuah et al., 2020). The fashion industry, particularly the apparel sector, exerts a significant ecological impact. With a market worth of 2.5 trillion dollars, it stands as the second-largest consumer of water globally, responsible for 20% of total water wastage (UNCTAD, 2019). Additionally, the apparel industry contributes to about 10% of worldwide carbon emissions, while its operations have resulted in the degradation of arable land. Cotton farming, integral to the industry, accounts for 24% of insecticide and 11% of pesticide use despite occupying just 3% of arable land across the globe (UNECE, 2018). A recent study by Mandarić et al (2022)

emphasizes that the fashion sector is a substantial environmental polluter and plays a role in various social and ecological challenges.

The significance of sustainable apparel manufacturing practices was underscored in 2014 during a prominent summit held in Copenhagen. This event aimed to highlight the urgency of identifying and enacting strategies for environmentally conscious clothing production. Notably, renowned brands such as Giorgio Armani and H&M have taken notable steps by introducing eco-friendly clothing options (Winge, 2008). Consequently, apart from heightened customer demands, companies are encountering amplified legitimacy and regulatory pressures that compel the adoption of sustainable practices.

Having recognized this perspective, manufacturers within the apparel industry, along with associated stakeholders, have embraced the feasibility and necessity of integrating sustainability objectives into their operations (Gedam et al., 2021). As a result, they have initiated the adoption of environmentally conscious production techniques, including methods like dry washing, alongside the introduction of green apparel lines (Dhir et al., 2021). The term "green apparel" refers to clothing produced using environmentally conscious practices, adhering to eco-friendly principles, and supporting fair trade initiatives (Khare & Kautish, 2022; Henninger et al., 2016). As highlighted by Gardetti (2015), conventional fabrics like polyester, spandex, nylon, and rayon lack biodegradability and involve chemical treatments, such as petroleum and formaldehyde usage, potentially posing harm to the environment.

Although researchers have extensively investigated and made substantial contributions to the field of green apparel in the last decade, they have frequently employed diverse terminology when referring to green apparel. This variance in terminology has led to challenges in comprehending the intricacies of this multifaceted subject. Additionally, scholarly works centered on green apparel have been disseminated across a diverse array of journals, indicating a fragmented readership audience. Hence, there exists a distinct gap necessitating a comprehensive assessment of the existing literature concerning green apparel. Therefore, this assessment aims to elucidate the current status of green apparel research and to outline potential avenues for future exploration by the academic community.

## **Methodology**

In contrast to a conventional narrative review, this study employed a Systematic Literature Review (SLR) methodology to analyse the pertinent literature. This approach is founded on a scientific, transparent, and replicable process (Treanfield et al., 2003; Snyder, 2019) and has been widely recognized and applied in the field of management research (Donthu et al., 2021; Lim et al., 2022). The SLR methodology offers a structured means of organizing and categorizing key findings within a specific research domain. It notably highlights hitherto undiscovered facets, thereby informing the formulation of potential directions for subsequent research (Kraus et al., 2022). The advantages of employing an SLR analysis encompass enhanced result quality (Christofi et al., 2017), the provision of a more defined research trajectory (Kauppi et al., 2018), and the projection of various factors conducive to the establishment of a fresh conceptual framework for future research agendas (Lim et al., 2022).

The approach of this study adheres to the established norms of SLR, aligning with the foundational principles delineated by (Massaro et al., 2016). These principles encompass the systematic identification of pertinent literature from databases (as depicted in the initial step of this study), the rigorous screening and evaluation of these studies for their eligibility

(reflected in the second step of this study), and the incorporation of selected studies within both qualitative and quantitative syntheses (evident in the third step of this study and subsequent Results section). These principles enjoy widespread recognition within the scientific community and have been embraced by numerous studies in the area of consumer behaviour, including but not limited to (Sharma et al., 2023; Bosso et al., 2023).

In conducting data collecting and filtering steps, this study followed the "Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)" approach as illustrated by Figure 1. The initial step involved employing the Google Scholar platform to explore the first 50 results generated by the query "green apparel". Subsequently, journals that center their focus on the domains of fashion and sustainability were scrutinized, specifically in relation to "green apparel". During this meticulous screening phase, the diverse array of terminologies employed were recognized, such as "green apparel", "green fashion", "organic apparel", "organic clothing", "sustainable apparel" and "sustainable clothing" to assess and deliberate upon green apparel. Utilizing these terminology variants, this study proceeded to execute comprehensive searches within one of the famous academic databases, Scopus. The search string was TITLE-ABS-KEY ("green apparel\*" OR "green fashion\*" OR "organic apparel\*" OR "organic cloth\*" OR "sustainable apparel\*" OR "sustainable cloth\*"), and time period was limited to year 2014 to year 2023.

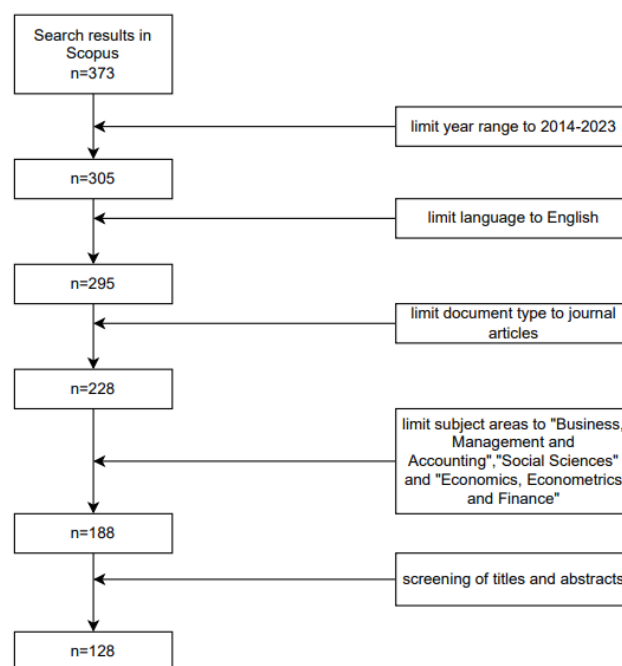


Figure 1. Systematic Process of Data Collection and Selection

After using search string, 373 studies were there in Scopus. Then, when limit year range from the year 2014 to the year 2023, there were 305 studies remaining. Next procedure was to limit document language to English, there were 295 studies available. By limiting document type to journal articles, there were 228 studies. Because the focus of this review is consumer behaviour field, subject areas were limited to "Business, Management and Accounting", "Social Sciences" and "Economics, Econometrics and Finance", the sample size reduced to 128 studies.

The collected studies from the primary search underwent a meticulous evaluation to ensure alignment with the paper's objectives. Each study's title, abstract, and, if necessary,

the entire study was examined against research scope of this review. Studies not aligned with the research questions or not meeting all three selection criteria were manually excluded after screening of titles and abstracts. After manually removed studies do not meet criteria, final sample size was 128 studies.

## Results

This study visually presented various statistical aspects using graphical representations, including the yearly and journal-wise distribution of articles, geographical scope and employed theories that derived from the selected green apparel literature. The analysis yielded valuable insights into the trends and focus areas within the research field of green apparel.

The yearly distribution of the sample is illustrated as Figure 2, which demonstrates an increasing interest from researchers in the green apparel field in recent years. This trend reveals the growing significance of sustainable practices in apparel manufacturing and consumption.

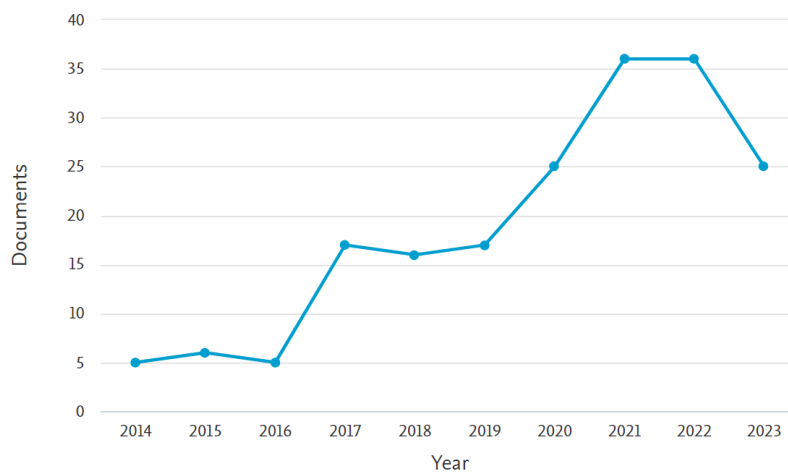


Figure 2. Yearly Distribution of Sample

Geographic distribution of sample is shown in Figure 3. It is unveiled that the primary focus of studies within developed countries was on the United States, while for developing countries, India received the most attention. This trend suggests the variation in sustainable practices and consumer behaviours across different regions.

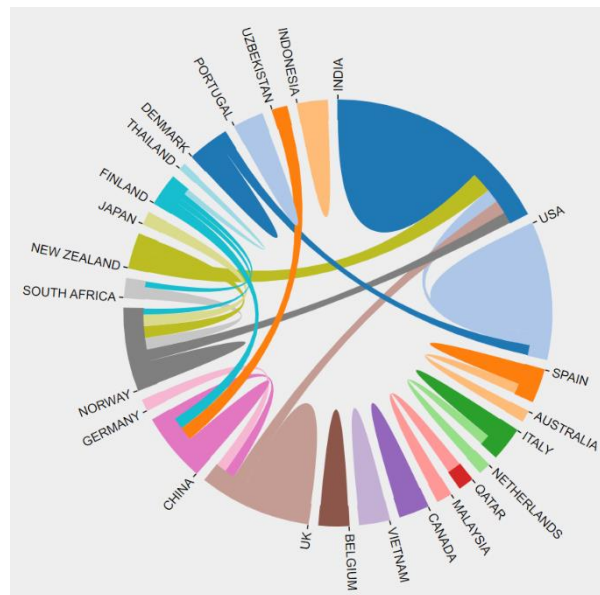


Figure 3. Geographic Distribution of Sample

After analysing the journals from which the documents in the sample come from, it can be seen that the three journals with the largest number of sources are: INTERNATIONAL JOURNAL OF CONSUMER STUDIES (9 studies), JOURNAL OF FASHION MARKETING AND MANAGEMENT (14 studies) and JOURNAL OF RETAILING AND CONSUMER SERVICES (6 studies). However, research on green clothing is published in a wide range of journals, not limited to fashion journals, environmental journals, or consumer research journals.

In the realm of theoretical frameworks, the green apparel literature predominantly relied on behavioural theories, especially Theory of Planned Behaviour (TPB). However, theories of learning, institutional perspectives, and networking were comparatively underexplored. This highlights an opportunity for diversifying the theoretical underpinnings of green apparel research.

After reading all sample studies, the themes of these studies could be summarized by Table 1. Basically, there are five themes namely pre-purchase, purchase, post-purchase, consumer awareness and advertising. And under each theme, there are many sub-themes following. Among all the sub-themes, purchase intention is the most highlighted sub-theme. Mainly because purchase intention is said to be the most useful predictor of actual purchase behaviour.

Table 1

*Themes of Sample Studies*

Themes	Sub-themes	Number of studies	Percentage
Pre-purchase	attitude	3	2.34%
	consumer preferences	1	0.78%
	consumers' perception	5	3.91%
	need for green apparel	1	0.78%
	purchase intention	54	42.19%
Purchase	consumers' choice	5	3.91%
	consumers' decision	5	3.91%
	consumption pattern	6	4.69%
	purchase behavior	24	18.75%
	purchasing quantities	1	0.78%
Post-purchase	sustainable clothes usage	3	2.34%
Consumer Awareness	consumer knowledge	1	0.78%
	communication of green fashion	1	0.78%
	consumer shifting	6	4.69%
	green fashion innovation	1	0.78%
	instrumental attributes	1	0.78%
	sensibility for sustainable clothing	1	0.78%
	sustainability education	2	1.56%
voluntary simplistic	1	0.78%	
Advertising	customer response	3	2.34%
	readability of information	1	0.78%
	segment membership	1	0.78%
	WOM	1	0.78%
<b>Total</b>		<b>128</b>	<b>100.00%</b>

Under the theme of pre-purchase, researchers have investigated how different human values shape consumer purchase intentions. The utilization of Schwartz's theory of basic human values has shed light on how values like self-enhancement and self-transcendence impact consumer attitudes toward green apparel. For instance, self-enhancement values have been found to negatively affect such attitudes, whereas self-transcendence values foster positive attitudes and actual purchasing of green clothing. Cultural differences continue to play a significant role in shaping consumer intentions. The variation in the impact of social norms on purchase intentions among US and South Korean consumers underscores the importance of considering cultural context (Han, 2018). Cross-cultural studies have provided insights into how values differ among consumers from different countries. The study by Su et al (2019) on US and Chinese consumers revealed that values such as conservation, self-enhancement, self-transcendence, and openness to change significantly affect attitudes toward purchasing sustainable clothing. These values were found to vary between the two countries, highlighting the influence of cultural differences on consumer preferences. Moreover, studies have explored the interplay between values and other factors, such as utilitarian and hedonic values. Razzaq et al (2018) examined how religiosity moderates the

impact of hedonistic and utilitarian values on sustainable fashion consumption. This nuanced approach considers the complexity of consumer decision-making processes.

Other factors beyond values also contribute to consumer attitudes toward green apparel. Knowledge about apparel and sustainable fashion, along with knowledge of a brand's sustainability practices, has been shown to positively influence consumer attitudes. Social influence, such as peer pressure, has been found to encourage positive attitudes toward green apparel. Conversely, factors like fashion innovativeness and a high fashion sense might influence consumers to exhibit lower positive attitudes toward green apparel, potentially due to a preference for conventional fashion.

Under the theme of purchase, the literature on green apparel purchase practices delves into various factors that positively influence consumers' decisions to buy sustainable clothing. These factors encompass a range of psychological, behavioural, and experiential aspects. One significant factor is consumers' moral intensity, which refers to the degree of ethical consideration an individual places on a given situation. Studies by Hong and Kang (2019) have highlighted the impact of moral intensity on green apparel purchase practices. Consumers who possess a strong ethical commitment are more likely to opt for sustainable clothing, aligning their choices with their moral values. Past behaviours, such as recycling and engaging in other environmentally friendly practices, have also been found to positively affect consumers' decisions to purchase green apparel. Research by Ha and Kwon (2016) demonstrates that prior recycling behaviours can lead to a heightened likelihood of choosing sustainable clothing. Similarly, engaging in past green behaviours, as explored by Khare and Sadachar (2017); Khare and Varshneya (2017), can serve as a catalyst for future environmentally conscious apparel purchases.

Under the theme of post-purchase, Cline (2012) stated that sustainability of apparel made from eco-friendly materials can be compromised if they are disposed of quickly. Consequently, extending the lifecycle of a product has gained significance in efforts to minimize resource wastage and energy consumption.

Under the theme of consumer awareness, although there is an evident shift in consumer preferences toward green apparel, certain factors still impede this transition. The study by Kusá and Urmínová (2020) highlights inhibiting factors that might be obstructing consumers from adopting sustainable clothing practices. These factors could range from lack of awareness and availability of green apparel options to pricing concerns or limited variety. Interestingly, one study has revealed that consumption involvement with a particular product does not significantly influence green apparel purchase behaviour (Khare et al., 2020). This insight implies that consumers' attachment to a product's features or characteristics might not directly correlate with their decision to choose environmentally friendly options.

Under the theme of advertising, Advertising campaigns focused on environmental issues have proven to be effective in instilling pro-environmental behaviour in consumers (Yang et al., 2015). Song and Kim (2018) found that consumers are more inclined to buy clothing from brands that convey a higher degree of eco-friendliness in their advertising campaigns. These campaigns typically employ emotional and rational appeals, which can be either positive or negative in nature.

### **Directions for Future Research**

Based on thematic analysis results of sample literature, some future directions could be proposed. Many researchers have examined how values could influence people's attitude, but how these values are shaped have not been studied yet. So, in the future, research may

investigate what are main factors shape people's value. Moreover, among those sample literature, only one study considered fashion innovation. However, green apparel is a kind of fashion products, the role of fashion innovation or fashion involvement in the context of green apparel consumption should be further investigated. Although scholars have considered how social media and Internet celebrities influence consumers' choice about green apparel (Munir, 2020), new technology trends on marketing such as blockchain and artificial intelligence have not been fully considered so far. In the future, researchers could investigate the role of technology in green apparel marketing in the digitalization era. For example, to investigate how blockchain and traceability solutions can enhance transparency and trust in sustainable fashion, to examine the role of artificial intelligence (AI) in providing personalized sustainable fashion recommendations to consumers, to explore how virtual try-on and AR technologies enable consumers to "try on" sustainable fashion items digitally.

Moreover, this review only focused exclusively on green apparel research published in English, using Scopus database. This approach may have excluded relevant articles in other languages. To enhance the comprehensiveness of future studies, researchers could consider incorporating articles in languages other than English. Additionally, expanding the scope to include various types of publications beyond research papers, such as book chapters and conference proceedings, might provide valuable insights.

### **Conclusion and Limitations**

This study presents a comprehensive review of the current status of green apparel research. The study involved a systematic literature review (SLR) approach, analysing the trends, themes, gaps, and potential avenues for future research within the field of green apparel. The aim was to provide valuable insights into consumer behaviours related to green apparel.

The study offers several theoretical implications for green apparel research. The dominance of consumer behaviour research using the Theory of Planned Behaviour (TPB) was highlighted. While TPB is essential for understanding consumer perspectives, it is suggested that other theories such as resource-based views, institutional theory, and networking theory should be integrated to explore firm-specific aspects of the green apparel industry more comprehensively. The identified themes, namely behavioural tendencies, consumer awareness, and barriers, provide distinct categories for further exploration. Researchers can delve deeper into these themes and sub-themes to gain a more nuanced understanding of the industry dynamics.

The study also offers practical implications for management and practice. The thematic analysis of green apparel articles provides insights that can guide firm management. The study suggests that firms need to undergo a holistic transformation in product ideation, distribution, and recycling mechanisms to become sustainable. The identified challenges in these areas can inform strategic decisions. Firms can benefit from managerial insights that validate research findings from different parts of the world. This alignment between research and practice can offer actionable insights and pave the way for more effective business strategies.

The study acknowledges certain limitations. The search process might have excluded relevant articles published in languages other than English or in non-indexed sources. Future research could consider broader language inclusion and other types of publications. The selection process involved manual screening, which could introduce human bias. Stringent measures were taken to minimize bias, but further efforts in this direction are recommended.



In conclusion, this study offers a comprehensive overview of green apparel research, highlighting theoretical implications, management insights, and potential avenues for future research. It underscores the importance of a holistic approach to sustainability within the apparel industry and presents valuable directions for academics, practitioners, and policymakers alike.

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