

Research Article

A Study on the Impact of Environmental Awareness on Sustainable Consumption Behavior in Maternity Wear

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With the relaxation of China's birth policies and the dual independence gained by Chinese women in both mental and economic aspects, maternity wear, as an essential item for pregnant women, has an enormous design space and a growing consumer market, attracting increasing attention from all quarters [1]. However, due to the continuous changes in pregnant women's body shapes and the fact that most women need to continue working and socializing during the early and middle stages of pregnancy [2], maternity wear has a short wearing cycle and rapid turnover [3] leading to the current unsustainable consumption of maternity wear. This study aims to explore the impact of environmental awareness on the sustainable consumption behavior of maternity wear. Specifically, the study objective is to use Grounded Theory to analyze sustainability issues within maternity wear consumption and identify the factors and stages influencing sustainable consumption behavior through online searches for relevant reports and comments. We address 2 research questions. RQ1: How to improve the sustainability of maternity wear to reduce unsustainable consumption? RQ2: How does environmental awareness influence sustainable consumption behavior in maternity wear? This article, based on Grounded Theory, to ensure the timeliness of comments and reports, conducted sample data collection from 2019 to 2022. We conducted searches using keywords such as "sustainable maternity wear," "eco-friendly maternity wear," "sustainable fashion," "maternity wear consumption," and "postpartum clothing consumption." We obtained a total of 1086 relevant articles and materials. After careful screening, we narrowed down our searches and organized 45 feasible textual materials for our study. Through online searches for relevant reports and comments regarding sustainable consumption of maternity wear, it identified consciousness-related influencing factors and three stages of sustainable maternity wear consumption behavior. Furthermore, it proposed reference recommendations for promoting sustainable consumption of maternity wear through management practices.

Keywords: environmental awareness, maternity wear, sustainability, consumer behavior, grounded theory

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1. Introduction

In recent years, under the pressure of frequent natural disasters and the COVID-19 pandemic, sustainability issues have attracted unprecedented attention, with a particular focus on the textile and apparel industry, which is the world's second-largest polluting sector [4]. During pregnancy, due to the continuous physiological changes in pregnant women[5], maternity wear has a higher frequency of replacement and a shorter usage period compared to adult clothing; Furthermore, as the social level of consumption and the awareness of quality prenatal care continue to rise, Maternity wear needs are not limited to fulfilling basic functional attributes[6]. Emotional needs provided by maternity wear are increasingly emphasized by pregnant women [7]. All these reasons have led to the unsustainable consumption of maternity wear and the ensuing environmental problems.

The pollution caused by the fashion industry has also received increasing attention from academics. However, for a long time, the focus has primarily been on attributing pollution to the production phase. However, the sustainable transformation of the apparel industry depends not only on raw materials, production, etc., but also on consumers and their wishes, behaviors, and habits, and consumer behaviors play an immeasurable role in reducing the negative environmental impacts of apparel[8]. As a result, in recent years, an increasing number of academics have focused on the sustainable consumption behavior of consumers. Although some research results have been achieved on sustainable consumption of clothing, there has been no research on sustainable consumption behavior of pregnant women, thus lacking reliable theories on related elements. Based on this background, insight into the sustainable consumption behavior of the new generation of pregnant women is of profound significance in promoting the sustainable development of maternity wear.

This study will improve the existing research from the perspective of environmental awareness from the following perspectives: (1) Using online reports as the sample source, adopting the rooted theory research method to explore the factors affecting the sustainable consumption behavior of maternity wear; (2) Using the Internet as the sample source, adopting the rooted theory research method to explore the factors affecting the sustainable consumption behavior of maternity wear. Based on the characteristics of the current research on sustainable consumption behavior of maternity wear, provide relevant policymakers with appropriate management recommendations for the promotion of sustainable consumption behavior of maternity wear.

2. Methodology

2.1. Research methods

The grounded theory is able to select the required source material from a large number of scattered textual materials or numerous data, sift and generalize them, and finally build a new theory suitable for the topic of study [9]. This study employs grounded theory to open coding and axial coding of online media materials related to pregnant women's sustainable consumption, aiming to explore the influencing factors of sustainable consumption behavior in maternity wear. This research aims to fill the current research gap regarding the key determinants of sustainable consumption behavior in maternity wear.

2.2. Sample

Due to the large number of search results, to obtain relevant secondary data comprehensively and accurately, this article follows the following principles when selecting reported comments:

i) The publication date of the samples should be within the past 3 years (i.e., 2019-2022) to ensure the timeliness of comments or reports.

ii) The samples should be representative; online reports should objectively assess the consumption behavior of the current maternity wear group, avoiding subjective factors that could introduce research errors, and ensuring rigor.

iii) Reports from authoritative institutions or platforms are selected to ensure credibility and professionalism.

In search engines such as Baidu, Sogou, and Google, as well as online communities like Zhihu, Xiaohongshu, Weibo, etc., the following keywords were selected for retrieval: "sustainable maternity wear", "eco-friendly maternity wear", "sustainable fashion", "maternity wear consumption", and similar phrases. Relevant data were retrieved following the principles mentioned above.

2.3. Data collection

With the development and growth of the Internet, this generation of pregnant women will search for the information they want to obtain on the Internet in the process of pregnancy and are also happy to share their views on social media. Therefore, the

secondary information on the Internet has the advantages of wide network coverage, participants can speak voluntarily and anonymously, group thinking and preservability, which can cover the consumption characteristics of different types of maternity wear and launch a study on the consumption behavior of the current major consumer groups of maternity wear from multiple perspectives. Therefore, this study uses reports and comments on the Internet related to the consumption of maternity wear and sustainable maternity wear as the source of data.

Through keyword searches, this study obtained a total of 1086 relevant report materials. According to the research objectives, further screening of the collected relevant reports was carried out: firstly, reports that only involved general maternity wear consumption without any sustainable content were excluded, and secondly, duplicate, or reprinted reports were removed. Over the course of one month (from 20 July 2023 to 23 August 2023), a total of 45 feasible textual materials were selected and organized. Thirty of these were randomly chosen for the first part of the study, for grounded coding and key indicator extraction, while the remaining 15 were used for validating the coding and ensuring model saturation. Some of the information sources are presented in Table 1.

TABLE 1: Selected sample sources.

| Language | Sources | Topic | Time |
|----------|---------------------|--|---------|
| Chinese | Sina.com | Care for the Earth with Heart: "October Mommy" 2022 S/S Sustainable Series | 2022/02 |
| | Time Weekly | Textile and clothing has become the world's second-generation polluting industry, how sustainable fashion is landing | 2021/11 |
| | CFW Fashion | Sustainable fashion is increasingly important to the industry, what gaps do maternity wear still need to cross? | 2021/09 |
| English | Honestly Modern.com | Why and at what stage to start investing in sustainable clothing | 2022/03 |
| | CAN LIFESTYLE.co | A pregnant woman taught herself to sew and started a sustainable maternity wear shop | 2021/12 |
| | JOHN LEWIS.com | Love Your Kids, Love the Planet, Be the Best Sustainable Brand | 2021/05 |

2.4. Construction of a Model Influencing Sustainable Consumption Behavior in Maternity Wear

2.4.1. Open Coding

Open coding is the first stage of grounded theory, which involves labeling data segments, essentially defining the data content [10]. By extracting entries of relevant information, repeatedly labeling, organizing, and summarizing, a total of 233 initial concepts and 33 categories were eventually formed.

2.4.2. Axial Coding

Axial coding is a strategy [11] used to reintegrate data into a coherent whole. It involves developing main categories and subcategories through clustering analysis and linking them while exploring how they are interconnected. To achieve this, concepts and categories obtained from open coding are repeatedly summarized and deduced to identify potential patterns or causal relationships. After careful and iterative reflection, the formed categories are logically classified, resulting in the following seven main categories, each with defined connotations (see Table 2).

2.4.3. Saturation test

"Theoretical saturation" refers to the point in the coding process where all categories have been sufficiently developed in terms of their attributes, dimensions, and variations. While it is always possible to discover new variables, further data collection and analysis hardly contribute anything new to the conceptualization[11]. To ensure that no variables have been overlooked, a theoretical saturation test was conducted using the remaining 15 textual materials after the above-mentioned coding. During the saturation test, no new categories were identified. Therefore, the 30 materials in this study were sufficient to develop saturated key indicators and theoretical saturation has been reached. There is no need to expand the database further.

3. Results and Discussions

This research, from the perspective of maternity wear consumers, explores the factors influencing sustainable consumption behavior concerning environmental awareness among maternity wear consumers. The following conclusions are drawn:

Grounded in the context of maternity wear consumption, the collection of the latest case data on sustainable maternity wear consumption and the use of grounded theory to

TABLE 2: Axial Coding.

| Subcategory | Main category | Scope |
|--|-----------------------------|---|
| A01 Knowledge of maternity wear materials | B01 Environmental knowledge | Maternity wear Consumers' Environmental Knowledge of Maternity wear |
| A02 Distinguishing sustainable brands | | |
| A03 Maternity wear Buying Knowledge | | |
| A04 Maternity wear Label Information | | |
| A05 Maternity wear Safety Certification and National Standards | | |
| A06 Environmental pollution of maternity wear | | |
| A07 Garment-generated waste | | |
| A08 Understanding of sustainability | | |
| A09 Socio-environmental responsibility | B02 Sense of responsibility | Awareness among pregnant women of their responsibilities towards the environment, society, and future generations |
| A10 Responsibility of future generations | | |
| A11 Responsibility for the education of future generations | | |
| A12 Perception of environmental issues | B03 Perceived risk | Pregnant women's perceptions of negative risks and losses that may result from their consumption behavior |
| A13 Pregnant women's skin is prone to irritation | | |
| A14 Safety of Maternity Wear | B04 Values | Pregnant women's perceptions, judgements and choices about the social and environmental impacts of sustainable consumption behavior by pregnant women. |
| A15 The value experience of pregnant women | | |
| A16 Perceived value of sustainability | | |
| A17 Reflections on the consumption process | | |
| A18 Value judgement | | |
| A19 Reduced environmental impact | | |
| A20 Care for the Earth's environment | B05 Environmental concern | Pregnant women are aware of the seriousness of environmental problems and the importance of environmental protection. |
| A21 Concern for the environment | | |
| A22 Willingness to pay a premium | B06 Behavioral intention | Willingness of pregnant women to engage in specific behaviors, including willingness to pay a sustainable premium and willingness to buy on a sustainable basis |

TABLE 2: Axial Coding.

| | | |
|--|---|--|
| A23 Sustainable willingness to buy | | |
| A24 Use of sustainable materials | B07 Sustainable Consumer Behavior in Maternity Wear | Sustainable behavior of pregnant women in the purchase, use and disposal of maternity wear products. |
| A25 Choosing environmentally friendly products | | |
| A26 Maternity wear for different stages of pregnancy | | |
| A27 Multiple use of maternity wear | | |
| A28 Extended circulation of maternity wear | | |
| A29 Maternity wear for multiple scenarios | | |
| A30 Compare multiple brands | | |
| A31 Buy certified products | | |
| A32 Buy better quality maternity wear | | |
| A33 Extending the life of maternity wear | | |

analyze data objectively reflect the characteristics, influencing factors, and behavioral patterns of current maternity wear consumers in sustainable consumption. This is of great significance for understanding the environmental awareness and sustainable consumption behavior of current maternity wear consumers.

The research summarizes the dimensions of environmental awareness among maternity wear consumers within the current sustainability context, including five dimensions: environmental knowledge, responsibility awareness, risk perception, values, and environmental concern. Due to the distinct consumption behavior of maternity wear consumers as a specific consumer group, this study concludes that the five factors of environmental awareness among maternity wear consumers are suitable for this specific consumer group and consumption context.

4. Conclusion and Recommendation

From the above discussion, the conclusion can be reached that

(1) Despite improvements in the cultural literacy and environmental awareness levels of consumers in China, there is still an uneven understanding of sustainability-related knowledge regarding maternity wear. Therefore, relevant authorities or organizations should intensify their efforts in promoting and educating maternity wear consumers about environmental knowledge from various angles, including raw materials, production methods, and consumption practices. This will help raise the environmental

awareness of maternity wear consumers and provide them with a comprehensive understanding of the environmental and health risks associated with unsustainable maternity wear consumption. By arousing their risk perception and nurturing their environmental concern, this can ultimately promote sustainable consumption behavior in the maternity wear sector.

(2) Guiding consumers to establish the right values and a sense of responsibility plays a crucial role in promoting sustainable consumption behavior among maternity wear consumers. Relevant decision-makers should formulate effective strategies to encourage specific behaviors among maternity wear consumers, including a willingness to pay a sustainability premium and a willingness to make sustainable purchases. Advocating for sustainable behavior in the purchase, use, and disposal of maternity wear products is essential. Encouraging consumers to embrace the noble tradition of thrift and frugality, creating a favorable public opinion environment through various media channels, and educating and guiding consumers to develop correct and rational values are fundamental steps. This will help instill a sense of responsibility in consumers towards their own actions, the natural environment, society, and the environment left for future generations, ultimately promoting sustainable consumption in maternity wear from its core.

(3) Engaging in activities related to everyday life can be an effective way to enhance environmental awareness among maternity wear consumers. This approach allows consumers to realize that sustainable maternity wear consumption is closely connected to their daily lives. For instance, local governments can organize community events such as clothing exchanges, resale initiatives, or maternity wear donations to promote sustainability. Maternity wear brands or companies can also host activities like second-hand maternity wear transactions and redesign projects. Through these practical activities, maternity wear consumers can learn how to practice sustainable consumption and actively participate in the sustainable consumption movement.

References

- [1] Zhao Yanyan, "The research of maternity clothes emotional design," Jiang Nan university, 2015.
- [2] She W. Innovative Practice Based on Japanese Maternity Clothes. Wu Han University; 2018.
- [3] Peña-Vinces J, Solakis K, Guillen J. Environmental knowledge, the collaborative economy and responsible consumption in the context of second-hand perinatal and

- infant clothes in Spain. *Resour Conserv Recycling*. 2020;159:104840.
- [4] Saha EP, Dey PK. "Implementing circular economy in the textile and clothing industry," in *Supply Chain Sustainability in Small and Medium Sized Enterprises*, 1st ed., 2022, p. 38. <https://doi.org/10.4324/9781003018551-10>.
- [5] Catherine Nelson-Piercy and & Heli Tolppanen & Alexandre Mebazaa. Physiological changes in pregnancy:Review articles. *Cardiovasc J Afr*. 2016;27(2).
- [6] Weigle EA, Mc Andrews L. The future of maternity wear:Generation Z's expectations of dressing for pregnancy. *J Fash Mark Manag*. 2021;: <https://doi.org/10.1108/JFMM-11-2020-0244>.
- [7] A. Jaiswal, "Smart motherhood wear: A solution to the problem of maternity wear," *Int. J. home sinence*, pp. 278–281, 2022.
- [8] Brooks A, Fletcher K, Francis RA, Rigby ED, Roberts T. Fashion, Sustainability, and the Anthropocene. *Utop Stud*. 2017;28(3):482–504.
- [9] Walker D, Myrick F. Grounded theory: an exploration of process and procedure. *Qual Health Res*. 2006 Apr;16(4):547–59.
- [10] Oktay JS. *Grounded Theory*. New York: Oxford University Press; 2012. <https://doi.org/10.1093/acprof:oso/9780199753697.001.0001>.
- [11] Anselm S, Corbin JM. *Basics of qualitative research: Grounded theory procedures and techniques*. SAGE Publications,Inc.; 1990.