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Research of Sustainable Business Models in the Production and Sale of Wedding Dresses in the Context of Globalization

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Abstract: ***The article conducts an analysis of sustainable business models in the processes of producing and selling bridal gowns in contemporary realities. The relevance of the topic is justified by the synergistic effect of two key factors: the growing consumer interest in products created according to ethical and environmental standards, and the tightening of regulatory and public oversight over corporate activities aimed at minimizing their negative environmental and social footprint. The study methodology covers concepts such as the principles of the circular economy rental, resale, and upcycling of wedding attire application of innovative, environmentally responsible materials, implementation of ethical manufacturing standards and strategies for localizing and regionalizing value chains. The ambivalent role of globalization is emphasized: on one hand, it opens access for brands to new markets, advanced technologies, and innovative raw material solutions, but on the other hand, it complicates logistics chains, intensifies competition, and raises the risk of greenwashing in corporate communications. The results obtained hold both theoretical and practical value for researchers working in the fields of sustainable development, strategic management, and the fashion industry, and also serve as a substantiated methodological and applied foundation for entrepreneurs and management of the bridal segment who seek to integrate principles of environmental and social responsibility into their operational and marketing models. In conclusion, it is stressed that hybrid approaches, which synergistically combine elements of the circular economy, digital innovation, and full transparency of supply chains, possess the greatest potential for simultaneously achieving environmental and economic sustainability within the context of a globalized bridal gown industry.***

Keywords: sustainable business models, bridal gowns, globalization, circular economy, ethical fashion, sustainable development, fashion industry, environmental responsibility

1.Introduction

The contemporary structure of the global economy is increasingly defined by the implementation of sustainable development principles, which exert a transformative influence on diverse sectors, including the fashion industry. Traditional production and consumption ways and models involve significant environmental and social costs: depletion of natural resources, pollution of hydrological and soil ecosystems, increased greenhouse gas emissions, as well as the exploitation of low-wage labor. In this context, the wedding industry segment, despite its pronounced sociocultural specificity and emotional intensity, has not escaped such negative consequences. The life cycle of a classic wedding dress, most often intended for single use, is characterized by high resource intensity and the generation of a considerable carbon footprint [1, 2].

The necessity to investigate sustainable business models in the production and retail of wedding dresses is driven by several key factors. First, there is a steady increase in environmental awareness and shifts in consumer value orientations, particularly among Millennials and Generation Z representatives, who demonstrate heightened loyalty to brands that declare sustainable development principles [3, 4]. This demand dynamic generates market incentives for industry players, prompting a rethinking of traditional business strategies in favor of more responsible practices. According to the ThredUp (2024) report, the resale segment of apparel on the global market, including wedding garments, is expected to grow, further confirming the need to adapt business models to new conditions [5].

Second, increasing regulatory pressure on market participants from national governments and supranational bodies is aimed at the active implementation of circular economy principles. For example, the European Union's strategy for sustainable and circular textiles sets ambitious targets to increase product durability, ensure suitability for multiple recycling, and eliminate hazardous chemical components in textile products by 2030 [6]. These regulatory initiatives directly transform manufacturing processes and operational models of companies producing wedding dresses, particularly those operating in international markets and required to comply with stringent environmental standards.

Third, the process of globalization acts as a dual determinant influencing the opportunities and limitations for implementing sustainable practices in the wedding industry. On one hand, global supply chains are characterized by transcontinental complexity and insufficient transparency, which complicates the verification of compliance with environmental and social standards at all levels of subcontractors and suppliers [7]. On the other hand, globalization opens access to innovative technologies, new eco-friendly materials, and expands the scope of target markets, creating favorable conditions for brands positioning themselves as sustainable [8]. According to Statista (2024) forecasts, the global "ethical" fashion market will continue to exhibit steady growth, which underpins the development of environmentally oriented solutions in the wedding industry segment as well [9].

Despite the increased academic interest in the topic of sustainable fashion, existing literature reveals a significant scientific gap: there are no systematic conceptual frameworks and comprehensive, multilevel analyses of specific sustainable business models adapted for the production and retail segment of wedding dresses, taking into account the complex impact of globalization processes. Most studies are either limited to examining general

sustainable development principles in the fashion industry or focus on analyzing individual elements (for example, clothing rental or the use of eco-friendly materials), without offering an integrated approach that considers both global and local factors.

The aim of the study is to identify, critically evaluate, and systematically classify the key sustainable business models in the manufacturing and commercial segment of wedding dresses within the context of globalization, as well as to assess their potential for enhancing the environmental efficiency and economic viability of companies in the sector.

The scientific novelty of the work lies in a comprehensive examination of the influence of globalization determinants on the formation, evolution, and scalability of various types of sustainable business models specifically within the niche segment of the wedding industry, which enables the proposal of an integrated methodology for analysis and the development of practical recommendations.

The author's hypothesis is based on the assumption that hybrid sustainable business models possess the greatest resilience and promise amid increasingly complex global processes. These models simultaneously integrate circular economy principles—such as rental, resale, and customization of products with the option of subsequent upcycling—and the active use of digital platforms to expand markets and ensure supply chain transparency, thereby contributing to the achievement of an optimal balance between environmental imperatives and economic efficiency.

2.Materials and Methods

The study is based on an analysis of current scientific literature and data from reputable industry reports. Mahiat T., Chowdhury M. M. I., Hossain M. M., and Miah M. S. [1] evaluate the environmental and social effects of local production, hypothesizing that optimizing energy consumption and raw materials can improve working conditions and the sustainability of rural weaving enterprises. Weber S., Oke A., and Mah J. [2] focus on the issue of textile waste, proposing that local recycling infrastructure can reduce the industry's environmental footprint. Utilizing statistical analysis of municipal data and interviews with recyclers, they propose an adapted algorithm for life cycle assessment (LCA) of textile fractions, while emphasizing the lack of economic calculations for closed-loop systems.

The next group of studies is devoted to models of reuse and resale. Fahmi M. A., Husin M. M., and Widyastuti U. [3] test the hypothesis that strategies such as reuse, refashioning, renting, and thrifting positively influence the sustainability of small and medium-sized wedding planning enterprises in Indonesia. Their methodology includes engaging SME owners and conducting multivariate regression analysis, identifying challenges related to return logistics, sanitization processes, and digital platforms. Hong Lan L. and Watkins J. [4] employ qualitative research methods (focus groups, interviews, and economic analysis) to examine the hypothesis that Vietnam's cultural characteristics contribute to the development of the second-hand market, while noting a gap in digital marketing strategies for promoting pre-owned wedding dresses. Preliminary findings from ThredUp [5] in the "2024 Resale Report" provide quantitative data on the resale segments of wedding dresses, but they highlight a lack of academic research on the impact of resale on the industry's sustainability. CU S. [11] proposes a conceptual model for transforming a wedding dress into an item for repeated use, based on a sociocultural analysis of field observations and interviews.

State strategies and market trends form a broader context: the European Commission [6], in "EU Strategy for Sustainable and Circular Textiles – Update and Progress," describes EU measures for design standardization, component labeling, and support for R&D, hypothesizing that a combination of environmental and socio-economic measures will enhance the competitiveness of the European cluster. Statista [9], in "Ethical Fashion Market Worldwide – Statistics & Facts," provides 2024 statistical data confirming increased demand for ethical fashion among millennials and Generation Z, but notes a lack of information on niche segments of the bridal market. McKinsey & Company [14], in "The State of Fashion 2025," employs predictive analytics based on big data and interviews with C-level executives, positing the need to restructure bridal-segment business models according to green standards, while noting that independent bridal ateliers remain outside the focus of major consultancies.

Digital technologies and traceability become key tools for sustainability. Garcia-Torres S., Rey-Garcia M., and Albareda L. [7] formulate a traceability metric for "farm to hanger" supply chains, testing the hypothesis that transparency correlates with reduced legal and environmental risks; their methodology includes analysis of registries and case studies of European brands, but a gap remains due to the absence of unified standards in Asian outsourcing. Oguntegbe K. F., Di Paola N., and Vona R. [8] examine the role of blockchain in communications for luxury brands, combining semantic analysis of social media with technical review of IBM Food Trust and VeChain; they hypothesize that blockchain enhances consumer trust, but note a lack of research on economic barriers for SMEs. Casciani D., Chkanikova O., and Pal R. [12] present an integrated model of "digital circularity," testing the hypothesis that digitalization reduces costs and carbon footprint through a predictive algorithm however, they point out that small bridal ateliers lack the resources to implement IoT and AI, leaving this issue unresolved.

The study of consumer behavior is complemented by research conducted by Lin P. H. and Chen W. H. [13], which examines how generational factors modify the determinants of purchasing sustainable clothing; however, their findings regarding the importance of social approval for Generation Z pertain to casual wear, leaving the bridal segment unaddressed. In the dissertation, Salomone R. [15] performs a content analysis of marketing campaigns for bridal lines, revealing a "greenwashing index" that demonstrates many brands, despite proclaiming environmental friendliness, do not actually change a business model based on rapid collection turnover. Karimkhan F. [10] investigates the

literature on the circular economy in the fashion industry, analyzing the transition from traditional linear models to sustainable circular practices. This work emphasizes that the emergence of innovative circular strategies is a direct consequence of these premises, providing a new perspective on the pathway to a circular fashion system.

In terms of methodology, most studies employ life cycle assessment (LCA), case studies, big data analytics, and sociological surveys, which enable both qualitative and quantitative evaluations of sustainability; however, their focus often on mass markets, major brands, or regional examples (Indonesia, Vietnam, Canada, the European Union) does not capture the global specificity of the bridal industry. Publications lack integration between industry-wide and niche approaches; there are no unified methodologies for assessing sustainability in small bridal businesses; cultural and emotional determinants of wedding dress consumption, as well as the influence of international and local regulations on the formation of sustainable value chains, remain underexplored. Consequently, future research should be directed toward developing multidisciplinary models that account for economic efficiency, technological and organizational barriers, and the cultural particularities of the bridal segment in the context of globalization.

3.Results

Analysis of the current state and evolution of sustainable business models in the wedding dress manufacturing and retail segment under deepening globalization has revealed a spectrum of structural trends, institutional challenges, and market opportunities. The linear paradigm ("take–make–use–dispose"), which has dominated for decades and relies on single-use products and extensive, often opaque global supply chains, is sharply criticized by both experts and consumers [1, 2]. This criticism drives the search for alternatives capable of reconciling brides' aesthetic requirements with sustainable development principles.

Based on academic research findings [3, 4, 10, 11, 12] and empirical industry practices [5], three broad groups of models can be distinguished.

1. Circular economy solutions. Wedding dress rental services exhibit a consistently increasing trend and have a substantial impact on reducing the production volume of new garments. After each use, a dress undergoes professional cleaning and minor repairs, which extend both its functional and aesthetic lifespan. Although online platforms expand geographic reach and facilitate interactions between clients and providers, logistics and precise tailoring remain local concerns, requiring a developed infrastructure for receiving, inspecting, and returning garments to ensure efficient circulation [3].

   The secondary market for bridal attire is actively developing through online marketplaces and specialized boutiques, contributing to an extended life cycle of high-quality garments and a reduced overall environmental footprint for the industry. Integration of digital sales channels ensures transparency and promptness of transactions, while niche offline points guarantee in-depth expertise in condition assessment and client consultation. Such an approach promotes resource rationalization and waste minimization, forming sustainable consumption patterns in the bridal fashion segment [4, 5].

   Upcycling and redesigning vintage or previously worn gowns are increasingly in demand due to the possibility of creating unique, exclusive garments and accessories. The transformation process requires a high level of skill in pattern making, finishing, and fabric artistry, making it predominantly the domain of small design studios. Global flows of vintage materials constitute a primary resource, supplying a variety of fabrics and findings that enable the realization of bespoke projects with minimal reliance on new resources [4].

   The concept of designing dresses according to Design for Disassembly principles and modular construction is at an early stage but already shows significant potential for closing material loops. A model based on interchangeable and easily separable components allows for prompt repair, element replacement, or complete recycling of individual parts. Despite the technical and organizational challenges of implementing such an approach in mass production, its application can markedly enhance resource efficiency and accelerate material circulation within the industry [10].

2. Models focusing on sustainable materials and processes. The use of environmentally preferred fabrics is expanding, in particular organic and recycled fibers such as rPET and Econyl, as well as next-generation biomaterials—Piñatex, Orange Fiber, and Mylo™. Thanks to the establishment of global supply chains for innovative raw materials, it has become possible to integrate these materials into production, thereby reducing consumption of non-renewable resources and lowering the overall environmental impact of the textile industry [11]. Ethical local production represents a strategy for reducing the carbon footprint and ensuring fair labor conditions. This approach involves relocating manufacturing facilities closer to target markets or collaborating with local artisans. Through such decentralization, transportation costs and emissions decrease, transparency of value-creation chains increases, and local social standards improve [7]. The made-to-order production model is becoming increasingly relevant due to the adoption of 3D scanning and virtual try-on technologies. These tools enable the creation of garments strictly according to individual customer measurements, which significantly minimizes excess finished-goods inventory and the amount of waste at all stages of the product value chain [12].

3. Hybrid constructions. The combination of the strategies listed (for example, dresses made from bio-fabrics that are rented, or customized garments followed by an upcycling service) creates a synergistic effect and, according to experts, most fully meets market challenges [3, 8].

Below, Figure 1 illustrates the cycles in the circular economy of wedding dresses.

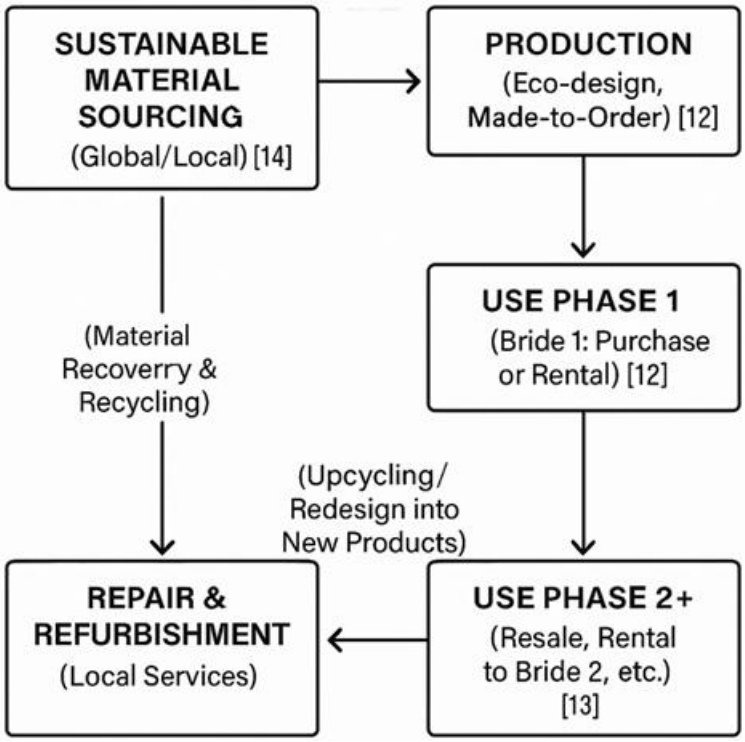

Figure 1: Cycles in the circular economy of wedding dresses (compiled by the author based on the analysis [3, 4, 5,10, 11, 12].

The diagram illustrates the various cycles through which a wedding dress can pass within a circular economy. Instead of following the linear path "production–use–disposal," the dress after its first use may be resold, rented out again, repaired, or reworked (upcycling). The ultimate objective is to maximize the service life of the garment and its components, as well as to recycle materials for reintegration into the production cycle.

Table 1: Comparative analysis of sustainable business models in the wedding industry (compiled by the author based on the analysis [4, 10, 12, 13, 15])

Business Model	Key Characteristics	Advantages	Disadvantages	Globalization Potential
Rental	Provision of dresses for temporary use	Reduced demand for new dresses, accessibility to high-end models, decreased waste	Logistics, cleaning, repair, need for large initial investment in inventory	Global online platforms, but service localization (fitting, tailoring) is important
Resale	Sale of pre-owned dresses	Extends the life of a dress, affordability, waste reduction	Dependence on supply, condition of dresses, perception of "used" by some customers	High: global online marketplaces, international shipping
Upcycling/Redesign	Creation of new items from old dresses and materials	Uniqueness, creativity, waste reduction, maximum resource utilization	Labor intensity, scalability challenges, sourcing appropriate materials	Niche but global market for unique items; global search for vintage
Sustainable Materials	Use of organic, recycled, and innovative fabrics	Reduced eco-footprint of raw materials, biodegradability (for some)	Higher cost of materials, limited availability of certain innovations	Global supply chains for eco-materials, international certification
Made-to-Order Production	Manufacturing after an order is placed	No overproduction, less waste, customization	Longer wait times for the customer, complexity of mass production	Global online orders using digital tools for measurements and design

Globalization provides niche sustainable brands with the opportunity to reach a global audience through e-commerce, which ensures not only an expanded customer base but also increased recognition of sustainable development concepts within the fashion sector [8]. Simultaneously, accelerated dissemination of knowledge and technologies in sustainable design facilitates the rapid adoption of advanced practices worldwide. Access to a broad portfolio of innovative materials and high-technology equipment, including next-generation biomaterials and fiber-processing techniques, creates conditions for a radical improvement in the environmental and ethical attributes of products [11]. In addition, globalization reinforces the trend toward conscious consumption, leading consumers to habitually evaluate not only the aesthetics but also the social and ecological dimensions of the goods they acquire [13, 14].

At the same time, globalization gives rise to systemic challenges, primarily by complicating the traceability of supply chains and creating the risk of ethical-standard violations during production and distribution, since control over remote operations is difficult [7]. Price pressure from regions with low production costs forces brands to seek compromises between reducing manufacturing expenses and maintaining labor and environmental standards. A serious problem is the threat of greenwashing, when marketing claims about sustainability outpace actual changes in business models and technological processes, thereby undermining consumer and investor trust [15]. Additional environmental costs associated with international logistics for renting and reselling garments—such as greenhouse gas emissions and resource consumption during transportation—also constitute a significant barrier to the sustainable development of the fashion industry on a global scale.

Therefore, sustainable business models in the production and sale of wedding dresses require an integrative approach in which technological innovation, social responsibility, and strategic partnerships with local and global market actors form the foundation for long-term success and ecological alignment of the industry.

4.Discussion

The adoption of environmentally responsible business models in the bridal fashion industry transcends a temporary trend and emerges as a pressing strategic imperative, shaped by evolving consumer attitudes and global environmental trends. The application of circular economy principles—specifically, the rental and resale of dresses—holds significant potential to reduce waste volumes and optimize resource utilization [3, 4, 5]. Moreover, globalization not only expands access to a diverse international audience but also complicates logistical chains and necessitates attention to local sociocultural market characteristics.

The use of innovative eco-friendly materials [11] and the establishment of ethical made-to-order production [12] also constitute key elements in the industry's sustainable development strategy. Global supply chains provide access to advanced eco-materials, yet they introduce risks related to insufficient process transparency and the difficulty of maintaining quality control and ethical compliance at remote manufacturing sites [7]. In such circumstances, end-to-end traceability technologies (including those implemented via blockchain) [8] and the integration of international certification systems become essential ways to enhance trust and verify the environmental and social attributes of products.

Analysis of statistical data indicates a steady increase in the eco-oriented offerings segment and demonstrates that consumers are willing to support such sustainability strategies financially [5, 9, 13, 14]. This supports the thesis that, in addition to environmental benefits, sustainable models possess significant economic potential. Nevertheless, realizing this potential faces challenges: business scaling issues, the necessity of substantial initial investments, combating greenwashing practices [15], and navigating a complex and constantly evolving system of international regulatory requirements [6].

The concept of "inclusive sustainability" merits attention, according to which access to eco-friendly wedding products should not be limited to a small number of premium consumers but extended to a broader audience. Pilot rental and resale models partially contribute to realizing this idea; however, to maximize market coverage, it is necessary to continue reducing the costs associated with producing from sustainable materials and to develop new innovative business solutions.

The following table 2 highlights the challenges and opportunities for sustainable wedding brands in the context of globalization.

Table 2: Key challenges and opportunities for sustainable wedding brands in the context of globalization (compiled by the author based on the analysis of [6,7,8,12,15])

Aspect	Challenges	Opportunities	Strategies
Supply Chains	Complexity of tracing origin and labor conditions; logistics costs and carbon footprint.	Access to a global variety of sustainable materials and innovative manufacturing technologies.	Implementation of blockchain for transparency; partnerships with certified suppliers; regionalization of part of production.
Market and Consumers	Greenwashing and consumer skepticism; price competition with traditional manufacturers.	Growing global demand for sustainability; access to international markets via e-commerce.	Clear communication of values; educational campaigns; offering unique value (design, story).
Operational Activities	Scaling circular models (rental, repair); investments in new technologies.	Use of digital platforms for optimization (rental SaaS, AI for design).	Phased scaling; collaboration with technology partners; franchising.
Regulation and Standards	Differences in legislation across countries; lack of unified global sustainability standards.	Strengthening international pressure in favor of sustainability (e.g., EU initiatives).	Proactive compliance with advanced standards; participation in industry standardization initiatives.

Thus, the future of sustainable bridal fashion under globalization processes will largely depend on companies' ability to develop innovative combinations of circular approaches, employ advanced digital technologies, and ensure transparency in managing international value-creation chains, while actively engaging and informing end consumers.

5.Conclusion

The conducted study of sustainable business models in the wedding dress production and retail segment under conditions of globalization transformations has revealed a complex, multidimensional set of issues that remains in a state of active evolution. The analysis showed that hybrid (integrated) business models exhibit the greatest potential. These models integrate the principles of the circular economy (garment rental, resale, upcycling and recycling of materials), employ innovative and environmentally responsible materials, uphold high ethical standards at every stage of the production cycle, and actively implement digital technologies to optimize logistics, manage supply chains, and expand the customer base through various methods and approaches via online platforms and marketplaces. Globalization plays a dual role: on one hand, it functions as a driver of positive change by providing access to advanced technologies, new eco-friendly materials, and international markets; on the other, it introduces additional challenges related to managing supply chains distributed across regions, ensuring that remote suppliers adhere to sustainable principles, and mitigating the risk of disseminating unfair practices such as "greenwashing."

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