

Impact of EU Sustainable Development Regulations on Vietnam's Textile and Garment Exports: Challenges and Policy Implications

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Abstract

This study examines the impact of European Union (EU) sustainability regulations on Vietnam's garment exports (HS codes 61–63) during 2023–2025, focusing on market access conditions, trade dynamics, and enterprise adaptation. This study combines an analysis of key EU policy frameworks, including the European Green Deal, ESPR, REACH, the Digital Product Passport (DPP), and Extended Producer Responsibility (EPR), with secondary trade data from ITC Trade Map. The findings show that Vietnam's garment exports to the EU increased from USD 6.996 billion in 2023 to USD 9.062 billion in 2025, while its share of total EU imports increased only marginally from 3.32% to 3.81%. This trend suggests that EU sustainability regulations have not been accompanied by an immediate contraction in Vietnam's exports. Rather, they are increasingly becoming structural conditions that influence competitive dynamics by raising requirements related to sustainable materials, chemical safety, digital traceability, and producer responsibility. To overcome compliance bottlenecks, the paper proposes policy solutions at two levels: macro-level institutional, financial, and infrastructural support, alongside enterprise-level investments in technological upgrading, sustainable material sourcing, data governance, and circular supply chain management.

Keywords: EU sustainability regulations, EU trade policy, Vietnamese garment exports, EVFTA, market access.

1. INTRODUCTION

In recent decades, pressing global issues such as climate change, biodiversity loss, resource depletion, and environmental degradation have compelled economies worldwide to pivot from conventional growth models toward green growth and sustainable development. Amid this global transition, the European Union (EU) has positioned itself as a pioneering leader by institutionalizing sustainability goals into actionable policies, technical standards, and market regulations. Through the European Green Deal (EGD), the EU aims to achieve climate neutrality by 2050 while fostering systemic transformations in production and consumption paradigms toward resource efficiency, circularity, and minimized environmental footprints (European Commission, 2019, 2020; Fetting, 2020).

To operationalize these ambitious targets, the EU has progressively established a comprehensive regulatory framework, including the Circular Economy Action Plan, the EU Strategy for Sustainable and Circular Textiles, the Ecodesign for Sustainable Products Regulation (ESPR), the Digital Product Passport (DPP), and the Corporate Sustainability Due Diligence Directive (CSDDD). Departing from previous approaches that relied primarily on voluntary commitments, the EU increasingly utilizes binding legal instruments to embed environmental and sustainability mandates directly into market conditions governing production, circulation, and consumption (European Commission, 2020, 2022, 2024; Leonard et al. 2021; Lopes et al. 2024).

Specifically for the textile and apparel sector, the EU Strategy for Sustainable and Circular Textiles, adopted in 2022, established a clear roadmap for transitioning the industry toward sustainability and circularity. This strategy prioritizes product durability, reusability, repairability, and recyclability, alongside the use of sustainable raw materials, hazardous chemical controls, and the reduction of environmental footprints throughout the product lifecycle (European Commission, 2022). Building on this foundation, the ESPR establishes a comprehensive legal framework that embeds sustainability and circularity criteria into product design, while paving the way for the Digital Product Passport (DPP) to enhance product traceability and information transparency (European Commission, 2020, 2022, 2024). Crucially, these regulatory shifts extend beyond the internal market, exerting spillover effects on third-country suppliers through international trade channels and global value chains (GVCs).

The textile and garment industry represents one of the sectors most profoundly affected by this green transition, given its resource-intensive nature characterized by high consumption of water, energy, and chemicals and significant waste generation across the entire product lifecycle. According to European Commission reports, the textile value chain exerts substantial environmental impacts while relying heavily on primary resources extracted outside the EU (European Commission, 2022). Consequently, the greening of the EU textile sector extends beyond restructuring internal market rules; it imposes imperative adjustment pressures on major exporting economies deeply integrated into global value chains (Sharma et al. 2025).

For Vietnam, the EU serves as both a pivotal export market for the textile and garment sector and a destination characterized by increasingly stringent environmental and sustainability standards. The EU–Vietnam Free Trade Agreement (EVFTA) has substantially facilitated bilateral trade through tariff elimination schedules and enhanced market access (Dinh et al. 2025; Do and Tran, 2021; Dung Nguyen, 2023; Pham, 2026). In 2025, Vietnam’s total merchandise export turnover to the EU-27 reached USD 56.2 billion a year-on-year increase of 8.6% with textiles and garments remaining a key export contributor (WTO and Integration Center, 2026). However, tariff preferences under the EVFTA are increasingly conditioned upon compliance with heightened technical, environmental, and supply chain sustainability benchmarks. Consequently, sustaining and expanding garment exports no longer depends solely on price competitiveness, product quality, or preferential tariffs, but critically hinges on the capacity to monitor raw materials, manage chemical inputs, ensure traceability, and maintain data transparency (Dinh et al. 2025; Do and Tran, 2021).

Shifting market access conditions in the EU demand adaptive transformations across multiple stages of garment production and export operations. Manufacturers are increasingly required to enforce stringent controls over raw material inputs, chemical usage, resource efficiency, waste management, and origin tracking to align with EU environmental standards. For the Vietnamese garment sector, greening the supply chain necessitates substantial capital investment in modern technologies, sustainable inputs, and cleaner production solutions (Nguyen and Le, 2024; Dinh et al. 2025). Furthermore, meeting these technical requirements inflates compliance costs and demands elevated managerial capabilities, particularly as environmental and traceability criteria

become deeply embedded in international trade terms (Dinh et al. 2025; The Hoang, 2025). These mandates pose pronounced challenges for small and medium-sized enterprises (SMEs) constrained by capital, technology, data infrastructure, and supply chain oversight.

Conversely, this adaptive imperative serves as a catalyst for firms to upgrade manufacturing technologies, optimize resource utilization, advance traceability, and transition toward transparent, sustainable supply chain governance (Khac Kien, 2024; The Hoang, 2025). Empirical evidence indicates that green market pressures are driving Vietnamese manufacturers to invest in cleaner production technologies, establish rigorous origin tracking, and adopt sustainable business models (Pham, 2026). Consequently, the impact of EU green mandates should be viewed not merely as short-term compliance costs, but as a strategic driver for long-term capacity building and sustainable competitive advantage.

In this context, the challenge for Vietnam is not only to comply with emerging EU sustainability requirements but also to use these requirements to strengthen the competitiveness of its textile and apparel industry. Examining the evolution of EU regulations, Vietnam's garment export performance in the EU market, and the main challenges facing exporters can provide a clearer basis for understanding the implications of these regulatory changes and identifying appropriate responses. Accordingly, this study addresses three research questions (RQs).

1. How do emerging EU sustainability regulations affect market access conditions for Vietnam's textile and garment industry?
2. What trends characterized Vietnam's garment exports to the EU during 2023–2025, and what do these trends suggest about the sector's adaptation challenges?
3. What policy measures can support Vietnamese garment exporters in meeting evolving EU sustainability requirements and maintaining export competitiveness?

By addressing these questions, the study examines changes in EU market access conditions, assesses Vietnam's recent export trends, and identifies the key adaptation requirements arising from evolving sustainability regulations. It also draws policy implications for supporting Vietnamese garment exporters in meeting these requirements and maintaining their competitiveness in the EU market.

2. RESEARCH METHODOLOGY

This study combines policy analysis with secondary trade data analysis to examine the implications of EU sustainability regulations for Vietnam's garment exports. The policy analysis reviews key EU policy and regulatory frameworks, including the European Green Deal, the EU Strategy for Sustainable and Circular Textiles, the Ecodesign for Sustainable Products Regulation (ESPR; Regulation (EU) 2024/1781), REACH, the Digital Product Passport (DPP), and Extended Producer Responsibility (EPR), with a focus on requirements related to ecodesign and product durability, sustainable materials and circularity, chemical safety, digital traceability, product information, and producer responsibility.

Secondary trade data were obtained from the International Trade Centre (ITC) Trade Map for Vietnam's exports to the EU during 2023–2025, covering HS 61, HS 62, and HS 63. The analysis examines export values, annual growth, market shares, and the distribution of exports across EU member states.

Descriptive analysis is used to identify changes in trade performance and export patterns over the study period, while policy analysis provides the regulatory context for interpreting these trends. The findings from the two analytical components are considered together to assess how

evolving EU sustainability requirements are changing market access conditions and creating adaptation requirements for Vietnamese garment exporters.

3. RESULTS AND DISCUSSION

3.1. The European Union's green regulatory framework for the textile and garment sector

In its systemic transition toward a green and circular economic model, the EU has identified textiles and garments as a priority value chain requiring immediate improvements in resource efficiency and environmental footprint reduction. This strategic trajectory is anchored within the European Green Deal, which targets climate neutrality across the EU by 2050, and is further operationalized through the Circular Economy Action Plan (CEAP) (European Commission, 2020, 2022).

For the textile sector, the CEAP provides a framework for extending policy attention beyond environmental impacts during production to sustainability across the product lifecycle, including design, raw material sourcing, manufacturing, use, and end-of-life management (European Commission, 2022). Building on this framework, the European Commission introduced the EU Strategy for Sustainable and Circular Textiles in March 2022. The strategy sets out measures to improve product durability, repairability, reusability, and recyclability, while promoting the use of recycled materials, restricting hazardous substances, and improving transparency across the value chain (European Commission, 2022). These policy directions were subsequently translated into binding regulatory requirements, with the ESPR playing a central role in establishing ecodesign requirements and other sustainability criteria for products.

At the product design stage, the ESPR (Regulation (EU) 2024/1781) establishes requirements related to durability, reusability, repairability, recyclability, resource efficiency, recycled content, and substances of concern for relevant product categories (European Commission, 2022, 2024). These requirements make product design and material selection increasingly important for access to the EU market. For Vietnamese exporters, this means greater attention to material composition and sourcing, as well as the need to maintain reliable information and documentation to substantiate sustainability-related product claims.

Chemical safety requirements are also expanding in scope, extending beyond final product characteristics to raw material sourcing and manufacturing processes. The EU addresses hazardous substances through chemical policy frameworks, particularly REACH and the Chemicals Strategy for Sustainability, with requirements that apply across the product lifecycle. In the textile and apparel sector, these requirements are particularly relevant to dyeing and finishing processes, which involve substantial use of chemical inputs. At the same time, the EU is developing measures to address microplastic pollution, including microplastic release from synthetic textile fibres (European Commission, 2020, 2022; European Parliament and Council of the European Union, 2025a, 2025b). For Vietnamese exporters, these developments increase the need to control chemical inputs throughout the production process, from raw material sourcing and processing to final finishing, rather than relying solely on conformity testing of finished products.

Alongside requirements for materials, chemical safety, and manufacturing processes, the EU is placing increasing emphasis on product traceability and information transparency. The DPP, established under the ESPR framework, provides a standardized structure for recording and sharing product information based on criteria defined for specific product groups (European Parliament and Council of the European Union, 2025a, 2025b). In the textile and garment sector, this mechanism increases the need for reliable data on material composition, input origins,

sustainability characteristics, and information relevant to product use, reuse, and recycling. Consequently, the ability to collect, manage, verify, and share product data is becoming an important complement to manufacturing capabilities, enabling enterprises to demonstrate compliance with EU market requirements.

Taken together, the EU's sustainability framework for the textile and garment sector extends compliance requirements beyond individual product characteristics to different stages of the product lifecycle, including ecodesign, material sourcing, manufacturing, traceability, and end-of-life management. Building on the objectives of the European Green Deal and the CEAP, these requirements are further developed through the EU Strategy for Sustainable and Circular Textiles and reflected in key instruments such as the ESPR, REACH, DPP, and EPR. For non-EU manufacturers, their effects are transmitted not only through applicable EU regulatory requirements but also through international brands, importers, and retailers, which increasingly incorporate sustainability requirements into technical specifications, material sourcing, data disclosure, and supplier selection.

This transmission mechanism fundamentally reshapes competitive dynamics for Vietnamese garment exporters in the EU market. Beyond conventional advantages in unit cost, craftsmanship quality, and lead times, exporters must increasingly satisfy rigorous benchmarks regarding sustainable raw materials, hazardous chemical controls, cleaner production technologies, traceability, and data governance. While these mandates elevate compliance costs and capital expenditure requirements in the short term, they simultaneously serve as a strategic catalyst for upgrading manufacturing technologies, optimizing resource efficiency, and enhancing supply chain governance. The specific extent and empirical manifestations of these regulatory impacts must be further analyzed against real-world trade dynamics between Vietnam and the EU (Dinh et al. 2025; Do and Tran, 2021; Khac Kien, 2024; Pham, 2026; The Hoang, 2025).

3.2. Status of Vietnamese garment exports to the EU over the 2023–2025 period

Over the 2023–2025 period, Vietnam's garment exports to the EU maintained an upward trajectory amidst expanding sustainability mandates across the single market. This trend underlines the persistent strategic importance of the EU market for Vietnam's garment sector. However, export enterprises must navigate increasingly complex market access conditions that extend beyond traditional factors such as price competitiveness, product quality, and lead times to encompass material composition, production processes, supply chain traceability, and environmental disclosures (WTO and Integration Center, 2026). Consequently, an empirical assessment of current export performance requires a simultaneous examination of trade volume, structural composition, and emerging requirements regarding supply chain capacity.

According to the data in Table 1, the total value of EU imports under HS codes 61–63 from Vietnam expanded from USD 6.996 billion in 2023 to USD 7.448 billion in 2024, reaching USD 9.062 billion in 2025 representing a cumulative growth of approximately 29.5% over the entire period. This upward surge was predominantly concentrated in 2025, driven by a 21.7% year-on-year increase compared to 2024, following a modest growth of 6.5% in 2024. These empirical results demonstrate that Vietnamese garment exports continued to scale up within the EU market during the analyzed timeframe. However, descriptive trade data alone do not provide sufficient causal evidence to attribute this export expansion directly to the EVFTA or to emerging EU green policies. Export outcomes remain susceptible to broader macroeconomic factors, including end-consumer demand, price levels, ordering cycles, supply chain capacity, and shifting global market conditions. Consequently, this study utilizes secondary trade metrics primarily to map macro export trajectories and structural compositions, while evaluating the impacts of EU

sustainability mandates through their transmission mechanisms onto market access conditions and enterprise compliance capabilities.

Table 1. EU imports of garments (HS 61–63) from Vietnam and world (2023–2025)

Product code	Product label	EU Imports from Viet Nam (2023) [USD '000]	EU Imports from Viet Nam (2024) [USD '000]	EU Imports from Viet Nam (2025) [USD '000]	EU Imports from World (2023) [USD '000]	EU Imports from World (2024) [USD '000]	EU Imports from World (2025) [USD '000]
'61	Articles of apparel and clothing accessories, knitted or crocheted	2,792,020	3,133,800	3,835,437	96,408,724	100,514,435	110,623,089
'62	Articles of apparel and clothing accessories, not knitted or crocheted	3,820,995	3,937,725	4,768,985	92,783,310	94,615,608	103,627,548
'63	Other made-up textile articles; sets; worn clothing and worn textile articles; rags	382,943	376,422	457,305	21,350,280	21,724,550	23,646,082
Total		6,995,958	7,447,947	9,061,727	210,542,314	216,854,593	237,896,719

Source: Author's calculations based on International Trade Centre (ITC) Trade Map database (2025).

An analysis of the export structure demonstrates that Vietnam's trade flows to the EU are heavily concentrated in two primary apparel categories. Based on the empirical data, in 2025, HS 62 reached USD 4.769 billion, while HS 61 attained USD 3.835 billion; combined, these two categories accounted for approximately 95% of total export value within HS 61–63. HS 63 recorded a smaller scale, totaling approximately USD 457.3 million. This structural composition confirms that finished garments constitute the core component of Vietnam's textile and apparel exports to the EU. This pattern carries critical strategic implications for the sector's adaptation to green policies, as emerging EU mandates concerning ecodesign, material composition, chemical safety, product durability, recyclability, and information traceability exert a direct impact on the product groups that dominate export volumes.

Growth dynamics also varied across product chapters. Over the 2023–2025 period, HS 61 grew by 37.4%, outpacing the 24.8% expansion of HS 62 and the 19.4% increase of HS 63. In 2025 alone, HS 61 and HS 62 recorded year-on-year growth rates of 22.4% and 21.1%, respectively, compared to 2024. Consequently, all primary apparel categories achieved notable expansion during the period under study. While these empirical results indicate no immediate decline in export value resulting from green trade requirements, they should not be construed as evidence that Vietnamese enterprises have fully adapted to these new mandates. A key factor is that numerous EU regulatory frameworks for sustainable products are being phased in according to multi-year

roadmaps, whereas commercial standards enforced by global brand owners and importers are often implemented ahead of statutory deadlines through supply chain governance mechanisms.

An assessment of Vietnam's position within the EU market import structure reveals that the total value of EU imports under these product categories from global suppliers expanded from approximately USD 210.5 billion in 2023 to USD 237.9 billion in 2025. Over the same period, imports sourced from Vietnam grew from USD 6.996 billion to USD 9.062 billion. Consequently, Vietnam's market share in the EU increased from roughly 3.32% to 3.81%. Although this gain in market share reflects an improved trade standing, it has not yet altered the overall market supply equilibrium within the EU. Notably, while the value of EU imports from Vietnam accelerated rapidly in 2025, the EU simultaneously expanded its import volumes from alternative supply sources. This dynamic indicates that Vietnam's ability to boost export turnover does not automatically equate to the establishment of a sustainable long-term competitive advantage.

An analysis of the transmission mechanisms through which green mandates impact Vietnam's garment export performance reveals an upward export trend to the EU over the 2023–2025 period. However, these aggregate trade figures do not provide sufficient empirical grounds to attribute this export growth directly to the EU's green policy framework. Instead, the real impact of these regulatory mandates must be evaluated through shifts in the conditions required to maintain and expand bilateral trade relationships. We conceptualize this transmission mechanism as a multi-stage process: EU Green Regulations → Brand/Importer Requirements → Enterprise Compliance Capacity and Costs → Order Retention and Expansion Potential → Export Outcomes.

For Vietnamese enterprises, these regulatory pressures converge on three core operational capabilities: (i) sustainable raw material sourcing and production technology; (ii) data governance and traceability systems; and (iii) supply chain management capabilities. In the short term, the adaptive transition inevitably elevates capital expenditure and compliance costs. Over the long term, however, it serves as a critical driver for technological upgrading, resource optimization, and the modernization of managerial capabilities. Consequently, rising export turnover should not be misinterpreted as a diminishing impact of green trade barriers. Rather, the long-term retention and expansion of market share in the EU will increasingly hinge on an enterprise's capacity to translate regulatory requirements concerning products, materials, chemicals, and data into concrete operational capabilities.

3.3. Policy implications and strategic solutions for enhancing adaptive capacity in Vietnam's garment industry

The empirical findings presented in Section 3.2 indicate that while Vietnam's garment exports to the EU maintained an upward trajectory during the 2023–2025 period, Vietnam's market share within total EU garment imports remains modest. Concurrently, EU market mandates are progressively broadening from immediate product attributes to encompass raw material sourcing, chemical controls, supply chain traceability, data transparency, and end-of-life management. Consequently, sustaining and expanding long-term export market share will increasingly depend on the adaptive capacity of export enterprises, complemented by enabling institutional support systems. On this basis, the study proposes a two-tiered framework of policy implications and strategic solutions: (i) macro-level institutional policy and support mechanisms; and (ii) firm-level operational capacity transformation.

At the macro level, the primary priority is to refine the policy environment and strengthen institutional support mechanisms for the green transition within the textile and garment sector. Governmental authorities and sectoral ministries must systematically operationalize circular economy objectives, resource efficiency mandates, chemical safety controls, and emissions

reduction targets within national industrial development strategies, ensuring seamless alignment with the stringent requirements of the EU market. Beyond regulatory alignment, policymakers should develop financial and technical assistance tools to mitigate transition costs, particularly for small and medium-sized enterprises (SMEs). Expanding green credit lines, facilitating technology innovation grants, and funding energy-efficiency and waste/wastewater management initiatives will lower initial capital barriers, thereby accelerating enterprise compliance with global environmental standards.

Second, strengthening data infrastructure, product traceability, and technical support frameworks represents a critical policy imperative. The findings in Section 3.2 highlight that emerging mandates such as the Digital Product Passport (DPP), material provenance verification, and mandatory information disclosure impose escalating demands on enterprise data governance capabilities. Consequently, regulatory authorities and industry support institutions must establish unified information portals to disseminate EU regulatory updates, assist firms in identifying applicable compliance metrics across specific product categories, and guide the deployment of interoperable traceability systems. In this regard, the Vietnam Textile and Apparel Association (VITAS) and relevant sectoral agencies should serve as strategic intermediaries actively curating policy intelligence, delivering specialized training modules, and formulating operational readiness assessment frameworks for export enterprises. This institutional intervention is particularly vital for small and medium-sized enterprises (SMEs), which face structural resource constraints in technical expertise and digital infrastructure investments.

Third, public policy must actively foster the development of a sustainable and circular domestic raw material supply chain. Heavy reliance on imported inputs not only compromises an enterprise's ability to verify material provenance and environmental attributes, but also constrains its strategic agility in meeting evolving EU buyer specifications. Therefore, policy incentives should target capital investment in recycled fiber production, eco-certified textiles, and sustainable input materials. Concurrently, government frameworks must promote horizontal and vertical integration among garment manufacturers, raw material suppliers, recycling facilities, and research institutions. Building a cohesive industrial ecosystem will effectively reduce firm-level compliance expenditure while elevating domestic value addition across the sector.

At the firm level, the strategic focus must shift from reactive compliance with isolated mandates toward the establishment of an integrated sustainable governance capability. First and foremost, export enterprises must conduct comprehensive value chain audits spanning raw material selection, eco-design, manufacturing, and waste management operations to identify critical operational bottlenecks that could impair EU market access. Strategic capital investments in energy-efficient technologies, water and material optimization, hazardous chemical controls, and waste minimization should be pursued not merely to fulfill regulatory compliance, but as a strategic mechanism to enhance long-term cost efficiency.

Furthermore, enterprises must systematically bolster their supply chain data governance and traceability capabilities. Information regarding material provenance, chemical composition, manufacturing processes, and environmental metrics should be captured and standardized right from the upstream echelons of the supply chain. For firms deeply embedded in EU value chains, robust data management is no longer merely a compliance requirement, but has rapidly become a core benchmark in supplier selection and evaluation frameworks. Consequently, investments in digital data management systems and supplier-interoperable data sharing infrastructure should be framed as an integral component of a firm's long-term competitive strategy.

Finally, export enterprises must progressively move up the global value chain, diminishing their reliance on pure Cut-Make-Trim (CMT) contract manufacturing while expanding strategic autonomy over raw material sourcing, eco-design, and product stewardship. Fostering stronger backward linkages with sustainable material suppliers both domestically and regionally will simultaneously enhance provenance verification, ensure compliance with environmental standards, and optimize utilization of EVFTA rules of origin. This strategic pivot serves as the baseline for enterprises to transition from cost-based competition toward a sustainable value proposition anchored in product quality, operational agility, total traceability, and environmental compliance capacity.

The policy implications derived from this study do not advocate for the immediate, wholesale adoption of EU standards within Vietnam; rather, they emphasize the gradual cultivation of adaptive capacity through a phased roadmap. At the national level, the priority lies in establishing a supportive policy, financial, technological, and informational environment to facilitate enterprise transition. At the firm level, effort must center on upgrading capabilities in raw material sourcing, production practices, data governance, and supply chain management. This dual-track alignment will enable enterprises not only to fulfill current EU market requirements, but also to build proactive resilience against the ongoing expansion of green trade mandates in the coming years.

4. CONCLUSION

This study demonstrates that the EU's green policy framework for the textile and garment sector is undergoing a paradigmatic shift transitioning from narrow environmental impact mitigation toward comprehensive sustainability management across the entire product life cycle. Emerging regulatory requirements regarding eco-design, chemical safety, supply chain traceability, the Digital Product Passport (DPP), and Extended Producer Responsibility (EPR) are progressively expanding the compliance perimeter from the final product to upstream material sourcing, production processes, data governance, and post-consumer waste management (European Commission, 2020, 2022; European Parliament and Council of the European Union, 2024).

The empirical analysis reveals that Vietnam's garment exports to the EU expanded from USD 6.996 billion in 2023 to USD 9.062 billion in 2025, accompanied by a modest increase in market share from approximately 3.32% to 3.81%. However, aggregate trade metrics alone are insufficient to establish direct causal links between this turnover growth and the implementation of the EVFTA or EU green policies. A more fundamental finding of this study is that EU environmental mandates are fundamentally reshaping the conditions required to maintain and expand bilateral trade relationships. This transmission occurs primarily through brand and importer specifications regarding sustainable raw materials, chemical safety, product traceability, data management, and supply chain governance.

Therefore, enhancing the long-term competitiveness of Vietnam's garment sector requires a simultaneous focus on technological upgrading, sustainable raw material transitions, data governance, product traceability, and supply chain modernization. At the policy level, public interventions must expand financial, technological, and informational support mechanisms while accelerating the development of a sustainable domestic raw material base. At the firm level, export enterprises must proactively embed sustainability metrics directly into their production processes and supply chain management practices. This dual alignment establishes a strategic baseline for the textile and garment industry to transform green trade mandates from external compliance pressures into an internal catalyst for upgrading industrial competitiveness within the EU market.

This study relies primarily on policy analysis and secondary trade data aggregated at the HS 61–63 level, which precludes the empirical quantification of direct causal relationships between specific green regulations and export performance outcomes. Future research could utilize firm-level datasets to rigorously evaluate compliance costs and measure the granular impacts of distinct sustainability mandates on enterprise export competitiveness.

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