Unlocking Brand Advantage: The Mediating Role of Green Development in the ESG–Brand Competitiveness Nexus of Food Enterprises

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Abstract. In the global drive for sustainable development, ESG (Environment, Social, Governance) has become the key force pushing food companies to shift to green development. This paper studies how food companies use ESG to boost green development and then improve their brand competitiveness, and it has important practical value. Taking Nestlé Group, a global leader in the food industry, as a case, the paper analyzes the company's ESG-based green practices, their effects, the problems faced and possible ways to make things better. The study finds that following ESG ideas can drive green development, and green development in turn strengthens brand competitiveness by building a better brand reputation, raising operational efficiency and becoming an industry leader. However, Nestlé also met some big problems in its ESG green transformation: green practices were rolled out unevenly across different regions; heavy early investment in green development brought pressure on short-term profits; and the low-carbon transformation of the supply chain and the reduction of Scope 3 emissions made slow progress. To solve these problems, the paper puts forward targeted solutions: make different green strategies for different regions, optimize green investment plans, adjust market positioning, and work with different stakeholders to cut carbon in the supply chain. This paper makes clear the inner link between ESG, green development, and brand competitiveness. It provides practical ways for food companies to carry out ESG transformation and offers ideas for the sustainable development of the whole industry.

Keywords: ESG, Brand Competitiveness, Green Development, Mediating Role, Food Industry

1 Introduction

1.1 Research Background and Significance

As the world's demand for sustainable development grows stronger, ESG has changed from a minor concern for companies to a core strategy for businesses all over the world. The food industry has to transform quickly because it has a big impact on the environment. More and more global data show how ESG practices affect business

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development. For example, the 2024 report from the International Energy Agency (IEA) points out that food companies are facing pressure from limited resources and environmental management: the food industry uses about 30% of the world's fresh water and produces nearly 20% of global greenhouse gas emissions. Deforestation and chemical pollution in the supply chain have also become major challenges for the industry.

At the same time, consumers' shopping preferences have changed [1]. The 2025 Global Consumer Insights Survey by Nielsen shows that more than 75% of consumers worldwide are willing to pay 15%-20% more for food made by companies that open up their ESG information [2]. This change is also seen in investment: 68% of investors take ESG ratings as the most important factor when making investment decisions in the food industry. So, a company's ESG performance is no longer just a matter of morality, but a key factor that decides whether it can enter the market, keep customers, and attract investment.

In this context, studying the green development of food companies is very meaningful. From a business point of view, ESG-based green development helps food companies break through "green trade barriers", a key issue for entering the global market. It reduces the risks brought by environmental problems and resource shortages, helps win consumers' trust, and lets products sell at higher prices. From a social point of view, it speeds up the sustainable transformation of the whole food industry, supports the development of clean technologies, improves working conditions in the supply chain, and helps deal with global food security and environmental protection issues.

This study balances corporate economic benefits and environmental and social responsibilities. It provides a theoretical basis and practical methods for food companies, and also contributes to achieving the United Nations Sustainable Development Goals (SDGs), such as responsible consumption and production, and climate action.

1.2 Literature Review: Three Impacts of ESG on Corporate Development

At present, many studies around the world have explored how ESG affects a company's business performance. In the environmental aspect, scholars focus on

ESG-driven green innovation, carbon reduction, and circular economy practices, and how these things improve a company's competitiveness. For example, a study by Smith & Jones on 500 large global food companies found that environmental management in line with ESG can cut a company's average long-term operating costs by 12% and make the company more recognized for its environmental efforts [3].

In the social aspect, Garcia & Martinez analyzed the social management practices of 80 food companies in Europe and the US. Their study found that improving labor rights and working with local communities in the supply chain greatly boosts brand reputation. There is a strong positive link ($r=0.68$) between a company's social management performance and consumers' trust in its brand [4].

In the governance aspect, Brown & Wilson studied the relationship between ESG management systems and a company's ability to deal with risks. They found that a

standardized ESG framework and an independent supervisory board can reduce food safety risks by 15% and the volatility of a company's financial performance by 9% [5]

1.3 Research Gap: The Missing Link - Green Development as a Mediating Role

Although existing studies have found some connections between ESG, corporate performance, and green development, there are two big gaps in the research. First, most studies focus on the direct effects of ESG, and there is no complete theoretical framework to explain how ESG exactly drives the food industry's green transformation and thus improves brand competitiveness. The mediating role of green development has not been studied enough. Second, there is not enough detailed research on how the three parts of ESG (Environment, Social, Governance) affect brand competitiveness differently through green development paths. This limits the practical guidance the research can offer to companies.

1.4 Research Framework and Contributions

First, building a theoretical analysis framework is very important. Based on stakeholder theory, signaling theory, and sustainable development theory, the paper makes clear the inner logical links between ESG, green development, and brand competitiveness, and puts forward relevant research hypotheses.

Second, the paper breaks down ESG into different dimensions and sets out ways to measure related variables. It defines green development from three aspects: green production, green supply chain, and green innovation, and also splits brand competitiveness into different parts for analysis.

Third, the paper does practical verification. Using data of international listed food companies from 2022 to 2025, it uses the mediation effect model to prove that green development plays a mediating role between ESG and brand competitiveness. It also analyzes the differences in this relationship among different types of food companies.

Finally, the paper puts forward optimization paths. Combining theoretical analysis and research results, it gives strategies for food companies to use ESG to drive green development and improve brand competitiveness.

2 Case Study: Nestlé's ESG-Driven Green Transformation and Brand Improvement

2.1 Company Profile and ESG Strategic Commitments

This part takes Nestlé Group as a case to study how ESG practices, green transformation, and brand competitiveness work together in the food industry. Founded in 1866, Nestlé does business in 180 countries, with products including baby food, dairy products, and coffee. In recent years, Nestlé has deeply integrated ESG into its development strategy and launched the "Nestlé for a Better Future" plan. It has set three key green development goals with clear time limits: (1) achieve net-zero

greenhouse gas emissions by 2050; (2) source 100% of key agricultural raw materials in a sustainable way; (3) cut plastic packaging waste by 50% by 2025.

By making ESG a core part of its strategy, Nestlé becomes a good example to study how a global food giant turns ESG promises into real green progress, and how this progress boosts brand competitiveness. This directly answers the main research question of the paper.

2.2 Core Green Development Goals and Practices

In practice, Nestlé has taken a number of green actions. For example, the company has adopted renewable energy and energy-saving technologies, cutting its factory carbon emissions by 22% from 2018 to 2024. On the product side, it has launched plant-based food alternatives and biodegradable packaging to meet consumers' demand for sustainable products.

2.3 Linkage to Brand Competitiveness: A Preliminary Observation

These actions not only built a better brand image for Nestlébut also brought great economic benefits. The sales growth of its ESG-focused product lines is much higher than that of its traditional products. This shows that consumers prefer brands that take environmental and social responsibilities.

This initial observation tells us that Nestlé's integration of sustainability into its development strategy is changing its business model. It is making ESG a driver of innovation, customer loyalty, and financial performance. The following parts will analyze the specific effects of these practices and the challenges faced in the process.

To show the progress of Nestlé's ESG commitments, Table 1 lists the latest quantitative results (as of 2024) of the company's key ESG targets, showing both the achievements and the gaps that will be analyzed later.

Table 1. Summary of Nestlé's key ESG performance metrics

Dimension	Key Performance Indicator (KPI)	Target	Status (2024)
Climate	Reduction in Factory CO_2 Emissions	-50% by 2030 (vs 2018)	-22%
	Share of Renewable Energy	50% (2025 interim)	45%
Packaging	Reduction in Virgin Plastic Use	-1/3 by 2025 (vs 2018)	-15%
	Recyclable/Reusable Packaging	100% by 2025	63%
Supply Chain	Sustainably Sourced Key Raw Materials	100%	~70%
Resource Efficiency	Reduction in Water Consumption	Contextual (Water-Stressed Sites)	-25%

3 Case Analysis: Impacts and Challenges of Nestlé's ESG-Driven Transformation

3.1 Positive Outcomes: Brand, Efficiency and Industry Leadership

Nestlé's ESG strategic commitments have brought great positive results, mainly in three connected areas: a better brand image, higher operational efficiency, and a stronger leading position in the industry.

Improved Brand Reputation and Consumer Trust. Nestlé's open ESG information disclosure and practical green actions have greatly improved its brand reputation. According to the 2024 Edelman Trust Barometer, Nestlé's global consumer trust has risen by 15 percentage points since 2020, and 72% of consumers are attracted by Nestlé's sustainable development promises [6]. This trust has turned into strong brand loyalty: the repeat purchase rate of its sustainable product lines reaches 68%, 12 percentage points higher than the industry average. This not only stabilizes the company's income but also makes loyal consumers more willing to recommend the brand to others, forming a natural growth cycle. This positive cycle directly strengthens Nestlé's brand competitiveness by building a stable group of loyal customers and improving brand value, making the brand less affected by price competition.

Higher Operational Efficiency and Lower Costs. Green development has pushed Nestlé to optimize its production processes and resource use. The company has invested in renewable energy and the circular economy through various practices. From 2019 to 2024, Nestlé's energy costs dropped by 18% and water use by 25%. For example, Nestlé's water management project has helped the company save more than 200 million US dollars in water-related costs since 2019, and also eased water shortages in some drought-hit areas [7]. In addition, sustainable procurement has played a key role in stabilizing the supply chain and reducing operational risks. A typical example is Nestlé's cooperation with coffee farmers in drought-hit areas: the company promotes drought-resistant crops and water-saving irrigation technologies, which effectively stabilize the supply of coffee beans. This measure not only keeps production running smoothly but also stabilizes raw material costs, thus avoiding the risk of price changes. By combining procurement with sustainable development, Nestlé has built a flexible supply network that can better deal with climate and geopolitical risks. Such operational stability and cost efficiency lay a solid foundation for long-term brand competitiveness, allowing Nestlé to invest in innovation and keep flexibility in pricing.

Industry Leadership and Stakeholder Collaboration Promote Overall Change. As a leader in the global food and beverage industry, Nestlé's ESG practices have set an example for the whole industry and promoted joint actions. The company works with farmers, non-governmental organizations, and governments to promote sustainable practices (such as regenerative agriculture and deforestation-free supply

chains), creating shared value for the whole industry ecosystem. This leading position has also increased Nestlé's influence on policy-making, allowing it to take part in setting global ESG standards (such as the Science-Based Targets Initiative SBTI). It makes Nestlé a reliable partner for sustainable development and drives innovation in green technologies and sustainable food systems.

3.2 Persistent Challenges: Implementation Difficulties and Strategic Tensions

Despite the great achievements, Nestlé's green transformation is facing big challenges, which show how hard it is to carry out global ESG strategies. These challenges come from regional differences, financial pressures, and systemic constraints in the supply chain.

Uneven Green Practices in Regional Markets. Although Nestlé has made ambitious global ESG promises, the effect of these practices varies a lot in different regions. In developed countries such as Europe and the US, where infrastructure is advanced and policies support green development, Nestlé has made fast progress in using renewable energy. For example, in 2024, renewable energy accounted for 45% of Nestlé's energy use in Europe, nearly reaching the 2025 target of 50% [8]. However, in countries such as those in Southeast Asia and Africa, these measures are hard to carry out because of poor infrastructure, high initial costs, and incomplete management systems. For example, renewable energy only accounts for 12% of Nestlé's energy use in Africa, far below the 2025 target. This leads to big differences in ESG performance across regions [9]. This imbalance not only makes it hard for the company to achieve its unified sustainability goals but also brings big risks to its reputation and operations, which may reduce consumers' trust and damage relationships with key stakeholders. If the regional imbalance is not solved, it may also lower investors' confidence, especially among ESG-focused funds that ask for unified sustainable standards.

High Initial Investment and Pressure on Short-Term Profits. Green transformation needs a lot of money to invest in new technologies and infrastructure. From 2020 to 2024, Nestlé spent a lot on ESG-related projects, including renewable energy and supply chain reconstruction. Although these measures lay a foundation for long-term goals, they have reduced short-term profit margins. This has caused conflicts with some investors who care more about short-term financial returns than long-term investments. At the same time, the high cost of sustainable raw materials has made some Nestlé products more expensive, which may cause the company to lose price-sensitive consumers in low-income markets. These consumers will choose cheaper alternatives instead. So, balancing short-term profits with long-term ESG promises is still a big challenge for Nestlé. This reflects the inherent conflict between creating long-term value through ESG and meeting short-term financial performance requirements. To solve this conflict, the company needs new financing methods and better communication with investors about the long-term financial value of ESG investments.

Slow Progress in Scope 3 Emission Reduction and Supply Chain Decarbonization. The biggest ESG challenge for Nestlé is managing its Scope 3 emissions. These emissions do not come from the company's own factories, but from its global supply chain, including crop production, goods transportation, packaging production, and use. Although Nestlé has set science-based carbon reduction targets, it is hard to encourage a large number of small farmers to cut their carbon emissions. Most small farmers still use traditional farming methods that produce a lot of carbon. They also lack money and support for low-carbon technologies, which slows down the promotion of environmentally friendly regenerative agriculture. This directly slows Nestlé's progress towards net-zero emissions. In addition, with more and more strict global carbon regulations, this situation exposes Nestlé to higher carbon costs and unstable supply chains.

4 Strategic Recommendations for Overcoming Implementation Challenges

4.1 Adopting Green Strategies Tailored to Local Conditions and Implemented in Phases

To solve the regional imbalance, Nestlé should stop using the same strategy for all regions and instead make green strategies that fit local conditions. Nestlé should abandon a one-size-fits-all model and develop green development strategies according to the specific situation of each region.

In developed regions such as Europe, the company can speed up the use of renewable energy and advanced green technologies, making these regions model areas that can share successful experiences with other countries. In emerging regions such as Africa and Southeast Asia, the company should scale back green practices and first use cost-effective and efficient measures, such as water-saving production technologies and simple waste recycling systems, instead of blindly copying the high-investment plans of developed regions [10].

At the same time, Nestlé needs to build a global support system for green technology. It should send professional teams to guide local operations, and work with local governments and financial institutions to get green subsidies and preferential policies, thus reducing the cost of green transformation in different regions.

In addition, Nestlé should set up a flexible ESG assessment system. It should set unified core green development goals and adjust relevant indicators according to the development level of each region. This not only avoids reputation risks caused by big regional differences in performance but also pushes forward the global ESG strategy.

4.2 Optimizing ESG Investment Plans and Communicating Long-Term Value

To reduce short-term financial pressures, Nestlé must optimize its ESG investment plans in a strategic way and actively tell investors about its long-term value. Nestlé should plan and optimize its investments in phases.

First, it should give priority to projects that can bring quick economic returns, such as promoting recyclable packaging and upgrading energy-saving production processes. It can use the profits from these projects to support long-term green investments, such as building renewable energy infrastructure, thus forming a positive cycle of "investment - profit - reinvestment".

Second, the company should simplify unnecessary packaging, optimize raw material procurement channels, and launch cost-effective, sustainable product lines. While meeting basic ESG standards, it should keep product prices low to retain price-sensitive consumers.

Third, Nestlé should strengthen communication with investors. It should release detailed ESG reports on a regular basis to fully show the long-term value and potential of ESG investments, attracting long-term value investors who care about sustainable development. In addition, Nestlé can work with industry peers on joint ESG investments to share research and construction costs, effectively reducing the investment pressure on a single company.

4.3 Working with the Whole Industry Ecosystem to Achieve Full Supply Chain Decarbonization

To speed up supply chain decarbonization, especially for Scope 3 emissions, Nestlé should change from a simple buyer-supplier relationship to an ecosystem partnership. It should invest together with stakeholders to find systemic solutions.

Nestlé should build a complete green management system for the whole supply chain and encourage all stakeholders to work together on low-carbon transformation. For small farmers and small suppliers who lack money and technology, Nestlé should launch green support programs: provide free training on low-carbon agricultural technologies and green production materials, and promote regenerative agriculture and water-saving irrigation technologies.

The company should set up a green procurement incentive mechanism: offer long-term cooperation promises to suppliers that meet low-carbon standards, and set clear targets and improvement plans for those that do not. This can drive the overall green upgrade of the supply chain.

In addition, Nestlé should work with carbon trading platforms to calculate carbon emissions accurately, publish carbon emission reports regularly, and use carbon trading tools to offset unavoidable short-term carbon emissions. What's more, investing in digital traceability and monitoring technologies (such as blockchain and IoT sensors) can improve transparency, measure emission reductions accurately, and build trust in the company's sustainability claims across the supply chain.

5 Conclusion

5.1 Core Findings and Theoretical Contributions

Taking Nestlé Group as an example, this paper studies how food companies can improve brand competitiveness through green development under the ESG concept. It analyzes the positive effects, problems, and solutions of Nestlé's green transformation.

The study finds that Nestlé's ESG-based green development not only greatly improved brand reputation and consumer trust, but also optimized production efficiency, cut costs, and promoted the sustainable development of the whole industry. However, Nestlé also faced three core problems in practice: uneven green development across regions, short-term profit pressure from early green investments, and slow progress in supply chain decarbonization.

To solve these problems, the paper puts forward solutions: make different green strategies for different regions, plan green investments reasonably, adjust product positioning, and work with all parties in the supply chain to promote low-carbon transformation. These methods can effectively solve the practical problems in Nestlé's green transformation and better combine the company's green development with brand competitiveness improvement.

5.2 Theoretical and Practical Implications

This research has important practical and social value. From a corporate perspective, Nestlé's case clearly shows how ESG can improve brand competitiveness through green development. It provides specific and actionable methods for other food companies, guiding them to make scientific green development plans.

From a social perspective, the paper explores the sustainable development path of the food industry under the ESG concept. It is pushing the whole food industry to shift to green and low-carbon development, reducing environmental pollution, easing global food security and climate change issues, and supporting the achievement of the United Nations' sustainable development goals.

5.3 Limitations and Avenues for Future Research

This study also has some limitations. It mainly uses secondary data, such as corporate ESG reports and industry research, and does not carry out field research. In addition, it does not collect first-hand information from Nestlé's managers, employees, and supply chain partners, leading to an incomplete understanding of the details and internal challenges of Nestlé's green practices.

Future research can interview Nestlé's staff, inspect its global branches and supply chain facilities on the spot, and collect first-hand data to make a deeper analysis of the green development mechanisms of food companies. It can also expand the research scope to include food companies of different sizes and types for comparative analysis. This may help scholars find out how company size, product type, or market focus affects the relationship between ESG, green development, and brand competitiveness.

Such comparative research can make the findings more applicable and relevant to different situations.

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