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Research Paper

The Economics of Environmentally Sustainable Sportswear Industry in Emerging Markets: Consumer Preferences and Brand Strategies in the Sportswear Industry

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Abstract: *This study explores the economic challenges and opportunities of adopting sustainability in the sportswear industry, focusing on emerging markets like India. It examines how brands such as Nike, Adidas, Puma, and Asics balance eco-friendly practices with profitability in price-sensitive markets. Key areas include supply chain optimisation, regulatory compliance, government incentives, and shifting consumer behaviour toward eco-conscious products. Case studies such as Adidas' ocean plastics initiative and Nike's "Move to Zero" demonstrate the incorporation of sustainability into branding and competitiveness. This study provides a framework for emerging economies to align environmental stewardship with financial viability.*

Keywords*: Sustainability, emerging markets, sportswear, consumer behaviour`, supply chain, regulatory compliance, profitability, eco-conscious branding****.***

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I. Introduction

1.1 Background

Since the late 20th century, sustainability has become a pressing motive among all businesses, affecting and influencing product development, a company's operation, and consumers' purchasing habits. This trend is also apparent in the sportswear industry, with multinational companies producing many eco-friendly products and implementing such habits to satisfy the consumer's ethical demands for a sustainable market.

The global **apparel market** is estimated to be valued at $1.79 trillion in 2024 accounting for 1.63% of the world's GDP. Meanwhile, from Ariston Research (ARI, 2024), the global **sportswear market** size was valued at USD 395.03 billion in 2023 and is expected to reach USD 579.96 billion by 2029,

In 2023, the **Indian sportswear market** was valued at USD 673.34 million. (MMR, 2024) and expected to grow at a compound annual growth rate (CAGR) of 16.2% from 2024 to 2030, reaching nearly USD 1926.10 billion.

However, executing these sustainable practices brings economic challenges, especially in growing markets such as India, where price sensitivity remains high and the cost structure often constrains corporate sustainability efforts.

1.2 Research Objective

This paper aims to examine the economic factors that mould the eco-freindly practices implemented by sportswear industries in emerging markets, focusing on the Indian market. Explicitly, looking at brands such as Puma, Nike, Asics and Adidas, analysing the complex economic decisions, such as stabilising the production costs with pricing methods, and incorporating business models in price-sensitive markets.

This paper will illuminate how companies can attain environmental sustainability without compromising prof itability or market share in the long run by integrating economic principles of demand and supply, externalities, consumer behaviour, and competitive strategies.

By investigating these factors, this study will address the question: *How can sportswear brands effectively balance the economic costs and benefits of environmentally sustainable practices to appeal to consumers in emerging markets like India?*

1.3 Thesis Statement

This paper argues that through manipulating economic principles such as demand elasticity, externalities, behavioural economics, and game theory, sportswear brands, can successfully integrate environmentally

sustainable businesses that promote profitability in emerging markets, and meet the rising consumer demand for foreign products.
The research approach adopted here is relevant not only for the sportswear industry but also for understanding broader economic principles that drive business decision-making in the face of sustainability challenges. The insights gathered from this study could serve as a foundation for future analysis of sustainable practices in other industries within emerging markets, where sustainable development is becoming increasingly essential for long-term economic growth.

II. Economic Framework of Environmental Sustainability in the Sportswear Industry

2.1 Supply and Demand for Sustainable Goods

"India is a crucial market for us and, with the changing consumer landscape, we see a huge potential with new and emerging demand for sports across different regions in India," Asics Corp, CEO Yasuhito Hirota said.

This is seen to be boosted by a mixture of consumer awareness, environmental consciousness and a shift in social norms. In emerging markets such as India, this trend is recognised, despite it being gradual. At the same time, an increasing percentage of the middle class is indicating intrigue in eco-friendly goods, price sensitivity remains a major component. Higher costs in production can lead to premium pricing. This raises a key economic question: how elastic is the demand for environmentally sustainable products in markets where affordability is a significant concern?

In regards to supply, producing sustainable sportswear typically involves higher costs, due to the investments needed to change the technology used, for example installing solar panels, and eco-friendly raw materials, such as cotton, VSF or recycled polyester. Due to these factors, it can lead to a high retail price and hence limit market penetration in price-sensitive regions such as India. However, there are methods to reduce costs such as technological advancements and economies of scale, offering brands options for competitive prices. In the branded sportswear industry, direct product costs normally remain around 15-25 pct of sales revenue and a direct cost increase can be compensated by a marketing cost reduction.

Further, there are certain economic benefits in the short term and long term to the companies. In the short term, it can give benefits of carbon credits, predictable and sustainable costs and help in marketing by creating a different product category for environmentally sustainable products, which creates additional revenue and builds brand image in the long term.

2.2 Behavioral economics and Consumer behaviour

Consumers often weigh **perceived costs**, like higher prices, against **intangible benefits**, such as environmental impact and personal values. Behavioural economics highlights the role of loss aversion, where consumers are more sensitive to potential losses, such as paying a premium for sustainable goods than equivalent gains, such as environmental benefit. Social norms, which mould how consumers perceive social pressure to buy eco-friendly products can strongly influence purchasing behaviour. Positive peer endorsements or societal trends toward sustainability can enhance purchase intentions, as well as, social pressure to promote and support brands which are actively participating to be more sustainable, and vice for brands which are not eco-friendly are more likely to be shunned by society.
This behavioural lens allows you to explore how sportswear brands like Nike, Adidas, Asics and Puma can leverage these insights in marketing strategies to promote environmentally sustainable products.

2.3 Sportswear Examples of Moving towards

Nike has an initiative, "Move to Zero" which focuses on waste reduction and shifting international operations to renewable energy. This will strike a chord with the urban consumer, particularly millennials and Gen Z, who care about sustainability. Creating this brand image for young customers will result in future loyalty.

Addidas has recently released a collection made entirely from ocean plastic, integrating sustainability and innovation. This premium product actually creates a new segment while having strong demand from consumers, thus it is proof of how profitability and value creation can be achieved as long as sustainability and brand strategy mix.

Puma, too, has come up with biodegradable and recycled materials in its products, which are targeting environmentally conscious consumers in India. Though these were high-cost initiatives at the outset, they have enabled Puma to become a market leader in sustainable sportswear, enhancing sales and brand equity, which also improved its brand image.

III. Externalities and Sustainable Practices

3.1 Negative Externalities of Traditional Manufacturing:

The sporting goods industry is characterised by mass volume production and distributed manufacturing across different geographical regions, which involves high levels of resource consumption, waste and other environmental emissions. Temporary workers of major clothing producers may expend as much as 80% of the assets utilized by the supply chain through the utilization of crude materials, vitality and water. The sports attire and footwear businesses depend on layered supply chains related to expansive multinational companies, found around the world and in specific in creating nations (essentially in Asia).

Traditional manufacturing processes in the sportswear industry often generate significant negative externalities, which are costs incurred by society but not reflected in the price of the product. These external factors include pollution, by the use of various toxic dyes and non-biodegradable materials, energy-intensive production causing soil, air and water contamination as well as the emission of greenhouse gases such as carbon dioxide during the production and transportation of the products. During the manufacturing, large amounts of water are used, which ends up not being recycled as well as fabric scraps and defective products, much of which end up in landfills. Due to the toxic materials, workers in the factories face a high health risk. Exposure to these hazardous conditions can impose costs on the public healthcare system and cause welfare loss. Recently, on October 27 2024, 2 workers died and 7 ended up in the hospital after inhaling toxic gas at a textile factory in Ahemdabad, reported by Indian Express

3.2 Positive Externalities of Sustainability

Hence, the manufacturers have to address these ongoing demands and confront the corporate sustainability responsibility model for their supply chain. This requires practices and related knowledge, skills, and attitudes of the workforce all along the supply chain in order to achieve an appropriate standard consistently based on best practices to attain this goal.

This results in various forms of positive externalities in the society. By creating ecological products, the brands can raise awareness regarding environmental issues that help increase consumer awareness levels. This can lead to a domino effect by building better conner habits in the customer. Like Adidas' Parley for the Oceans initiative. The ocean plastic used in shoe production amplified conversations around ocean conservation. This therefore includes ethical labour practices and helps in elevating living standards for the local communities in terms of offering rare wages and better working conditions, a development that creates ripples into economic development within manufacturing regions.

IV. Government Regulations and Economic Incentives for Environmental Sustainability In India

4.1 Impact of Regulation on Market Behavior

The Indian government has implemented some rules and regulations to help make the sportswear industry more eco-friendly. In India, environmental regulations are reshaping cost structures alongside market dynamics for sportswear brands. These regulations act as both cost-push factors, increasing the marginal cost of production, and demand-pull factors, creating consumer preference for eco-friendly products.

One such regulation is the Plastic Waste Management Rules (EPR Framework). Imposing producers with responsibility for their products' end-of-life management helps firms internalise external costs by investing in sustainable packaging solutions. For example, Puma India’s recycling initiatives are part of its compliance strategy, mitigating potential penalties and reducing long-term waste management costs.

Programme is the Perform, Achieve, and Trade (PAT) scheme which aids in creating a cap-and-trade system for energy-intensive industries, indirectly influencing sportswear companies to adopt renewable energy. Nike India’s adoption of solar panels in its supply chain directly responds to these regulatory shifts.

These regulations can cause different impacts. For the short term, there is a cost expiation for the companies, as they have to substitute the materials in use and technology compatible with it, with more environmentally sustainable, biodegradable alternatives, increasing their production costs. However, in the long run, it can also increase their demand. Internalising these negative externalities can attract consumers who are more environmentally conscious as well as improve brand image, hence improving their market share.

4.2 Role of Tax Incentives and Subsidies

Government incentives play a vital role in reducing opportunity costs and helping transitions to sustainable practice. Many different types of incentives have been brought in by the government in India to transition into a more environmentally friendly sportswear industry.

Subsidies, such as the MNRE Solar Scheme, were placed to help increase the **use of renewable energy**. This helped to reduce the upfront cost of solar installations, decreasing the average fixed cost per unit for manufacturers. For example, Mahindra Logistics reported avoiding over 1,500 tons of CO_2 emissions annually by installing solar panels in the workshops, as a part of their energy conservation measures. These warehouses also support zero-carbon initiatives by integrating renewable energy and sustainable construction materials

Another such scheme is the Production-Linked Incentive or PLI. The latter provided financial incentives for integrating green materials, thereby helping domestic manufacturers with eco-friendly materials. This is how brands such as Adidas and Puma have used this to incorporate more sustainable materials, thereby reducing their reliance on imports and their vulnerability to foreign exchange risks.

State-Level Tax Rebates are also available for green investments. In states like Tamil Nadu, its application was able to reduce the effective marginal tax rate and increase the gross profit of companies that adopt sustainable manufacturing.

V. Conclusion

The shift towards environmental sustainability in the sportswear industry, particularly in emerging markets like India, underscores a complex interplay of economic, regulatory, and behavioural factors. Research highlights that while sustainable manufacturing necessitates significant upfront investments, such as adopting renewable energy or integrating eco-friendly materials, these practices can yield long-term economic and environmental benefits (Porter & Kramer, 2011). These include brand loyalty, cheaper operations due to economies of scale, and an increase in market share with an ever-growing green-conscious consumer population (Kotler et al., 2021). Government policies and incentives are also important to market dynamics. The studies suggest that subsidy and tax rebates, similar to the India MNRE Solar Scheme and Production-Linked Incentive scheme, make the effective marginal cost of sustainability investment lower and encourage the internalization of externalities in order to follow eco-friendly practices (Gupta et al., 2020). These interventions are conducive to the alignment of profitability with environmental stewardship for firms in price-sensitive economies such as India.

Insights drawn from behavioural economics indicate that the influence of social norms and loss aversion is highly relevant in affecting consumer preferences. Studies confirm that brands which use this perspective, such as Nike with "Move to Zero" and Adidas using ocean plastics to make products, are beneficial for increasing consumer engagement as well as creating demand for sustainable products (Thaler & Sunstein, 2008). These strategies establish an educational process and trust establishment as a critical component to help build a unique market space for sustainability.

In addition, sustainable practices yield positive externalities in terms of good labour conditions and lesser environmental degradation that are positively aligned with social welfare. For example, Adidas' Parley has generated debate about the protection of oceans, while its products have been able to achieve profit levels; in this manner, companies can achieve profit-making activities with other wider goals for the environment (Smith, 2022).

In conclusion, the convergence of regulatory frameworks, innovative business strategies, and shifting consumer preferences positions the sportswear industry as a vanguard in the pursuit of sustainable development.

Drawing from research, this case study demonstrates that balancing economic costs and environmental benefits is achievable when companies integrate robust economic principles with a commitment to sustainability. This blueprint serves not only the sportswear industry but also other industries in emerging markets as it helps correlate profitability with environmental responsibility.

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