Green product innovation: A means towards achieving global sustainable product within biodegradable plastic industry

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ABSTRACT

Green innovativeness has long been considered one of the most significant components of economic progress, environmental sustainability, and improved living standards. Green innovation has developed as a strategic aim both in theory and practice because of the interaction between sustainability and innovation. The main objective of this study is to get a deeper understanding of the motivations behind, strategies towards, and problems of incorporating sustainable development issues into biodegradable plastic product innovation. Biodegradable materials have the potential to replace traditional petroleum-based plastics across a range of products and contribute to a more circular economy. The degradation might occur in the soil, water, anaerobic digestion facility, or compost, depending on the target application. However, the uptake of these materials will not succeed unless consumers, manufacturers, and regulators are convinced of their efficacy. Therefore, this study used a qualitative technique and numerous case studies to fulfil the research goals of getting more profound insights from biodegradable plastic firms and non-governmental organizations (NGOs) to examine biodegradable plastic product innovation. To begin with, this study develops a conceptual model that highlights eight important environmental components of innovation in bioplastic products, such as saving energy, public policies, and reductions in material and pollution control, as outlined in product life cycles. Therefore, this research shows that firms are motivated to produce biodegradable plastic for various reasons. The findings also demonstrate that environmental rules may provide possibilities for risk mitigation, profitability and image preservation, and the establishment of new businesses and be a source of restrictions and regulatory compliance. The study's findings are then summarized and incorporated into a concept that illuminates many elements of green product innovation while also answering the difficulties and dangers that businesses confront. Finally, the consequences for business leaders, academics, and policymakers are discussed.

KEYWORDS

Green product innovation; Biodegradable plastic; Life cycle analysis; Environmental sustainability; And multiple case studies

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