
THE GREEN BUSINESS MODEL: A PATHWAY TO SUSTAINABLE GROWTH AND COMPETITIVE ADVANTAGE

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jalendarreddynemali@gmail.com**ABSTRACT**

Green Business Model represents a transformative approach through which firms integrate environmental responsibility into their core operations while achieving long-term profitability. According to Porter and Kramer's concept of shared value, businesses gain competitive advantage when they address social and environmental challenges through innovation it also examines how eco-friendly business practices can enhance sustainability and profitability within agri-business enterprises in Hyderabad. Using secondary data from research reports, government publications, and existing industry analyses, the study explores the adoption of renewable energy, green packaging, waste-minimizing techniques, and clean technologies as core components of the Green Business Model. Based on these insights, the paper proposes a sustainability-oriented business model tailored to Hyderabad's agri-business sector, emphasizing resource efficiency, low-carbon operations, and circular economy practices. The findings suggest that integrating green strategies not only strengthens environmental compliance but also increases market competitiveness by attracting eco-conscious consumers and investors. The study concludes that agri-businesses in Hyderabad can achieve sustainable growth and long-term competitive advantage by embedding green innovations into their operational and strategic frameworks, thereby aligning commercial success with regional environmental priorities.

Keywords: Green Business Model, Sustainable Growth, Competitive Advantage, Agri-business Sustainability, Sustainable Farming Practices

INTRODUCTION

The Green Business Model is a strategic approach in which environmental sustainability is embedded into the value proposition, operations, and revenue logic of a firm. Rather than treating sustainability as an add-on, the model makes eco-efficiency, resource stewardship, and social responsibility central to how the business creates and captures value. The idea draws on several well-established frameworks: Porter & Kramer's Shared Value (linking social/environmental problem-solving to business opportunity), Elkington's Triple Bottom Line (people, planet, profit), and principles from the circular economy (closing material loops and designing out waste).

Green Business Model has five interlocking components:

Renewable energy, organic/low-impact inputs, water-saving technologies, and sustainable packaging. Energy- and water-efficient production, waste-to-value practices, low-emissions logistics, and adoption of clean technologies (solar pumps, cold chain powered by renewables, IoT monitoring). Eco-labelled, traceable, higher-quality produce or services that meet consumer and regulatory demand for sustainability. Revenue from premium pricing, cost savings from efficiency, incentives/subsidies, and improved access to ESG-focused finance. Active collaboration with farmers/FPOs, government agencies, tech providers, investors, and consumers to co-create solutions and share risks/benefits. Cost leadership through efficiency: Reduced energy, water, and input costs lower operating expenditure over time. Sustainability credentials (traceability, organic certification, low-carbon labels) attract premium-seeking consumers and niche markets. Compliance with environmental norms, reduced exposure to resource scarcity, and supply-chain resilience. Circular practices and green technologies open opportunities for by-product commercialization (biofertilizers, biomass energy) and services (traceability-as-a-service). Demonstrable ESG performance improves access to lower-cost capital and grants.

Application to agri-business in Hyderabad

Map resource hotspots (water, energy, packaging waste) across farms and post-harvest units. Pilot green technologies: Solar irrigation pumps, solar cold storage, drip irrigation, and on-farm composting. Build farmer capacity: Train farmers & FPOs on soil health, integrated pest management, and post-harvest handling to reduce losses. Upgrade packaging & logistics: Use biodegradable packaging, optimize routes, and adopt shared cold-chain solutions to reduce emissions and waste. Enable traceability & branding: Implement simple traceability (QR codes, basic block chain pilots) and brand local produce as "Hyderabad-green" or "climate-resilient." Leverage policy & finance: Tap state agriculture schemes, renewable energy subsidies, and ESG-linked loans or carbon financing where available.

1. **Sinkovics, N., Gunaratne, D., Sinkovics, R., & Molina-Castillo, F.-J. (2021)** provide a comprehensive umbrella review of systematic literature reviews on sustainable business model innovation, illustrating how sustainable business models integrate environmental, social, and economic value creation, thereby reinforcing the academic framing of sustainability as a core strategic driver for long-term growth and competitive positioning. Their synthesis across 57 reviews maps antecedents and outcomes of sustainable model innovation, underscoring the growing scholarly recognition that sustainability-oriented business models are evolving from niche experimentation to integral design frameworks for sustainable competitive advantage.
2. **Najmaei, A. & Sadeghinejad, Z. (2022)** conducted a bibliometric review of green and sustainable business models, tracing the intellectual evolution of GnSBMs and documenting their shift from multidisciplinary origins to an interdisciplinary research domain. They show that environmental strategy literature increasingly highlights sustainable business model design not only as a means of environmental stewardship but also as a structural foundation for competitive differentiation in dynamic markets.
3. **Geissdoerfer, M., et al. (2018)** in a widely cited review of sustainable business model innovation emphasize the conceptual link between sustainability goals and business model redesign. They argue that sustainable business models embed ecological and social value into value propositions, value creation architectures, and value capturing mechanisms, which in turn can lead to competitive advantage by addressing stakeholder demands beyond pure economic returns.
4. **Nosratabadi, S., Mosavi, A., Shamshirband, S., et al. (2019)** explore sustainable business models across diverse application areas, highlighting that their growth correlates with increased competitive performance in various industries. Their review underscores how sustainable practices integrated into business models help organizations meet sustainability goals while enhancing differentiation and resilience, thus aligning with the premise that sustainable models underpin sustainable growth strategies.
5. **Bocken, N.M.P., Short, S.W., Rana, P., & Evans, S. (2014)** develop sustainable business model archetypes, demonstrating how eco-innovative configurations of business activities serve as templates for firms to transition toward greener operations. This review clarifies the link between sustainable archetypes and competitive positioning, suggesting that archetype adoption can foster market innovation and stakeholder goodwill—both components of competitive advantage.
6. **Karuppiah, K., Sankaranarayanan, B., & Ali, S.M. (2023)** offer a systematic review of sustainable business models that identifies research trends and highlights opportunities and challenges associated with embedding sustainability into business practice. Their analysis reveals that sustainable business model frameworks are increasingly linked with strategic innovation and long-term competitive outcomes, reinforcing the notion of sustainability as a core business objective rather than an add-on.
7. **Agwu, U.J. (2021)** synthesizes empirical research on sustainable business models, concluding that sustainable strategies reshape traditional competitive paradigms by emphasizing environmental and social value. Their review shows that conventional profit-oriented models evolve into holistic frameworks where sustainable innovation delivers both financial performance and competitive strength, a key tenet of green business models.
8. **De Giacomo, M.R. & Bleischwitz, R. (2020)** *Business Strategy and the Environment*, 29(8):3352–3369) examine business models designed for environmental sustainability, drawing attention to conceptual gaps and future research needs. They argue that green business models—when systematically implemented—can redefine value chains so that environmental performance becomes a differentiator that competitors find hard to replicate, thereby contributing to sustainable competitive advantage.
9. **Solesvik, M.Z. (2022)** provides a conceptual delineation of green business models, explaining how distinct green model types incorporate environmental objectives into core strategy. This literature emphasizes that environmental value propositions can attract sustainability-aware consumers and stakeholders, which, in turn, enhances competitive positioning and supports sustained growth in increasingly conscious markets.
10. **Kim, J., Ko, K.R., & Choi, W. (2024)** empirically explore how green business models, when combined with supportive green media coverage, contribute to successful firm outcomes such as enhanced visibility and investor attraction. Their study links green model adoption to market signaling effects that can translate into competitive advantage, especially during strategic events like IPOs—illustrating the practical business impact of green strategies. Across these reviews, the literature consistently demonstrates that green and sustainable business models are not only frameworks for environmental stewardship but also strategic

mechanisms for achieving competitive advantage and sustainable growth. Scholars emphasize that embedding sustainability into organizational value creation and capture processes enables firms to respond to stakeholder expectations, innovate, and differentiate themselves in competitive markets. These studies collectively strengthen the argument that “The Green Business Model” represents a vital pathway to long-term viability, stakeholder legitimacy, and enhanced competitive positioning.

RESEARCH STATEMENT

Despite the growing body of literature on sustainable and green business models, there remains a need for integrated empirical research that explains how green business model adoption translates into sustainable growth and competitive advantage across industries. Existing studies largely focus on conceptual frameworks, archetypes, and bibliometric analyses, with limited consensus on the mechanisms through which environmental value creation enhances firm performance. This research seeks to address this gap by examining the strategic role of green business models in embedding sustainability into core business operations and evaluating their impact on long-term growth, innovation capability, and competitive positioning. By synthesizing insights from prior theoretical and empirical studies, the research aims to provide a structured understanding of how green business models function as strategic pathways rather than peripheral sustainability initiatives.

RESEARCH OBJECTIVES

1. To examine the key components of green business models and analyze their impact on sustainable organizational growth and performance.
2. To assess how the adoption of green business models contributes to competitive advantage while identifying key implementation challenges.

Hypothesis Testing

H₁: Organizations that adopt green business models exhibit significantly higher levels of sustainable growth and competitive advantage compared to organizations that rely on conventional business models

RESEARCH METHODOLOGY

Research Design

The study adopted a descriptive and analytical research design to examine the impact and contribution of green business model adoption on sustainable growth, organizational performance, and competitive advantage. The descriptive design was used to understand the demographic profile of respondents, while the analytical design facilitated hypothesis testing using inferential statistical tools such as Analysis of Variance (ANOVA).

Population and Sample Size

The target population comprised professionals working in manufacturing, service, and other industry sectors, with varying levels of experience and educational backgrounds. A total of 200 respondents constituted the sample for the study. The sample size was considered adequate to ensure representation across demographic categories such as gender, age group, education level, industry type, and work experience, thereby enhancing the reliability and validity of the findings.

Sampling Technique

A convenience sampling technique was employed to collect primary data from respondents who were readily accessible and willing to participate in the study. Efforts were made to ensure diversity in terms of industry type and professional experience to reduce sampling bias and improve the generalizability of results.

Data Collection Method

Primary data were collected using a structured questionnaire designed to measure respondents' perceptions of green business model components, sustainable growth, organizational performance, competitive advantage, and implementation challenges. The questionnaire consisted of two sections:

Section A captured demographic information such as gender, age, education level, industry type, and work experience.

Section B included statements related to green business model adoption and its outcomes, measured using a five-point Likert scale ranging from “Strongly Disagree” to “Strongly Agree.”

Tools and Techniques of Analysis

The collected data were coded and analyzed using statistical software (SPSS). Descriptive statistics such as frequencies and percentages were used to summarize demographic characteristics. Inferential analysis was conducted using one-way ANOVA to test the study hypotheses and examine differences among groups regarding sustainable growth, performance, and competitive advantage arising from green business model adoption.

Data Analysis and Interpretation

Tab:1 Demographic Divide

Demographic Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	120	60.0
	Female	80	40.0
Age Group	Below 30 years	50	25.0
	31–40 years	70	35.0
	41–50 years	55	27.5
	Above 50 years	25	12.5
Education Level	Undergraduate	60	30.0
	Postgraduate	110	55.0
	Doctorate	30	15.0
Industry Type	Manufacturing	70	35.0
	Services	90	45.0
	Others	40	20.0
Work Experience	Less than 5 years	60	30.0
	More than 10 years	55	27.5

Interpretation: With regards to gender-wise distribution indicates that male respondents constitute the majority (60%), suggesting higher male representation in the study. However, female participation (40%) is substantial, allowing meaningful gender-based comparison and reducing the risk of gender bias in interpretation. **With regards to** age distribution reflects a balanced mix of respondents across different career stages. A significant proportion belongs to the 31–40 years age group (35%), indicating strong participation from mid-career professionals who are actively involved in organizational operations and decision-making. Respondents below 30 years (25%) reflect emerging professionals with growing awareness of green practices. The presence of respondents aged 41–50 years (27.5%) and above 50 years (12.5%) suggests inclusion of experienced and senior professionals, likely contributing strategic and policy-level insights. **With regards to** educational profile shows that the majority of respondents are postgraduates (55%), followed by undergraduates (30%) and doctorate holders (15%). This indicates a highly educated sample, enhancing the credibility of responses, particularly on complex topics such as sustainability, green practices, and environmental management. **With regards to** Industry-wise distribution reveals that the service sector has the highest representation (45%), followed by manufacturing (35%) and other sectors (20%). The strong presence of manufacturing respondents may be attributed to greater environmental impact and regulatory pressure, while the service sector representation indicates growing adoption of green business models. Overall, the sample reflects industry diversity, strengthening the generalizability of the findings. **With regards to** work experience, 30% of respondents have less than five years of experience, representing early-career professionals who may bring innovative and fresh perspectives on sustainability. Additionally, 27.5% of respondents have more than ten years of experience, indicating the involvement of seasoned professionals capable of offering strategic and long-term sustainability insights. This combination provides a balanced view of both operational and strategic dimensions.

Inferential statistics**Tab- ANOVA Test1** adoption of green business models

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (df)	Mean Square (MS)	F-value	Sig. (p-value)
Between Groups	28.45	2	14.23	5.62	0.006
Within Groups	115.30	47	2.45		
Total	143.75	49			

The p-value (0.011) is also less than 0.05, leading to rejection of the null hypothesis. This suggests that adoption of green business models significantly influences competitive advantage, though challenges vary across groups.

CONCLUSIONS

based on Demographic Divide

The demographic analysis revealed a diverse representation of respondents in terms of gender, age, education, industry type, and work experience. A majority of respondents belonged to the 31–40 years age group and possessed postgraduate-level education, indicating that the data was largely contributed by knowledgeable and professionally active individuals. The presence of respondents from both manufacturing and service sectors ensured industry diversity, while varying levels of work experience provided both operational and strategic perspectives. This balanced demographic composition enhanced the credibility and relevance of the findings related to green business model adoption and its organizational impact.

based on Objective 1

(Impact of Green Business Model Components on Sustainable Organizational Growth and Performance)

The analysis confirms that key components of green business models—such as sustainable value creation, environmentally responsible operations, and efficient resource utilization—have a positive and significant impact on organizational growth and performance. Firms integrating environmental sustainability into their business models experience improved operational efficiency, cost reduction, and long-term financial stability. The ANOVA results further validated this finding by revealing statistically significant differences in perceptions among respondents, leading to the rejection of the null hypothesis. This demonstrates that green business models play a critical role in fostering sustainable organizational growth.

based on Objective 2

Contribution of Green Business Model Adoption to Competitive Advantage and Implementation Challenges

The study also concludes that the adoption of green business models significantly enhances competitive advantage by enabling differentiation, encouraging innovation, and strengthening stakeholder engagement. Organizations practicing sustainability are perceived as more resilient and market-oriented. However, the analysis highlights notable challenges, including high initial investment costs, technological limitations, and regulatory complexities. The ANOVA results showed significant variation in respondent perceptions, indicating that these challenges differ across industries and organizational contexts. Despite these barriers, green business models remain a strategic tool for achieving long-term competitiveness.

Inferential statistics**based on ANOVA**

The One-Way ANOVA tests conducted for both objectives revealed statistically significant results at the 5% level of significance, leading to the **rejection of null hypotheses** in both cases. This confirms that perceptions regarding sustainable growth and competitive advantage vary meaningfully among different respondent groups. The statistical evidence strengthens the conclusion that green business model adoption has a substantial and measurable impact on organizational outcomes.

Overall the study establishes that green business models are essential drivers of sustainable organizational growth and competitive advantage. The demographic profile supports the validity of the findings, while the ANOVA results provide strong statistical confirmation of the objectives. Although implementation challenges exist, organizations that successfully integrate environmental sustainability into their business models are better positioned to achieve long-term growth, resilience, and market leadership. The study underscores the importance of strategic commitment, innovation, and supportive policies in maximizing the benefits of green business models.

REFERENCES

- Agwu, U.J. (2021) ‘Sustainable business models and competitive advantage: A systematic literature review’, *Revista de Administração Contemporânea*, 25(4), pp. 1–15.
- Bocken, N.M.P., Short, S.W., Rana, P. and Evans, S. (2014) ‘A literature and practice review to develop sustainable business model archetypes’, *Journal of Cleaner Production*, 65, pp. 42–56.
- De Giacomo, M.R. and Bleischwitz, R. (2020) ‘Business models for environmental sustainability: Contemporary shortcomings and some perspectives’, *Business Strategy and the Environment*, 29(8), pp. 3352–3369.
- Geissdoerfer, M., Savaget, P., Bocken, N.M.P. and Hultink, E.J. (2018) ‘The circular economy – A new sustainability paradigm?’, *Journal of Cleaner Production*, 198, pp. 401–416.
- Karuppiah, K., Sankaranarayanan, B. and Ali, S.M. (2023) ‘Sustainable business models: A systematic literature review’, *Decision Analytics Journal*, 8, Article 100272.
- Kim, J., Ko, K.R. and Choi, W. (2024) ‘Green business models, green media exposure and firm performance: Evidence from IPO firms’, *Sustainability*, 16(11), Article 4520.
- Najmaei, A. and Sadeghinejad, Z. (2023) ‘Green and sustainable business models: A bibliometric and systematic review’, *Scientometrics*, 128(2), pp. 957–999.
- Nosratabadi, S., Mosavi, A., Shamshirband, S., Kazimieras Zavadskas, E., Rakotonirainy, A. and Chau, K.W. (2019) ‘Sustainable business models: A review’, *Sustainability*, 11(6), Article 1663.
- Sinkovics, N., Gunaratne, D., Sinkovics, R.R. and Molina-Castillo, F.J. (2021) ‘Sustainable business model innovation: An umbrella review’, *Sustainability*, 13(13), Article 7266.
- Solesvik, M.Z. (2022) ‘Green business models: Conceptual framework and typologies’, *FSO Journal*, 15(2), pp. 45–60.