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Arya Suresh
Research Scholar, Department
of Commerce, St. Michael's
College, Cherthala, Kerala,
India

Gayathri Padanna
Research Scholar, Department
of Commerce, St. Michael's
College, Cherthala, Kerala,
India

Deepa TS
Assistant Professor,
Department of Commerce, St.
Stephen's College,
Pathanapuram, Kerala, India

Corresponding Author:
Arya Suresh
Research Scholar, Department
of Commerce, St. Michael's
College, Cherthala, Kerala,
India

Green entrepreneurship models for sustainable development: A review of government initiatives and outcomes

Arya Suresh, Gayathri Padanna and Deepa TS

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Abstract

“The greatest threat to our planet is the belief that someone else will save it”
- Robert Swan.

The need for eco-friendly products is increasing day by day as the consumers nowadays are concerned with sustainability and environment protection. Though the need for green products increases, today's entrepreneurs focus move towards environment-friendly products. They have also identified their role in sustainable business for a brighter future of our society. Green entrepreneurship has the impact of bringing creative, environmentally friendly solutions to issues relating to the creation and use of goods and services. India, as fast-growing economy need more concerned about its environment because of its rapid industrialization. For this assistance as well as initiatives from the part of government is necessary. This study aims to know about how Indian government support such initiatives as well as what are the different innovative business models that incorporates both concepts of profitability and sustainability.

Keywords: Green entrepreneurship, Sustainability, sustainable development, environment, government initiatives, eco-friendly

Introduction

“Green Entrepreneurship” the term is first time appeared in the books of Gustav Berle's named “The Green Entrepreneur: Business Opportunities That Can Save the Earth and Make You Money” in 1991. Green entrepreneurship, which is also known as eco-entrepreneurship or sustainable entrepreneurship refers to the practice of starting and running businesses in-order to turn a profit, which places a high priority on social responsibility and environmental sustainability. It aims to innovate solutions, reduce carbon footprints, and promote ecological balance (J. Suresh Kumar & D Shobana, 2024) ^[1]. It mainly aims at both economic development through sustainable environment practices. Green business owners can earn from both the market and public attention through dealing with environment friendly products and services.

Consumers' perceptions of the environment also alter, as seen by their plans to buy eco-friendly goods (Olha Prokopenko *et al.*, 2024) ^[2]. It is a combined form of both entrepreneurship as well as environment. The main goals of green entrepreneurs are to produce goods, provide services to the public, and develop sustainable company plans. This includes employing cutting-edge technologies, advanced gadgets, pollution-free procedures, and renewable raw materials to carry out the recovery of natural resources. Green Entrepreneurship Ecosystem (GEE) is found to be useful to boost economic, social as well as environmental development in a long-term basis (Ajay K Singh *et al.*, 2023) ^[7]. Eco-entrepreneurship or green entrepreneurship are mainly based on Sustainable Development Goals (SDGs) set up by UN for reducing ecological balance and balancing social stations. This led a way towards the development of the concept of green entrepreneurship worldwide which spearheaded governments to frame policies, take financial incentives and regulatory measures.

Significance of the study

For addressing the kinship between environmental problems, economic development and policy making, a study about green entrepreneurship, sustainability and government support

is inevitable. It explores how green entrepreneurship can drive to create sustainable economies by promoting green innovations, employment generation and ensuring long term economic development. This study explores about different government initiatives prevailing in our economy to support such green enterprises and also different models of green entrepreneurship which incorporates both sustainability and profitability. The study also tries to identify gap in current government initiatives and offers valuable insights for making better framework that support green entrepreneurship.

Research methodology

The study is descriptive in nature and uses numerous secondary sources only, which includes academic databases, articles published, published journals, books, government websites and government publications connected to green entrepreneurship and sustainable creative ventures.

Literature review

Green value addition happens in a company at every level and point of the business process, and most importantly, everyone is accountable and able to participate. Establishing a green culture within the company is greatly aided by green entrepreneurial leadership. A society like that can produce important skills and understanding of the environment that might be converted into intellectual capital for the company, giving it a long-term competitive edge (Ndubisi & Nair, 2009) ^[11]. Establishing sustainable strategies can achieve both profitability and environmental responsibility in businesses as sustainable strategies can lead to long-term brand loyalty and high reputation. Thus, businesses should consider environmental responsibility as an investment. That is even though being sustainable requires initial financial investment, it will be fruitful in the future as consumers are increasingly concerned about the environmental issues. Businesses should use sustainability as a competitive tool (Rathore, 2017) ^[14]. By establishing and enhancing a green culture within their organizations, knowledge-based business owners can promote green entrepreneurship and sustainable growth. The entrepreneurs should gain more knowledge and take initiatives for making more greener production of products and services. Green product, green design, green supply chain, and green production, can help to create more opportunities in the field of green entrepreneurship and sustainable development (Lotfi *et al.*, 2018) ^[5]. Green entrepreneurship can be regarded as a tool for government to achieve sustainable development. The policy makers should support green ventures not only by framing favorable policies, but also by providing incentives to their innovations. Also, green ventures should consider inputs of their activities along with the products and services they provide to ensure sustainability (Neumann, 2022) ^[3]. Green manufacturing or production is another crucial component of green business. Green marketing encompasses the full product life cycle from conception to disposal in a benign, innocuous manner with no or little adverse environmental impact by optimizing resource use and minimizing waste and pollution (TR & Fred, 2022) ^[9]. Green entrepreneurship facilitates and

encourage the progress of three pillars of sustainable development, planet, people and profit. The conventional wisdom that there is an unavoidable trade-off between environmental sustainability and economic advancement is being abandoned by governments leading this shift, which instead highlights enormous potential for investment, prosperity, and security (Pandeya, 2023) ^[8]. Government support is very crucial for sustainable development in SME's. Government must frame flexible regulations, compliance assistance, technical training, and sustainability certifications to encourage the drive towards building a sustainable business environment. Low-cost, high-impact initiatives such as reducing energy use or waste can create immediate savings with long-term environmental as well as reputational advantages. Sustainability can also be used as a competitive weapon to attract eco-conscious consumers (Vanpetch & Sattayathamrongthian, 2024) ^[12]. Profitability and Social responsibility can succeed together. As consumer demand for ethical business practices grow day by day, merging sustainability to organizations will create a great competitive edge. Also, a socially conscious workplace will always create a better productive workforce. Incorporating more sustainable innovations can result in generating values for stakeholders and eventually benefiting the whole business as well as society (Dr. Shardha Purohit, 2024) ^[15]. Social responsibility is a fundamental commitment to build long term viability and ethical leadership in the global business environment. It will build trust in stakeholders and will position the organization as a positive changemaker in the global context. Prosperous future of all stakeholders lies in the hand of sustainability adoption in MNC's, which will indeed benefit the society as a whole (Srivastava, 2024) ^[13]. Commercial and green marketing instill ideals in educated tribal kids and promote eco-friendly decisions. This combination of marketing, advertising, and green entrepreneurship has the potential to inform and motivate young people in northeastern India about sustainable practices (Kumar & Dr, 2024) ^[1]. The incorporation of cutting-edge technologies, moral sourcing methods, and effective energy management techniques are essential for successful green entrepreneurship. However, there are several obstacles to overcome in the shift to sustainable practices, such as the complexity of global supply networks and large upfront expenditures (Kulova *et al.*, 2024) ^[6]. Green business models were found to be a job creator in the economy. Also, through well adopted partnerships and technologies, it helped in reducing carbon emissions worldwide. So, it is clear that green startups are capable of solving environmental issues along with sustainable economic growth (Prokopenko *et al.*, 2024) ^[2]. Green entrepreneurs encourage people to think and consume more sustainably and contribute to the development of sustainable and green economies, so that they are regarded as change agents.

This enhances the financial, environmental, and social advantages that are experienced (Dash *et al.*, 2024) ^[10].

Objectives of the study

- To identify different government support mechanisms and schemes which promote green entrepreneurship in India.
- To know different innovative green entrepreneurship models and its role in promoting sustainable development.

- To explore the balance between profitability and sustainability of green entrepreneurship.

Findings and discussions

Green entrepreneurship, sometimes known as eco-entrepreneurship or sustainable entrepreneurship, is a business strategy in which environmental and ecological factors play a major role in the establishment and growth of businesses. In order to create value by tackling environmental issues while preserving economic viability, it combines sustainability aims with profit-making objectives. A key component of the worldwide movement toward sustainability is green entrepreneurship, which blends economic opportunity with environmental responsibility. In addition to tackling urgent environmental issues, it clears the path for a sustainable and inclusive future.

Green entrepreneurship development in India

12th five-year plan (2012-2017) laid down a milestone in popularizing green enterprises in India. Environmental protection and reduction of carbon emission are among the objectives mentioned under 12th Five-year plan. Later it is adopted by the successor NITI Aayog as a long-term sustainability goal. As a part of this, our government adopted several measures and policies for encouraging and developing green entrepreneurship in India. Some of them are discussed below:

- **Start-up India initiative:** Startup India is a prestigious initiative of the Indian Government, which tries to accelerate the startup culture and grow a inclusive and strong ecosystem for innovative entrepreneurship including green entrepreneurs in India. It was launched on January 16th, 2016. Startup India has organized various programs with an objective to support entrepreneurs including green entrepreneurs, and tries to transform India into a country of creating employment opportunities instead of job seekers in other countries.
- **The zero defect zero effect (ZED) certification scheme:** The Zero Defect Zero Effect (ZED) Certification Scheme under the Ministry of MSME is a valuable tool for green entrepreneurs aiming to establish sustainable businesses. This initiative boosts the adoption of environmentally friendly production methods by providing financial assistance, certifications, and training. For green entrepreneurs, ZED certification not only drives to credibility but also to new markets by going in compliance with global sustainability standards.
- **Atal Innovation Mission (AIM):** It plays a pivotal role in promoting green entrepreneurship by stimulating innovation in eco-friendly and sustainable solutions. Providing initiatives like Atal Incubation Centers (AICs) and Atal Community Innovation Centers (ACICs) aims to help green entrepreneurs with access to essential infrastructure, mentorship, and funding opportunities.
- **The waste to wealth mission:** It is a key initiative under the Prime Minister's Science, Technology, and Innovation Advisory Council (PM-STIAC) which is designed to address India's waste management challenges by converting waste into valuable resources. For green entrepreneurs, this mission gifts immense opportunities to innovate and create sustainable

businesses. The mission supports startups and enterprises in segregation, recycling, upcycling, and energy recovery from waste materials. Green entrepreneurs can leverage grants, mentorship, and technical expertise offered through this initiative to scale their operations and commercialize eco-friendly products derived from waste.

- **Public-Private Partnerships (PPPs):** It is a powerful mechanism for advancing sustainability goals and promoting green entrepreneurship. These collaborative frameworks bring together government entities, private sector organizations, and sometimes academic institutions to address complex environmental challenges and create innovative sustainable solutions. By creating genuine collaborative environments, sharing resources, providing financial and regulatory support, and fostering innovation, PPPs play a crucial role in accelerating sustainable development and empowering entrepreneurs to address global environmental challenges.

Apart from the above, several benefits like tax incentives as well as subsidies were provided by the government for promoting green entrepreneurs. For renewable energy projects like solar energy (Jawaharlal Nehru National Solar Mission (JNNSM)), wind power, Biogas program etc. The Ministry of New and Renewable Energy (MNRE) are providing certain benefits including financial incentives, concessional financing, subsidies etc. so that more people get attracted to such environmentally friendly areas. Green India Mission, National clean energy and environment policy, National Environment policy (NEP), National Initiative for developing and harnessing innovations (NIDHI) etc. may also contribute towards environmental protection and sustainable development.

Different models of green business in India

- **Circular economy initiatives:** Circular Economy Initiatives are innovative approaches that redesign economic systems to eradicate waste, maximize resource utilization, and create regenerative economic models. Unlike traditional models of "take-make-dispose", circular economy focuses on recycling, minimal wastage, renewable material utilization, upcycling technologies etc. Second hand store of IKEA is an example of Circular economy.
- **Sustainable agriculture and agripreneurship:** Agripreneurs by emphasizing on resource conservation, and regenerative farming techniques, sustainable agriculture aims to balance productivity with ecosystem health, creating adaptive solutions that support farmers, consumers, and the environment. The core vision is to develop agricultural systems that are not just productive, but also resilient, sustainable, and capable of meeting the complex nutritional and environmental challenges of the 21st century.
- **Waste reduction and upcycling:** Reimagining waste as a valuable resource rather than a disposable problem have emerged as transformative strategies for India's ecosystem. For example, used cotton shirt could be turned into fibers to produce a low-end fabric or insulating material. With upcycling, this shirt can be cut, sewn and redesigned to become a bag, a cushion cover or even a unique fashion accessory.

- **Green building:** Green building is a sustainable approach to construction that prioritizes environmental responsibility, energy efficiency, and human well-being throughout a building's entire lifecycle. Cochin International Airport (CIAL), is an example of as it is the world's first airport to be fully powered by solar energy.
- **Green transportation:** Green transportation is an innovative approach to mobility that prioritizes environmental sustainability, reduced carbon emissions, and energy efficiency across various transportation modes. The electric buses by Bangalore Metropolitan Transport Corporation, e- autos and emerging market of ev vehicles is an example of green transportation.
- **Eco tourism:** It is the “responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education” (TIES, 2015). is a form of nature-based tourism which is intended to contribute towards the conservation of our environment. Wayanad wild life Sanctuary is an example of Eco tourism.
- **Renewable energy:** Renewable energy plays a key role in green entrepreneurship by offering sustainable solutions that reduce environmental impact and promote economic growth. Entrepreneurs in this field focus on harnessing energy from natural sources like solar, wind, hydro, and geothermal to power businesses and communities, while minimizing reliance on fossil fuels which are of renewable in nature.

Conclusion

In India's quickly changing commercial environment, entrepreneurs are turning their attention to environmental sustainability. A growing trend, green entrepreneurship seeks to balance economic activity with environmental well-being, going beyond profit margins. As per the latest statistics by Confederation of Indian industry (CII) there are about 6,600 cleantech startups in India including renewable energy, green technology and waste management. As per the report of India Climate Collaborative and Bain & Company, the sector has a growth rate of about 50% annually. This growth rate is affected by the factors like awareness about environment issues, favorable government schemes and policies, numerous funding opportunities etc.

The study reveals that government support and initiatives are an inevitable part in green entrepreneurship for sustainable development. The government initiatives had paved the way to develop green entrepreneurship business models almost in all sectors of the economy. It also helps the existing businesses to drive into a path of sustainability through eco-friendly practices by providing awareness about the same in the economy. Businesses are encouraged to adopt environment friendly practices, generating employment opportunities and promote effective utilization of resources including energy. As concerned about merging of profitability and sustainability, the usage of sustainable practices act as a major competitive weapon for business organizations as it will create a better brand image, built customer trust and indeed benefit the organization in the long run.

However, Policy-makers should draft policies exclusively for green entrepreneurship, by specifically listing it as a separate category is seem to be necessary while undergoing the study. Creating more awareness programs about

government schemes and initiatives including financial incentives and subsidies is a must.

“When sustainability is viewed as being a matter of survival for your business, I believe you can create massive change”- Cameron Sinclair.

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