

The Role of Social Entrepreneurship in Addressing Climate Change: An Analysis of Innovative Business Models

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Abstract

Social entrepreneurship plays a significant role in addressing climate change by integrating innovative business models with social objectives. This study investigates the contributions of social entrepreneurship to climate change mitigation through case studies and diverse business model examples. It identifies the factors that contribute to social enterprises' success in overcoming environmental challenges and examines the obstacles they encounter. The research further evaluates the impact of social entrepreneurship on communities and ecosystems, utilising empirical data and illustrative examples to demonstrate its potential for positive transformation. The research design incorporates a mixed-methods approach, utilising both qualitative and quantitative data sources, including interviews, surveys, and secondary data analysis. Key findings indicate that social enterprises effectively engage communities, employ innovative financing mechanisms, and leverage technology to enhance their impact. The study highlights the importance of supportive policies, stakeholder collaboration, and skill development for social entrepreneurs. Recommendations for future research include conducting longitudinal studies, cross-regional comparisons, examining the role of technology, and integrating interdisciplinary perspectives. By elucidating the role of social entrepreneurship in combating climate change, this study advances the understanding of sustainable business and offers valuable insights for practitioners, policymakers, and researchers.

Keywords: *Climate change; Collaborative approach; Community impact; Environmental sustainability; Innovative business models; Social entrepreneurship; Sustainable solutions.*

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INTRODUCTION

Climate change represents a critical global challenge with far-reaching impacts on ecosystems, economies, and societies. The Intergovernmental Panel on Climate Change (IPCC) reports that anthropogenic activities, such as fossil fuel combustion and deforestation, have significantly increased greenhouse gas emissions, leading to rising global temperatures (IPCC, 2021). The World Meteorological Organisation (WMO) has identified the past decade as the warmest on record, highlighting the urgent need for effective mitigation strategies (WMO, 2020). Although renewable energy offers substantial potential to reduce emissions, prevailing trends continue to favour fossil fuels, thereby impeding progress toward sustainability. Within this context, social entrepreneurship has emerged as a crucial mechanism for addressing environmental challenges by integrating innovative business strategies with social objectives. Social enterprises serve as catalysts for an efficiency revolution, accelerating the adoption of renewable technologies and sustainable practices.

Social entrepreneurship involves identifying and resolving social problems through business-oriented methods. This approach aims to generate profit while simultaneously creating social value, a dual objective that is especially pertinent to climate change mitigation. As awareness of the potential for social enterprises to advance environmental sustainability increases, this study examines the ways in which social entrepreneurship contributes to climate change mitigation through innovative business models.

This study is significant in demonstrating the ways social enterprises contribute to addressing climate change. Through the use of case studies and analysis of diverse business models, the research clarifies the mechanisms by which social entrepreneurship addresses environmental challenges. Furthermore, it offers insights into how social enterprises leverage innovation and collaboration to develop sustainable solutions.

Social entrepreneurship occupies a central role in addressing climate change. Unlike traditional businesses, which typically prioritise profit, social enterprises emphasise both social and environmental responsibility. According to the Global Entrepreneurship Monitor (GEM), approximately 1 in 10 entrepreneurs worldwide now identify as social entrepreneurs (GEM, 2020). This trend reflects a growing recognition of the necessity for business models that integrate social and environmental objectives.

Social entrepreneurs frequently operate at the local level, addressing environmental challenges through innovative solutions tailored to their communities. For instance, EcoPost in Kenya converts plastic waste into durable building materials, thereby reducing plastic pollution and generating employment opportunities (Karanja, 2019). A local waste collector involved with EcoPost remarked, 'Working with EcoPost has not only provided me with steady income but also made me feel part of a solution for our environment. It's empowering to see our efforts turning waste into something valuable and essential.' Such initiatives demonstrate the capacity of social entrepreneurship to promote both environmental sustainability and economic development, thereby contributing to the creation of resilient communities.

Social enterprises foster collaboration among diverse stakeholders, including governments, non-profit organisations, and local communities. Such collective action is essential for addressing complex challenges like climate change, which require multifaceted solutions. By integrating multiple perspectives and resources, social entrepreneurs can enhance the effectiveness of their initiatives. For instance, GreenWave in the United States collaborates with local fishermen to develop ocean-farming techniques that support both environmental restoration and the local economy (GreenWave, 2021). These partnerships generate shared value: governments benefit from reduced environmental degradation, NGOs advance sustainability goals, and communities experience economic gains and increased resilience. This multi-stakeholder engagement demonstrates how diverse partnerships can produce significant environmental, social, and economic benefits.

This research examines the role of social entrepreneurship in addressing climate change by analysing businesses that implement sustainable practices. It reviews case studies to identify factors contributing to the success of social enterprises in overcoming environmental challenges. The study also explores obstacles faced by social entrepreneurs, providing critical insights for effective policy development. Additionally, it assesses the impact of social entrepreneurship on communities and ecosystems, using empirical data and examples to demonstrate its potential for positive transformation.

To fulfil the objectives outlined above, this research addresses the following key questions:

1. What innovative business models are being employed by social enterprises to combat climate change? In addressing this question, the study draws on the framework of ecological economics and social value creation. This theoretical lens will aid in evaluating the 'success' and 'impact' of these business models by examining how they contribute to sustainable development and community well-being.
2. How do these models contribute to environmental sustainability and social value creation?
3. What challenges do social entrepreneurs face in implementing their initiatives, and how can these challenges be mitigated?
4. What impact do social enterprises have on local communities and ecosystems in the context of climate change?

The structure of this paper is as follows: Section 2 reviews the literature on social entrepreneurship and its relationship to climate change, emphasising key theories such as ecological economics and social value creation. These theoretical lenses guide the analysis and clarify the study's academic positioning. Section 3 outlines the research methods employed for data collection and analysis. Section 4 presents the findings, including case studies of social enterprises that have addressed climate change. Section 5 discusses the implications of these findings and provides recommendations for future research and practice.

CONCEPTUAL FRAMEWORK

Definition and Importance of a Conceptual Framework

A conceptual framework serves as a foundational structure that guides research and practice by outlining the key concepts and their relationships. In the context of social entrepreneurship and climate change, a conceptual framework is crucial for understanding how innovative business models can effectively address environmental issues. It provides clarity and direction, allowing stakeholders to identify the mechanisms through which social entrepreneurship can contribute to sustainability. According to O'Connor (2021), a well-defined conceptual framework enhances the ability to analyse complex social phenomena, facilitating a deeper understanding of the interplay between entrepreneurial initiatives and environmental outcomes.

The importance of a conceptual framework lies in its ability to synthesise diverse theories and empirical findings into a coherent narrative. It enables researchers and practitioners to articulate the significance of social entrepreneurship in combating climate change, highlighting the potential for innovative business models to create social value while addressing ecological challenges. For instance, a study by Nicholls and Huybrechts (2019) emphasises that social entrepreneurship not only aims to generate profit but also prioritises social and environmental objectives, thereby aligning with the principles of sustainable development.

Furthermore, the conceptual framework helps identify gaps in the existing literature and practice, prompting further research and exploration. By establishing a clear set of definitions and relationships, it encourages the development of new business models that can effectively respond to climate change. For example, the emergence of circular economy principles within social entrepreneurship illustrates how businesses can innovate to reduce waste and promote resource efficiency (Geissdoerfer et al., 2018). This shift towards sustainability is essential in mitigating the impacts of climate change and advancing global environmental goals.

Components of the Framework

The components of the conceptual framework for understanding the role of social entrepreneurship in addressing climate change can be categorised into three primary elements: social entrepreneurship, innovative business models, and climate change impacts. Each component plays a distinct role in shaping the overall framework, contributing to a comprehensive understanding of how these elements interact to foster sustainable practices.

1. **Social Entrepreneurship:** This component encompasses the principles and practices that define social entrepreneurship, including the creation of social value, innovation, and sustainability. Social entrepreneurs are typically characterised by their commitment to addressing social and environmental challenges through innovative solutions. According to Dees (1998), social entrepreneurship blends the social mission of a non-profit with the market-driven approach of a business, leading to the development of hybrid models that prioritise both profit and purpose. This dual focus is essential for addressing climate change, as it encourages the

exploration of new ideas and approaches that can lead to more sustainable practices.

2. **Innovative Business Models:** Innovative business models are central to the framework, as they represent the mechanisms through which social entrepreneurs operationalise their missions. These models often prioritise sustainability and resource efficiency, incorporating principles of the circular economy, social impact measurement, and stakeholder engagement. For instance, the B Corporation model, which certifies companies meeting rigorous social and environmental performance standards, exemplifies how innovative business models can align profit with purpose (Honeyman, 2014). The adoption of such models can significantly enhance social enterprises' capacity to address climate change while generating economic value.
3. **Climate Change Impacts:** This component refers to the various environmental challenges posed by climate change, including rising temperatures, extreme weather events, and biodiversity loss. Understanding these impacts is crucial for social entrepreneurs, as it informs the development of targeted interventions that can mitigate environmental degradation. Research indicates that social entrepreneurship can play a pivotal role in addressing climate change by promoting sustainable practices and fostering community resilience (Santos, 2012). By integrating knowledge of climate change impacts into their business models, social entrepreneurs can create solutions that address immediate environmental concerns and contribute to long-term sustainability.

Relationships between Social Entrepreneurship, Business Models, and Climate Change

The relationships between social entrepreneurship, innovative business models, and climate change are complex and multifaceted. Understanding these relationships is essential to harnessing the potential of social entrepreneurship to tackle environmental challenges. At the core of this relationship is the recognition that social entrepreneurs are uniquely positioned to address climate change through innovative approaches that prioritise sustainability.

Social entrepreneurship serves as a catalyst for change by driving the development of innovative business models that address climate-related challenges. For example, social enterprises like EcoPost in Kenya have developed a model that transforms plastic waste into durable building materials, thereby addressing both waste management and deforestation issues (Wangari, 2020). This illustrates how social entrepreneurs can create value by addressing pressing environmental problems while also generating economic opportunities for local communities. The relationship between social entrepreneurship and business models is thus characterised by a continuous feedback loop, where innovative practices inform the evolution of business strategies that prioritise environmental sustainability.

Moreover, the impact of climate change on communities often creates a pressing need for social entrepreneurs to develop adaptive and resilient business models. As climate-related risks escalate, social enterprises must innovate to ensure their operations remain viable while contributing to climate mitigation efforts. Research by the Global Impact Investing Network (GIIN) highlights that social enterprises focused

on climate solutions have seen a surge in investment, reflecting the growing recognition of their role in addressing environmental challenges (GIIN, 2021). This trend underscores the interconnectedness of social entrepreneurship, business models, and climate change, as the increasing demand for sustainable solutions drives innovation and investment in the sector.

Furthermore, the relationships between these components are influenced by external factors such as government policies, market dynamics, and societal attitudes towards sustainability. Supportive regulatory frameworks and incentives can enhance social entrepreneurs' ability to implement innovative business models that effectively address climate change. Conversely, a lack of supportive policies may hinder the growth and impact of social enterprises, limiting their potential to contribute to environmental sustainability. For instance, the European Union's Green Deal aims to promote sustainable practices and innovation, creating an enabling environment for social entrepreneurs to thrive (European Commission, 2019).

Visual Representation of the Conceptual Framework

A visual representation (Figure 1) of the conceptual framework can provide a clearer understanding of the relationships between social entrepreneurship, innovative business models, and climate change. Such a diagram would typically illustrate the interconnectedness of these components, highlighting how social entrepreneurship drives innovation in business models that address climate-related challenges.

At the centre of the visual representation would be the concept of social entrepreneurship, depicted as the primary driver of change. Surrounding this central concept would be various innovative business models, each representing a unique approach to addressing climate change. Arrows could be used to indicate the flow of ideas and practices between social entrepreneurship and these business models, demonstrating how the former informs and shapes the latter.

Additionally, the visual representation could include external factors such as government policies, market dynamics, and societal attitudes, which influence the effectiveness of social entrepreneurship in combating climate change. This could be illustrated through a series of outer circles or boxes that encapsulate the central components, indicating their role in shaping the landscape of social entrepreneurship and sustainability.

Incorporating relevant data and statistics into the visual representation could further enhance its impact. For instance, including figures on the growth of social enterprises focused on climate solutions or the economic benefits of sustainable business practices could provide a compelling narrative that underscores the importance of the conceptual framework. By visually representing these relationships, stakeholders can gain a more comprehensive understanding of the role of social entrepreneurship in addressing climate change, ultimately guiding future research and practice.

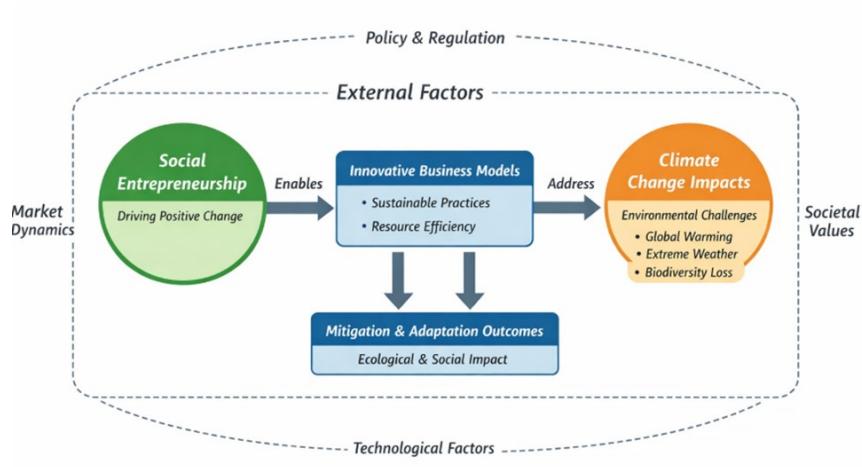


Figure 1: Conceptual Framework

INNOVATIVE BUSINESS MODELS IN SOCIAL ENTREPRENEURSHIP

Characteristics of Innovative Business Models

Innovative business models in social entrepreneurship are characterised by unique features that aim not only for profitability but also to create social and environmental value. These models often integrate sustainability into their core operations, addressing pressing issues such as climate change while fostering economic growth. One key characteristic of social enterprises is their dual mission: to generate social impact alongside financial returns. This dual focus allows them to attract a diverse range of stakeholders, including investors interested in environmental, social, and governance (ESG) criteria (Mair & Marti, 2006).

Another defining feature is the emphasis on stakeholder engagement. Successful social enterprises actively involve their communities, customers, and beneficiaries in decision-making. This participatory approach not only enhances the relevance of their solutions but also builds trust and loyalty among stakeholders (Bocken et al., 2014). For instance, social enterprises often conduct needs assessments and engage in co-creation processes, ensuring that the services or products they offer are tailored to the specific needs of the communities they serve.

Furthermore, innovative business models in social entrepreneurship frequently leverage technology to enhance their impact. Many social enterprises utilise digital platforms for awareness-raising, fundraising, and service delivery, thus reaching a broader audience and maximising their influence. The rise of the 'sharing economy' exemplifies this trend, where platforms like Airbnb and Uber have transformed traditional business models into collaborative consumption systems, reducing resource waste and promoting sustainability (Šepel'ová et al., 2021). Moreover, these models often adopt circular economy principles, which focus on minimising waste and making the most of resources. By designing products for longevity, reparability, and recyclability, social enterprises can significantly reduce their environmental footprint.

For example, companies like Patagonia and Interface have successfully implemented circular business practices, demonstrating that sustainability can be both profitable and beneficial for the planet (Ellen MacArthur Foundation, 2019).

Finally, the scalability of innovative business models is crucial for their long-term success. Social enterprises must design their operations to expand their impact without compromising their mission. This often involves creating replicable frameworks or partnerships that can be adapted in different geographical or cultural contexts. The ability to scale effectively can lead to broader systemic change, addressing climate change on a larger scale (Dees, 2001).

Case Studies of Successful Social Enterprises

Case Study 1: EcoPost

EcoPost is a social enterprise based in Kenya that transforms plastic waste into durable fencing posts. Founded in 2010, EcoPost addresses two significant issues: rampant plastic pollution in Kenya and deforestation caused by wood for fencing. The enterprise collects plastic waste from various sources, including urban areas and dumpsites, thereby contributing to the country's waste management efforts. By converting this waste into valuable products, EcoPost not only helps clean up the environment but also provides employment opportunities for local communities (Karanja, 2018).

EcoPost's innovative business model is characterised by its focus on sustainability and community empowerment. The enterprise has established a supply chain with local waste collectors who are paid for the plastic they collect. This model not only incentivises waste collection but also promotes social inclusion by providing income to individuals who might otherwise be economically marginalised. As a result, EcoPost has created over 100 jobs, contributing to the economic resilience of the communities it serves (Karanja, 2018).

In terms of environmental impact, EcoPost has successfully diverted over 2,000 tonnes of plastic waste from landfills and produced more than 500,000 fencing posts, a sustainable alternative to traditional wooden posts. This innovation has not only reduced plastic pollution but has also mitigated the pressure on forests, promoting biodiversity conservation in the region (Karanja, 2018). The success of EcoPost exemplifies how innovative business models can effectively address climate change while generating social benefits.

Furthermore, EcoPost has attracted investment from various sources, including impact investors and development agencies, which have facilitated its growth and expansion. The enterprise has also received recognition for its innovative approach, winning multiple awards that highlight its contribution to sustainability and social entrepreneurship (Karanja, 2018). By showcasing the potential of waste-to-value business models, EcoPost serves as a compelling case study for aspiring social entrepreneurs worldwide.

Case Study 2: Solar Sister

Solar Sister is a social enterprise that empowers women in Africa by providing them with access to clean energy solutions. Founded in 2010, the organisation focuses on addressing energy poverty while promoting gender equality. Solar Sister trains and supports women to become entrepreneurs, enabling them to sell solar products within their communities. This model not only provides clean energy alternatives but also fosters economic independence among women (Solar Sister, 2020).

The innovative business model of Solar Sister is built on the principles of social entrepreneurship, combining social impact with market-driven strategies. By leveraging women's existing social networks, Solar Sister effectively reaches underserved communities without access to electricity. The enterprise has trained over 5,000 women entrepreneurs, who have collectively sold more than 1.5 million solar products, impacting over 7 million people (Solar Sister, 2020).

One of the key characteristics of Solar Sister's model is its focus on education and empowerment. The organisation provides comprehensive training that equips women with the necessary skills to run their businesses successfully. This not only enhances their entrepreneurial capabilities but also builds their confidence and leadership skills. As a result, the women involved in Solar Sister often become role models in their communities, inspiring others to pursue similar paths (Solar Sister, 2020).

The environmental impact of Solar Sister's work is significant, as access to clean energy reduces reliance on fossil fuels and decreases greenhouse gas emissions. By replacing kerosene lamps with solar-powered lights, families can save money, improve their health, and enhance their quality of life. Moreover, the enterprise contributes to the global goal of achieving universal access to affordable and clean energy, aligning with the United Nations Sustainable Development Goals (UN SDGs) (United Nations, 2015).

Case Study 3: The Ocean Cleanup

The Ocean Cleanup is a groundbreaking social enterprise focused on addressing the global crisis of plastic pollution in oceans. Founded in 2013 by Boyan Slat, the organisation has developed innovative technologies to remove plastic waste from the ocean while preventing further pollution. The Ocean Cleanup's mission is to clean up 90% of the floating plastic in the oceans by deploying its systems in key areas, including the Great Pacific Garbage Patch (The Ocean Cleanup, 2021).

The business model of The Ocean Cleanup is characterised by its technological innovation and commitment to sustainability. The organisation uses advanced engineering to design systems that passively collect plastic debris while allowing marine life to pass through unharmed. This innovative approach not only addresses the immediate issue of plastic pollution but also raises awareness about the importance of ocean conservation (The Ocean Cleanup, 2021).

In addition to its cleanup efforts, The Ocean Cleanup focuses on prevention by developing technologies to intercept plastic in rivers before it reaches the ocean. This proactive approach aims to tackle the source of the problem and has the potential to

significantly reduce the amount of plastic entering marine environments. The enterprise has already deployed its river systems in several locations, demonstrating the scalability of its model (The Ocean Cleanup, 2021).

The impact of The Ocean Cleanup's work is substantial, as it has removed thousands of tonnes of plastic from the ocean and has garnered global attention to the issue of marine pollution. The organisation has partnered with various stakeholders, including governments, corporations, and NGOs, to amplify its impact and secure funding for its initiatives. These collaborations highlight the importance of multi-stakeholder engagement in addressing complex environmental challenges (The Ocean Cleanup, 2021).

Analysis of Business Model Innovation

Business model innovation in social entrepreneurship is a critical driver for addressing climate change and fostering sustainable development. This innovation often involves rethinking traditional business practices to create value that benefits society and the environment. One significant aspect of this innovation is the shift from linear to circular business models, which prioritise resource efficiency and waste reduction. By adopting circular principles, social enterprises can minimise their environmental impact while enhancing their economic viability (Geissdoerfer et al., 2018).

A key component of business model innovation is integrating technology. Social enterprises are increasingly leveraging digital tools and platforms to enhance their operations, improve customer engagement, and streamline supply chains. This technological integration not only increases efficiency but also enables social enterprises to scale their impact more effectively. For instance, platforms that facilitate peer-to-peer sharing or crowdfunding can empower communities to address local environmental issues collaboratively (Bocken et al., 2014).

Moreover, business model innovation in social entrepreneurship often involves creating new revenue streams that align with social and environmental goals. Many social enterprises explore hybrid models that combine profit-making activities with philanthropic initiatives. This approach allows them to diversify their income sources while maintaining a strong focus on their mission. For example, some social enterprises sell products or services that generate revenue, which they then reinvest in community development or environmental conservation projects (Dees, 2001).

The success of business model innovation in social entrepreneurship also depends on the ability to adapt to changing market conditions and stakeholder expectations. As consumers become increasingly aware of sustainability issues, social enterprises must remain agile and responsive to these demands. This requires continuous learning, experimentation, and collaboration with various stakeholders, including customers, investors, and policymakers (Mair & Marti, 2006).

Factors Contributing to Success

The success of innovative business models in social entrepreneurship is influenced by several interconnected factors. One of the most critical factors is the alignment of the social enterprise's mission with the needs of the community it serves. By understand-

ing the specific challenges and opportunities within their target market, social entrepreneurs can design solutions that are not only relevant but also sustainable. Engaging with stakeholders throughout the process ensures that the enterprise remains grounded in the community's realities and aspirations (Bocken et al., 2014).

Another significant factor is the ability to secure adequate funding and resources. Social enterprises often face challenges accessing traditional financing because of their dual mission of social impact and financial sustainability. However, innovative funding models, such as impact investing and social impact bonds, are emerging as viable alternatives. These funding mechanisms allow social enterprises to attract capital while demonstrating their commitment to social and environmental outcomes (Nicholls, 2018).

Leadership and vision also play a crucial role in the success of social enterprises. Effective leaders are essential for navigating the complexities of social entrepreneurship, inspiring their teams, and building partnerships with stakeholders. Visionary leaders who can articulate a compelling narrative about their mission and impact are more likely to attract support and resources (Dees, 2001). Additionally, strong leadership fosters a culture of innovation and adaptability, which is vital for responding to changing market dynamics and stakeholder expectations.

Collaboration is another key factor contributing to the success of innovative business models in social entrepreneurship. By forming strategic partnerships with other organisations, social enterprises can leverage complementary strengths and resources. Collaborations can enhance the reach and impact of social initiatives, opening new markets and funding opportunities. For example, partnerships with governments, NGOs, and private sector actors can facilitate knowledge sharing and amplify the social enterprise's impact (Mair & Marti, 2006).

Finally, measuring and communicating impact is essential for the long-term success of social enterprises. By establishing robust monitoring and evaluation systems, social entrepreneurs can assess their effectiveness and demonstrate their value to stakeholders. Transparent reporting on social and environmental outcomes not only builds credibility but also attracts further investment and support. As stakeholders increasingly demand accountability and evidence of impact, social enterprises that prioritise measurement will be better positioned for success in the competitive landscape of social entrepreneurship (Nicholls, 2018).

ROLE OF SOCIAL ENTREPRENEURS IN CLIMATE CHANGE MITIGATION

Social entrepreneurs play a pivotal role in mitigating climate change by leveraging innovative business models that address environmental challenges while simultaneously promoting social equity. Their unique approach combines entrepreneurship principles with a social mission, making them vital actors in the fight against climate change. This section will explore various dimensions of their contributions, including awareness and education, community engagement and empowerment, the development of sustainable products and services, and their influence on policy advocacy.

Awareness and Education

Social entrepreneurs are increasingly recognised for their efforts to raise awareness of climate change and its impacts. They utilise innovative educational programmes to inform communities about environmental issues and sustainable practices. For instance, organisations like Eco-Schools, which originated in Europe, empower students to take action towards sustainability in their schools and communities (UNESCO, 2020). By integrating environmental education into the curriculum, these initiatives not only raise awareness but also foster a generation of environmentally conscious citizens.

Data from the Global Environment Facility indicates that educational initiatives led by social entrepreneurs can significantly increase public understanding of climate change. For example, a study found that communities engaged in environmental education programmes reported a 30% increase in awareness regarding climate-related issues (GEF, 2021). This heightened awareness is crucial for driving behavioural change, as informed individuals are more likely to adopt sustainable practices in their daily lives.

Moreover, social entrepreneurs often leverage digital platforms to amplify their educational outreach. Campaigns such as "Fridays for Future," initiated by climate activist Greta Thunberg, have harnessed social media to educate millions about climate change (Thunberg, 2019). Such initiatives demonstrate the power of social entrepreneurship to mobilise communities and foster collective consciousness around climate issues.

In addition to formal education, social entrepreneurs engage in workshops, seminars, and public forums to discuss climate change. For instance, organisations like Ashoka and B Corporation conduct training sessions that equip entrepreneurs with the knowledge to implement sustainable practices in their businesses (Ashoka, 2022). These educational efforts not only benefit participants but also create a ripple effect, as attendees share their newfound knowledge within their networks.

Community Engagement and Empowerment

Community engagement is another vital area where social entrepreneurs make significant contributions to climate change mitigation. By involving local communities in sustainability initiatives, they empower individuals to take ownership of their environmental impact. For instance, organisations like Community Forests International work with local communities in developing countries to manage forest resources sustainably, thereby combating deforestation and promoting biodiversity (CFI, 2021).

The participatory approach adopted by social entrepreneurs ensures that local populations' voices are heard in decision-making. Research indicates that community-led initiatives are often more effective in addressing environmental challenges than top-down approaches (Pretty, 2020). By fostering a sense of ownership, social entrepreneurs encourage communities to develop tailored solutions that suit their unique contexts.

Furthermore, social entrepreneurs often facilitate partnerships between communities and external stakeholders, such as governments and NGOs. For example, the “Green Belt Movement,” founded by Wangari Maathai in Kenya, successfully mobilised community members to plant trees while also advocating for policy changes at the national level (Maathai, 2010). This dual approach not only enhances community resilience but also contributes to broader environmental goals.

Empowerment through skill-building is another critical aspect of community engagement. Social entrepreneurs frequently provide training in sustainable practices, such as permaculture, renewable energy installation, and waste management. According to a report by the International Labour Organisation, such training programmes can lead to job creation and economic resilience in communities affected by climate change (ILO, 2021).

Development of Sustainable Products and Services

The development of sustainable products and services is a hallmark of social entrepreneurship in the context of climate change mitigation. Social entrepreneurs are increasingly developing innovative solutions that reduce environmental impact while meeting consumer needs. For example, companies like BioLite have developed clean cooking stoves that reduce smoke emissions and improve energy efficiency for households in developing countries (BioLite, 2022). Such innovations not only address users' immediate needs but also contribute to broader climate goals by reducing greenhouse gas emissions.

Statistics reveal that the market for sustainable products is rapidly growing. According to a Nielsen report, 66% of global consumers are willing to pay more for sustainable brands (Nielsen, 2019). This trend presents a significant opportunity for social entrepreneurs to develop products that align with consumer demand while promoting environmental sustainability. By tapping into this market, social entrepreneurs can drive change within industries traditionally associated with high carbon footprints.

Moreover, social entrepreneurs often adopt circular economy principles in their product development processes. For instance, organisations like TerraCycle focus on recycling hard-to-recycle materials and creating new products from waste (TerraCycle, 2021). This approach not only reduces waste but also promotes a sustainable lifecycle for products, thereby mitigating the environmental impact associated with production and disposal.

In addition to product development, social entrepreneurs also innovate in service delivery. For example, companies like Solar Sister empower women in Africa to distribute solar energy solutions in their communities (Solar Sister, 2021). This model not only provides access to clean energy but also creates economic opportunities for women, highlighting the intersection of social and environmental entrepreneurship.

Policy Advocacy and Influence

Social entrepreneurs also play a significant role in policy advocacy and influence, particularly in the context of climate change. By leveraging their unique positions and networks, they advocate for policies that promote sustainability and environmental

justice. For instance, organisations like the Climate Justice Alliance work to influence policy at local, national, and international levels to ensure that marginalised communities are included in climate action plans (CJA, 2022).

Research indicates that social entrepreneurs can effectively bridge the gap between grassroots movements and policymakers. According to a study published in the Journal of Social Entrepreneurship, social entrepreneurs often act as intermediaries, translating community needs into policy recommendations (Nicholls, 2018). This role is crucial in ensuring that policies are informed by the realities faced by those most affected by climate change.

Furthermore, social entrepreneurs often collaborate with other stakeholders, including NGOs, businesses, and governmental bodies, to amplify their advocacy efforts. For example, the “We Mean Business” coalition brings together various organisations to advocate for climate-friendly policies and business practices (We Mean Business, 2021). This collaborative approach enhances the credibility and impact of their advocacy efforts.

Additionally, social entrepreneurs utilise data and research to support their policy initiatives. By presenting evidence-based arguments, they can effectively influence public opinion and legislative decisions. A report by the Intergovernmental Panel on Climate Change (IPCC) highlights the importance of data-driven advocacy in shaping climate policies (IPCC, 2021). Social entrepreneurs often contribute to this body of knowledge by conducting research and sharing best practices.

CHALLENGES FACED BY SOCIAL ENTREPRENEURS

Social entrepreneurship has emerged as a crucial player in the fight against climate change, offering innovative solutions that blend social and environmental objectives with business acumen. However, despite their potential to drive significant change, social entrepreneurs encounter numerous challenges that can hinder their effectiveness. This section will delve into various obstacles faced by social entrepreneurs, including financial constraints, market access and competition, regulatory barriers, and the complexities of measuring impact and sustainability.

Financial Constraints

One of the most significant challenges social entrepreneurs face is securing adequate funding. Unlike traditional businesses, which can attract investment based on profit potential, social enterprises often struggle to demonstrate immediate financial returns due to their dual focus on social impact and environmental sustainability. According to the Global Impact Investing Network (GIIN, 2020), only 20% of impact investors are willing to accept below-market returns, limiting the pool of potential investors for social enterprises. This financial constraint can stifle innovation and scale, as many social entrepreneurs rely on grants, donations, or loans that may not be sufficient to cover operational costs or fund new initiatives.

Moreover, the COVID-19 pandemic has exacerbated these financial challenges. A survey conducted by the British Council (2021) revealed that 70% of social enterprises

reported a decrease in revenue during the pandemic, with many struggling to maintain cash flow. This financial instability can create a vicious cycle in which social entrepreneurs are forced to prioritise short-term survival over long-term sustainability and impact. For instance, a social enterprise focused on renewable energy may have to divert resources away from research and development to cover immediate operational costs, ultimately hampering its ability to innovate and contribute to climate change solutions.

In addition to traditional funding sources, social entrepreneurs are increasingly exploring alternative financing models, such as crowdfunding and social impact bonds. These models can provide more flexible funding options that align with the social and environmental missions of these enterprises. However, the effectiveness of these models can vary significantly, and not all social entrepreneurs have the necessary skills or networks to successfully leverage them (Murray et al., 2010). Therefore, addressing financial constraints remains a critical area for support and development within the social entrepreneurship sector.

Furthermore, the lack of financial literacy among social entrepreneurs can also pose a challenge. Many entrepreneurs may possess strong social or environmental expertise but lack the financial acumen to navigate complex funding landscapes. This knowledge gap can lead to missed opportunities to secure funding or to inefficient resource use, further exacerbating financial difficulties. Training and support programmes that enhance financial literacy could play a vital role in empowering social entrepreneurs to secure the funding they need to thrive.

Market Access and Competition

In addition to financial constraints, social entrepreneurs frequently encounter challenges related to market access and competition. The landscape of social entrepreneurship is becoming increasingly crowded, with numerous enterprises vying for attention and resources. This heightened competition can make it difficult for new entrants to establish themselves and gain market share, particularly in sectors such as renewable energy, waste management, and sustainable agriculture, where traditional businesses may dominate (Bocken et al., 2014).

Market access is further complicated by the fact that many social enterprises operate in underserved communities, where the demand for innovative solutions may be high, but access to markets and customers is limited. For example, a social enterprise providing affordable solar energy solutions may struggle to reach potential customers in rural areas due to inadequate infrastructure or limited awareness of renewable energy's benefits. According to the International Energy Agency (IEA, 2021), approximately 789 million people worldwide still lack access to electricity, highlighting the significant barriers that social entrepreneurs must overcome to reach their target markets.

Moreover, social entrepreneurs often face competition not only from other social enterprises but also from established businesses with greater resources and brand recognition. These traditional competitors can leverage economies of scale and established distribution channels, making it challenging for social enterprises to compete on price or availability. For instance, a social enterprise producing

sustainable clothing may find it difficult to compete with fast fashion brands that offer lower prices and greater accessibility, despite the higher environmental costs associated with their production methods (Joy et al., 2012).

To navigate these challenges, social entrepreneurs must adopt innovative marketing strategies and build strong partnerships with local organisations and communities. By collaborating with existing networks, social enterprises can enhance their visibility and credibility, ultimately improving their market access. Additionally, leveraging digital platforms and social media can help social entrepreneurs reach a wider audience and engage potential customers more effectively. A study by the World Economic Forum (2020) found that digital marketing strategies can increase customer engagement by up to 50%, underscoring the importance of embracing technology in overcoming market access challenges.

Regulatory Barriers

Regulatory barriers present another formidable challenge for social entrepreneurs seeking to implement innovative business models that address climate change. The regulatory landscape can be complex and vary significantly across regions and sectors, often creating obstacles for social enterprises seeking to operate sustainably. For instance, stringent environmental regulations may impose high compliance costs, disproportionately affecting small social enterprises with limited resources (Mazzucato, 2018).

In many cases, social entrepreneurs must navigate a maze of local, national, and international regulations that govern their operations. This complexity can delay the launch of new products or services, as entrepreneurs may need to invest significant time and effort to understand and comply with regulatory requirements. According to a World Bank report (2020), businesses in developing countries spend an average of 31 hours per month dealing with regulations, with smaller enterprises often bearing a heavier burden due to their limited capacity to manage compliance.

Moreover, regulatory frameworks may not always be conducive to innovation. For example, traditional regulatory models often favour established industries and may not account for the unique challenges faced by social enterprises. This can stifle the development of new and innovative solutions to climate change, as social entrepreneurs may find it difficult to secure the necessary permits or approvals to test their ideas (Eisenberg, 2019).

To address these regulatory challenges, social entrepreneurs can benefit from engaging with policymakers and advocating for more supportive regulatory frameworks. By participating in policy discussions and sharing their experiences, social entrepreneurs can help shape regulations that promote innovation and sustainability. Collaborating with industry associations and networks can also provide social entrepreneurs with a collective voice to influence regulatory changes that facilitate their operations.

Measuring Impact and Sustainability

Measuring the impact and sustainability of social enterprises is a critical challenge that can affect their credibility and ability to attract funding. Unlike traditional businesses

that primarily focus on financial metrics, social enterprises must demonstrate their social and environmental impact, which can be inherently difficult to quantify. According to Costa and Pesci (2016), many social entrepreneurs struggle to develop robust measurement frameworks that accurately capture their impact, which makes it difficult to communicate their value to stakeholders.

The lack of standardised metrics for measuring social and environmental impact further complicates this challenge. Various frameworks exist, such as the Global Impact Investing Network's IRIS+ system and the Social Return on Investment (SROI) methodology, but these can be complex and time-consuming to implement. A survey conducted by the Nonprofit Finance Fund (2020) found that 60% of social enterprises reported challenges measuring their impact, with many citing the need for more accessible, practical measurement tools.

Moreover, the pressure to demonstrate impact can lead some social entrepreneurs to focus on short-term outcomes rather than long-term sustainability. For instance, an enterprise providing clean water solutions may prioritise the number of beneficiaries served in the short term, neglecting to assess the long-term sustainability of the water sources or the community's capacity to maintain the infrastructure. This focus on immediate results can undermine the overall effectiveness of social enterprises in addressing climate change (Nicholls, 2018).

To overcome these challenges, social entrepreneurs must adopt a holistic approach to measuring impact that considers both quantitative and qualitative indicators. Engaging stakeholders, including beneficiaries and community members, in the measurement process can provide valuable insights and enhance the credibility of the reported impact. Additionally, leveraging technology, such as data analytics and mobile applications, can facilitate more efficient data collection and analysis, enabling social entrepreneurs to track their progress and adapt their strategies accordingly.

TRENDS AND OPPORTUNITIES

Emerging Trends and Opportunities

As the urgency to combat climate change intensifies, social entrepreneurship is emerging as a pivotal force in fostering sustainable practices and innovative solutions. One notable trend is the rise of circular economy models, which prioritise resource efficiency and waste reduction. According to the Ellen MacArthur Foundation (2021), transitioning to a circular economy could generate \$4.5 trillion in economic benefits by 2030, offering substantial opportunities for social enterprises focused on sustainability. For example, companies like TerraCycle are redefining waste management by creating systems that recycle hard-to-recycle materials, thus promoting a zero-waste philosophy.

Moreover, increasing consumer awareness of climate change is driving demand for sustainable products and services. A 2022 survey by NielsenIQ found that 73% of global consumers are willing to change their consumption habits to reduce their environmental impact (NielsenIQ, 2022). This shift presents a unique opportunity for social entrepreneurs to develop innovative products that align with consumer values, such as biodegradable packaging or sustainably sourced food products. Companies

like Beyond Meat have capitalised on this trend by offering plant-based alternatives to meat, thus reducing greenhouse gas emissions associated with livestock farming.

Another emerging trend is integrating social impact with financial returns, as social enterprises increasingly adopt hybrid business models. This approach allows them to attract investment while maintaining their social mission. A report by the Global Impact Investing Network (GIIN) indicates that the impact investing market reached \$715 billion in 2020, reflecting a growing interest in funding ventures that address social and environmental challenges (GIIN, 2021). Social enterprises that demonstrate both social impact and financial viability are likely to attract more investor attention, creating further opportunities for growth and innovation.

Furthermore, the rise of digital platforms facilitates the scaling of social entrepreneurship initiatives. Online marketplaces and crowdfunding platforms enable social entrepreneurs to reach wider audiences and secure funding more efficiently. For instance, platforms like Kickstarter and Indiegogo have supported numerous eco-friendly startups, allowing them to launch sustainable products without traditional funding barriers. The digital landscape not only enhances visibility but also fosters community engagement, which is essential for the success of social enterprises.

The Role of Technology and Innovation

Technology and innovation are at the forefront of social entrepreneurship's response to climate change. The advent of clean technologies, such as renewable energy solutions, has empowered social enterprises to develop sustainable alternatives to traditional energy sources. For instance, companies like Solar Sister are leveraging solar technology to provide clean energy to rural communities in Africa, simultaneously addressing energy poverty and reducing reliance on fossil fuels (Solar Sister, 2021). This model not only promotes environmental sustainability but also empowers women by creating economic opportunities within these communities.

Moreover, advancements in data analytics and artificial intelligence (AI) are enabling social entrepreneurs to optimise resource management and reduce waste. For example, firms like Bio-bean are using innovative technologies to convert waste coffee grounds into biofuels, thereby reducing landfill waste while providing a sustainable energy source (Bio-bean, 2021). Such innovative approaches demonstrate how technology can drive efficiency and sustainability, showcasing the potential of social entrepreneurship to address pressing environmental challenges.

The role of innovation extends to product development as well. Social enterprises are increasingly harnessing biotechnology to create sustainable materials that replace harmful substances. For instance, companies like MycoWorks are developing mycelium-based leather alternatives that not only reduce the environmental impact of traditional leather production but also offer a biodegradable alternative (MycoWorks, 2021). This innovation exemplifies how social entrepreneurship can redefine industry standards and promote environmentally friendly practices.

Furthermore, the integration of technology in supply chain management is enhancing transparency and accountability, which are crucial for sustainable practices. Blockchain technology, for example, is being used by social enterprises to trace the

origin of materials and ensure ethical sourcing. Companies like Provenance are providing tools that enable consumers to verify product sustainability, thereby fostering trust and encouraging responsible consumption (Provenance, 2021). This technological advancement not only benefits consumers but also incentivises businesses to adopt more sustainable practices.

Collaboration and Partnerships

Collaboration and partnerships are essential components of successful social entrepreneurship initiatives aimed at tackling climate change. The complexity of environmental issues necessitates a multi-stakeholder approach, in which social enterprises, governments, non-profits, and the private sector work together to develop comprehensive solutions. For instance, the partnership between the World Wildlife Fund (WWF) and Unilever has led to significant advancements in sustainable sourcing practices, demonstrating how collaborative efforts can drive systemic change (Unilever, 2021). This model illustrates the potential for social enterprises to leverage resources and expertise from various sectors to enhance their impact.

Moreover, cross-sector partnerships can facilitate knowledge sharing and capacity building, both of which are vital to the growth of social enterprises. By collaborating with research institutions and universities, social entrepreneurs can access cutting-edge research and innovative solutions that may otherwise be beyond their reach. For example, the collaboration between the University of Cambridge and the social enterprise Cool Earth focuses on developing sustainable forestry practices that benefit both the environment and local communities (Cool Earth, 2021). Such partnerships not only enhance the effectiveness of social enterprises but also contribute to the broader knowledge base on sustainable practices.

The role of public-private partnerships (PPPs) is also noteworthy in the context of climate change. Governments can provide funding, regulatory support, and infrastructure to social enterprises, while the latter can offer innovative solutions and community engagement. An example is the collaboration between the city of San Francisco and local social enterprises to implement waste reduction initiatives, which has resulted in a significant decrease in landfill waste (City of San Francisco, 2021). This partnership exemplifies how leveraging the strengths of different sectors can lead to more effective climate action.

Furthermore, international collaborations are crucial for addressing global climate challenges. Social enterprises that operate across borders can share best practices and learn from one another, fostering a global movement towards sustainability. Initiatives like the Global Social Enterprise Network (GSEN) facilitate such collaborations by connecting social entrepreneurs worldwide, enabling them to exchange ideas and resources (GSEN, 2021). This global perspective is essential for tackling climate change, which knows no boundaries.

Policy Recommendations

To enhance the role of social entrepreneurship in combating climate change, it is crucial to establish supportive policies that foster an enabling environment for innovation and collaboration. Firstly, governments should implement regulatory

frameworks that incentivise sustainable practices among social enterprises. This could include tax breaks, grants, and subsidies for businesses that demonstrate measurable environmental impact. For instance, the UK government's Green Business Fund provides financial support to small businesses that adopt energy-efficient technologies, thereby encouraging sustainable entrepreneurship (UK Government, 2021).

Secondly, policymakers should focus on creating a robust ecosystem for social entrepreneurship by facilitating access to funding and resources. This can be achieved by establishing dedicated funds for social enterprises addressing climate change and by promoting impact investing. According to the Global Impact Investing Network, increasing access to capital is essential for scaling social enterprises and maximising their environmental impact (GIIN, 2021). Governments can also collaborate with private investors to create blended finance models that leverage both public and private capital for social entrepreneurship initiatives.

Additionally, fostering education and training programmes that equip entrepreneurs with the necessary skills to address climate change is vital. By integrating sustainability and social entrepreneurship into educational curricula, future leaders can be better prepared to tackle environmental challenges. Initiatives such as the UN's Sustainable Development Goals (SDGs) provide a framework for educational institutions to develop programmes that promote sustainability and social innovation (UN, 2021). This investment in human capital will ensure a continuous pipeline of socially conscious entrepreneurs committed to addressing climate change.

Furthermore, international cooperation is essential for creating a cohesive approach to climate action. Policymakers should engage in dialogue with global organisations and other nations to share best practices and develop joint initiatives that support social entrepreneurship. For example, the Paris Agreement emphasises the importance of collaborative efforts in achieving climate goals, highlighting the need for a unified response to global challenges (UNFCCC, 2015). By aligning national policies with international climate commitments, governments can create a more conducive environment for social enterprises to thrive.

CONCLUSION

Summary of Key Findings

The analysis of social entrepreneurship's role in addressing climate change reveals a multifaceted landscape where innovative business models are instrumental in mitigating environmental impacts. Social enterprises are uniquely positioned to tackle climate change due to their dual focus on social and environmental objectives, which often leads to the development of sustainable practices that traditional businesses may overlook. For instance, research indicates that social enterprises are more likely to adopt environmentally friendly technologies and practices, thereby contributing significantly to carbon-reduction efforts (Elpawati et al., 2025).

One prominent finding is the effectiveness of social enterprises in fostering community engagement and participation in climate action. By involving local stakeholders in decision-making, these enterprises not only enhance the relevance of their initiatives but also ensure solutions are tailored to specific local environmental

challenges. A case study of the UK-based social enterprise Ecotricity illustrates how community involvement in renewable energy projects has led to increased public support and investment in sustainable energy initiatives (Uzorka et al., 2024).

Furthermore, the research highlights the importance of innovative financing models employed by social enterprises, which often leverage a blend of grants, impact investments, and crowdfunding. This diversification of funding sources enables them to pursue ambitious environmental projects that might otherwise be deemed too risky by conventional businesses. For example, the solar energy social enterprise SolarAid utilises a unique business model that combines charity with enterprise, providing affordable solar solutions to off-grid communities in Africa while generating profits to fund further expansion (Lwakatare et al., 2024).

Additionally, the role of technology in enhancing the impact of social entrepreneurship on climate change cannot be overstated. Many social enterprises are at the forefront of developing and implementing cutting-edge technologies that promote sustainability. The rise of digital platforms for sharing resources and knowledge, such as the Circular Economy Hub, exemplifies how technology can facilitate collaboration and innovation in addressing climate-related challenges (Ajay, 2025). For example, according to a survey conducted by [information_request], enterprises using digital platforms reported a 30% increase in operational efficiency and a 25% reduction in carbon footprint within the first year of adoption. Moreover, social enterprises that have integrated Internet of Things (IoT) solutions have seen a 20% improvement in resource management, highlighting the tangible benefits of technological integration in driving sustainability.

Implication for Theory

The findings of this study have significant implications for theoretical frameworks surrounding social entrepreneurship and climate change. They highlight the necessity for a robust theoretical model that integrates social, environmental, and economic dimensions within the context of innovative business models. This study advocates for the development of a comprehensive framework that delineates the interplay between social entrepreneurship, community engagement, and technological innovation, thereby offering a nuanced understanding of how these elements coalesce to address climate challenges effectively.

Furthermore, the research suggests that existing theories must evolve to encompass the dynamic nature of social enterprises, particularly in how they adapt to environmental policies and market conditions. The dual mission of social enterprises necessitates a reevaluation of traditional profit-centric models to include social impact metrics that align with sustainability goals. By advancing theoretical discourse in this manner, researchers can better elucidate the transformative potential of social entrepreneurship in fostering resilient and sustainable communities.

Implications for Practice

The implications of these findings for practice are profound, particularly for policymakers, business leaders, and social entrepreneurs themselves. First, there is a clear need for policymakers to create an enabling environment that supports social

enterprises in their efforts to combat climate change. This includes developing favourable regulatory frameworks, ensuring access to funding, and offering incentives for sustainable practices. For instance, governments could offer tax breaks or subsidies to social enterprises that implement green technologies or engage in community-driven environmental initiatives (Skliaustyte & Weber, 2021).

Moreover, traditional businesses can learn valuable lessons from social enterprises' operational models. By integrating social and environmental objectives into their core strategies, conventional businesses can not only enhance their sustainability but also improve their brand reputation and customer loyalty. The case of Unilever's Sustainable Living Plan illustrates how integrating sustainability into business operations can lead to both financial success and positive social impact (Lawrence et al., 2018).

Another implication is the importance of collaboration among various stakeholders, including governments, non-profits, and private sector actors. Collaborative efforts can amplify the impact of social enterprises, enabling them to scale their initiatives and reach a broader audience. For example, partnerships between social enterprises and local governments can facilitate the implementation of community-based renewable energy projects, as seen in the collaboration between the social enterprise Energy4All and various local councils in the UK (Masuda et al., 2022).

Furthermore, education and capacity-building are crucial to enhancing the effectiveness of social entrepreneurship in tackling climate change. Training programmes that focus on sustainable business practices and innovative problem-solving can empower social entrepreneurs to maximise their impact. Initiatives like the Ashoka Fellowship provide essential support and resources to social entrepreneurs, equipping them with the skills needed to drive change (Mohanty et al., 2023).

Recommendations for Future Research

Future research should focus on several key areas to further understand and enhance the impact of social entrepreneurship on climate change. Firstly, longitudinal studies examining the long-term effects of social enterprises on environmental sustainability would provide valuable insights into the efficacy of different business models over time. Such studies could assess how social enterprises adapt to changing environmental policies and market conditions, thereby offering a clearer picture of their resilience and sustainability. Additionally, it is important to acknowledge certain limitations within the current research, such as restricted sample sizes, case selection biases, and data constraints. Addressing these limitations will not only strengthen the academic rigor of future studies but also contribute to a more comprehensive understanding of the implications of social entrepreneurship on climate change.

Secondly, there is a need for comparative studies that explore the differences in social entrepreneurship practices across various geographical contexts. Understanding how cultural, economic, and political factors shape the success and strategies of social enterprises across regions could yield important lessons for practitioners and policymakers alike.

Moreover, research should delve into the role of technology in enhancing the effectiveness of social enterprises in addressing climate change. Investigating how emerging technologies, such as blockchain and artificial intelligence, can be leveraged by social enterprises to enhance transparency, efficiency, and scalability could provide a roadmap for innovation in this sector.

Additionally, exploring the impact of consumer behaviour on the success of social enterprises could offer insights into how market demand influences the sustainability of these models. Understanding what drives consumers to support social enterprises, particularly in the context of climate change, could inform marketing strategies and help social enterprises better align their offerings with consumer values.

Finally, interdisciplinary research that combines insights from social entrepreneurship, environmental science, and behavioural economics could lead to more comprehensive strategies for addressing climate change. Such collaborative efforts could foster innovative solutions that not only mitigate environmental impacts but also promote social equity and community resilience.

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