

Paryavarna Sakhi : Enabling Women-Led Waste Management and Social Entrepreneurship for Sustainable Development

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Abstract

Purpose : This paper proposed the role of the “Paryavarna Sakhi” model in empowering women to lead waste management initiatives and thus contribute to social entrepreneurship, which also emphasizes sustainable development.

Methodology : The research study considered a comprehensive approach, where the studies on waste management, women’s empowerment, and social entrepreneurship were reviewed to create a model. This research considered multifaceted aspects of the “Paryavarna Sakhi” model. It assessed key dimensions such as active participation of members, leadership encouragement, gender equality, and economic empowerment.

Findings : This study shed light on how women fit into the “Paryavarna Sakhi” model framework for trash management. Positive influences were economic empowerment, leadership promotion, and active involvement; gender equality was crucial.

Practical Implications : It is recommended that individuals and organizations embrace the tenets of the “Paryavarna Sakhi model” by encouraging the active engagement of women as stakeholders and the spread of reliable information. The study acknowledged its limitations and suggested directions for further investigation.

Originality : This study was the first to examine women’s empowerment in waste management via the distinctive perspective of the Paryavarna Sakhi model, in contrast to previous studies on social entrepreneurship and women entrepreneurship. It gave the conversation about sustainable development a fresh viewpoint.

Keywords : *Paryavarna Sakhi*, women-led waste management, social entrepreneurship, sustainable development, gender equality, economic empowerment

JEL Classification Codes : L310, Q530, Q560

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Waste management has become a top priority on the global sustainability agenda due to the growing challenges caused by waste generation in both urban and rural areas and improper disposal in the unorganized sector (Babayemi et al., 2019; Ismail & Hanafiah, 2023; Veckalne & Tambovceva, 2021). The stress on natural resources and ecosystems has increased due to rapid industrialization (Tahir et al., 2015), urbanization (Ikhlayel et al., 2016), population growth (Babayemi et al., 2019), and growing market consumption (Neto et al., 2023). Materials discarded from residences, workplaces, and industries comprise the trash (De Weerd et al., 2020; Feng et al., 2022; Patricio et al., 2020). It includes all social, economic, and environmental concerns.

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Pollution, habitat destruction, and climate change (Bora et al., 2020; Guran, 2019; Williamson et al., 2018) are all impacted by an increase in waste in landfills and the ocean (Crawford et al., 2017; Mohebbi et al., 2022). Since traditional waste management techniques have often been shown to be unproductive, paradigm shifts in favor of sustainable alternatives are required.

In the time of challenges and difficulties, social entrepreneurship has emerged as a dynamic force in considering entrepreneurial opportunities with social and environmental issues. Social entrepreneurs use innovative business models to address problems with a positive impact on societal consciousness. Waste management, in this context, presents a great opportunity for social entrepreneurs to address the need for waste reduction, waste management, reuse, and recycling (Charles, 2021; Kolte et al., 2021; Mondal et al., 2023). A hub of opportunities that transform trash disposal into good is provided by waste management as a social entrepreneurial channel. Social entrepreneurship is demonstrated by creative waste-to-resource conversion (International Labour Organization, 2014), the growth of local economies (Doe et al., 2023; Warlina et al., 2022), and the creation of green jobs (Sharma et al., 2021; Vesere et al., 2021). Waste management programs can influence systemic change, behavioral changes, and the development of more sustainable consumption patterns in the nation by fostering the power of social entrepreneurship. The world grapples with the situation of waste accumulation, and the combination of waste management and social entrepreneurship emerges as a compelling avenue for transformation in the modern world. By the consideration of social impact, economic viability, and environmental concern, the approach of waste management as entrepreneurship holds the promise of sustainable development by way of nurturing society, and fostering a harmonious bond between humanity and the planet.

Waste management as an avenue for social entrepreneurship has gained significance as an innovative approach to addressing environmental issues faced at the global level. This also contributes to fostering economic growth and social empowerment. Accessibility and simplicity are key components of trash management as social entrepreneurship, especially for female entrepreneurs (Carvalho & Williams, 2014; Chineme et al., 2022; Mohiuddin et al., 2014). Like any other traditional business venture that requires capital investment and infrastructure, waste management can be initiated with relatively minimal financial resources and straightforward setups as the accessibility of materials is pure waste in nature, and availability is easy. The simple way will lower the entry barriers for aspiring entrepreneurs but also align with the principles of sustainability and resource optimization. Women find waste management employment particularly accommodating because of this platform's accessibility, ease of use, adaptation to a range of situations, flexibility, and potential to have a significant good impact on communities that choose to pursue waste management entrepreneurship.

This paper considers a unique waste management initiative called “Pariyavarana Sakhi,” which aptly translates to “Eco-Friendly,” encapsulating the dual purpose of environmental preservation and the role of women as social entrepreneurs. This study examines how waste management can contribute to women's empowerment, economic independence, and communal well-being by taking into account the strength of the “Sakhi” (women) factor. It focuses on the “Pariyavarana Sakhi” concept as an illustration of inclusive and sustainable business.

Waste management stands at the forefront of global sustainability challenges from the urban and rural areas grappling with escalating waste generation and improper disposal practices. The critical juncture of unchecked waste accumulation necessitates innovative and sustainable solutions, particularly in the context of social entrepreneurship. The intersection of waste management and social entrepreneurship presents a compelling avenue for transformative change, and that opens a door for innovation. Nevertheless, there is still a glaring void in academic study, even if previous studies have acknowledged the importance of waste management and its potential for social entrepreneurship. Previous studies have explored the environmental, social, and economic dimensions of waste but have not comprehensively examined the nuanced role of waste management in easy business-making avenues for women as social entrepreneurs within waste management initiatives. This study addresses this gap by introducing the unique initiative “Pariyavarana Sakhi” model aims to explore the untapped potential of women's empowerment, economic independence, and community well-being through sustainable and

inclusive entrepreneurship. The study is unique in that it focuses on a thorough comprehension of waste management as a social entrepreneurship endeavor, paying special attention to the aspects of women's involvement that have not been thoroughly examined in this regard.

Current Trend/Potential of the Paryavarna Sakhi Model

Research on social entrepreneurship and waste management is highly relevant and in demand in the present trend, especially when it focuses on women's empowerment through programs like “Paryavarna Sakhi.” A number of considerations support the relevance and timeliness of this study:

↳ **Global Sustainability Agenda :** Waste management has become a crucial component of the global sustainability agenda. Governments, organizations, and communities worldwide are increasingly recognizing the urgency of adopting sustainable practices to address environmental challenges associated with waste generation.

↳ **Rising Interest in Social Entrepreneurship :** Social entrepreneurship is gaining prominence as a dynamic and impactful approach to addressing societal and environmental issues. There is a growing interest in business models that not only generate economic value but also contribute positively to social and environmental well-being.

↳ **Focus on Women's Empowerment :** The emphasis on women's empowerment has drawn interest from throughout the world. Including women in business is in line with larger social and economic objectives since it fosters variety and inclusivity in society, particularly in fields like waste management.

↳ **Circular Economy Initiatives :** The concept of turning waste into economic resources aligns with the principles of a circular economy. Governments, businesses, and community groups are increasingly exploring circular economy initiatives to minimize waste and maximize resource efficiency.

↳ **Community and Economic Development :** In addition to promoting environmental sustainability, waste management as a social entrepreneurship project also fosters community development and economic expansion. Initiatives of this nature are relevant and appealing since they generate green jobs and have a good effect on local economies.

↳ **Accessibility and Simplicity in Entrepreneurship :** The availability and simplicity of waste management will make it easy, particularly for women entrepreneurs, making it a practical and scalable solution. The minimal financial requirements and straight forward setups will make the current trend toward more inclusive and sustainable business practices.

↳ **Innovative Solutions for Sustainable Development :** In a world struggling with environmental challenges, there is a growing demand for innovative solutions that contribute to sustainable development. The integration of waste management and social entrepreneurship, as exemplified by the “Paryavarna Sakhi Model,” will represent a forward-looking and impactful approach.

Literature Review

In recent years, the concept of social entrepreneurship has challenged traditional paradigms by means of demonstrating modern strategies to societal issues. Parris and McInnis-Bowers (2014) clarified this by looking at “efficient entrepreneurship,” showing how global initiatives such as Clean can now be started with an income-oriented approach in addition to social value while also questioning norms and making use of available resources.

Tauran et al. (2015) conducted a study that reveals the role of social entrepreneurship in waste management,

particularly in “waste bank” activities. This study serves as a means of fostering community innovation and social capital. The study emphasizes the importance of key factors riding social entrepreneurship in city settings, contributing to sustainable waste management techniques. The study conducted by Staicu (2019) intensifies the conversation by examining the role that social entrepreneurship plays in preventing textile waste, particularly in the setting of Bucharest, Romania. By highlighting the role of social enterprises using apparel reuse projects, the studies underscore the significance of shaping selection-making tactics and fostering collaboration to make bigger fabric waste discount efforts.

Furthermore, Charles (2021) analyzed the viability of Tanzanian social entrepreneurs who collect and recycle waste, offering insights into how these businesses overcome obstacles and maintain longevity. The study highlights the value of waste collection, skill development, and social entrepreneurship as essential components of sustainable waste management. Additionally, the study by Akinboade et al. (2023), which looks into value-creation techniques from local government services in South Africa, sheds light on the dynamics of social entrepreneurship. This study demonstrates how social entrepreneurship may integrate social ideals into the venture through customer-centric techniques, design thinking, and trust building, thus contributing to the transformation of traditional business paradigms.

Seay et al. (2016) presented a thorough description of a service learning project that involved University of Kentucky students and demonstrated the transformation of waste plastic into liquid fuel for irrigation pumps. This work was conducted in a similar context. The accomplishment of this project demonstrated the value of cultural difficulties in the community while also highlighting the possibilities for creative solutions. Working in tandem with the Organization of Development Action and Maintenance (ODAM) in Tiruchuli, India, the project showcased how engineering solutions and cultural sensitivity may be harmoniously combined to create an environmentally beneficial impact. In their case study from Nepal, Nayak and Hegde (2019) shed light on the combination of sustainable development and social entrepreneurship. This study emphasizes ethical behaviors, social effect, and environmental stewardship, linking economic operations with broader societal and environmental aims, in contrast to entrepreneurial endeavors that prioritize societal and environmental impact.

Through an analysis of cases from Colombia and India, Rosca et al. (2020) studied social and women entrepreneurship in emerging markets. The study emphasized the decision-making techniques and unwavering commitment of female entrepreneurs to social concerns. Additionally, it addresses contextual issues and how creative solutions for socioeconomic improvement have emerged as essential elements that promote socioeconomic advancement and corporate expansion.

Women entrepreneurs as crucial components of India's sustainable development are highlighted in the Agarwal et al. (2020) study. The research identified the critical competencies based on data collected from seven interviews with entrepreneurs. Personal, social, and environmental factors significantly influence the development of entrepreneurial skills. These findings offer valuable guidance to policymakers in supporting mechanisms and championing and empowering women entrepreneurs in their pursuit of sustainable impact. Chythra and Gangu (2021) considered the aspects of social entrepreneurship in India and spotlighted women's empowerment. Through a case study on the Peepal Tree Foundation, the research illuminates how social enterprises, exemplified by the Peepal Tree Foundation, provide training, economic security, entrepreneurial skills, and educational knowledge to empower women in particular.

The potential of social entrepreneurship is demonstrated by this research taken together. Consideration is given to the empowerment of women entrepreneurs, whether via creative approaches to waste management or the blending of technical and cultural awareness. A detailed knowledge of social entrepreneurship's critical role in promoting sustainable development in a variety of contexts is made possible by the extensive insights from research.

Objectives of the Study

- (1) To analyze waste management as social entrepreneurship: Evaluating the potential of waste management as a sustainable entrepreneurial avenue through the “Paryavarna Sakhi model.”
- (2) To promote women's engagement in entrepreneurship: Examine how the “Paryavarna Sakhi Model” initiative facilitates women's active participation in waste management activities.
- (3) To create a framework for the model: Develop a comprehensive framework for the “Paryavarna Sakhi” model to guide the establishment of waste management initiatives.

Methodology

The study conducts a comprehensive analysis of various literature focusing on waste management, women's entrepreneurship, and social entrepreneurship. It synthesizes insights from these studies to underscore the potential of waste management for sustainable entrepreneurship and the active participation of women in waste management. Based on these analyses, the study puts forth a novel, “Paryavarna Sakhi model,” that takes into account women's involvement in waste management entrepreneurship. These interns are closer to the idea of social entrepreneurship, which advances economic empowerment, environmental sustainability, and gender equality.

Discussion

Waste Management and Social Entrepreneurship

As evidenced by several notable studies, waste management has emerged as a dynamic domain of social entrepreneurship because it has social conciseness. Arora et al. (2014) underscored the role of waste reduction in achieving sustainable development. The study by Dudin et al. (2019) emphasized the alignment between environmental entrepreneurship and waste activities. Mihaliková and Lachytová (2020) examined the complementary advantages of waste management and waste segregation. Abdullahi (2020) presented the societal implications of converting garbage into valuable materials. Prihandoko et al. (2021) advocate for technology-driven waste management results in entrepreneurship. Meanwhile, Filatova and Gorbach (2021) analyzed the interplay between legal frameworks and environmental entrepreneurship in waste management.

These studies show waste management initiatives work on the principles of social entrepreneurship, which effectively tackles environmental problems, creates economic opportunities and fosters sustainable development. It also considers community involvement, creativity, and the use of appropriate technology. Utilizing waste management as a social entrepreneurship project benefits vulnerable populations as well as the environment. Consequently, the mutually beneficial association between waste management and social entrepreneurship highlights the significance of their interdependence.

Women and Waste Management

The studies of Asteria and Haryanto (2021), Asteria and Herdiansyah (2022), Dutta et al. (2022), Rokis et al. (2022), and Sandhu (2020) presented evidence on the competence of women's role in waste management. These studies highlight that women can effectively engage in the waste management processes, supported by factors such as fewer capital requirements, easy availability of resources and relative ease of acquiring necessary skills. Their involvement in waste management not only demonstrates their capacity for taking up social entrepreneurship initiatives but also aligns with the principles of sustainability and community development in general.

The “Paryavarna sakhi” model, with its focus on women empowerment and environmental issues, serves as a supportive framework for social entrepreneurship. By considering the women's skills, dedication, and resourcefulness, this model can contribute significantly to waste management projects. Women who actively participate in trash management as business owners can help achieve both local development and more general sustainability goals by fostering an approach that is more inclusive, ecologically responsible, and commercially feasible.

↳ **Types of Waste :** According to Thüerer et al. (2017), waste is defined as materials, substances, or products that are no longer required, valued, or useful for people, enterprises, or society at large. These materials are wasted or disposed of for a variety of reasons, such as obsolescence, wear and tear, or a lack of immediate utility, where recycling and upcycling waste require less competence (Singh & Rani, 2021). Based on its properties, origins, and possible effects on the environment, waste can be categorized into several sorts.

↳ **Plastic Waste :** Due to the presence of synthetic polymers, it is not biodegradable and is a common problem resulting from the regular use of products such as bottles, containers, and packaging materials. These plastics, which come mostly from homes, businesses, and industries, cling to the environment and worsen pollution and depletion of resources (Evode et al., 2021).

↳ **Paper and Cardboard Waste :** Its ability to recycle sets it apart from other materials found in homes, workplaces, and commercial spaces. A large amount of the garbage produced is made up of discarded magazines, newspapers, cardboard boxes, and used office paper. Recycling this kind of garbage properly can promote sustainable practices and lessen the burden on landfills and forests (Ma et al., 2016).

↳ **Textile Waste :** A special issue arises from its complicated composition, originating from both homes and the fashion industry. This waste stream includes leftover fabric and unwanted apparel. By using upcycling, collected textile waste can be given new life when consumer habits and fashion trends change. This lowers the need for new materials and lessens the environmental impact of the trash (Khan et al., 2023).

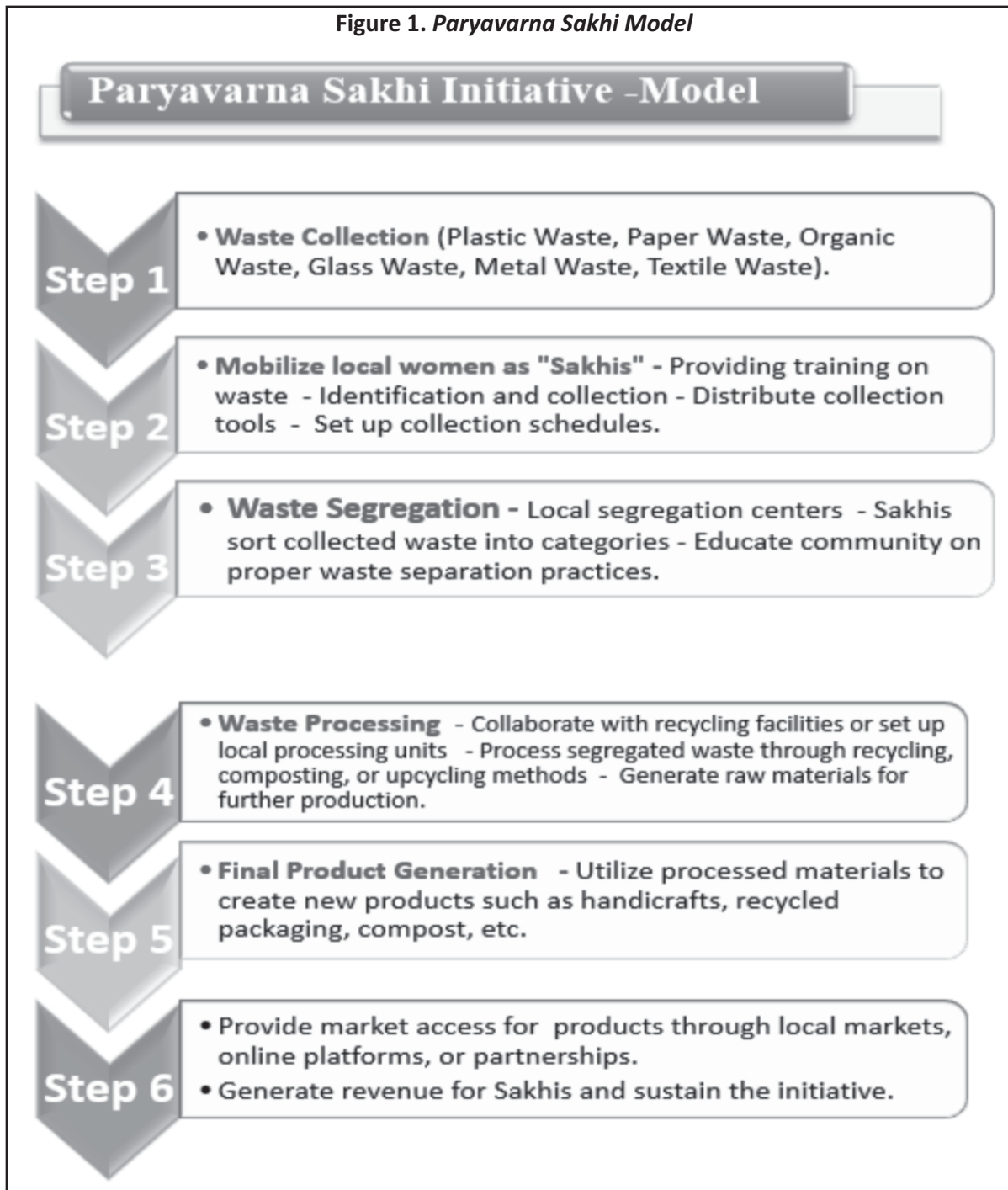
↳ **Glass Waste :** Glass jars and bottles, which come from homes, eateries, and the beverage sector, are examples of this. Glass has the benefit of being infinitely recyclable, in contrast to certain other waste materials. However, glass debris can stay in landfills for thousands of years if correct recycling procedures aren't followed. Innovative upcycling techniques can offer a fresh approach to dealing with this kind of garbage while using fewer resources (Bisikirske et al., 2019).

↳ **Wood Waste :** There is potential for upcycling into different goods arising from construction, the furniture industry, and houses. Pallets, leftover furniture, and wood offcuts can all be repurposed to create useful goods while lowering waste production and deforestation (Besserer et al., 2021).

↳ **Organic Waste :** Compost and energy can be produced from biodegradable materials, such as food scraps and yard trimmings, with proper management. Innovative uses of organic waste, like making biodegradable plates or packaging, support sustainable practices and cut down on waste (Amrul et al., 2022).

The waste categories that were previously described are ideal for female entrepreneurs. With relatively simple processes, these waste kinds can be properly handled and converted into valuable goods. When it comes to recycling plastic trash for small-scale manufacturing and crafting, women may make a big contribution. Women are able to develop creative packaging and stationery solutions since cardboard and paper waste are recyclable. Women are able to upcycle discarded textiles into stylish accessories. Glass garbage can be creatively transformed into home decor, and wood waste presents chances for the creation of wooden products and furniture. Additionally,

Figure 1. *Paryavarna Sakhi Model*



women entrepreneurs can venture into organic waste management, producing organic fertilizers and biodegradable products that align with sustainability. This provides an ideal opportunity for women to establish and excel in their entrepreneurial ventures as *Paryavarna Sakhis*.

The “Paryavarna Sakhi” model (Figure 1) to incite the practice and achieve sustainable success requires a holistic approach that integrates community engagement, effective waste management strategies, and economic viability. An extensive community education campaign emphasizing the financial and ecological advantages of

appropriate waste management ought to be the first step in the endeavor. Training that equips them to recognize, gather, and separate different trash types should be a part of mobilizing local women such as *Sakhis*. To guarantee frequent garbage removal, collection tools should be distributed, and collection schedules should be set up.

In order to sustain high-quality waste separation, the crucial waste segregation phase necessitates equipped local centers from where they collect the waste and ongoing community education. Effective waste processing is made possible by taking into account how simple it is to recycle and how working with recycling facilities or setting up local processing units may transform garbage into useful resources. The key to success is creating marketable goods out of processed materials, which promotes a circular economy. In order to ensure revenue generation that supports both the entrepreneurship and the *Sakhis*, the products so generated should be made available on the market through a variety of channels, emphasizing eco-friendly products.

Monitoring and assessment must be ongoing in order to guarantee sustainability and long-term success. The impact of the effort is assessed by measures such as waste collection, waste diversion rates, revenue generation, product marketability, and community participation levels. It is essential to identify waste and be flexible in responding to shifting waste streams and consumer expectations. To ensure sustainability and long-term success, monitoring and assessment must be continuous. Metrics like revenue creation, product marketability, trash diversion rates, waste collection, and community participation are used to evaluate the effort's impact. It is critical to recognize waste and respond adaptably to changing waste streams and customer demands.

Conclusion

The social entrepreneurship project Paryavarna Sakhi presents itself as a positive and all-encompassing strategy for promoting women-initiated trash management for sustainable development. By considering waste management as a type of social entrepreneurship and emphasizing its accessibility and flexibility, waste management can be used to create environmentally friendly solutions and create livelihood opportunities for marginalized communities, particularly women. This approach helps to meet the study's objectives.

The Paryavarna Sakhi approach encourages women (*Sakhi*) to participate in trash management tasks actively. They can assume a leadership position and bring about positive change in their communities by collecting, organizing, and producing trash. The idea tackles the problem of waste management while simultaneously advancing gender equality and women's economic empowerment through empowering women to start their businesses. This study has led to the creation of a replicable model for the Paryavarna Sakhi initiative, which takes social entrepreneurship concerns into account and offers a thorough framework for the construction of comparable waste management programs. This model can be used as a guide to empowering women to take the lead in waste management, promote sustainable practices, and further the more general objectives of social advancement and environmental conservation.

Authors' Contribution

The Paryavarna Sakhi initiative now has a replicable model that considers social entrepreneurship issues and provides a comprehensive framework for the development of similar trash management initiatives, according to the study. Utilizing this model as a guide will enable women to assume leadership roles in waste management, encourage environmentally friendly behaviors, and achieve the broader goals of environmental preservation and social advancement.

Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

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