

Transformative Corporate Social Responsibility and the Circular Economy as a Community-Based Social Work Intervention: Evidence from the WIRALODRA Group in Indonesia

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Article Info

Received : 30th Aug 2025

Revised : 2th Nov 2025

Accepted : 14th Dec 2025

Keywords:

Corporate Social Responsibility (CSR), Circular Economy, Group Income Improvement, Recycling, Community Empowerment.

Abstract

Efforts to implement the Circular Economy (CE) model in Corporate Social Responsibility (CSR) practices are increasingly appropriate as a response to environmental issues, economic inequality, and low community participation in waste management. However, most CSR programs in Indonesia are still oriented towards philanthropic practices and therefore have not provided long-term impacts on the socio-economic independence of communities. This study aims to analyze the implementation of CE as a transformative CSR strategy in increasing the capacity and income of the WIRALODRA Group in the Indramayu Regency. This study employs a qualitative approach, utilizing a case study design that incorporates semi-structured interviews, participant observation, and document review. The results show that the implementation of CE through plastic recycling technology, maggot cultivation, food product barter mechanisms, and multi-stakeholder collaboration has successfully diversified income sources, improved technical skills, and strengthened the group's social capacity. Although the increase in income has not been economically significant, this program has triggered behavioral changes, fostered community solidarity, and led to the formation of an environmentally based social learning ecosystem. This study confirms that CE-based CSR has the potential to become a sustainable community empowerment model if supported by intensive mentoring, adaptive marketing strategies, and collaborative governance.

Kata Kunci:

Tanggung Jawab Sosial Perusahaan, Ekonomi Sirkular, Peningkatan Pendapatan Kelompok, Daur Ulang, Pemberdayaan Masyarakat.

Abstrak

Upaya penerapan model Ekonomi Sirkular (ES) dalam praktik Tanggung Jawab Sosial Perusahaan (Corporate Social Responsibility/CSR) dinilai semakin tepat sebagai respons terhadap isu-isu lingkungan, ketimpangan ekonomi, dan rendahnya partisipasi masyarakat dalam pengelolaan sampah. Namun, sebagian besar program CSR di Indonesia masih berorientasi pada praktik filantropi sehingga belum memberikan dampak jangka panjang terhadap kemandirian sosial-ekonomi masyarakat. Penelitian ini bertujuan untuk menganalisis implementasi ES sebagai strategi CSR transformatif dalam meningkatkan kapasitas dan pendapatan Kelompok WIRALODRA di Kabupaten Indramayu. Penelitian ini

menggunakan pendekatan kualitatif dengan desain studi kasus yang menggabungkan wawancara terstruktur, observasi partisipan, dan peninjauan dokumen. Hasil penelitian menunjukkan bahwa implementasi ES melalui teknologi daur ulang plastik, budidaya maggot, mekanisme barter produk pangan, dan kolaborasi multistihak telah berhasil mendiversifikasi sumber pendapatan, meningkatkan keterampilan teknis, serta memperkuat kapasitas sosial kelompok. Meskipun peningkatan pendapatan belum signifikan secara ekonomi, program ini telah memicu perubahan perilaku, menumbuhkan solidaritas masyarakat, dan mendorong terbentuknya ekosistem pembelajaran sosial berbasis lingkungan. Penelitian ini menegaskan bahwa CSR berbasis ES memiliki potensi untuk menjadi model pemberdayaan masyarakat yang berkelanjutan jika didukung oleh pendampingan yang intensif, strategi pemasaran yang adaptif, dan tata kelola yang kolaboratif.

INTRODUCTION

Over the past few decades, the transformation of the global development paradigm has compelled corporations to move beyond a narrow profit-oriented focus and assume a more active role in addressing pressing social and environmental challenges through sustainable approaches. In this context, Corporate Social Responsibility (CSR) has evolved from a predominantly philanthropic practice into a more integrative and transformative strategy that emphasizes creating shared value for both businesses and society (Diez-Cañamero et al., 2020; Porter & Kramer, 2011). This shift is particularly critical in countries of the Global South, where multidimensional challenges-such as poverty, social inequality, and environmental degradation-remain pervasive and deeply interconnected (Mensah, 2019; Mihai et al., 2022).

One approach that has gained increasing attention in the global literature is the concept

of the Circular Economy (CE), which promotes resource efficiency through the principles of reduce, reuse, and recycle, while transforming waste into new sources of economic value (Kirchherr et al., 2017; Morea et al., 2021). In contrast to the conventional linear economic model-characterized by extraction, consumption, and disposal-the circular economy offers a systemic framework that not only enhances ecological efficiency but also holds the potential to generate inclusive socio-economic benefits, particularly for local communities (Geissdoerfer et al., 2017; Vragoteris & Gritzas, 2024). Empirical studies have demonstrated that integrating CE into corporate social responsibility (CSR) practices can significantly improve corporate sustainability performance while expanding economic opportunities for communities through innovation-driven, community-based initiatives (Fortunati et al., 2020; Niyommaneerat et al., 2023).

Despite these developments, CSR implementation in many developing countries, including Indonesia, remains dominated by short-term, charity-based approaches that fail to address the structural roots of social and environmental problems (Faotiyah, 2023; Lock & Araujo, 2020). Such models tend to position communities as passive beneficiaries rather than active agents of change, thereby limiting both the sustainability of interventions and the development of local capacities (Midgley, 2014). From a social work perspective, this situation underscores the need for a paradigm shift toward empowerment-oriented approaches that recognize individuals and communities as active participants in social transformation processes.

Within this framework, community empowerment emerges as a critical lens, emphasizing the enhancement of community capacities, participation, and control over the resources that shape their lives (Ife & Tesoriero, 2008; Lee, 2001). Furthermore, the Person-in-Environment (PIE) perspective highlights the importance of understanding the dynamic interactions between individuals and their broader social, economic, and ecological environments (Karls & Wandrei, 1994). Integrating CSR and community empowerment within a PIE framework provides a valuable opportunity to develop more holistic and sustainable models of social intervention that address both structural conditions and individual capacities.

Although the body of literature on CSR and the circular economy (CE) continues to expand, a significant research gap remains, particularly in understanding how integrating these concepts can serve as a community empowerment strategy within a social work framework in Global South contexts. Existing studies primarily focus on corporate performance, sustainability indicators, or economic efficiency, with limited attention to social dynamics such as behavioral change, capacity transformation, and the development of community-based learning ecosystems (Morea et al., 2021; Mihai et al., 2021). Therefore, there is a pressing need for empirical research that examines how CE-based CSR practices contribute to enhancing social functioning, economic self-reliance, and community resilience.

Addressing this gap, this study aims to analyze the implementation of the circular economy as a transformative CSR strategy to enhance the capacity and income of community groups, using the WIRALODRA Group in Indramayu as a case study. Beyond economic outcomes, this research explores behavioral transformation processes, the strengthening of technical and social capacities, and the dynamics of multi-stakeholder collaboration within a community empowerment framework.

This study contributes to the development of an integrated analytical framework that bridges CSR, the circular economy, and social work perspectives. Practically, the findings are

expected to inform the design of more inclusive, sustainable, and empowerment-oriented CSR models, particularly in developing country contexts.

LITERATUR REVIEW

Over the past few decades, the transformation of the global development paradigm has prompted a fundamental redefinition of the role of corporations—from narrowly profit-oriented economic entities to strategic actors in sustainable development. In this context, Corporate Social Responsibility (CSR) has undergone a significant evolution, shifting from traditional philanthropic practices toward more strategic approaches centered on creating shared value between firms and society (Porter & Kramer, 2011; Diez-Cañamero et al., 2020). Contemporary literature increasingly conceptualizes CSR not as an auxiliary or add-on activity, but as an integral component of corporate strategy that simultaneously advances social, economic, and environmental sustainability.

Within the Global South, the implementation of CSR is particularly critical given the persistence of complex and interrelated structural challenges, including multidimensional poverty, social inequality, and environmental degradation (Mensah, 2019; Mihai et al., 2022). A growing body of research suggests that the effectiveness of CSR in these contexts largely depends on its capacity to address underlying structural issues rather than merely providing short-term assistance.

However, CSR practices in many developing countries remain dominated by charitable, short-term approaches that lack a long-term sustainability orientation (Abebe Mamo et al., 2024; Kvasničková Stanislavská et al., 2020; Visser, 2008). Such models tend to reproduce dependency relations by positioning communities as passive beneficiaries, thereby constraining the development of local capacities and undermining community self-reliance (Midgley, 2014).

Amid increasing global attention to sustainability, the concept of the Circular Economy (CE) has emerged as a promising alternative framework capable of addressing the limitations of the linear economic model. CE emphasizes resource efficiency through the principles of reduce, reuse, and recycle, while transforming waste into new sources of economic value (Kirchherr et al., 2017; Morea et al., 2021). In contrast to the extract–consume–dispose logic of linear systems, the circular economy promotes closed-loop systems that not only enhance ecological efficiency but also generate inclusive economic opportunities for local communities (Geissdoerfer et al., 2017; Vragoteris & Gritzas, 2024).

Empirical studies indicate that integrating CE principles into CSR practices holds significant potential to enhance corporate sustainability performance while expanding community-based economic opportunities. For instance, Fortunati et al. (2020) and

Niyommaneerat et al. (2023) demonstrate that circular innovation initiatives can generate new forms of economic value through waste management, while simultaneously fostering active community participation in value creation processes. In this regard, CE functions not only as an environmental strategy but also as an instrument for inclusive economic empowerment.

From a social work perspective, the limitations of conventional, charity-oriented CSR approaches underscore the need for a paradigm shift toward an empowerment-oriented framework that positions individuals and communities as active agents of social change (Midgley, 2014; Abebe Mamo et al., 2024; Kvasničková Stanislavská et al., 2020; Visser, 2008). Community empowerment is conceptualized as a process of enhancing capacities, strengthening control over resources, and enabling individuals and groups to shape their own life trajectories, while emphasizing active participation, capacity building, and the redistribution of power in social development processes (Ife & Tesoriero, 2008; Rappaport, 1987). In this context, the integration of CSR with a circular economy approach offers a transformative pathway for social intervention, as it not only promotes resource efficiency and community-based economic innovation but also strengthens social functioning, economic self-reliance, and adaptive capacity (Geissdoerfer et al., 2017; Kirchherr et al., 2017; Fortunati et al., 2020).

Nevertheless, despite the rapid expansion of literature on CSR and CE, a significant research gap remains-particularly in the Global South-where existing studies predominantly focus on corporate performance, economic efficiency, or environmental outcomes, with limited attention to social dimensions such as behavioral change, capacity transformation, and the development of community-based learning ecosystems (Morea et al., 2021; Mihai et al., 2021; Niyommaneerat et al., 2023). Accordingly, there is a pressing need for empirical research that bridges this gap by examining how CE-based CSR practices contribute to enhancing social functioning, economic self-reliance, and community resilience. Such efforts are expected not only to advance theoretical integration across CSR, CE, and social work perspectives, but also to inform the design of more inclusive, participatory, and sustainable CSR models in developing country contexts (Porter & Kramer, 2011; Mensah, 2019; Vragoteris & Gritzas, 2024).

METHOD

This research utilizes descriptive qualitative approach with a case study method. This method was chosen to explain the conditions and implementation of the Circular Economy (CE) strategy in CSR programs in depth and comprehensively. A case study approach will be used to examine the phenomenon in depth and comprehensively, allowing researchers to fully describe how the WIRALODRA Program involves various

sectors, generates innovation, is implemented and has an impact on increasing income, without separating the phenomenon from its environmental context.

Determination of research subjects is carried out using techniques/purposive sampling, with the selection of informants based on in-depth knowledge and direct involvement. Therefore, the subjects of this research are Community Development Officer (CDO) PT Kilang Pertamina International Refinery Unit VI Balongan as the formulator and implementer of the strategy, administrator, and active member of the WIRALODRA Group. The object of this research is the Circular Economy (CE) strategy in increasing the income of the WIRALODRA Group. The

data collection techniques used are three main data collection techniques, namely observation, interviews, and documentation. Observation data were obtained by observing all activities carried out by the WIRALODRA Group related to the CE strategy to determine its real implementation. Interviews were conducted in a semi-structured manner with key informants, namely the CDO of PT KPI RU VI Balongan (CDO), the head of the WIRALODRA group (MT & MT 2), maggot and organic waste managers (RS) and plastic waste managers (A); to explore the selection of CE as a strategy, the grand design of the program, the form of collaborative support provided, and the concrete impact on increasing income and group independence.

Table 1. : data Informan

No	Stakeholder	Sex	Location	Interview date	Interview duration (minutes)
1.	MT	Male	Karangampel	18/07/2025	72.04
2.	RS	Male	Karangampel	20/07/2025	11.11
3.	A	Male	Karangampel	09/09/2025	20.13
4.	MT2	Male	Karangampel	13/08/2025	29.58
5.	CDO	Male	Lemahmekar	09/08/2025	22.49

Documentation was obtained by searching written documents such as CSR program reports, group activity reports, journals, and books. Data analysis included data reduction, data presentation, and drawing conclusions.

RESULTS

Behavioral Change and Waste Management Systems

The social empowerment program of the WIRALODRA (Wilayah Masyarakat Pengelola Daur Ulang Sampah) group has experienced various long-term dynamics that have influenced the change in the waste management system from a linear system to a circular waste management system. Previously, Balongan District, especially the Ring 1 area of PT KP RU VI Balongan, did not have a structured waste management system, where the behavior of

littering was deeply rooted in the community. Amid these limitations, some residents still burned waste in their yards, a practice that carried a high risk of triggering fires because the area was close to PT KPI RU VI Balongan and PT Pertamina Patra Niaga. Integrated Terminal Balongan is full of fuel oil (BBM) supplies and cylinders Liquefied Petroleum Gas (LPG). The proximity of the Balongan area to the operational areas of Pertamina Group subsidiaries and deficiencies in waste processing infrastructure such as this often result in weakened environmental awareness and encourage an increase in the volume and type of community waste and non-B3 solid waste from poorly managed refinery activities. The WIRALODRA group's social empowerment program presents a new formulation to address these environmental safety issues and improve the waste management system in Indramayu, particularly in Balongan Village.

Various efforts to socialize and educate about waste management have been carried out through word of mouth, community meetings at village halls, and environmental cleanup activities. However, the results have not been significant and effective in changing community behavior. People are still reluctant to sort and process waste independently and consider the recycling system as additional work because, according to some people, waste is useless and merely dirt that is finished by burning it. In addition, another problem that

emerged in the field was administrative limitations that affected the operational effectiveness of the WIRALODRA group's waste bank at the beginning of implementation (Observation, 2025). This resulted in low community participation in waste management due to inadequate administration, such as manual recording, which caused difficulties in managing waste, tracking waste volume, calculating the economic value of waste, and intensive distribution to group members. Other issues that emerged included limited human resource (HR) capacity, inadequate budgets, and a lack of facilities and infrastructure to support waste bank activities. These various obstacles were exacerbated by public rejection and resistance in the early phase of program implementation, which contributed to the minimal level of community participation in the new practices introduced by the WIRALODRA group (Observation, 2025).

"Previously, Wiralodra was protested by residents who put up banners rejecting it because they considered it only a final disposal site (TPA). I understand, they don't understand yet." - MT

The public is skeptical of the concept of a waste bank, which is short-lived, and doubts about the economic value of waste, leading them to believe that WIRALODRA is a final waste disposal site that could pollute the environment. Public resistance to new initiatives is often rooted in ingrained habits and a lack of understanding of the long-term

benefits of circular waste management (Syabrina, 2022).

To overcome this, PT KPI RU VI Balongan implemented several strategic approaches to intensive education involving members of the WIRALODRA group, including:

1. Socialization visit door-to-door by members of the WIRALODRA group who have been trained in waste management.
2. Practical educational activities include directly demonstrating the sorting process

and economic value of waste through the TELUR BASAH (Telur Barter Sampah dan Minyak Jelantah) program and recycling waste into items with sales value.

3. Provision of facilities such as waste terminals, shredding machines, molding, and other operational support facilities.
4. A successful comparative study to a waste bank outside Indramayu to increase the knowledge of WIRALODRA group members.

Figure 1. *WIRALODRA Sorted Waste Stop Facilities*



Source : Researcher's Documentation

The approach taken by PT KPI RU VI Balongan seeks to transform the model linear waste mindset (use-dispose) to be circular mindset (reduce-reuse-recycle) which has added economic value for the community.

Technology Innovation and Waste Management Systems

In general, the implementation of a circular economy is based on two main pillars: plastic recycling technology and the integration of

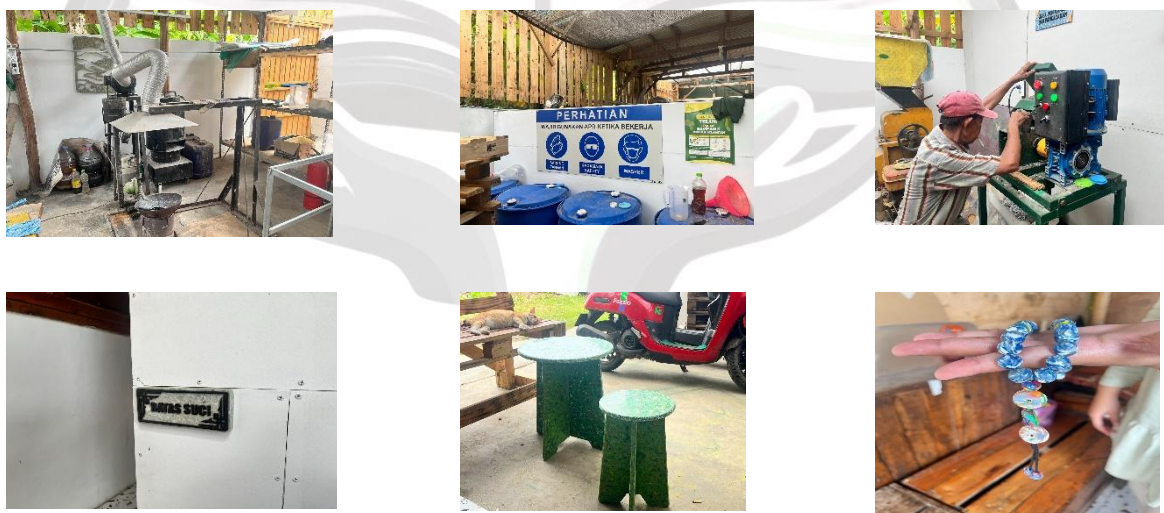
Black Soldier Fly (BSF) maggot cultivation (Observation, 2025). These two pillars represent an innovative, holistic approach that creates valuable products and can increase new income sources for members of the WIRALODRA circular economy group.

The circular economy model used by the WIRALODRA group demonstrates that the plastic waste recycling technology used is still relatively simple. The technologies used include shredding machines, heating devices, and molding, but they are capable of processing

various types of plastic, such as High-Density Polyethylene (HDPE), Polyethylene Terephthalate (PET) and mixed plastic. The plastic waste recycling process begins with sorting the waste into 3 categories, namely organic waste, inorganic waste, and residual waste at the WIRALODRA Sorted Waste Stop. Inorganic waste is re-sorted according to the types of plastic, then sorted, cleaned in the plastic waste washing area and dried. Before entering the shredding stage, the dried plastic waste is sorted according to color categories, then shredded into the main raw material. The next process is melting the plastic waste or what is often called the "cooking" process using a PERISTALTIK stove (Produk Olahan Hasil Solidifikasi Plastik) - Processed Products from

Plastic Solidification- replicating the miniature operational process of PT KPI RU VI Balongan with used cooking oil as fuel. After the cooking process, the melted plastic is molded in a molding machine to produce injection molding products in the form of plastic plates of various sizes that are ready to be shaped according to orders. Derivative products produced by the WIRALODRA group include tissue holders, trash cans, chairs, tables, plaques, beads, interior decorations, and other items of use. The simple technology implemented at WIRALODRA has strategic advantages, namely reducing operational costs and enabling sustainable waste processing (Observation, 2025).

Figure 2: Recycling Technology in the WIRALODRA Group



Source : Researcher's Documentation

In addition to plastic waste processing, the WIRALODRA group's unique circular economy model is the use of BSF maggots to diversify organic waste management, reduce waste volume, and create economically valuable

products. Maggots were chosen to decompose organic waste because they are highly effective in reducing organic waste volume. Maggots in their growth phase, specifically their larval phase, are excellent organic

decomposers.(Kasya et al., 2023;Saidi et al., 2023; Sulistia et al., 2021).

"These maggots can consume a whole chicken carcass in about four hours if the number of maggots is one kilogram and they are in the juvenile phase approaching adulthood."-BW

Organic waste processing using BSF maggots can reduce odor and some organic decay emissions and has the potential to lower heavy metal levels in the final residue. Furthermore, another unique feature of the circular economy model at WIRALODRA is

the integration of maggots as an ingredient in laying hen feed used in the waste and used cooking oil barter program (TELUR BASAH). This approach has been proven to significantly reduce chicken feed costs. Thus, a circular economy model can be created by combining the concepts of reducing waste, fulfilling food needs with chicken eggs, and social empowerment (Ajat Sudrajat et al., 2025). In addition, BSF derivative products such as fresh maggots, pupae, and maggot excrement (kasgot) also provide additional sales value for the group.

Figure 3: Circular Economy Practices in the WIRALODRA Group



Source: Researcher and Company Documentation

The overall implementation of Recycling Technology and Circular Economy Product Innovation at WIRALODRA is supported by a structured division of tasks ranging from waste collection and sorting, plastic waste processing, BSF maggot cultivation, to product marketing.

"Here, I mostly work on plaque production and plastic waste management. Some people handle the maggots themselves." -A

This role specialization is carried out to ensure the circular economy chain can run consistently so that it can create new sources of income, product diversification, and operational efficiency.

Strengthening Community Technical and Social Capacity

Community capacity building within the WIRALODRA group develops through a gradual learning process and ongoing social interactions. Some members join due to social incentives such as family influence, curiosity, or even a desire for productive activities. Involvement in the program is predominantly social, fostering a sense of responsibility and a desire to learn more about environmental management (Sugiarto & Gabriella, 2020).

Capacity building is crucial, as many members initially lacked understanding of waste

management or maggot cultivation. Through training and hands-on mentoring, they began to understand the use of plastic shredding machines, plastic melting methods, manual and automatic molding techniques, and maggot management. Supporting facilities include waste stops as sorting areas, plastic shredding machines, PERISTALTIK stoves for melting plastic, and molding machines for molding processed plastic. Additionally, organic waste management, such as maggot cages and the provision of laying hen farms, supports integration of Circular Economy in groups.

Technical capacity is strengthened by dividing tasks, from waste collection and sorting, plastic processing, BSF maggot cultivation, to product marketing. This system improves work efficiency and fosters a sense of ownership. Member engagement develops into an understanding of the waste management process. Interconnected activities, from waste sorting and processing to utilization into products of economic value, begin to shape practices. Circular Economy (Ratri et al., 2023) Not only that, there is a process of trial and error carried out independently by groups to develop product variations. This process strengthens creativity, independence, and innovation within the group (Yulita & Irmawita, 2022).

In addition to improving technical skills, the program also fosters social capacity. Although economic income hasn't significantly increased, members remain because they

experience significant non-material benefits, such as increased self-confidence and the opening of new social networks.

"There is additional income but it is not too big yet."-A

The production space, which initially only served for processing activities, has now become a learning center where members share knowledge and deepen their understanding of the Circular Economy. The learning process is now more open, involving not only technical activities but also sharing information with the broader community.

"Pertamina provides facilities and training... 2016–2019 training at the Village Hall Office."-MT

Additionally, the circular economy program in the WIRALODRA group promotes capacity building that can lead to social reintegration and economic independence for its members. Through various trainings, workshops, trial and error, and facility support from PT KPI RU VI Balongan, members can develop new skills and produce aesthetic products with economic value (observation, 2025). The skills gained by these members have successfully contributed to creating community-based learning ecosystems such as KALDERA - SMK Negeri 1 Balongan, the Empowerment of Prisoners II B Indramayu, and community groups interested in circular economy practices. Overall, this skill transfer enhances the capabilities of individuals and the community in establishing sustainable

economic opportunities and increasing social impact beyond the WIRALODRA group (Pham dkk., 2022).

"We've been asked to be resource persons by the Ministry of Maritime Affairs and Fisheries, the provincial Marine Affairs and Fisheries Department, and KKN students. Last year, we also received a certificate from the Ministry of Maritime Affairs and Fisheries, which we received at an event in Makassar at Losari Beach. WIRALODRA represented Indramayu in West Java." -MT

"The prison program was initially a replication of the Wiralodra program, starting with integrated farming, involving organic waste management and maggot cultivation. The program was then expanded to increase inmates' incomes."-CDO

Through the ongoing learning process, the WIRALODRA group can practice Circular Economy. This could be a replication of other CSR programs. This demonstrates that the program is not only economically oriented but also seeks to foster sustainable learning.

Market Expansion and Multi-Party Partnerships

Development efforts in the Economy Circular program within the WIRALODRA Group focus on market expansion and strengthening partnership networks that enhance the economic value of recycled products. The involvement of PT KPI RU VI Balongan has significantly contributed to increasing the sales value of the WIRALODRA group's processed products and improving

market accessibility. This involvement can promote the development of a better distribution network, thereby creating opportunities for recycled products to reach the market more effectively (Mahmud et al., 2020).

Initially, product marketing was straightforward and confined to local networks, depending on community relations and internal demand from the Balongan area. As the program grew and formal partnerships were formed, the marketing reach expanded. WIRALODRA products started to be showcased at company events and through networking with the Pertamina Group, which indirectly boosted market confidence in the recycled products produced.

"Marketing isn't online yet, just advertising on Facebook and WhatsApp... Pertamina has been very helpful. Besides Pertamina, we've also received orders from the Ministry of Maritime Affairs and Fisheries, especially for events like BCL (Bersih Cinta Laut)."-MT

Although digital marketing is not yet fully optimized, networking support can expand market access. Collaborating with communities and relevant agencies has been shown to boost the visibility of these products, making them better known and more accessible to the market (Dziubaniuk dkk., 2023) (Camilleri, 2020).

"We once received an order to be shipped to China through the ministry. But we had to be very careful; even one letter had to be reprinted."-MT

Generally, efforts to boost sales value and market access require cooperation from all

group members to adapt to changing market conditions. The collaboration between the WIRALODRA group and the CSR of PT KPI RU VI Balongan through circular economy practices has effectively strengthened the group's value chain and fostered an inclusive ecosystem capable of delivering both environmental and economic benefits. This underscores that partnerships between companies and communities are an effective strategy for reaching circular economy goals, increasing group income, and enhancing economic sustainability at the local level.

DISCUSSION

The findings of this study demonstrate that implementing circular economy-based CSR within the WIRALODRA group functions not merely as an economic intervention but as a community-centered social initiative that drives behavioral transformation and reshapes local environmental management systems. The shift from linear waste management practices to a circular system reflects a broader paradigmatic transition consistent with global literature, which positions the circular economy as a systemic approach integrating environmental sustainability with social well-being (Geissdoerfer et al., 2017; Kirchherr et al., 2017). In this context, the program's success in transforming community mindsets—from burning waste to managing and valorizing it—highlights the potential of education- and participation-driven CSR interventions to foster meaningful behavioral change, a

dimension relatively underexplored in conventional CSR studies (Morea et al., 2021; Mihai et al., 2021). This finding further confirms that the social dimension of circular economy practices is critical for achieving long-term sustainability, particularly in Global South contexts.

Furthermore, the study reveals that simple technological innovations—such as plastic recycling and Black Soldier Fly (BSF) maggot cultivation—not only generate alternative income streams but also enhance the technical capacities of community members through experiential learning. These findings reinforce the argument that integrating circular economy principles into CSR can serve as an effective mechanism for fostering community-based economic empowerment (Fortunati et al., 2020; Niyommaneerat et al., 2023). Importantly, this process unfolds incrementally through social interaction, training, and collective experimentation, ultimately contributing to the emergence of a community-based learning ecosystem. From a social work perspective, these dynamics reflect the empowerment process as conceptualized by Ife and Tesoriero (2008) and Rappaport (1987), wherein capacity building extends beyond technical skills to encompass psychosocial dimensions such as self-confidence, solidarity, and a sense of ownership over the program. In this regard, circular economy-based CSR functions as a multidimensional intervention that strengthens the community's social functioning.

In addition, the findings regarding the strengthening of social capacity-demonstrated by the formation of collaborative networks, increased participation, and the evolving role of the community as a learning agent-indicate that this intervention transcends the charitable CSR approaches widely critiqued in the literature (Visser, 2008; Kvasničková Stanislavská et al., 2020; Hayati et al., 2023; Kalamika & Khabiburohman, 2020; Utami et al., 2020). The WIRALODRA program effectively transforms community members from passive beneficiaries into active participants within the circular economic value chain, aligning with empowerment-oriented approaches in social work (Midgley, 2014). Within the Person-in-Environment (PIE) framework, this transformation is influenced not only by individual capacity enhancement but also by structural support, including the provision of facilities, intensive mentoring, and multi-stakeholder engagement (Karls & Wandrei, 1994). This underscores that the success of social interventions cannot be separated from the dynamic interaction between individual agency and broader socio-economic structures.

However, the study also indicates that increases in economic income remain limited, suggesting that the success of circular economy-based CSR initiatives cannot be adequately assessed solely through short-term economic indicators. This finding reinforces critiques of CSR evaluation frameworks that disproportionately emphasize economic

outputs and corporate performance metrics (Morea et al., 2021; Mihai et al., 2021). Instead, the results highlight that social impacts-such as behavioral change, the development of learning ecosystems, and enhanced community resilience-are critical indicators of success in community-based interventions. Accordingly, integrating CSR, the circular economy, and social work perspectives offers a more comprehensive analytical framework for understanding sustainable development. It also provides practical implications, emphasizing that CSR program design in developing countries should prioritize participatory approaches, capacity building, and multi-actor collaboration to achieve meaningful and enduring impacts.

CONCLUSION

This study demonstrates that implementing circular economy-based CSR within the WIRALODRA group marks a shift from conventional, charity-oriented CSR toward a more transformative, community-based social work intervention. The findings reveal that integrating circular economy principles-such as waste recycling, maggot cultivation, and community-driven innovation-has not only diversified income sources but, more importantly, has facilitated behavioral change, enhanced environmental awareness, and fostered collective responsibility in waste management. These results confirm that CSR initiatives grounded in participatory and learning processes can serve as effective

mechanisms for promoting sustainable social transformation, particularly in contexts characterized by entrenched environmental and socio-economic challenges.

From a theoretical perspective, this study contributes to the expanding body of literature by integrating CSR, the circular economy, and social work frameworks, particularly through an empowerment-oriented and Person-in-Environment (PIE) lens. The findings emphasize that the most significant impacts of circular economy-based CSR extend beyond economic gains to include the enhancement of social functioning, community capacity, and adaptive resilience. By illustrating how empowerment processes unfold through incremental learning, social interaction, and multi-stakeholder collaboration, this study advances existing discussions on CSR beyond firm-level performance metrics toward a more holistic understanding of community-centered development. It also highlights the importance of recognizing behavioral change and social learning ecosystems as critical dimensions of sustainability.

The study suggests that CSR programs in developing countries should move beyond short-term philanthropic efforts and adopt more inclusive, participatory, and capacity-building strategies. Although the observed economic outcomes remain modest, the enhancement of social capital, technical skills, and collaborative networks provides a strong foundation for long-term community resilience

and self-reliance. Therefore, future CSR interventions should prioritize continuous mentoring, adaptive market strategies, and integrated governance frameworks to maximize their impact. Further research is needed to explore the long-term economic trajectories of such initiatives and to examine how CE-based CSR models can be scaled and replicated across diverse socio-cultural contexts in the Global South.

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