

## Synthesis of Literature on MSME Green Transformation Based on Triple Bottom Line for Circular Economy

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**ABSTRACT** - Green transformation has become a strategic agenda for Micro, Small, and Medium Enterprises (MSMEs) in responding to sustainability challenges, environmental pressures, and global economic dynamics. This study aims to synthesize existing literature on the green transformation of MSMEs based on the Triple Bottom Line (TBL) approach in supporting circular economy practices. This research employs a qualitative approach using a systematic literature review method. Data were collected from scientific journal articles, policy reports, and relevant publications published within the last ten years. Data analysis was conducted through thematic analysis to identify key patterns, opportunities, and challenges related to TBL implementation in MSMEs. The results indicate that the application of TBL principles contributes positively to resource efficiency, social value creation, and business competitiveness, although MSMEs still face limitations in capacity, access to financing, and policy support. The study concludes that TBL-based green transformation plays an important role in advancing circular economy practices among MSMEs. Future research is recommended to incorporate empirical approaches and cross-country analyses to strengthen the practical implementation of green transformation strategies.

**ABSTRAK** - Transformasi hijau menjadi agenda strategis bagi Usaha Mikro, Kecil, dan Menengah (UMKM) dalam menghadapi tantangan keberlanjutan, tekanan lingkungan, dan dinamika ekonomi global. Pendekatan Triple Bottom Line (TBL) yang menekankan keseimbangan antara aspek ekonomi (profit), sosial (people), dan lingkungan (planet) menawarkan kerangka konseptual yang relevan untuk mendorong UMKM beralih menuju praktik ekonomi sirkular. Penelitian ini bertujuan untuk mensintesis temuan literatur terkait transformasi hijau UMKM berbasis TBL dalam mendukung ekonomi sirkular. Penelitian ini menggunakan pendekatan kualitatif dengan metode systematic literature review. Teknik pengumpulan data dilakukan melalui penelusuran artikel jurnal ilmiah, laporan kebijakan, dan publikasi relevan yang diterbitkan dalam sepuluh tahun terakhir. Metode analisis data dilakukan melalui analisis tematik untuk mengidentifikasi pola, peluang, dan tantangan implementasi TBL pada UMKM. Hasil penelitian menunjukkan bahwa penerapan prinsip TBL berkontribusi positif terhadap efisiensi sumber daya, penguatan nilai sosial, dan peningkatan daya saing usaha, meskipun masih dihadapkan pada keterbatasan kapasitas, akses pembiayaan, dan dukungan kebijakan. Penelitian ini menyimpulkan bahwa transformasi hijau berbasis TBL berperan penting dalam mendorong praktik ekonomi sirkular pada UMKM. Penelitian selanjutnya disarankan untuk menggunakan pendekatan empiris dan analisis lintas negara guna memperkuat implementasi strategi transformasi hijau.

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### Kata Kunci -

[Transformasi Hijau; Triple Bottom Line; Ekonomi Sirkular; Keberlanjutan.]

## INTRODUCTION

Green transformation has become a crucial agenda in sustainable economic development, particularly for Micro, Small, and Medium Enterprises (MSMEs), which play a dominant role in national economic structures. Amid increasing pressures from environmental degradation, climate change, and limited natural resources, the linear economic model that has long been applied is increasingly inadequate. This condition has encouraged the emergence of the circular economy as an alternative paradigm that emphasizes resource efficiency, waste reduction, and the sustainability of production and consumption systems (Geissdoerfer et al., 2017). The central problem lies in how MSMEs can undertake green transformation while maintaining competitiveness and contributing to sustainability goals.

Alongside growing market demands, regulatory pressures, and heightened consumer awareness of sustainable business practices, the green transformation of MSMEs has attracted increasing attention in academic research and public policy. However, the transformation process extends beyond environmental considerations and also involves economic and social sustainability. Therefore, the Triple Bottom Line (TBL) approach, which integrates economic, social, and environmental dimensions, provides a relevant conceptual framework to support the implementation of circular economy practices within MSMEs (Machado et al., 2024).

The circular economy has been widely recognized as an important strategy for organizations, including MSMEs, to enhance resource efficiency, reduce production costs, and create added value through product innovation and sustainable business models. Numerous studies indicate that the adoption of circular economy principles contributes positively to operational performance and organizational competitiveness, particularly through waste management, material recycling, and supply chain optimization (Farooque et al., 2019; Dwivedi et al., 2023).

Meanwhile, the Triple Bottom Line concept serves as an evaluative framework that enables organizations to assess business performance in a more holistic manner (Fauzi et al., 2010). This approach emphasizes that organizational success should not be measured solely by financial outcomes but also by social contributions and environmental impacts. In the context of MSMEs, the implementation of TBL has been shown to strengthen business sustainability, enhance social legitimacy, and facilitate the integration of circular economy practices into daily business activities (Garcia et al., 2020; Machado et al., 2024).

Despite the rapid growth of research on the circular economy and organizational sustainability, most existing studies continue to focus on large enterprises and developed-country contexts. Research specifically addressing MSMEs, particularly in developing countries, remains relatively limited. Moreover, studies that integrate the circular economy with the Triple Bottom Line approach are often partial, placing greater emphasis on environmental or economic dimensions, while the social dimension receives comparatively less attention (Osei et al., 2024). From a theoretical perspective, a gap remains in understanding how TBL can function as an integrative mechanism in promoting the green transformation of MSMEs toward a circular economy. Previous research has largely positioned TBL as a performance evaluation tool rather

than as a strategic framework for business transformation. Consequently, the conceptual relationship between green transformation, TBL, and the circular economy within MSMEs has not been comprehensively articulated in the existing literature (Feng & Goli, 2023).

Addressing this gap requires an approach that positions the Triple Bottom Line as a strategic foundation in the green transformation process of MSMEs. By integrating the dimensions of people, planet, and profit, MSMEs can adopt circular economy practices more systematically, ranging from product design and production processes to supply chain management. Such an approach enables MSMEs to move beyond a narrow focus on environmental efficiency toward the creation of social value and long-term economic sustainability (Farooque et al., 2019; Machado et al., 2024).

Accordingly, this study aims to synthesize existing literature on the green transformation of MSMEs based on the Triple Bottom Line in supporting the circular economy. The main contribution of this research is conceptual, as it formulates an integrative framework that links green transformation, TBL, and the circular economy within the context of MSMEs. In addition, this study is expected to provide practical implications for policymakers and MSME practitioners in designing more effective sustainability strategies, particularly in developing-country contexts such as Indonesia.

## **RESEARCH METHOD**

The research method employed in this study adopts a qualitative approach with a literature synthesis design to examine the green transformation of Micro, Small, and Medium Enterprises (MSMEs) based on the Triple Bottom Line (TBL) framework in supporting the circular economy. This study does not involve an empirical population or statistical sample; instead, the research scope focuses on selected scientific publications relevant to the research theme. Data were derived from secondary sources in the form of peer-reviewed journal articles accessed through Google Scholar, Scopus, and ScienceDirect databases. The literature search was conducted using the keywords MSMEs/SMEs, circular economy, green transformation, and triple bottom line, with publications limited to the last ten years. Data collection was carried out through a systematic screening and selection process to ensure the relevance of the literature to the research objectives. Data analysis was performed using thematic analysis to identify key themes, conceptual relationships, and research gaps related to the application of the Triple Bottom Line and circular economy principles in MSMEs. The findings were then synthesized to develop a comprehensive conceptual understanding and to formulate strategic implications for sustainable MSME development.

## **RESULTS AND DISCUSSION**

### **The Role of the Triple Bottom Line in the Green Transformation of MSMEs**

The results of the literature synthesis show that the Triple Bottom Line (TBL) is the

dominant framework used in research on the green transformation of MSMEs towards a circular economy (Roslan and Akbar 2024). The literature consistently places TBL as an approach that allows MSMEs to simultaneously integrate economic, social, and environmental goals in business activities (Mandataris et al., 2025). The implementation of TBL encourages MSMEs to view sustainability not only as an external obligation, but as part of an integrated business strategy (Garcia et al., 2020; Geissdoerfer et al., 2017). A number of studies show that MSMEs that adopt the TBL principle tend to be more adaptive to changes in the business environment and sustainability regulations. This framework helps MSMEs align the needs of business efficiency with the demands of reducing environmental impact and increasing social value. Thus, TBL acts as a conceptual foundation in directing the green transformation of MSMEs towards a circular economy.

### **Findings on the Economic Dimension**

In the economic dimension, the results of the study show that circular economy practices contribute to increasing the operational efficiency of MSMEs. The literature identifies a range of practices, such as production waste reduction, material reuse, and supply chain optimization, that have an impact on reduced costs and increased productivity. Resource efficiency is a recurring main finding in various MSME contexts, especially in businesses with limited capital and small production scales (Braccini & Margherita, 2018; Farooque et al., 2019). In addition, the adoption of digital technology and the concept of Industry 4.0 has emerged as the main supporting factor for the transformation of the circular economy. Studies show that the digitalization of business processes allows MSMEs to monitor the use of resources more accurately, increase supply chain transparency, and improve operational decision-making. The integration of this technology is reported to contribute to improving economic performance while supporting the application of circular principles more systematically (Carlo et al., 2021; Chaudhuri et al., 2022; Alkathiri et al., 2024).

### **Findings on the Social Dimension**

The social dimension in the framework of TBL occupies an important position in the green transformation of MSMEs. The results of the literature synthesis show that MSMEs that implement sustainability practices tend to pay attention to worker welfare, work justice, and local community involvement. Practices such as improving working conditions, labor protection, and social participation are findings that are often reported in studies related to the sustainability of MSMEs (Aigner et al., 2022; Fleacă et al., 2023). The proximity of MSMEs to their social environment is also identified as a factor that strengthens the social dimension of TBL. The literature shows that the involvement of MSMEs in community activities and local networks contributes to increased stakeholder trust. These strong social relationships reportedly support business stability and long-term sustainability of MSMEs, especially in uncertain economic conditions (Garcia et al., 2020;

Kumar et al., 2022).

### **Findings on Environmental Dimensions**

In the environmental dimension, the results of the study show that the implementation of the circular economy is consistently associated with reducing the environmental impact of MSME activities. Practices often identified include long-lived product design, use of eco-friendly materials, recycling, and the implementation of clean production. Studies show that these practices help reduce the exploitation of natural resources and reduce the volume of waste and emissions (Hapuwatte et al., 2023; Su & Zabilski, 2022). In addition to environmental benefits, the literature also notes that MSMEs' commitment to environmentally friendly practices correlates with an improvement in business image. Consumers who are increasingly aware of sustainability issues tend to give a positive response to MSMEs that show concern for the environment. These findings have consistently appeared in various studies that link environmental practices to the competitive advantage of MSMEs (Manioudis & Angelakis, 2023; Farooque et al., 2019).

### **Innovation and Resilience in the Circular Economy Transition**

The results of the study also show that the transition to a circular economy encourages increased innovation in MSMEs. These innovations include the development of eco-design-based products, the use of waste as production inputs, and the implementation of new business models that are more sustainable. The literature confirms that innovation is an important element in strengthening the resilience of MSMEs to market changes and external pressures (Braccini & Margherita, 2018; Carlo et al., 2021). Overall, the results of the literature synthesis show that the integration of the Triple Bottom Line in the green transformation of MSMEs supports the achievement of a comprehensive circular economy. These findings illustrate that economic, social, and environmental dimensions are interrelated and form the basis for the sustainability of MSMEs. By adopting the TBL framework, MSMEs are able to implement circular economy practices in a more structured and consistent manner.

### **Green Transformation, Circular Economy and Its Relevance for MSMEs**

Green transformation in MSMEs refers to the process of adopting environmentally friendly practices, green innovation, and resource efficiency in business operations (Renati and Faisal 2024). The literature shows that this transformation not only impacts the reduction of emissions and waste, but also improves consumer reputation and trust. The TBL concept emphasizes that business success is not only measured by financial gains, but also by social contribution and environmental sustainability. In the context of MSMEs, the TBL approach encourages business actors to integrate social and ecological values into their daily business strategies. The circular economy offers an alternative model to the linear economy by emphasizing the principle of reduce,

reuse, recycle. For MSMEs, the implementation of a circular economy can increase cost efficiency and open up opportunities for product innovation based on waste or recycled materials.

The results of the literature synthesis show that the green transformation of TBL-based MSMEs acts as a bridge to a circular economy. From an economic aspect, energy efficiency and raw materials increase long-term profitability. From the social aspect, MSMEs that implement sustainable practices tend to strengthen relationships with local communities and improve worker welfare. From an environmental aspect, the implementation of a circular economy helps reduce waste and pressure on natural resources. However, various challenges are still faced, including limited knowledge, technological capacity, and access to green financing. Therefore, policy support, training, and multi-stakeholder collaboration are key factors for the success of MSMEs' green transformation.

This discussion emphasizes that the Triple Bottom Line (TBL) is a relevant framework in integrating the green transformation of MSMEs with circular economy principles. TBL allows MSME actors to align economic, social, and environmental goals in one complete business system, so that sustainability is not understood separately. This is in line with the view of Geissdoerfer et al. (2017) who place the circular economy as a new sustainability paradigm that requires a systemic approach. In the context of Indonesian MSMEs, TBL integration helps formulate a more structured and contextual direction for green transformation, as shown by the findings of Alfarizi and Hanum (2023) regarding the linkage between innovation, sustainability, and MSME performance.

In the economic dimension, the results of the discussion show that the implementation of the circular economy has a real impact on the sustainability of MSME businesses. Practices of resource efficiency, waste reduction, and optimization of production processes contribute to reduced operational costs and increased business flexibility. These findings are consistent with studies by Farooque et al. (2019) and Feng and Goli (2023) which affirm that a circular economy is capable of improving business performance through efficiency and resource reuse. For MSMEs, the economic dimension in TBL is the main driver of green transformation because sustainability is often perceived as an opportunity to strengthen business stability and competitiveness, especially in the face of market uncertainty (Osei et al., 2024).

From a social perspective, the discussion strengthens that MSMEs have structural advantages in implementing social sustainability. The proximity of MSMEs to the workforce and local communities allows for the implementation of more inclusive social practices, such as improving worker welfare, community involvement, and strengthening local networks. Machado et al. (2024) emphasized that the social dimension in TBL plays an important role in building the sustainability of MSMEs through human, process, and technology-based approaches. Thus, the social dimension not only increases business legitimacy, but also creates trust that strengthens the resilience of MSMEs in the long term.

In the environmental dimension, the discussion shows that the green transformation of MSMEs generally takes place gradually. MSMEs tend to start from relatively simple environmental practices, such as waste management, energy efficiency, and the use of more environmentally friendly raw materials, before moving on to more complex innovations. This

approach reflects the limited resources of MSMEs, while emphasizing that circular economy principles can be flexibly adapted according to business capacity (Papile et al., 2021; Garcia et al., 2020). These findings are in line with agroindustry studies that emphasize that the implementation of a circular economy on a small scale requires realistic and contextual stages.

The innovation aspect acts as a connecting element that strengthens the linkage between the three dimensions of TBL. Innovation in the green transformation of MSMEs is not only related to technology adoption, but also includes business model innovation, product design, and collaboration patterns in the supply chain. Studies by Dwivedi et al. (2023) and Suchek et al. (2023) show that the integration of digital technology and circular practices encourages MSMEs to become more adaptive and resilient. Thus, the green transformation of TBL-based MSMEs not only supports the achievement of a circular economy, but also strengthens competitiveness and business sustainability holistically.

## CONCLUSION

Based on the synthesis of literature that has been carried out, it can be concluded that the green transformation of MSMEs based on the Triple Bottom Line (TBL) is a strategic and relevant approach in supporting the transition to a circular economy. The literature shows that the integration of economic, social, and environmental dimensions allows MSMEs to adopt sustainability practices more systematically, not only oriented towards resource efficiency and reducing environmental impact, but also on strengthening social values and increasing business competitiveness. However, the implementation of green transformation for MSMEs still faces various challenges, especially limited internal capacity, access to financing, technology adoption, and suboptimal policy support. Therefore, synergy is needed between MSME actors, the government, financial institutions, and other stakeholders to create an ecosystem that supports the sustainable implementation of TBL. Conceptually, these findings enrich the understanding of the role of TBL as an integrative framework in the circular economy, while opening up space for further research to examine the empirical implementation, sectoral context, and influence of innovation and digital transformation on the success of green transformation of MSMEs.

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