



THE ROLE OF THE GREEN ECONOMY IN THE DEVELOPMENT OF SMALL BUSINESSES

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Abstract. *The transition to a green economy presents both opportunities and challenges for small businesses. As global environmental concerns intensify and sustainable practices become central to economic planning, small and medium-sized enterprises (SMEs) are increasingly seen as crucial actors in this shift. This study analyzes the impact of green economy principles—such as energy efficiency, renewable energy, waste reduction, and circular production—on the development, competitiveness, and resilience of SMEs. Through quantitative data analysis and case studies across different countries, the research demonstrates that embracing green practices not only improves environmental outcomes but also enhances innovation, access to finance, and market expansion for small businesses.*

Keywords: *green economy, small business, sustainable development, eco-friendly technologies, green entrepreneurship, business support, energy efficiency, environmental initiatives, innovation, green investments*



Аннотация. *Переход к «зелёной» экономике представляет собой как возможности, так и вызовы для малого бизнеса. По мере усиления глобальной экологической обеспокоенности и интеграции устойчивых практик в экономическое планирование, малые и средние предприятия (МСП) всё чаще рассматриваются как ключевые участники этого перехода. В данном исследовании анализируется влияние принципов зелёной экономики — таких как энергоэффективность, использование возобновляемых источников энергии, сокращение отходов и циклическое производство — на развитие, конкурентоспособность и устойчивость МСП. На основе количественного анализа данных и кейс-стади в различных странах показано, что внедрение зелёных практик не только улучшает экологические показатели, но и способствует инновациям, расширению доступа к финансированию и выходу малого бизнеса на новые рынки.*

Ключевые слова: *зелёная экономика, малый бизнес, устойчивое развитие, экологические технологии, экобизнес, поддержка предпринимательства, энергоэффективность, экологические инициативы, инновации, зелёные инвестиции*



Introduction

Small and medium-sized enterprises (SMEs) represent a vital component of global economic development, comprising over **90% of businesses worldwide** and contributing to **more than half of global employment** (World Bank, 2023). As the global economy faces intensifying challenges from climate change, resource depletion, and environmental degradation, the transition to a **green economy** has emerged as a strategic imperative.

A green economy, as defined by the United Nations Environment Programme (UNEP), is one that is **low-carbon, resource-efficient, and socially inclusive**. It emphasizes sustainable development while minimizing environmental risks and ecological scarcities. For SMEs, the integration of green economy principles offers significant opportunities—not only to reduce operational costs through efficiency improvements but also to access new markets, attract green financing, and build resilience to environmental regulations and supply chain disruptions.

However, SMEs often encounter barriers in adopting green practices, such as limited financial capacity, insufficient technical knowledge, and regulatory complexity. Despite these constraints, evidence suggests that SMEs are increasingly participating in sustainability transitions, particularly in sectors such as **renewable energy, sustainable agriculture, green construction, and circular manufacturing**.

Governments, international organizations, and financial institutions have responded by introducing a range of incentives, including **tax benefits, low-interest green loans, subsidies for clean technologies, and training programs**. The **European Green Deal, Green Climate Fund, and national-level green financing programs** are a few examples of frameworks that have explicitly targeted SMEs to promote sustainable practices.

This paper aims to investigate the **extent and impact of green economy integration among SMEs**. It seeks to answer the following research questions:

To what degree have SMEs adopted green economy practices across different regions?

What are the economic and social outcomes of green transitions for small businesses?

What policy and financial mechanisms most effectively support SME engagement in the green economy?

By combining statistical analysis with real-world case studies, this research provides insights into how green transitions contribute to the sustainable development and competitiveness of small businesses globally.

Methods

This research employed a mixed-methods approach combining: Quantitative Analysis

1 We analyzed statistical data from international databases and national sources for the period 2018–2023:

OECD Green Growth Indicators

World Bank Enterprise Surveys

International Labour Organization (ILO)

International Renewable Energy Agency (IRENA)





National SME development agencies (e.g., US SBA, European Commission SME Dashboard)

Key indicators examined included:

SME adoption of renewable energy and green technologies

Government subsidies and green loans to SMEs

Employment generation in green SMEs

SME contributions to carbon reduction targets

2 Qualitative Case Studies

We conducted in-depth case studies of SME green initiatives in:

Germany (solar manufacturing and circular packaging)

Uzbekistan (solar-powered agribusiness)

Kenya (off-grid renewable energy startups)

Vietnam (eco-friendly textile SMEs)

We interviewed 30 SME owners/managers and analyzed government policy documents, innovation reports, and green finance programs.

Results

1 SME Participation in the Green Economy

In 2023, approximately 34% of SMEs globally reported adopting at least one green practice (e.g., renewable energy use, waste minimization, or eco-labelling), up from 21% in 2019 (OECD, 2024).

The share is significantly higher in the EU, where 45% of SMEs implement green business models (Eurostat, 2023).

In developing economies, uptake remains lower (around 17–22%), though growing due to international support and local reforms.

2 Access to Green Finance

Global green finance allocated to SMEs reached USD 230 billion in 2023, representing a 38% increase from 2021 (World Bank Green Finance Report, 2024).

Instruments included green bonds, sustainability-linked loans, and carbon credit schemes.

In Central Asia, programs such as the EU4Environment and GEFF (Green Economy Financing Facility) provided over €500 million in green loans to SMEs by 2023.

3 Employment and Innovation Outcomes

SMEs adopting green strategies reported 19% higher employment growth over five years compared to non-green peers (ILO, 2023).

Green SMEs demonstrated 24% higher rates of product innovation, especially in sectors like clean tech, organic agriculture, and green construction.

In Germany, eco-friendly SMEs were 3.2 times more likely to export to new markets than conventional SMEs (Fraunhofer Institute, 2023).

4 Case Highlights

Uzbekistan: A solar-powered greenhouse startup increased yields by 40% while cutting energy costs by 60%. Supported by UNIDO and the Uzbek SME Agency.





Kenya: Off-grid solar SMEs provided access to electricity for 1.5 million rural households, employing over 7,000 workers.

Vietnam: Eco-textile SMEs gained EU market access by meeting strict environmental criteria through circular waste treatment systems.

Discussion

The findings of this study reveal a positive correlation between green economy engagement and SME growth, both in terms of profitability and sustainability. Green transition, once seen as a regulatory burden, is increasingly viewed as a strategic asset.

1 Economic Benefits

Lower operational costs through energy efficiency and reduced material inputs.

Enhanced market access, particularly in eco-conscious consumer segments and foreign trade.

Improved access to financing due to growing green financial instruments and government support.

2 Barriers to Adoption

Despite the benefits, challenges persist:

Lack of technical expertise: Many SMEs lack the knowledge to implement green technologies.

Financing gaps: While green finance is expanding, access remains difficult for microenterprises.

Policy fragmentation: Inconsistent green standards and incentive schemes across regions hinder scalability.

3 Policy Implications

Governments must simplify access to green funding for small businesses.

Capacity-building programs are essential to train SMEs in green practices.

Public procurement should prioritize green-certified SMEs to stimulate demand. Future Prospects


With climate targets becoming more stringent, and consumers demanding sustainable products, the role of green SMEs is set to grow. Technologies like AI for energy optimization, bio-based materials, and decentralized renewables will further reshape small business ecosystems.

Conclusion

This study demonstrates that the green economy plays a transformative role in the development of small businesses by fostering innovation, improving resource efficiency, and enhancing competitiveness. The findings confirm that SMEs that embrace green practices—such as renewable energy use, waste minimization, and sustainable production—benefit from both environmental and economic gains.

Key conclusions include: Increased adoption of green practices among SMEs globally, with a notable 13% rise between 2019 and 2023, particularly in regions with strong policy support and access to green financing.





Positive impacts on business growth: Green SMEs experience higher employment growth, greater innovation rates, and stronger export potential compared to their conventional counterparts.

Expansion of green finance: More than USD 230 billion was allocated to SMEs through green financing instruments in 2023 alone, enabling sustainable investments and scaling opportunities.

Despite these achievements, challenges remain—especially for SMEs in developing countries. Barriers such as limited access to finance, lack of technical capacity, and policy fragmentation continue to hinder broader adoption. Overcoming these obstacles will require coordinated efforts from governments, financial institutions, and development agencies.

Policy recommendations include:

Expanding access to affordable green finance for micro and small enterprises.

Strengthening training and advisory programs to enhance technical capacity.

Promoting inclusive policies that link green transitions with social and economic inclusion.

Encouraging public-private partnerships and local innovation ecosystems.

In conclusion, integrating SMEs into the green economy is not only essential for meeting global sustainability targets but also offers a resilient pathway for inclusive economic development. With the right support, small businesses can become engines of a low-carbon future—driving both environmental protection and socioeconomic progress.

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