

SUSTAINABILITY AND GREEN ACCOUNTING IN SME'S: A REVIEW OF CURRENT PRACTICES AND FUTURE DIRECTIONS

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Abstract—Small and Medium Enterprises (SMEs) are important drivers of global economic development, innovation, and job opportunities, but their combined environmental contribution is significant. Making sustainability integral to SMEs is thus imperative, with green accounting providing a platform for the inclusion of social and ecological considerations in business decisions. This review synthesizes the literature on sustainability and green accounting in SMEs, setting out their goals, reach, opportunities, and challenges. The evidence indicates that although SMEs recognize the strategic value of sustainability, the use of formal green accounting techniques is limited due to financial, technical, and institutional constraints. Meanwhile, opportunities exist in digital accounting software, supply chain integration, and policy incentives. The paper ends by proposing SME-specific frameworks and detailing future research needs to enhance SMEs' contributions to global sustainability transitions.

Keywords: Sustainability, Green Accounting, SME, Environmental Management, CSR.

Introduction

Sustainability has grown from a voluntary corporate social responsibility (CSR) program to a strategic imperative for companies of all sizes. Transnational issues like climate change, resource depletion, and social injustice have raised the need for businesses to embrace practices that match economic performance with environmental and social responsibility. While large corporations have increasingly incorporated sustainability into their practices using standardized tools like the Global Reporting Initiative (GRI) and ISO 14001, small and medium-sized enterprises (SMEs) often lag behind. This is troubling, as SMEs account for over 90% of enterprises globally and together contribute a significant environmental impact (OECD, 2022). Green accounting, or environmental or sustainability accounting, provides SMEs with a formalized strategy for integrating sustainability into financial and managerial infrastructure. With the inclusion of environmental costs, resource utilization, and social effects in decision-making, green accounting achieves efficiency, innovation, and stakeholder confidence. However, widespread adoption among SMEs is still limited by financial barriers, technical limitations, and the complexity of current models. Fulfilling these challenges is essential for enabling SMEs to effectively contribute to sustainable development and global environmental goals.

Objectives

- To ensure environmental accountability by monitoring emissions, waste, and resource use.
- To achieve cost reduction and efficiency through sustainable resource management.
- To comply with environmental and industry-specific regulatory standards.
- To build credibility and trust with customers, suppliers, and communities.
- To align sustainability with business growth and innovation for long-term competitiveness.

Scope

The scope of green accounting among SMEs is both environmental, social, and economic. Environmental is in relation to waste management, emissions tracking, and power efficiency measures. Social is employee welfare, occupational health, and community development, showing the role of SMEs in supporting their local ecosystems. Economically, it's looking at incorporating costs of the environment into budgeting and measuring returns on investment in sustainability projects. In contrast to big companies that apply standardized global reporting, SMEs generally apply it in localized and sector-specific manners, correlating with their operational capability and market context.

Statement of the Problem

Small and Medium Enterprises (SMEs) account for more than 90% of the world's businesses and play a crucial role in driving economic development and creating jobs. Although they are significant, their combined environmental impact is large and is responsible for depleting resources, emitting greenhouse gases, and generating waste. In contrast with major corporations, SMEs usually do not have the means, technical skills, and support structures to adopt sustainable practices consistently. Whereas green accounting provides a model to embed environmental and social factors into financial decision-making, its use among SMEs is not widespread. Existing research highlights isolated practices, limited SME frameworks, and difficulties in accounting for sustainability performance at the SME level. This gap creates an urgent need to realize how sustainability and green accounting can be successfully embedded within SMEs in order to balance profitability and environmental accountability.

Foundations of Sustainability and Green Accounting for SMEs

Understanding Sustainability Practices in SMEs

Sustainability in SMEs involves finding a balance between economic development, environmental sustainability, and social welfare. In contrast to large companies, which tend to embrace structured sustainability models and release comprehensive reports, SMEs tend to incorporate sustainability in an informal and localized way. These are normally actioned based on owner-manager values, customer demands, regulatory forces, or cost effectiveness. Typical endeavours are energy conservation, waste minimization, responsible procurement, and participation in community development. While such efforts might not be officially recorded, they play an important part in environmental and social responsibility. However, the lack of standardized reporting restricts comparability and visibility of SME sustainability performance at regional and international levels.

Frameworks Guiding Green Accounting in SMEs

Green accounting provides systematic methods for integrating environmental and social aspects into financial as well as managerial processes. There are various frameworks that apply: the Global Reporting Initiative (GRI), which offers detailed standards for reporting on sustainability but perhaps might be too elaborate for resource-constrained SMEs; ISO 14001 Environmental Management Systems, which enable environmental certification but require substantial investment; the Triple Bottom Line (TBL) model, which measures business success on people, planet, and profit dimensions; and Environmental Management Accounting (EMA), which focuses on internal decision-making and eco-efficiency gains. Although these frameworks are commonly used, they were originally created for big companies. For SMEs, simpler, flexible, and less costly versions must be in place to ensure viability without creating undue administrative loads.

Literature Review

Trends in Adoption among SMEs

SMEs have adopted sustainability and green accounting practices at a slower pace than large companies. SMEs tend to adopt sustainability informally, and practices are influenced by cost-reduction motivations and owner-manager values instead of formalized reporting, according to Tilley and Fuller (2000). Research conducted by Battisti and Perry (2011) and Cassells and Lewis (2019) reveals that SMEs in highly environmentally sensitive industries, including manufacturing and food processing, will adopt sustainable practices as a result of regulatory and market pressures. In developed economies, adoption is backed by more robust policy frameworks and consumer demand (OECD, 2022), while in developing countries, SMEs tend to focus on short-term survival rather than formalized sustainability programs (Amoah & Kosgei, 2021).

Barriers to Adoption

Various barriers prevent SMEs from embracing green accounting. Funding limitations are commonly cited as a key issue, with Jenkins (2009) and Burritt and Christ (2016) writing that SMEs generally do not have the financial means to pay for sustainability technologies or certifications. Information and expertise shortcomings further hinder take-up; as Bos-Brouwers (2010) asserts, the majority of SMEs have no formal training in sustainability and operate on an ad hoc approach. Guidelines like GRI and ISO 14001, though extensive, are generally regarded as too complicated for SMEs (Burritt & Schaltegger, 2010). Furthermore, as pointed out by Gherib, Aloui, and Ayadi (2018), the short-term focus of SMEs on survival and profitability usually takes precedence over long-term sustainability planning.

Enablers of Adoption

In spite of these issues, various enablers facilitate SME participation in green accounting. Government assistance through subsidies and tax breaks has been found to have a positive effect on adoption (Perrini et al., 2007). Supply chain pressures also come into play, with Revell and Blackburn (2007) noting that SMEs embedded in global value chains tend to adopt sustainability standards imposed by larger companies. Demand for green products by consumers is another driver (Lawrence, Collins, Pavlovich, & Arunachalam, 2006), which encourages SMEs to display green practices. Additionally, Burritt and Christ (2016) highlight the capability of digital accounting tools, such as cloud-based systems, to enhance the simplicity of reporting and decrease costs. Industry associations and business networks also serve as knowledge-sharing platforms that increase the capability of SMEs to embrace sustainability initiatives (Battisti & Perry, 2011).

Gaps in Existing Literature

As corporate sustainability literature has grown, studies on SMEs are still underdeveloped. The majority of the previous studies concentrate on large firms (Schaltegger & Burritt, 2017), with comparatively fewer studies dealing with SME context. Quantitative evidence associating sustainability practices with financial performance in SMEs is sparse (Cassells & Lewis, 2019), raising concerns regarding the material business payoffs of green accounting. Cross-country comparative studies are also non-existent, particularly in developing economies that are SME-dominated but also confront distinct resource and institutional issues (Amoah & Kosgei, 2021). Lastly, while Burritt and Christ (2016) provide coverage of increasing accounting roles from digitalization, few studies have investigated the transformative possibilities of AI, blockchain, and integrated sustainability platforms to SMEs. These gaps suggest the necessity for further empirical, cross-regional, and technology-oriented research appropriate to SME settings.

Opportunities in Green Accounting for SMEs

Green accounting offers SMEs a variety of opportunities that go beyond conformity to strategic benefits.

1. **Competitive Advantage** SMEs can stand out in the market based on environmentally friendly branding, which attracts increasingly green-aware consumers and business associates.
2. **Operational Efficiency** Green practices like waste minimization, energy efficiency, and optimization of resources have the immediate effect of reducing operating expenses while enhancing productivity.
3. **Access to Green Finance** Implementation of sustainability accounting can qualify SMEs for green lending, ESG-linked investments, and other financial products that favor environmentally conscious businesses.
4. **Digital Transformation** Growth of cloud-based and low-cost accounting software facilitates SMEs' automation of sustainability reporting, which is more economical and accessible even for resource-constrained companies.
5. **Value Chain Integration** SMEs that embrace sustainability standards tend to win contracts from multinational companies that increasingly expect suppliers to have sustainable practices.
6. **Institutional and Policy Support** Governments and institutions offer subsidies, training programs, and regulatory systems that provide conditions conducive for SMEs to adopt green accounting as well as sustainability practices.

Challenges of Green Accounting in SMEs

Despite its potential, SMEs encounter several significant challenges in implementing green accounting techniques.

1. **Costly Implementation:** Most SMEs have thin budgets, and the initial cost of implementing sustainability frameworks, purchasing new technology, or acquiring certifications proves prohibitive. This reduces the priority of green accounting in favor of more pressing operational requirements.

2. Limited Knowledge and Training: One of the main impediments is the limited awareness and technical knowledge among SME managers and employees. Absent competent training or access to low-cost consultancy, sustainability accounting practices are either given inadequate implementation or entirely left out.

3. Lack of SME-Specific Frameworks: The majority of the current sustainability frameworks, including GRI and ISO 14001, are written for large firms. Their complexity and administrative requirements make them unsuitable for SMEs; thus, there is a need for streamlined and customized models.

4. Weak Stakeholder and Investor Pressure: In contrast to large companies that are subjected to high pressure from investors, regulators, and global markets, SMEs tend to have lower external pressure to prove sustainability and consequently lower incentives to spend on green accounting.

5. Short-Term Business Orientation: SMEs are inclined to focus more on profitability and survival in the short term than on long-term planning. Such a short-term orientation may discourage investment in sustainability measures that yield benefits only in the medium to long term.

Discussion

The review of the literature shows that SMEs exhibit increasing enthusiasm for adopting sustainability measures; however, structural constraints persist. In contrast to large companies, SMEs operate with a shortage of resources, small managerial expertise, and less scrutiny by stakeholders, which all converge to limit the implementation of green accounting frameworks. These hindrances call for context-specific remedies instead of the direct application of standards intended for big companies.

Emerging opportunities like digital platforms, government support, and supply chain demands provide potential avenues to enhance SME uptake. Cloud accounting systems and AI platforms can mitigate the administrative and financial costs of sustainability reporting (Burritt & Christ, 2016). Government policies offering financial incentives, tax breaks, or capacity development programs can further reduce barrier levels and stimulate take-up (Perrini et al., 2007). In addition, as Revell and Blackburn (2007) point out, SMEs involved in global value chains are frequently subjected to mounting pressure from larger firms to provide evidence of compliance with sustainability, which provides indirect but compelling incentives for take-up.

To have maximum impact, sustainability frameworks should be streamlined, scalable, and aligned with SME capacities, acknowledging the heterogeneity of industries and regional settings where they are situated. Connecting green accounting to finance access—via green loans, ESG-linked credit, or sustainability-based investment—can yield robust incentives for SMEs to mainstream sustainability into core business models. Most importantly, future approaches need to see sustainability not just as an external compliance matter but as an internal source of efficiency, innovation, and competitiveness.

Future Research Directions

From the identified gaps in the literature, some future research directions for sustainability and green accounting in SMEs are apparent:

1. Development of SME-Specific Sustainability Frameworks

Most of the current frameworks, like GRI and ISO 14001, are intended for big corporations and are, therefore, complicated and resource-consuming for SMEs. It is recommended that future studies work on establishing simplified, scalable frameworks with implementable indicators that embrace environmental, social, and economic aspects without burdening SMEs with administrative tasks.

2. Financial Performance Impacts of Green Accounting

Although sustainability is usually linked with longer-term benefits, little empirical evidence is available on green accounting adoption and its direct impact on SME financial performance. Quantitative studies could rigorously establish how sustainability programs affect profitability, cost-saving, and longer-term competitiveness.

3. AI-Driven and Digital Sustainability Tools

Digital transformation provides greater opportunities for SMEs to incorporate sustainability with reduced costs. Subsequent research can be done to assess the possibilities of AI, blockchain, and cloud-based platforms in automating sustainability reporting, enhancing transparency, and supporting decision-making by SMEs with reduced resources.

4. Cross-Country Comparative Studies

Existing literature overwhelmingly focuses on SMEs in developed economies, with fewer research studies conducted in emerging and developing markets where SMEs are the prevalent form of business. Comparative studies may identify contextual differences, such as regulatory contexts, cultural sentiments, and availability of resources, to guide more representative policy and framework creation.

5. Green Financing Mechanisms for SMEs

Access to finance is one of the key sustainability adoption barriers for SMEs. The future should see research into how financial institutions can structure SME-centric green financing instruments—such as sustainability-linked loans, tax credits, or credit guarantees—such that they specifically reward sustainable behaviour and lower the cost of adoption.

Conclusion

Small and Medium Enterprises (SMEs) are a crucial source of economic development worldwide and are central to pursuing sustainable transitions. Green accounting provides a systematic approach for SMEs to integrate environmental and social considerations into their financial and managerial frameworks, aligning business performance with sustainability objectives. Widespread adoption is still being hindered by cost concerns, inexperience with technical capacities, the scarcity of SME-specific frameworks, and insufficient stakeholder pressure. Overcoming these is a call to action from policymakers, industry bodies, and financial institutions to offer facilitative conditions like fiscal incentives, capacity-building programs, and the creation of affordable digital tools with designs adapted to SME settings. SMEs' possibilities exist not just in saving costs and increasing efficiency but also in tapping green finance, building competitiveness, and accessing spots in sustainable global value chains. In order to have the greatest impact, future studies need to close the gap between theoretical frameworks and real-world applications, with specific focus on streamlined structures, technological innovation, and funding frameworks. Finally, incorporating sustainability via green accounting can enable SMEs to be a prime driver of both economic resilience and environmental stewardship and significantly contribute to international sustainability objectives.

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