

## Shifting Paradigms for Micro, Small, and Medium Enterprises in the Global Construction Market: The Crucial Roles of Technology and Sustainability

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**Abstract :** The global construction market is experiencing significant shifts, particularly for micro, small, and medium enterprises (MSMEs), driven by the dual imperatives of technological advancement and sustainability. MSMEs play a crucial role in the construction industry, often being the backbone of economic development and fostering entrepreneurial skills. However, their dominance has also led to industry fragmentation and challenges such as technological lag and declining profit margins, which threaten their global competitiveness. This paper explores the integration of technology and sustainability in reshaping the paradigms for MSMEs in the construction sector. The adoption of advanced technologies, such as building information modeling (BIM) and AI, are pivotal for promoting sustainable construction practices. These tools enable MSMEs to design and construct environmentally responsible buildings, thereby contributing to the industry's sustainability goals. The research highlights that achieving sustainability in construction involves significant efforts in conservation, recycling, and the development of new materials and technologies. This approach aligns with the broader goal of integrating economic, environmental, and social aims into firm objectives to create long-term value while ensuring the protection of natural resources for future generations. Critical factors for implementing sustainable oriented innovation (SOI) practices in MSMEs include top management support, government initiatives, and financial resources. These factors are essential for fostering an environment conducive to innovation and sustainability. Furthermore, the empowerment of MSMEs through improved governance, market-oriented programs, sustainable productivity growth, and access to financing is vital. In developing regions like Indonesia, these strategies are crucial for enabling MSMEs to thrive in the face of globalization. The tendency of large firms to grow larger with the help of technology and globalization has led to the emergence of a high-technology oligopoly, posing a significant challenge to traditional construction practices. This shift necessitates that MSMEs adapt by leveraging technology and embracing sustainable practices to remain competitive. The research underscores the importance of integrating technology and sustainability not only as a competitive strategy but also as a means to contribute to the global effort of environmental conservation and sustainable development. This paper concludes that the successful integration of technology and sustainability in MSMEs requires a multifaceted approach. It involves the adoption of advanced technological tools, strong support from top management, proactive government policies, and access to financial resources. By addressing these factors, MSMEs can overcome the challenges of industry fragmentation, technological lag, and declining profit margins. Ultimately, this integration will enable MSMEs to play a pivotal role in driving the construction industry towards a more sustainable and technologically advanced future. The findings and recommendations are based on a comprehensive case study utilizing semi-structured interviews, observations, questionnaires, and document reviews.

**Keywords :** MSMEs, construction, technology, sustainability, innovation

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