

International Conference on
**Economic Management, Development, and Growth: Integrating
Financial, Business, and Social Perspectives (ICEMDG-2025)**

Conference Proceeding

May 08, 2025 (Virtual)

**Transformative Applications of Generative AI in Socially Responsible Financial Models: A
Machine Learning Perspective**

Murali Malempati

Senior Software Engineer, Mastercard International INC, O'Fallon, USA

Generative AI is redefining socially responsible financial models by enhancing decision-making, risk assessment, and financial inclusion. This study explores the transformative applications of Generative AI in developing ethical, transparent, and sustainable financial systems from a machine learning perspective. Traditional financial models often struggle with biases, inefficiencies, and limited adaptability to dynamic economic conditions. By leveraging Generative AI, institutions can create predictive models for impact investing, fraud detection, credit risk evaluation, and financial forecasting, ensuring fairer and more inclusive financial practices. Additionally, AI-driven simulations enable scenario analysis for sustainable investments, helping organizations align with Environmental, Social and Governance (ESG) goals. However, challenges such as algorithmic bias, data privacy, and regulatory compliance remain critical considerations. This paper examines the potential and limitations of Generative AI in fostering ethical finance, emphasizing the need for responsible AI deployment to enhance transparency, efficiency, and accessibility in financial systems.