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cultural context may not generalize effectively to others without contextual refinement. A questionnaire-based dataset was collected from employees and preprocessed to ensure data integrity. Feature selection was performed using the Remora Optimization Algorithm (ROA), and ResNet-152, a deep convolutional neural network, was culturally adapted through fine-tuning with localized datasets. This approach ensured the model accounted for culturally specific visual and behavioral cues.

Chapter 15

Integrated Optimization Model in Sustainability (MOIS) An Integrative Approach for Business Management in Colombian SMEs

Franz Rodríguez Franky, Jesus Afanador, Jairo Rivera

In Colombia, small and medium-sized enterprises (SMEs) are the backbone of the national economy, representing 99.5% of the formal business fabric and generating approximately 79% of the country's employment (BBVA Research, 2023). However, SMEs face structural challenges, such as the scarcity of financial resources, the low adoption of sustainable technologies, and the limited capacity to implement efficient management models that balance sustainability with business competitiveness (Rizos et al., 2021; Lieder & Rashid, 2020). To address these problems, the Comprehensive Optimization Model in Sustainability (MOIS) is proposed, a methodological tool designed to strengthen the business processes of SMEs in Colombia based on a comprehensive approach that combines sustainability, logistics efficiency and internal control. This model is based on the articulation of three strategic axes: the Analytical Model of Sustainable Business Performance (MADES), the Logistics Evaluation and Analysis Model (MEAL) and the Comprehensive Diagnosis Model of the Internal Control System (DISCI).

Link de publicación:

<https://www.igi-global.com/book/building-applied-models-problem-solving/371424>