Sales Forecasting with Machine Learning: A Hybrid Approach for the Dynamic Fashion Sector

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Cite as:
Lourenco Carlos, Januario Leandro, Santos Vanessa (2024), Sales Forecasting with Machine Learning: A Hybrid Approach for the Dynamic Fashion Sector. *Proceedings of the European Marketing Academy*, 53rd, (119078)

Paper from the 53rd Annual EMAC Conference, Bucharest, Romania, May 28-31, 2024

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Abstract

Small and medium-sized enterprises (SMEs) confront the significant challenge of accurately forecasting sales to optimize inventory management and maintain brand value. This complexity is exacerbated in the dynamic fashion sector, due short product life cycles and rapidly changing consumer preferences. This study focuses on comparing and refining sales forecasting methods comparing traditional methods (Moving Averages), machine learning model (XGBoost) and Integrated Forecasting models. The analysis revealed that while Moving Averages are effective in managing percentage errors and showing strengths during stable sales conditions, XGBoost excels in reducing total and absolute quantity errors. The IF model synergistically combines these methods, frequently surpassing their individual performances. The results emphasize the potential benefits of integrating traditional and advanced techniques for more robust and accurate sales predictions.

Subject Areas: *Channels, Retailing*

Track: Retailing & Omni-Channel Management