Analytical Neural Network Forecasting Sales of the Garment and Textile Company and Business Intelligence

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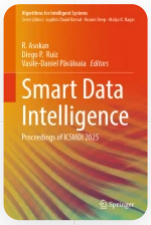

Smart Data Intelligence

(ICSMDI 2025)

Lina Gozali, Sherine Angellina Hoswari, Lamto Widodo, Ariawan Gunadi & Jap Tji Beng

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Abstract

The garment industry, characterised by dynamic market trends and seasonal fluctuations,

faces significant challenges in sales forecasting and inventory management. Traditional methods often fail to address the complexity and volatility inherent in the sector. This paper explores the application of Business Intelligence (BI) technology to improve sales prediction and inventory analysis in the garment industry. By implementing progressive data analytics, machine learning algorithms, and real-time data processing, BI systems can provide more accurate forecasts and optimise inventory levels. The study shows how integrating BI tools can improve decision-making, reduce out-of-stock and overstock situations, and improve operational efficiency. Case studies from various garment companies highlight the practical benefits and tangible improvements achieved by implementing BI. Companies can better understand consumer spending patterns and preferences by analysing consumer data. This condition allows them to create product offerings that better suit the market's demands while reducing reliance on intuition-based forecasting. In addition, BI integration with existing supply chain management systems helps companies respond to changes in demand more quickly and efficiently, reduce lead times, and improve customer satisfaction. The improved responsiveness and prediction accuracy resulting from BI also contribute to operational sustainability, as companies can minimise waste and excessive use of resources.

Data Analytics Lead Optimization Market Research and Competitive Intelligence

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Analytical Neural Network Forecasting Sales of the Garment and Textile Company and Business Intelligence

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Keywords: Business Intelligence, Sales, Demand, Forecasting, PowerBI