

The emerging trends of automation data management techniques importance to optimise management operations. A case study of UK fashion industry

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ABSTRACT

Aim: This research aims to explore the contemporary trends concerning the automation data management approaches, and their relevance for the enhancement of the management processes in the British fashion sector.

Design/Method: An extensive database of the UK fashion industry was used, which included general and specific characteristics of clothes, customers' feedback, and purchasing behaviour. Cleaning the data included methods such as dealing with missing data and transforming nominal variables into numerical ones. Since the data was large, K-means clustering was applied to partition the data into relevant clusters of data. In choosing the appropriate number of clusters, Exploratory Data Analysis (EDA) using the elbow method was adopted, while the silhouette score was also used in the assessment of clustering performance.

Finding/Results: A factor analysis exposed four better clusters where the features singled out from a sketch map of the coordinates are defined and discussed about the fashion industry. The study found customer preferences, seasonal ratio, and available products by clustering. The next steps of operational marketing strategies such as suggestions for targeted marketing approaches, inventory plans and customer management strategies were suggested based on the findings of clustering analysis. The work shows how advancements such as automation and machine learning can help improve the operations and decision-making processes within the fashion business.

Keywords: *Automation, Data Management, K-means Clustering, Fashion Industry, Machine Learning, Customer Preferences, Operational Efficiency, Strategic Decision-Making*