

**DETERMINATION OF FACTORS EFFECT ON EXCESS FABRIC
PRODUCTION IN A FABRIC MILL: DEVELOPMENT OF A
CONCEPTUAL MODEL FOR EXCESS FABRIC PRODUCTION
MANAGEMENT**

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Business Administration in Supply Chain Management

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ABSTRACT

Excess fabric production is a significant challenge in the fashion industry, leading to both environmental and financial issues. For fabric manufacturing companies, overproduction results in financial losses, opportunity losses and excess inventory. Therefore, the research objective is to do a case study in ABC Company, known for supplying fabric solutions to over 30 customers and 8 strategic business units, produces approximately 128,000 meters of various fabrics daily, including Jersey, Rib, Pique, Interlock, and Fleece. A major issue for ABC Company is that, while delivering 3.5 million meters of fabric per month, it produces an average of 6,000 meters of excess finished fabric monthly. This surplus cannot be delivered unless additional orders are placed by customers. If no further orders are received within three months, the company absorbs the cost of this surplus fabric, amounting to approximately \$216,000 USD annually. Therefore, this research aims to identify the factors contributing to fabric overproduction at ABC Company using stored secondary data from the ERP system for the financial year 23/24. The goal is to find solutions to mitigate these issues based on primary data obtained from questionnaire provided to industrial experts. Thereafter a conceptual framework was developed through mapping factors effect on the overproduction and the solutions given by field experts. The findings revealed that throughout the financial year, it showed fabric overproduction of more than 1% of the total production and further studies revealed that the significant increases in fabric overproduction during April and May, compared to other months within the financial year. Moreover, the analysis showed out of many factors four factors showed a significant impact ($p > 0.05$) on the fabric overproduction of the ABC company. These four factors are, demand forecasting error, late stock, wastage differences, and delivery under tolerance. Out of them the primary reason for overproduction, affecting both synthetic and cotton products, was demand forecast errors. However, other reasons varied by month; for example, in September 2023, the primary cause was late stock for both product types, while in May 2023, the issue was similarly due to late stock. This overproduction is influenced by the seasonal nature of the fashion industry, where products are tailored to meet fluctuating demand. Primary data solutions highlighted that over 65% of respondents agreed, and over 11% strongly agreed, on the positive impact of using various data sources for demand forecasting to minimize overproduction. Through the implementation of this conceptual framework and a developed dashboard, ABC Company aims to minimize overproduction and move towards a more sustainable approach.

Keywords: Overproduction, demand forecast, sustainability, and wastage.

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LIST OF ACRONYMS

OTIF On Time in Full

RFT Right First Time

ERP Enterprises Resources Planning

SAP System, Application and Products

OTD On Time Delivery

MCQ Minimum color quantity

MOQ Minimum order quantity

R&D Research and development

KPI Key performance indicators

SCM Supply Chain Management