

ABSTRACT

Yeay Apparel is a small business operating in the custom apparel industry, producing various types of garments such as daily service uniforms (PDH). In its production process, the company faces challenges related to raw material shortages, which lead to delays in fulfilling customer orders. This study aims to forecast demand and plan raw material needs using the Moving Average, Exponential Smoothing, and Material Requirement Planning (MRP) methods. Based on the analysis, the Exponential Smoothing method with a smoothing constant (α) of 0.9 was selected due to its lowest forecasting error. The forecasting results were then used to develop a Master Production Schedule and calculate raw material requirements through MRP. The planning indicated that raw material procurement should be scheduled periodically to avoid shortages, such as twice a year for fabric, once for thread and ink, and three times for emblems. This research is expected to provide a strategic solution for raw material inventory control to ensure more efficient and timely production.

Keywords: *Raw Material Inventory, Exponential Smoothing, Moving Average, MRP, PDH, Garment Industry*