

ABSTRAK

Industri percetakan memiliki peran penting dalam mendukung berbagai sektor, seperti pendidikan dan perdagangan, serta berkontribusi pada pertumbuhan ekonomi. Salah satu tantangan utama dalam industri ini adalah menjaga kualitas hasil cetak agar sesuai dengan standar dan harapan konsumen. Penelitian ini dilakukan di CV. Arti Bumi Intaran, sebuah perusahaan percetakan di Yogyakarta yang memproduksi berbagai jenis buku, dengan fokus pada buku mewarnai anak. Permasalahan yang ditemukan adalah tingginya tingkat cacat produk cetakan, seperti halaman kotor, halaman kosong, dan pemotongan miring, yang melebihi batas toleransi 2%, dengan angka kecacatan mencapai 4,4% pada bulan Agustus 2024. Penelitian ini bertujuan untuk mengidentifikasi jenis-jenis cacat dan faktor penyebabnya, serta memberikan usulan perbaikan melalui pendekatan *Failure Mode and Effect Analysis* (FMEA) dan *Theory of Inventive Problem Solving* (TRIZ). Metode pengumpulan data dilakukan melalui wawancara, observasi, dokumentasi, dan studi literatur. Hasil analisis menunjukkan bahwa faktor utama penyebab cacat berasal dari ketidaktepatan pengaturan mesin, kualitas bahan, serta kurang optimalnya sistem kontrol kualitas. Usulan perbaikan meliputi implementasi sensor otomatis untuk viskositas tinta dan suhu pengeringan, penggunaan lem cepat kering dan material tahan aus pada proses binding dan pemotongan, serta penyusunan SOP baru dan pelatihan karyawan. Penerapan solusi berbasis TRIZ terbukti dapat meningkatkan efisiensi dan konsistensi kualitas hasil cetakan, sekaligus memperkuat daya saing perusahaan dalam industri percetakan.

Kata kunci: industri percetakan, produk cacat, FMEA, TRIZ, kontrol kualitas, buku mewarnai anak

ABSTRACT

The printing industry plays a crucial role in supporting various sectors, such as education and commerce, while also contributing to economic growth. One of the main challenges in this industry is maintaining the print quality to meet established standards and customer expectations. This research was conducted at CV. Arti Bumi Intaran, a printing company based in Yogyakarta that produces various types of books, with a primary focus on children's coloring books. The main issue identified was the high defect rate in the printing process, such as dirty pages, blank pages, and misaligned cuts, exceeding the acceptable defect rate of 2%, with an actual rate reaching 4.4% in August 2024. The objective of this study is to identify types and causes of product defects and to propose improvement strategies using the Failure Mode and Effect Analysis (FMEA) and Theory of Inventive Problem Solving (TRIZ) methods. Data were collected through interviews, observations, documentation, and literature review. The analysis revealed that the primary causes of defects stem from improper machine settings, suboptimal material quality, and inadequate quality control systems. Proposed improvements include the implementation of automatic sensors for ink viscosity and drying temperature, the use of fast-drying adhesive and wear-resistant materials for binding and cutting processes, as well as the development of new standard operating procedures (SOPs) and staff training. The application of TRIZ-based solutions proved effective in improving production efficiency and print consistency, thereby strengthening the company's competitiveness in the printing industry.

Keywords: *printing industry, product defects, FMEA, TRIZ, quality control, children's coloring books*