

INTISARI

XYZ merupakan UMKM kerajinan kulit di Daerah Istimewa Yogyakarta dengan tas kulit sebagai produk utama. Proses produksinya masih menghadapi berbagai cacat yang menimbulkan inkonsistensi kualitas, pemrosesan ulang, pemborosan bahan baku, serta komplain konsumen. Penelitian ini bertujuan mengembangkan kerangka pengendalian kualitas sesuai karakteristik UMKM melalui identifikasi dan prioritisasi risiko kegagalan, analisis biaya kualitas, serta penyusunan rekomendasi perbaikan. Metode penelitian yang digunakan mengintegrasikan *Best-Worst Method* (BWM), *Failure Mode and Effects Analysis* (FMEA), dan *Grey Relational Analysis* (GRA) untuk prioritasi risiko, disertai *Activity-Based Costing* (ABC) model *Prevention-Appraisal-Failure* (PAF) untuk biaya kualitas. Hasil penelitian mengidentifikasi 35 risiko kegagalan pada 13 tahapan produksi. Pembobotan kriteria FMEA dengan BWM menghasilkan bobot tertinggi adalah Detection (0,448), diikuti Severity (0,360) dan Occurrence (0,192). Diperoleh 12 risiko kegagalan prioritas pada 9 tahapan, dengan risiko tertinggi berupa pola tidak sesuai dan bagian terkelupas atau tergores; *finishing* menjadi tahapan paling kritis. Pengujian kulit berjamur menunjukkan ketidaksesuaian pada kadar air, kadar abu, dan ketebalan. Total biaya kualitas pada Februari 2026 sebesar Rp9.055.520, didominasi biaya penilaian (77,97%), diikuti biaya kegagalan internal (11,67%), dan biaya pencegahan (10,36%), menunjukkan pengendalian kualitas masih bertumpu pada inspeksi dan koreksi. Seluruh rekomendasi perbaikan berkategori tinggi dan medium sehingga layak diimplementasikan sesuai kapasitas UMKM.

Kata kunci: pengendalian kualitas, BWM, FMEA, GRA, biaya kualitas, *Activity-Based Costing*, UMKM

ABSTRACT

XYZ is a leather-craft MSME in Yogyakarta, Indonesia, with leather bags as its primary product. Its production process continues to encounter various defects that result in inconsistent product quality, rework, raw material waste, and customer complaints. This study aims to develop a quality control framework tailored to the characteristics of MSMEs through the identification and prioritization of failure risks, quality cost analysis, and the formulation of improvement recommendations. The research method integrates the Best-Worst Method (BWM), Failure Mode and Effects Analysis (FMEA), and Grey Relational Analysis (GRA) for risk prioritization, together with Activity-Based Costing (ABC) based on the Prevention-Appraisal-Failure (PAF) model for quality cost analysis. The results identified 35 failure risks across 13 production stages. The weighting of the FMEA criteria using BWM showed that Detection had the highest weight (0.448), followed by Severity (0.360) and Occurrence (0.192). Twelve priority failure risks were identified across nine production stages, with nonconforming patterns and peeled or scratched components emerging as the highest-priority risks, while the finishing stage was identified as the most critical. Testing of mold-affected leather revealed nonconformities in moisture content, ash content, and thickness. The total quality cost incurred in February 2026 amounted to IDR 9,055,520, dominated by appraisal costs (77.97%), followed by internal failure costs (11.67%) and prevention costs (10.36%). This cost structure indicates that quality control remains largely dependent on inspection and corrective actions. All proposed improvement recommendations were classified as high or medium priority and were therefore considered feasible for implementation within the capacity of the MSME.

Keywords: *quality control, BWM, FMEA, GRA, cost of quality, Activity-Based Costing, MSME*