Designing Maintenance Scorecard Using DMAIC Approach (Case Study: Carrosserie Bus) = Perancangan Maintenance Scorecard melalui Pendekatan DMAIC (Studi Kasus: Carrosserie Bus)

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Abstrak

Skripsi ini menyelidiki optimalisasi operasi perawatan badan bus melalui integrasi kerangka Maintenance Scorecard dan pendekatan DMAIC (Define-Measure-Analyze-Improve-Control). Sebuah studi kasus dilakukan di bengkel perawatan Carrosserie Bus, produsen bus utama di Indonesia. Analisis data perawatan mengungkapkan masalah yang berhubungan dengan kualitas material, metode yang ketinggalan zaman, diagnosa yang tidak akurat, kurangnya protokol pencegahan, dan kendala ruang kerja. Strategi yang mencakup peningkatan rantai pasokan, adopsi alat canggih, pelatihan berkelanjutan, dan desain ulang infrastruktur diterapkan menargetkan setiap penyebab akar berikut metodologi DMAIC terstruktur. Pilot terfokus 3 bulan dalam unit perbaikan badan yang kurang optimal menyebabkan penyempurnaan sebelum implementasi selama 12 bulan di seluruh organisasi. Pengukuran kontrol termasuk prosedur operasi standar, audit berkelanjutan, dan pelacakan skor kartu memastikan keberlanjutan peningkatan kinerja dalam efektivitas, efisiensi dan keandalan. Penelitian ini memberikan kerangka kerja holistik langkah demi langkah yang menggabungkan penilaian kinerja dan perbaikan proses untuk mendorong keunggulan pemeliharaan di tengah tantangan yang kompleks. Rekomendasi praktis ditawarkan untuk membantu organisasi serupa meningkatkan ketersediaan aset. Arah penelitian ilmiah lebih lanjut disoroti termasuk pengembangan model prediktif dan perluasan aplikasi DMAIC ke fungsi terkait.

......This thesis investigates the optimization of bus body maintenance operations through integrating a Maintenance Scorecard framework and the DMAIC (Define-Measure-Analyze-Improve-Control) approach. A case study was conducted at the maintenance workshop of Carrosserie Bus, a major bus manufacturer in Indonesia. Maintenance data analysis revealed issues related to material quality, outdated methods, inaccurate diagnostics, lack of preventive protocols, and workspace constraints. Strategies encompassing supply chain enhancements, advanced tool adoption, continuous training, and infrastructure redesign were implemented targeting each root cause following a structured DMAIC methodology. A focused 3-month pilot within the underperforming body repair unit led to refinements before a 12-month organization-wide rollout. Control measures including standard operating procedures, ongoing auditing, and scorecard tracking ensure sustainability of performance gains in effectiveness, efficiency and reliability. The research delivers a holistic step-by-step framework blending performance assessment and process improvement to drive maintenance excellence amidst complex challenges. Practical recommendations are offered to help similar organizations boost asset availability. Further scholarly directions are highlighted including predictive model development and expansion of DMAIC application to adjacent functions.