

IMPROVEMENT OF MAINTENANCE MANAGEMENT SYSTEM FOR ENHANCING AVAILABILITY OF EQUIPMENT IN WORKSHOPS

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ABSTRACT

This study aimed at improvement of maintenance management system for enhancing availability of equipment in the Mzinga Corporation(MZC)workshops. It was important to conduct this research at MZC because the situation shows that reactive maintenance strategy that is exercised by MZC to their workshops is an ineffective and there is no adequate information concerning its equipment availability for improvement of maintenance management system.

The study specifically, focused on identification of the factors affecting MMS, develop mathematical model and propose improvement strategies to improve maintenance management system for enhancing availability in the workshops. The study adopted: qualitative approach for data collection and quantitative for developed mathematical model. Questionnaires were used to collect data from MZC. Data were identified through literature review and fish bone diagram. Data were analyzed using multiple regression analysis using SPSS software, version 20 and computer excel.

The case study identified thirty-two factors affecting MMS in MZC that were clustered into six groups which are; spare part, human resources, workload planing and scheduling, work accomplishment, workload identification and information technology. However, from the broad range of factors used, the best factors fitted to the mathematical model were; human resources workload identification, spare parts, and information technology. The developed mathematical model outputs were availability of facilities and low maintenance cost. About 67- 72% availability of facilities for corrective maintenance were proven to be existing in the three workshops which are tool, machine repair and carpentry respectively.

The research has eventually managed to establish the improved maintenance management system based on computerized program that will be able to provide a savings in cost by 58% over a reactive maintenance strategy, and increase availability of equipment by 18% over the reactive maintenance strategy. Also, the findings can

be used by other similar corporations. Also, further study is recommended on: Factors affecting maintenance management system for enhancing availability using larger sample size.

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