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SCHOOL OF ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING

**EVALUATION OF
MAINTENANCE PRACTICES IN KENYAN INDUSTRIES**

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Evaluation of maitenance practices in Ken



2015/31248

Research thesis submitted in partial fulfillment of the requirement of the degree of Masters of Science in Industrial Engineering and Management of Dedan Kimathi University of Technology.

DATE: MAY, 2015

DECLARATION
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This research is my original work and to the best of my knowledge it has not been presented for a degree in any other university.

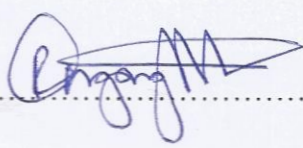
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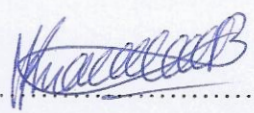
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The research thesis has been submitted to the mechanical engineering department, school of engineering, DeKUT, with the approval as the supervisors.

Prof Peter N. Muchiri

Sign  Date: 06/05/2015

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ABSTRACT

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Maintenance involves both the planned and unplanned actions that are carried out to retain a system in, or restore it to an acceptable operating condition. Thus, maintenance is defined as a set of activities required to keep the means of production in the desired operating conditions or to restore them to this condition. Maintenance practices is defined as “the systematic activities geared towards the actual execution and improvement of maintenance”. It has always been assumed that developing countries practice poor maintenance practices. Thus, it is important to evaluate the maintenance practices in Kenya in order to establish the actual status. This research is aimed at developing an assessment framework for the evaluation of maintenance practices. Further, the framework is applied in assessing the maintenance practices in Kenyan industries.

The research was carried out through a survey, using a questionnaire developed to establish the maintenance practices in a number of Kenyan companies. In this survey, the companies were clustered into different categories, namely, service, power generation, food manufacturing and processing, agro/chemical, metal processing, motor vehicle assemblers, transport, maintenance and construction industries. The responses from the survey were analysed. The analysis involved the three aspects of maintenance practices, namely, technical, managerial and human aspects. For each of these aspects, an evaluation index was developed and calculated. Subsequently, the general evaluation index was determined. The general evaluation index showed that Kenyan companies are at the managed level of maintenance practices. This means that maintenance processes are partially planned and highly dependent on the operator experience and competence. At this level, the processes are partially planned and performance depends on the operators' experience and competence. It is recommended that the companies aim at improving the index to the highest level, the optimizing stage. The research has contributed to knowledge by developing an assessment criteria and establishing the maintenance status in the Kenyan industries.