UNIVERSITI PUTRA MALAYSIA

CRITICAL SUCCESS FACTORS OF TOTAL PRODUCTIVE MAINTENANCE IMPLEMENTATION IN MALAYSIAN AUTOMOTIVE SMEs

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By

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Thesis submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfilment of the Requirements for the Degree of Master of Science

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DEDICATION

To my beloved family for their kindness and constantly standing by my side in ensuring success.
Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Master of Science

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Faculty : Engineering

Total Productive Maintenance (TPM) has been recognized widely and accepted by many organizations as a management philosophy. Currently, the implementation level of TPM mainly concentrated within the large industries with few Small and Medium Enterprises (SMEs) adopting the TPM. Thus, this research aims to determine the level of TPM implementation in automotive SMEs. This research examines the Critical Success Factors (CSFs) level of importance and practices, and the barriers associated in implementing TPM. Eventually, the identified CSFs are to assist the SMEs in implementing TPM to further enhance their production equipment maintenance activities. A survey methodology was employed in this study adopting various stages involving review of literature, design and development of survey questionnaire, data collection, data analysis and discussions. The study showed 87% of responses have implemented TPM more than 3 years and also they are having good knowledge of TPM philosophy, aims and goals. However, success
implementation was found not very encouraging. With only 10.64% strongly agree that they have implemented TPM successfully. Analysis of the TPM CSFs revealed that all factors of CSFs, *Training and Education, Top Management Commitment, Performance Management System, Resource Management, Continuous Improvement System, and Work Culture and Involvement* are important in ensuring successful implementation. Majority of the respondents also agree that these factors are the key success factors for successful TPM implementation. However, the *Training and Education and Top Management Commitment* are the two highest factors that are not widely being practiced within automotive SMEs. Responses from the respondents revealed that among the highest barriers in the TPM implementation was *Lack of long term vision and strategic planning*, followed by *Lack of management support* and *Lack of understanding*. These barriers are the constraints needed to be addressed through the CSFs if the success of TPM is required. Finally, the analysis of the significant relationship between TPM CSFs and *TPM Outcomes* shows the TPM CSFs significantly influenced the *TPM Outcomes*. It can be seen that there are variations of 93.7%, 55.4% and 39.6% towards the three measured variables of *Overall Equipment Effectiveness, Autonomous Maintenance* and *Planned Maintenance* respectively. These results show that if the TPM CSFs which were considered important are able to be translated into practice; most probably the success of TPM will be observed.
Abstrak tesis ini dipersembahkan kepada Senat Universiti Putra Malaysia bagi memenuhi keperluan untuk memperolehi ijazah Master Sains

FAKTOR-FAKTOR KRITIKAL KEJAYAAN DALAM PELAKSANAAN “TOTAL PRODUCTIVE MAINTENANCE” DI PERUSAHAAN KECIL SEDERHANA OTOMOTIF MALAYSIA

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“Total Productive Maintenance” (TPM) telah diakui secara meluas dan diterima oleh banyak organisasi sebagai satu falsafah pengurusan. Pada masa ini tahap pelaksanaan TPM lebih tertumpu dalam industri besar dengan hanya segelintir Perusahaan Kecil Sederhana (PKS) mengadaptasi TPM. Oleh itu, penyelidikan ini bertujuan untuk menentukan tahap pelaksanaan TPM dalam PKS otomotif. Penyelidikan ini juga akan mengenalpasti tahap kepentingan dan amalan faktor-faktor kritikal kejayaan, dan rintangan dalam melaksanakan TPM. Faktor-faktor yang dikenal pasti adalah untuk membantu PKS dalam melaksanakan TPM bagi mempertingkatkan lagi kegiatan penyelenggaraan peralatan pengeluaran mereka.

Metodologi kaji selidik telah digunapakai dalam kajian ini yang melibatkan berbagai peringkat peringkat merangkumi kajian ilmiah, rekabentuk dan pembangunan soalan kajiselidik, pengumpulan data, analisis data dan perbincangan. Hasil kajian menunjukkan 87% dari maklumbals telah melaksanakan TPM lebih dari 3 tahun dan juga mempunyai pengetahuan yang baik tentang falsafah, matlamat
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Finally, to my beloved family for their love, patience, and encouragement and continuous support which have made it possible for me to complete this programme.
I certify that a Thesis Examination Committee has met on 23 November 2010 to conduct the final examination of Badli Shah bin Mohd Yusoff on his thesis entitled “Critical Success Factors of Total Productive Maintenance Implementation in Malaysian Automotive SMEs” in accordance with the Universities and University College Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the candidate be awarded the Master of Science.

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DECLARATION

I declare that the thesis is my original work except for the quotations and citations which have been duly acknowledge. I also declare that it has not been previously, and is not concurrently, submitted for any other degree at Universiti Putra Malaysia or at any other institution.

BADLI SHAH B. MOHD YUSOFF

Date: 23 November 2010
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