FACTORS AFFECTING QUALITY IN A MANUFACTURING ORGANIZATION FOR A NON-REPAIRABLE PRODUCT

THESIS

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ABSTRACT

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The study was conducted in J.F. Rubber Philippines Incorporated located at Block 2, Lot 6, People's Technology Complex Special Economic Zone, Carmona, Cavite from August 2016 to March 2017. The study aimed to identify the factors affecting quality in a manufacturing organization for a non-repairable product. Specifically, it aimed to: 1. determine the significances of product quality for a non-repairable product; 2. determine the relationship of both soft factors and hard factors to each product quality measurement for a non-repairable product; 3. determine the relationship of soft factors to hard factors; 4. investigate the direct and indirect effects of the both soft factors and hard factors to each product quality measurement through its effect on the two factors; 5. determine the rank of both soft factors and hard factors in order of importance or effect they have on quality within a manufacturing organization for a non-repairable product; and 6. determine the recommendations for maintaining best quality through analyzing the different factors affecting quality for a non-repairable product.

A total of one hundred twenty one (121) participants were selected which included the management and the employees of JF Rubber Philippines Incorporated. The researchers used some quality control tools to know the significance of sustaining product quality in JF Rubber Philippines Incorporated producing a non-repairable product. The statistical treatment used in this study were the factor analysis, correlation analysis and regression analysis.

The study revealed that through the use of some quality control tools help to determine importance of quality in every manufacturing industry, especially in an industry which produces a non-repairable product. Among all part numbers or products that JF rubber Philippines Incorporated produces, the researchers only selected top ten part numbers with the highest rejection cost which are compression machine, vacuum machine, curing, part measurement and functional test, respectively, with a total rejection cost of Php 332, 681.24 pesos during the operation in December 1 to 28, 2016.

Check sheet helped to see the amount of money lost due to product defects.

Pareto chart helped to visualize the reject cost of every part number in JF Rubber Phil. Inc.

In addition, fishbone diagram analysis supports to determine the main causes and subcauses of the problem which lead to the development of countermeasures.

The result of the study showed that in soft factors such as leadership, customer leadership, customer focus, education and training, strategic planning and teamwork and cooperation are highly significant to all product quality measurements. Five hard factors elements such as technology utilization, cost savings, inspection and testing and continual improvement had highly significant effect to all product quality measurements.

For the relationship of the hard factors to soft factors, three hard factors such as technology utilization, inspection and testing and continual improvement were highly significant to all six soft factors. In addition, the only soft factor that had a highly significant direct impact on all product quality measurement through effect on hard factor was customer focus. On the other hand, the hard factor that was found to have highly

significant direct impact on all product quality measurement through effect on soft factor were inspection and test equipment factor.

The regression result showed the ranking of all factors and it revealed that the most important factor which affects product quality as a whole was customer focus (soft factor), followed by inspection and testing (hard factor) and continual improvement (hard factor) which had a directly proportional relationship to product quality. Product and process innovation (hard factor), on the other hand, had an inversely proportional relationship to product quality. All other factors were considered not significant but all were essential factors which must be improved to achieve the best product quality.

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INTRODUCTION

In this competitive world, all companies try to be the best in their work and want their products to be of great quality. Product quality is rapidly becoming an important competitive issue. It has received much attention over the past few decades as globalization has increased resulting in an extremely competitive market environment and increased customer expectation (Garvin, 2000).

Quality certification and compliance to these certifications has become a part of daily life in most manufacturing organizations around the world in an attempt to ensure consistent product quality to maintain their competitiveness (Lombard, 2004). Managing quality is crucial for small businesses. Quality products help to maintain customer satisfaction, loyalty and reduce the risk and cost of replacing faulty goods. Companies can build a reputation for quality by gaining accreditation with a recognized quality standard, such as ISO 9001, published by the International Organization for Standardization (ISO 9001, 2000).