



**UNIVERSITI TEKNIKAL MALAYSIA MELAKA**

**PRODUCT QUALITY IMPROVEMENT FOR SME COMPANY**

This report is submitted in accordance with the requirement of the Universiti Teknikal Malaysia Melaka (UTeM) for the Bachelor of Manufacturing Engineering Technology (Process and Technology) with Honours.

by

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**BORANG PENGESAHAN STATUS LAPORAN PROJEK SARJANA MUDA**

Tajuk: PRODUCT QUALITY IMPROVEMENT FOR SME COMPANY  
Sesi Pengajian: 2018

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**Faculty of Mechanical and Manufacturing Engineering Technology**

**PRODUCT QUALITY IMPROVEMENT FOR SME COMPANY**

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**Bachelor of Manufacturing Engineering Technology (Process and Technology)**

**2018**

**PRODUCT QUALITY IMPROVEMENT FOR SME COMPANY**

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**A thesis is submitted**

**In fulfilment requirement of Bachelor of Manufacturing Engineering Technology**

**(Process and Technology) with Honours.**

**Faculty of Mechanical and Manufacturing Engineering Technology**

**2018**

## **DECLARATION**

I hereby, declared this report entitled **PRODUCT QUALITY IMPROVEMENT FOR SME COMPANY** is the results of my own research except as cited in references.

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## APPROVAL

This report is submitted to the Faculty Of Mechanical and Manufacturing Engineering Technology of Universiti Teknikal Malaysia Melaka (UTeM) as a partial fulfilment of the requirements for the degree of Bachelor of Manufacturing Engineering Technology (Process and Technology) with Honours. The member of the supervisory is as follow:

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## ABSTRAK

*Pada masa kini, banyak syarikat industri kecil dan sederhana (IKS) ditubuhkan di negara kita. Selain itu, syarikat IKS juga menggunakan mesin untuk menghasilkan produk mereka seperti produk makanan. Kajian ini juga ingin melakukan penambahbaikan mengenai mesin untuk memberikan kualiti produk yang lebih baik dan matlamat projek kami adalah untuk mengurangkan kecacatan terhadap kualiti produk. Dalam kajian ini, dapat mempelajari dan memahami tentang aliran mesin pada proses produksi. Ia juga untuk menentukan cara menggunakan tujuh alat kawalan kualiti dan teknik statistik asas seperti Carta Pareto, Histogram, Gambarajah Scatter, Gambarajah Fishbone, Kunci Kira, Carta Kawalan, dan Carta Aliran. Berdasarkan ketujuh cara yang dipilih adalah Carta Aliran, Carta Pareto, Carta Kawalan, dan Gambarajah Fishbone adalah carta yang terbaik untuk digunakan untuk melakukan penambahbaikan terhadap kecacatan. Selain itu, selepas belajar tentang alat dan teknik dan ia juga dapat memahami teknik untuk menggunakan carta supaya dapat mengurangkan kecacatan pengeluaran*

## **ABSTRACT**

Nowadays, many small and medium sized enterprises (SME) Company are established in our country. Besides that, SME Company also use a machine to produce their product such as a food product. This study also an implementation of an improvement about a machine to produce a better quality of product and the aim for our project is to reduce a product defect. In this study we will learn and understand about a machine flow at the production process. It also to determine a way to use a seven quality control tools and technique such as Pare-to charts, Histogram, Scatter diagram, Fish-bone diagram, Check sheet, Control chart, and Flowchart. From all the seven quality control, Flowchart, Control Chart, Pare-to Chart and Fish-bone Diagram are the best technique to do an improvement for quality defect that were study. The conclusion of this study is to ensure that we can understand and implement it at our process.



## **DEDICATION**

This report is dedicated to Mr. Salleh Bin Aboo Hassan for without his early inspiration, coaching and enthusiasm, none of this would have happened. This dedication is especially dedicated to my parents. To my parents, Said Bin Yusoff and Rohani Bt Maktab for his ongoing love and support, he also taught me to trust in Allah and believe in hard work. I also dedicate this report to my family who always support me with their unconditional love that motivates me to set a higher target in completing this final year project. This dedication is also dedicated to my beloved friends Nur Syazana Ab Maulod that have provided me with a strong love shield and always surround me and never lets any sadness enter inside.

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## **LIST OF ABBREVIATIONS**

<b>SPC</b>	Statistical Process Control
<b>SMED</b>	Single Minute Exchange of Dies
<b>TPM</b>	Total Productive Maintenance
<b>UCL</b>	Upper Control Limit
<b>LCL</b>	Lower Control Limit
<b>FYP</b>	Final Year Project
<b>SME</b>	Small and Medium Sized Enterprise
<b>IKS</b>	“Industri Kecil dan Sederhana”

## CHAPTER 1

### INTRODUCTION

In this chapter, it explains about explanation of the study and the main purpose of this study. This chapter has also stated about the problem statement of the study, objectives that is expected to be achieved and the scope of the study that is going to be conducted..

#### 1.1 Project Background

Nowadays, at companies have a problem competition that becomes tougher and severe especially within at the SME Company all industries are continuously attempt to determine the new goals in order to boost the efficiency of management and organization. From our competitive surroundings, industries must have to verify the foremost effective solution to fulfil their customer's desires and satisfaction, the solution is for our topic are statistical process control (SPC) that would be a tool supported method to observe and solve the quality problem. The foundation for SPC was set by Dr. walter Shewhart while operating for bell telephone laboratories. He was conducting analysis on ways to enhance quality and lower costs. SPC is an effective tool to improve the production processes and reduce the defect and it's been used in industry for many years.

The SPC is not only for monitoring a process however this problem solving technique can help to get and test the theories on cause of problem. These cause of problem usually occur by the variation in manufacturing process. Other than, SPC can also help manufacturing organization to predict future performance with reference

collected data by analyzing the control charts is used to assess performance against a target and recommend the appropriate methods to enhance the process by bringing the performance closer to the target.

In order to survive during this competitive market, improving the quality and productivity of a product or process should be for any company. It's encouraged the company to build up their quality improvement program not solely targeted on external customer however also its internal customer. Internal customer could be a division, individual or unit employee who purchases or is that the receiver of products, materials, services or data from different units within the same company according to (Clarisse, 2011).

The company are able to do effective implementation of SPC if there have a good understanding of such strategy or method that will create the product meet their quality specification. Hence, manufacturing organization will protectively create corrections before method variation negatively impacts quality and customer perceptions by identifying process variation and potential non-conformance with design expectations early among the production. The aim of this study is to develop the statistical tools for analysing the product quality. These statistical tools relies on seven basic quality tools and technique. The seven basic quality tools and technique is that the key implement of SPC in production line that the most effective way to apply for decrease number of defectives. During this study, the statistical tools are develop and the data are collected from selected industries. Then, the analysis will be held for the identify problem occur that are related with quality issue of product.

## **1.2 Problem Statement**

Nowadays, at SME Company we can see many of company are established and they are produce a product of foods. So we can see that common problem is a defect of a product. Usually a manufacturing defect could be a waste and will affect quantity of the final product. In addition, we can see for ourselves about preparation of company for “Mee Kuning Juwita”. The company are SME Company that were produce a yellow noodles. Besides that, the Company that we visit on March. The foremost common causes of manufacturing defects are poor quality mixture of raw materials and carelessness in mixing the product together. In manufacturing defect is one which may be created less dangerous, or gotten eliminate altogether, if the product were created with better-quality materials or was made by an additional careful and skilled worker. A design defect makes the product dangerous no matter but well it's created or but carefully it is place together.

## **1.3 Project Objective**

The objectives of this study are followed:

1. To study a process flow at production line.
2. To determine current waste for reject percentage for production line.
3. To propose improvement opportunities to improve productivity.

## **1.4 Scope of Project**

The project scope has been carried out to achieve the project's objective. The objectives of our study is to perform analysis using quality tools and purpose opportunities to improve defect of mixture machine of yellow noodles for SME

company. From our idea the data will be analyzed by using seven quality control tools and technique analysis in addition we also study the production line in the SME Company and analyzed rejected percentage for every 25kg of flour in mixture machine. Other than, we try to eliminate the type of waste to improve product quality of SME Company and eliminate the production waste. So from this project I hope it can easier a company to produce a yellow noodles.