

7	Task Analysis	Annett. J (2000)	Task Analysis Concept	This paper proposes a problem-solving that need in-depth analyst to task before
8	Improvement OTIF (On Time In Full) to Increase Product Support Level in Ketapang Support Point at UT Pontianak Branch.	Didik Kasiyanto, 2024	Inventory Management	The optimized product support with inventory tools that are namely simple moving average, accuracy forecasting, speed up delivery time, fulfill purchase requests as quantity and delivery time, and that all will be called OTIF.

Table 2.2 Comparison with previous studies

Some of the discussions regarding on-time in full are obtained from adaptations of several books and internal work applications from United Tractors which the author cannot convey here in detail, some of these things are because they are not for publication or are about specific internal strategies, what is conveyed here is general information. which can be done by other companies or organizations; however, this is reflected in the summary of the study that has been carried out.

CHAPTER 3 – RESEARCH METHODS

3.1 Scope of Study

This research focuses on the operational parts department, uses DMAIC methods, and studies only the scope of maximizing Ketapang point office support UT Pontianak by increasing the service level to customers through the OTIF method. Which is responsible for the operational function of managing the sales business, supply chain and spare parts inventory so that it is effective and efficient and is responsible for maintaining the service level of spare parts in accordance with customer expectations.

3.2 Time Frame Research

This research will last for four (4) months or 16 weeks from September to December 2023.

Table 3.1 Time Frame of Study and Research.

Week Action Frame	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16
DEFINE																
•Problem Identification																
•Define Objective																
•Literature Review																
•Define Research Methodology																
MEASURE																
•Data Collection																
•Data Validation																
ANALYSIS																
•Root Cause Analysis																
•Focus Group Discussion																
•Solution Determination																
IMPROVE																
•Improvement Design																
•Verification																
•Standardization																
CONTROL																
•Self Audit Program																

3.3 Research Flow Process

This research has flow process as described at Figure 3.1 Research Flow Process, that explain the detail processes, start from background in introduction, problem statement, research objective, literature review, research method, result, conclusion, and recommendation.

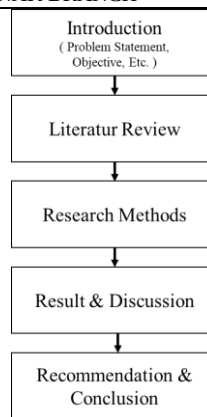


Figure 3.1 Research Flow Process

3.4 Research Framework

According to (Monika Smętkowska, 2018) This research uses the DMAIC model which is a very structured framework and is part of continuous improvement to produce an optimal and best performance. This framework starts by identifying problems and opportunities for improvement that we will work on based on all data and information from stakeholders and their expectations, The next stage is identifying variables to be measured and targets to be set in key performance indicators. The next stage is to analyses by using financial research that will calculate in detail from all the data prepared. Followed by the improvement process that will be carried out in the form of building support infrastructure in both offices and warehouses. The final stage reviews all parameters that have been set in the key performance indicator and evaluates the improvements that have been carried out. Six Sigma DMAIC is the implementation of scientific methods that can be used to deliver our best value to customers. The framework used in this research uses the DMAIC method which is shown in Figure 3.2.

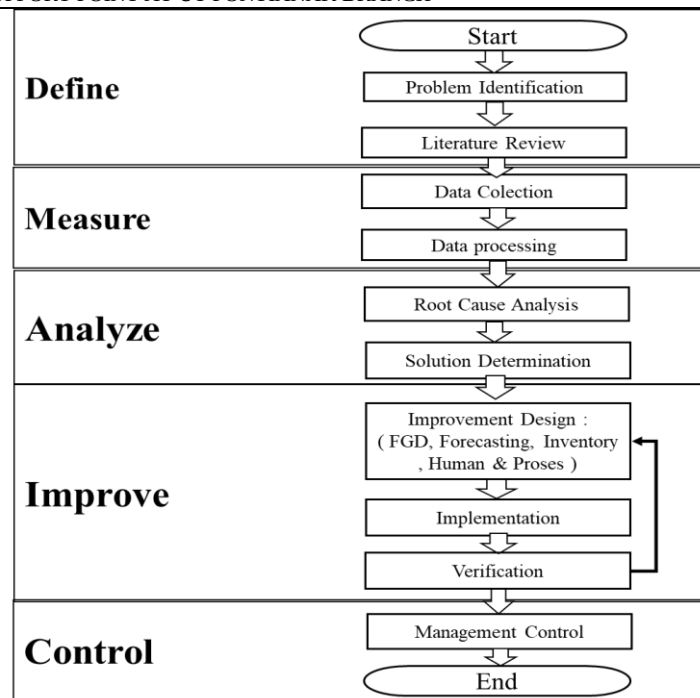


Figure 3.2 Research Methods

Or it can be show for general uses process by describing each flow according to its function below:

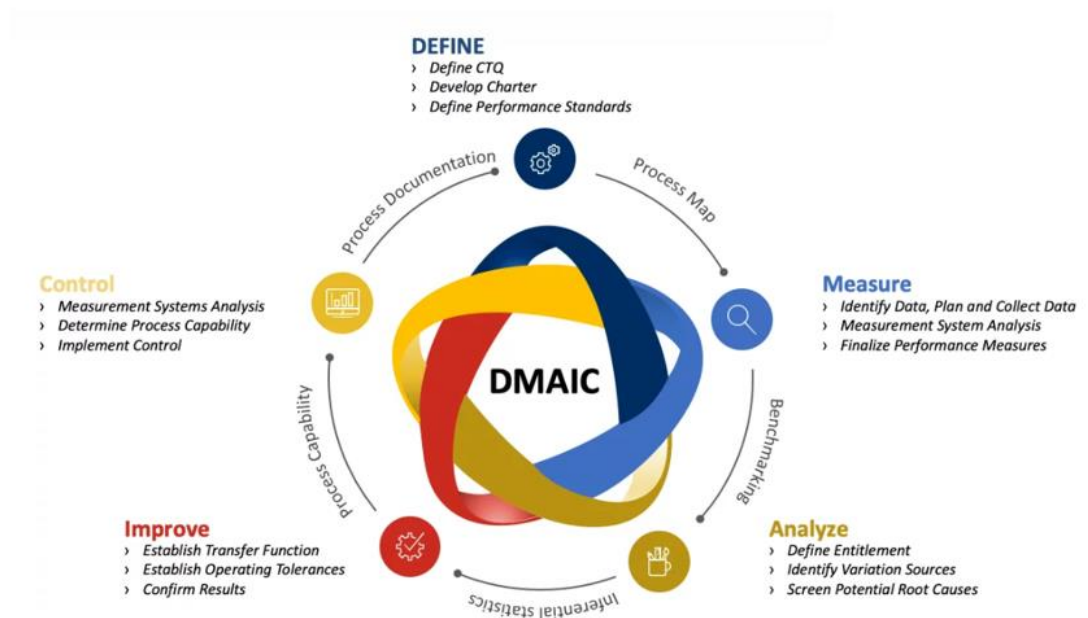


Figure 3.3 DMAIC Process

3.4.1 Define

The initial stage in this thesis is the identification stage. The purpose of this step is to establish the main subject of the thesis. Clearly understanding the subject is essential, as it will impact the analytical approach, proposed solutions, expected results, and implementation plans. In this section, it is necessary to expressly formulate the main objectives and problems that will be addressed through the thesis, so that the focus of the thesis is maintained properly. These objectives will guide the steps in the thesis to solve the problem and will also influence the resolution strategy, type of data collection and analysis, process of improvement, and oversight mechanisms. The detailed explanation of this identification section is divided into two parts which can be described as follows.

3.4.1.1 Problem Identification

The initial step in the research process involves an introduction to the problems that arise, including an understanding of the consequences and potential risks that may arise. In the context of this study, the focus of identification is on the disparity between estimated sales and supply availability.

3.4.1.2 Literature Review

After identifying the research problem, the next step is to conduct a comprehensive literature review. The aim is to expand the understanding and knowledge of researchers in overcoming the problems that have been identified. This literature review is also a reference in determining methods and cognitive approaches that are more in-depth to overcome existing problems. The literature review process involves observing manuals, thesis reports, journals, and various other literature sources available on various internet platforms.

3.4.2 Measure

The next step in this thesis is the problem measurement stage. The purpose of this step is to collect all relevant data related to the problems identified, which will later be processed for more in-depth analysis. The method used is an approach to solving problems that details the problem situation based on facts and existing data. Data collection was carried out through interviews, filling out questionnaires, field

surveys, recording numerical and graphic data, and taking personal notes. The detailed explanation of this measurement section is divided into two parts, as follows.

3.4.2.1 Data Collections

In this segment, various essential data for further analysis will be collected through several methods. The data collection process aims to obtain relevant information to support further thesis analysis. The data collected is actual data relating to the problems that have been identified, so that appropriate solutions can be applied in the context of this research.

3.4.2.2 Data Processing

After all the data has been collected, the next step is data processing. The collected data will be arranged in a structured manner to facilitate further analysis. In the data processing stage, the data will be broken down into two types, namely quantitative data and qualitative data. Quantitative data includes historical information and current conditions related to products or projects, such as information on time, cost, product volume, and results achieved. Meanwhile, qualitative data was obtained through interviews with employees or parties involved in the situation under study.

3.4.3 Analyze

In this third segment, structured data will be studied in depth to support the formulation of solutions to the problems encountered. The purpose of this analysis is to identify the root cause of the problem, so that the results of this analysis will have an impact on the development of solutions that aim to overcome delays in the project. A detailed explanation of this analysis section is divided into two sub-sections, as follows.

3.4.3.1 Root Cause Analysis

In this segment, structured data will be analyzed using the fishbone diagram. The purpose of this analysis is to identify the root causes of the problems encountered, so that the results of the analysis will play a role in formulating solutions to prevent possible failures in the future.