

CHAPTER IV

RESEARCH METHODS

4.1 Research Locations

The research is conducted at the PDAM Giri Tirta Gresik Unit Driyorejo. The area of Driyorejo subdistrict is 5,129.72 Ha with the following boundaries North is Kedamean sub-district, west Side adjacent to Legundi sub-district, in the south bordered by Sidoarjo Regency, and east of Surabaya bordering the city. Driyorejo Sub-district is divided into 16 villages, 108 Rukun Citizen (RW), and 456 Rukun neighbors (RT). The villages are Bambe, Banjaran, cups, Driyorejo, Gadung, Karangandong, Kesamben Wetan, Krikilan Mojosarirejo, Mulung, Petiken, Randegansari, Sumput, climb, Tenaru, and Wedaraanom. The map of the research location is as follows:

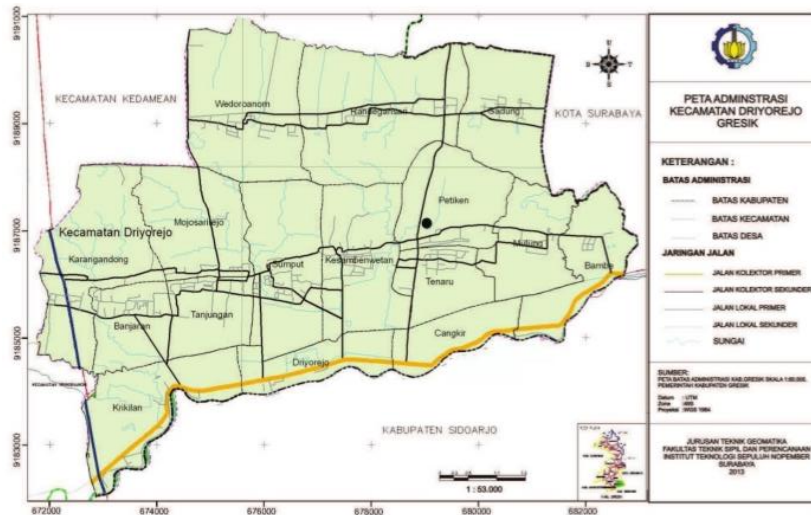


Figure 4.1 Map of Driyorejo District

Source: www.Google.com, 2020

4.2 Research Methodology

4.2.1 Types of Research

This research is a case study of a water requirement that occurs in PDAM GiriTirtaDriyorejo Gresik. While this method of research is a quantitative descriptive method and is broadly divided into 3 phases of

implementation as follows, (1) data collection, (2) data analysis, (3) conclusions and suggestions.

4.2.2 Data Collection

Data collection is done through the study of literature and using the data owned by the related agencies in this case is the PDAM Giri Tirta Driyorejo Gresik. The data retrieval techniques used in this study are library studies. The secondary data required in this study include : The population of Driyorejo District in 2014-2018

1. Customer Data According to the type in PDAM of GiriTirtaDriyorejo regency of Gresik in 2014-2018
2. Water discharge data available from the reservoir in the PDAM of GiriTirtaDriyorejo District of Gresik is water discharge capacity Data on the reservoir year 2014-2018.
3. Data of the water utility of GiriTirtaDriyorejo Gresik which includes:

Operational costs, maintenance and investment costs:

A. Operational cost Data:

- a. Data on chemicals cost year 2014-2018
- b. Employee cost Data for the year 2014-2018
- c. Office fee Data for 2014-2018

B. Maintenance cost Data

- a. Maintenance costs from 2014-2018
- b. Data maintenance cost processing year 2014-2018
- c. Data on transportation and distribution cost year 2014-2018
- d. Office maintenance cost Data for 2014-2018

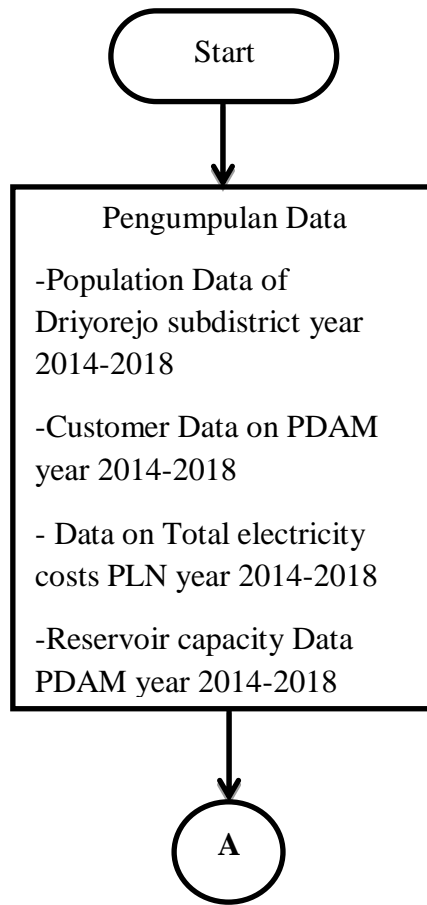
C. Investment cost Data:

- a. Raw water cost Data from 2014-2018
 - b. General cost Data/cost of the year 2014-2018
 - c. Data of depreciation of water source and pumping cost in 2014-2018
 - d. Raw water cost Data in litres 2014-2018
 - e. Water treatment depreciation cost Data in 2014-2018
 - f. Data transport depreciation cost and distribution year 2014-2018
 - g. General institutions depreciation cost Data and amortization year 2014-2018
- D. Benefit Data
- a. The customer Data of GiriTirta PDAM is active in 2014-2018

4.2.3 Data Analysis

In the stage of data analysis is done to know the increase in water demand and sufficient or the availability of water in PDAM for Driyorejo subdistrict. The required Data is the number of people and the addition of PDAM customers. Then the data is analyzed using the formulas to find the water needs of the next 5 years period. From the analysis is adjusted to the ability of the water source in the reservoir. Then from the analysis of the data can be concluded and used as a reference to give recommendations in planning to anticipate the shortage of water needs and the addition of existing reservoir capacity.

To get easy for analyzing used flowchat research like as figure below:



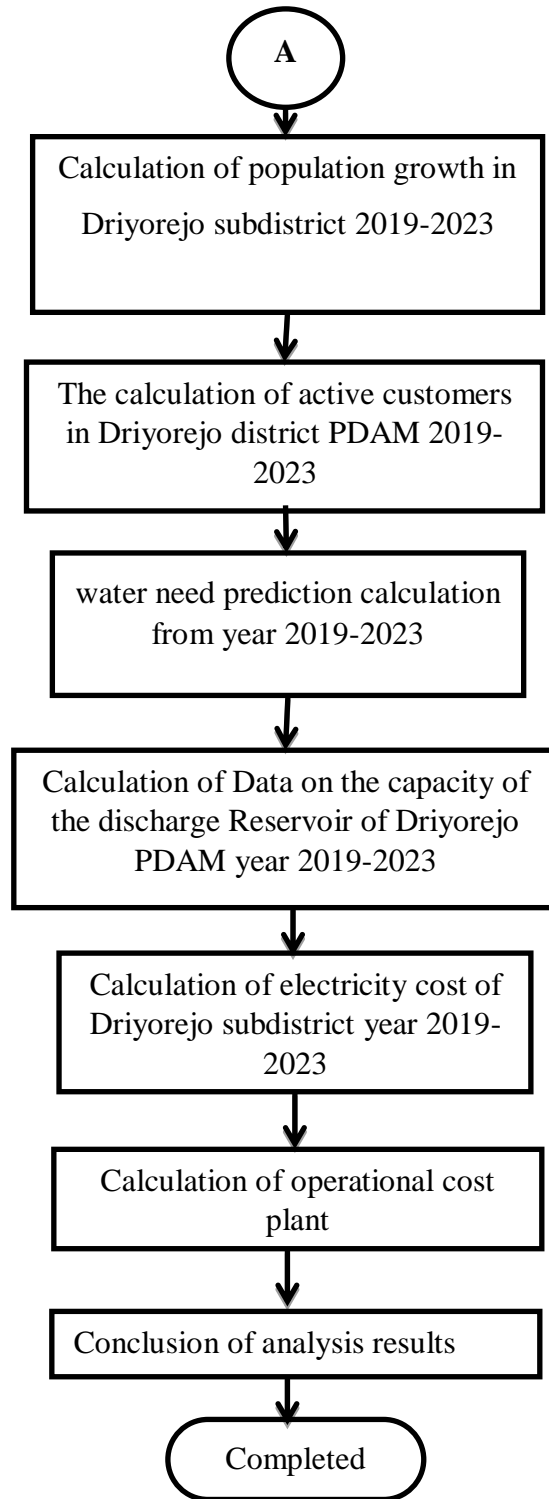


Figure 4.2 Research Flow Char