**Why didn't the previous one use another table**

I think table 1 is enough because my study focuses on segmentation on electricity consumptions for the section at ..... I think it is enough to explain the previous research.

**Why these variables were chosen**

Because based on the problems mentioned in the problem statement which states that electricity usage at peak load is higher than peak off load.

Second, because the combination of 13 variables has the highest percent value.

**Why did it go from 107 variables to 13 variables?**

Based on the results of data cleaning, these variables are possible to be processed into development models such as clustering or other models.

**Why we need data profiling and data cleaning in clustering process**

Data profiling is the process of gathering information about the characteristics and quality of the data to be used in a clustering process. Data profiling helps in determining whether the data to be used is appropriate and whether it meets the quality required for the clustering process.

Data cleaning is the process of cleaning data from errors or deficiencies that can interfere with the clustering process. Data cleaning aims to improve the quality of the data to be used so that the clustering results obtained are more accurate and meaningful.

It is necessary to do data profiling and data cleaning in processing clustering because data that is not qualified or not in accordance with the needs can cause clustering results that are not accurate or meaningful. Therefore, data profiling and data cleaning are very important to ensure that the data to be used in the clustering process meets the required quality and according to the needs.

**How CLV works**

The variables used use variables from the cluster results, which I adopted and modified in previous research on the LRFM model. In the formula there is a weight value, to calculate it using AHP based on several previous studies reviewed.

The calculation is taken from the multiplication between variables and weights. NP refers to the standard group of the amount of power used by the customer as Weighted Power, NKPOL refers to the ordinary group of the amount of electricity during peak load used by the customer as Peak Load Weighted kWh, NKPL refers to the standard group of the amount of electricity during peak load used by the customer as Peak Load Weighted kWh.

**Why is the result of segment 2 with more customers not ranked 1?**

Because what is calculated is not the number of customers but the calculated value of the variable results of power, peak load and peak off load.

Kenapa menggunakan AHP untuk menghitung nilai weight CLV ?

(**Why use AHP to calculate CLV weight values)?**

1. Based on previous journal reviews. AHP is used to find the weight value based on LRFM variables that have gone through the clustering process. In this study we do it by taking the cluster result variables that have been determined and then we enter them in the AHP formula. The process of AHP is not clearly explained in previous journals.
2. CLV is a measure of the value generated by a customer during his partnership with the company. To calculate CLV, companies usually take several criteria such as customer loyalty level, customer spending level, and customer profitability level. By using AHP, companies can compare these criteria and determine the relative weight for each criterion, to calculate the weight value of CLV more accurately.
3. AHP in calculating the weight value of CLV can help companies make more informed decisions.

**Kerja Weight Value**

First I tried to enter the formula using Rstudio without understanding it to get the value but after I understood it, the CI value based on the normalization matrix of the 3 variables that have been compared, the consistency index can be calculated using the formula mentioned earlier. After this process will be repeated from step 3 to step 5 until finding the 3 values.

**Definition AHP**

AHP (Analytic Hierarchy Process) is one of the hierarchical analysis techniques used to assist in decision making by comparing alternatives. AHP allows decision makers to group the criteria under consideration into a hierarchy, assigning relative weights to each criterion.

**Why is the AHP process not explained?**

Because in this study we only know the weight value, which we concluded based on previous research studies.

**How do you know that statement?**

I found out after I discussed it with the CRM manager who happens to be my father.

**Where did you get the data from?**

I get it directly from PLN because my father works there, but I have permission from PLN by not disguising the variables and not displaying the data.

**Definition Customer Segmentation Electricity**

The process of dividing electricity customers into groups or segments based on certain criteria.

**Important segmentation of electricity customers**

Segmenting electricity customers is important because it allows utilities to better understand the needs and preferences of each customer segment, so that they can provide better services that meet customer needs. In addition, electricity customer segmentation can also help electricity companies manage resources more efficiently and improve customer satisfaction.

**Why customer segmentation is done using big data**

Customer segmentation is the process of dividing customers into groups or segments based on certain criteria. Big data is a large and complex collection of data that can be used to extract new information and insights.

Using big data in the customer segmentation process can provide several benefits, including:

More accurate data: big data can collect data from various sources, such as transaction data, customer interaction data, and customer behaviour data. As such, big data can provide more accurate and up-to-date data about customers, allowing companies to better understand customer needs and preferences.

More complex analysis: big data allows companies to perform more complex analysis on customer data, such as correlation analysis, regression analysis, and clustering analysis. As such, big data can help companies find patterns that are not obvious from smaller data, allowing them to find more defined customer segments.

Improving process efficiency: big data can help companies process customer data more quickly and efficiently, thus allowing companies to manage and organize customer data more quickly. Thus, big data can help companies accelerate the customer segmentation process, so that they can more quickly provide services that suit customer needs.

**Why this importance study?**

By studying customer segmentation based on electricity consumption data using K-Means Clustering, CLV, and CRM strategies, companies can manage and improve services to customers more effectively and efficiently and increase company profits and customer satisfaction.

**what is the importance of implementing customer relationship management in determining targeting strategy**

Customer Relationship Management (CRM) is a strategy used to manage relationships with customers with the aim of increasing customer satisfaction and increasing customer loyalty to the company. Applying CRM in determining targeting strategies is very important because CRM can help companies understand customer needs and preferences better, so they can provide services that are more in line with customer needs.

By implementing CRM, companies can collect customer data that is useful for determining targeting strategies, such as demographic data, customer behaviour data, and customer preference data. Thus, companies can determine the right customer segments to target with marketing strategies that suit customer needs.

In addition, implementing CRM can also help companies manage customer relationships more effectively, to increase customer satisfaction levels and increase customer loyalty to the company. Thus, implementing CRM can help companies increase the results obtained from the targeting strategy carried out.

**Why to use K-Means in determining accurate segmentation:**

K-Means is one of the popular clustering techniques used in the customer segmentation process. K-Means is an iterative method that divides data into clusters or segments based on the similarity of data features.

Fast process: K-Means is a fast method in processing data, so it can help companies in processing customer data quickly and efficiently.

Simple algorithm: K-Means is a simple and easy-to-understand algorithm, so it can be implemented easily and can be applied to various types of data.

Accurate results: K-Means can group data into well-defined clusters, thus providing accurate results in determining customer segmentation.

Can be applied to large data: K-Means can be applied to large data, so it can help companies process large customer data quickly and efficiently.

Can cluster unstructured data: K-Means can cluster unstructured data, so it can help companies in determining unstructured customer segmentation accurately.

**Why only use one month's data in processing the clustering model?**

Because in that month the electricity usage is the highest in other months so that it can help companies in processing clustering models that are more accurate and relevant to the company's current needs.

Second, there are limitations in data processing because the computer manages the process longer.

**Why only focus on one area in customer segmentation?**

due to disparities in electricity usage. In the Padang area is the highest electricity consumption.

**Why only focus on one region in customer segmentation?**

Due to a more focused target market, which means focusing on business customers only, there is a high electricity consumption than other customers so that it can help companies determine a more focused and defined target market. Thus, companies can better understand the needs and preferences of business customers, so that they can provide services that are more in line with customer needs.

Second, to eliminate data gaps due to business customers having the highest electricity consumption.

**Apa itu deductive**

Deductive methods are often used in research that focuses on drawing conclusions from known premises to new conclusions.

**Why deductive in customer segmentation**

because this method can help companies group customers based on characteristics found in the customer population, so that companies can determine the right marketing strategy to increase customer satisfaction and can help companies increase company profits by offering products or services that suit customer needs.

**Kerja Elbow Method**

elbow method is a validation to determine the number of clusters.

The midpoint of the g chart starts to slope and a final line that starts to rise is drawn.

Fast process: elbow is a fast validation in processing data, so it can help companies in processing customer data quickly and efficiently.

**There are several impacts that can be caused by customer segmentation of electricity customers on PLN, including:**

Making it easier for PLN to determine the right marketing strategy. By understanding the needs and characteristics of segmented customers, PLN can develop more appropriate and effective marketing strategies to increase customer satisfaction.

Improve service efficiency and effectiveness. Customer segmentation can help PLN manage customers more effectively, for example by providing services that are more personalized and in accordance with customer needs.

Increase company profits. By understanding customer needs and preferences, PLN can increase company profits by offering products or services that suit customer needs.

Increase customer satisfaction. Customer segmentation can help PLN in providing services that are more in line with customer needs, thus increasing the level of customer satisfaction with the services provided.

Overall, customer segmentation can help PLN in managing and improving services to customers more effectively and efficiently and can increase company profits and customer satisfaction.

**Is this model the best in your opinion?**

K-Means is a clustering algorithm that can be used to group customers based on distinctive characteristics. It can be used to determine groups of customers that share similar characteristics, such as electricity consumption levels, geographic location, or demographic profile.

Customer Lifetime Value (CLV) is a measure that describes the expected value of a customer over the lifetime of a business relationship with a company. CLV can be used to help companies group customers based on the potential value expected from each customer and prioritize customers who have a higher CLV.

CRM (Customer Relationship Management) is a strategy that aims to manage relationships with customers in an effective and efficient way. CRM can be used to group customers based on the level of interaction with the company, such as frequency of purchase, level of satisfaction, or level of activity in loyalty programs.

In clustering customers, there may be advantages to using a combination model of K-Means, CLV, and CRM strategies. However, it is important to remember that no model is perfect for all situations, and the best decision will depend on the context and objectives of the segmentation.

**How do you conclude the combination of the 3 models of K-Means, CLV and CRM is related?**

The combination of the 3 models of K-Means, CLV (Customer Lifetime Value) and CRM (Customer Relationship Management) can be used to manage customer relationships and predict the long-term value of customers.

K-Means is a clustering algorithm used to group data into homogeneous groups (clusters) based on their features. It can be used to categorize customers into groups based on characteristics such as age, gender, income, and so on.

CLV (Customer Lifetime Value) is the monetary value that a customer is expected to generate over the lifetime of his/her relationship with the company. It can be used to determine how much a company should invest to maintain and improve relationships with specific customers.

CRM (Customer Relationship Management) is the strategy and technology used to manage customer relationships and maximize customer value for the company. This can include activities such as collecting and analyzing customer data, managing interactions with customers, and improving customer satisfaction.

By combining K-Means, CLV, and CRM, companies can group customers based on relevant characteristics, determine the long-term value of each customer group, and effectively manage customer relationships to maximize customer value for the company.