Dataslays

CUSTOMER SEGMENTATION

A Thorough Examination of Electric Vehicle (EV) Charging Patterns

April 2025

Ngoc My Nguyen

GOAL

Identify and analyze different EV charging customer groups and their behaviours based on historical transaction data.

VALUE

The findings enable data-driven decisions to improve overall business performance and customer satisfaction.

Understanding various customer segments helps design strategies such as targeted incentives and tailored pricing models, thereby boost engagement and profitability while promoting sustainable energy use.

DATASET

The selected dataset, sourced from this collection, captures all charging sessions during your company's annual commercial operation period (from Sept 30, 2021 to Sept 30, 2022).

It is particularly well-suited for clustering analysis due to the following key factors:

1 Substantial size

With a total of 72,856 sessions contributed by 2,337 EV users and 2,119 chargers
=> a large enough sample for effective clustering

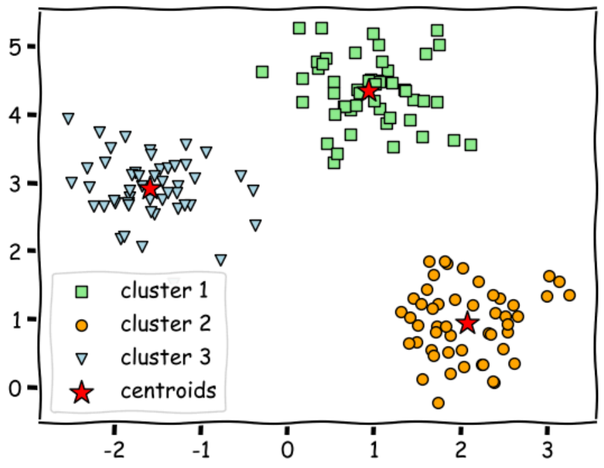
2 Diverse dimensions

Including a variety of features (e.g. duration, demand, location etc.), covering both numerical and categorical data.
=> allowing various analytical and feature engineering approaches

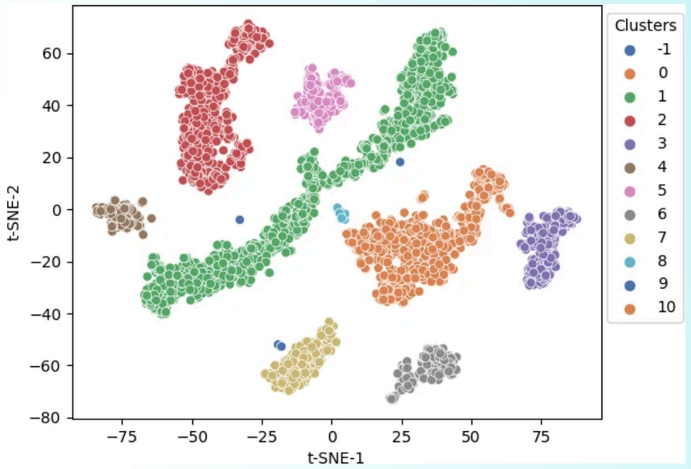
3 High data quality and usability

Well-maintained, featuring no missing values and collected though a transparent and scientifically validated process.
=> ensuring reliability and clarity

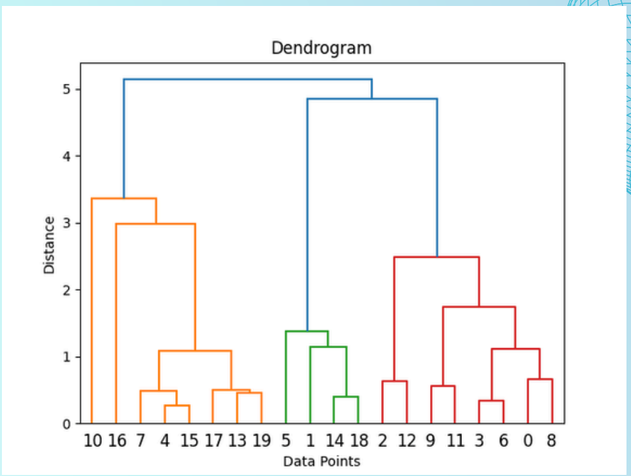
CLUSTERING METHODS



K-MEANS/K-MEANS++



DBSCAN/OPTICS (DENSITY-BASED)



HAC (HIERARCHICAL AGGLOMERATIVE)

LET'S INNOVATE EV CHARGING WITH DATA INSIGHTS!

+49 1767 195 0809

ngocmy.nguyen@dataslays.com

www.dataslays.com