PURCHASE PLAN FOR HEALTHCARE SUPPLY CHAIN

TEAM NAME: J.A.R.S

CONTENT

GOALS AND OBJECTIVES

Objective n° 1

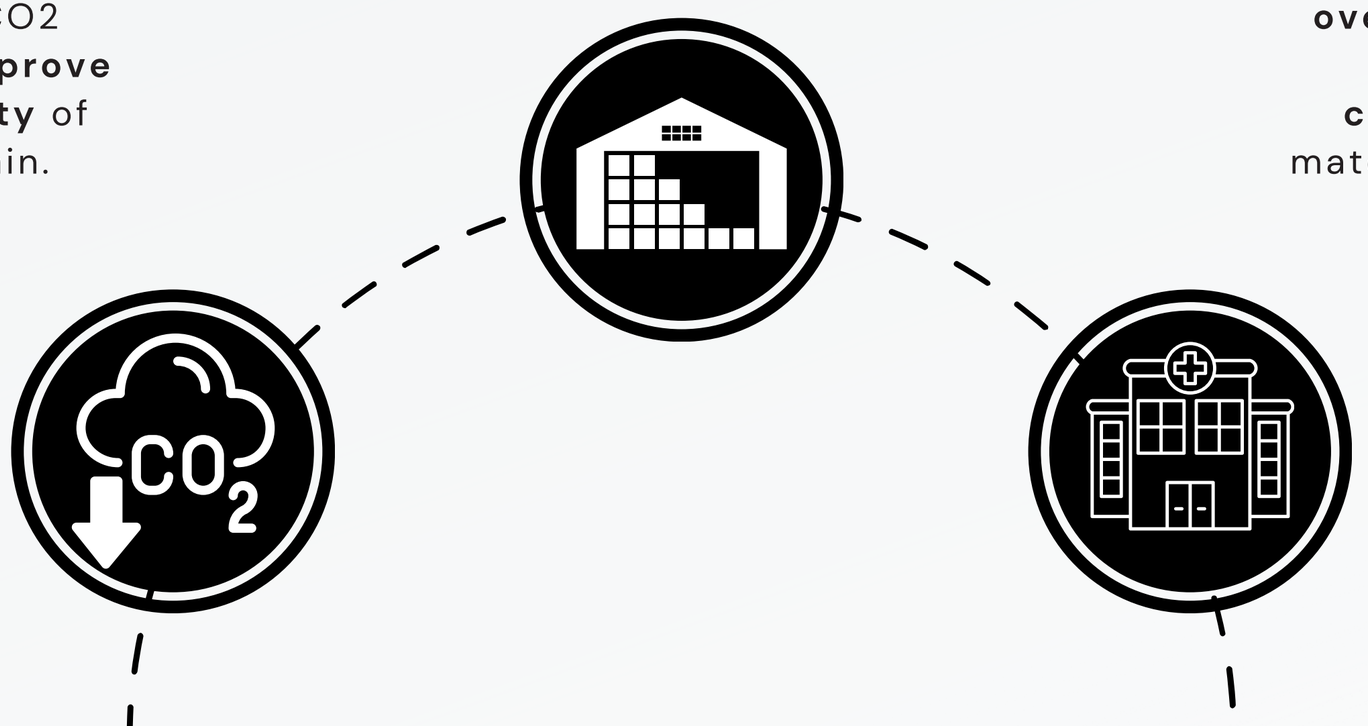
Optimize the transportation of the supplies in order to **minimize** the CO2 emissions and **improve the sustainability** of the supply chain.

Objective n° 2

Predict the needs of the hospital to ensure that it does not run out of stock at any time.

Objective n° 3

Centralize the provisioning of public hospitals to **prevent oversupplying** and **enhance the coordination** of material between the hospitals.



IDEA

Based on the hospital’s storage capacity, come up with a **purchase plan** ordering several months in advance to **prevent stockouts** and **optimize transportation** by doing a total of **6** purchases per year.

Predict the **price** and needed **quantity** of each product for each purchase of the upcoming year, based on previous years’ data.

Approaches used:

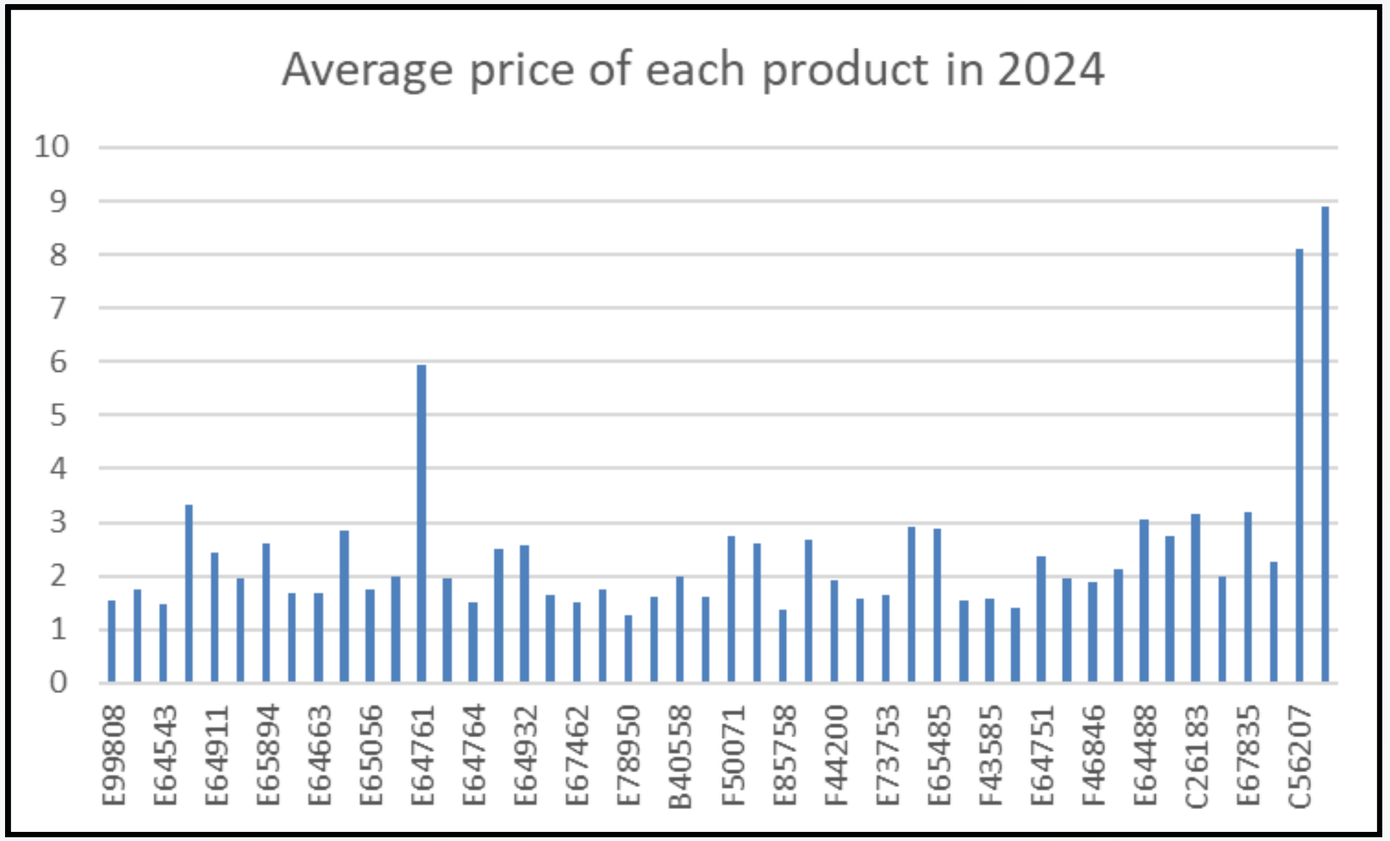
- Data visualization
- Segmentation
- Forecasting (Prediction Formula)

PREDICTION FORMULA

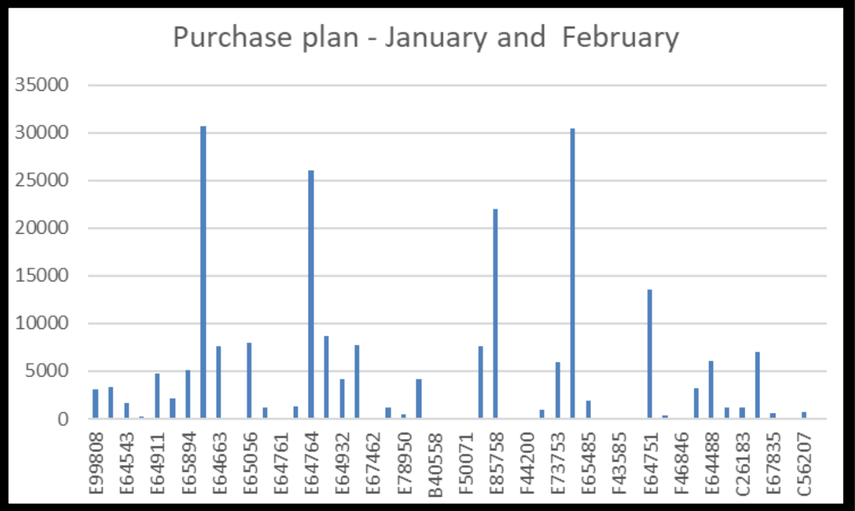
$$p_n = p_{n-1} \cdot \left(\prod_{j=1}^{n-1} \left(\frac{p_{n-j}}{p_{n-j-1}}\right)^{\tau^{j-1}}\right)^{\frac{1}{\sum_{j=1}^{n-1} \tau^{j-1}}}$$

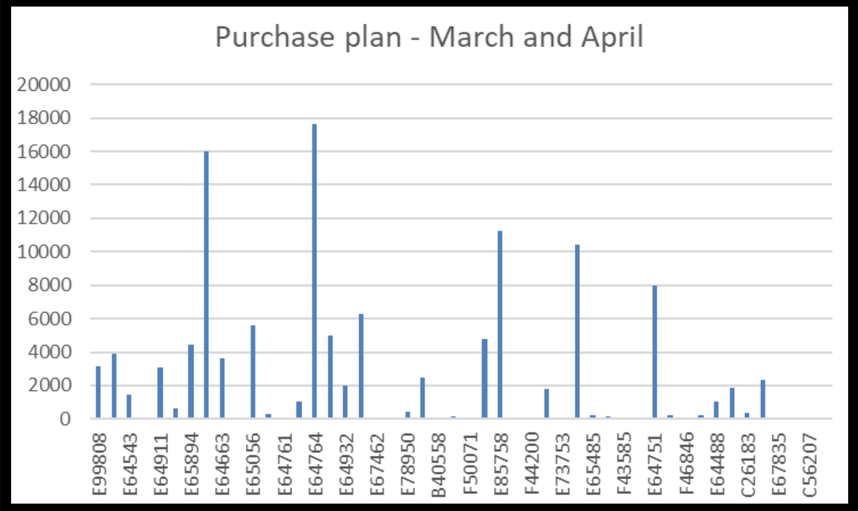
Weighted geometric mean

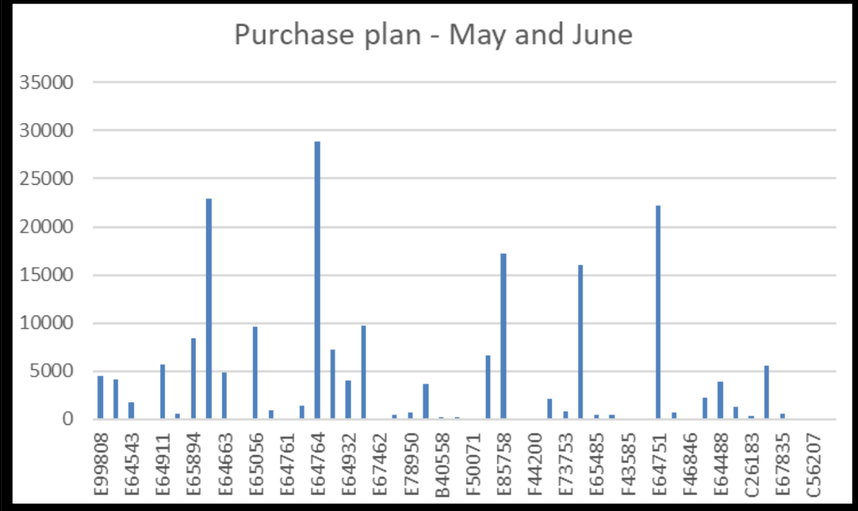
PREDICTION OF PRICES

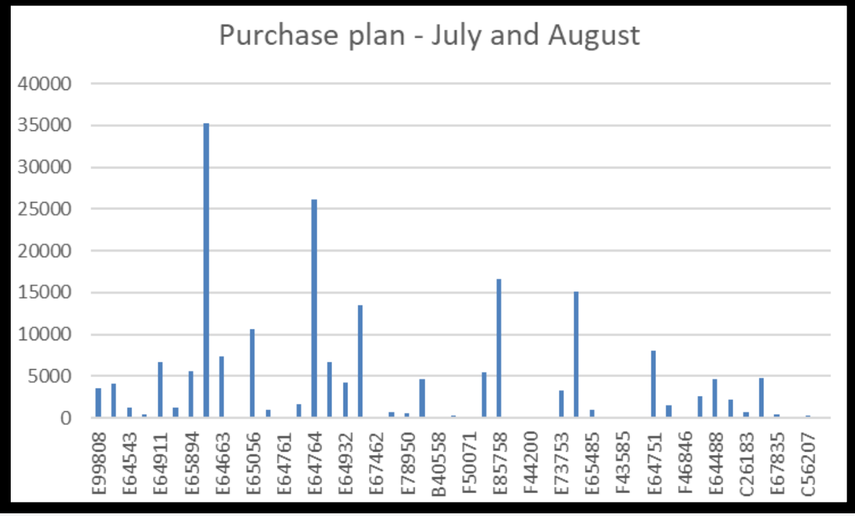


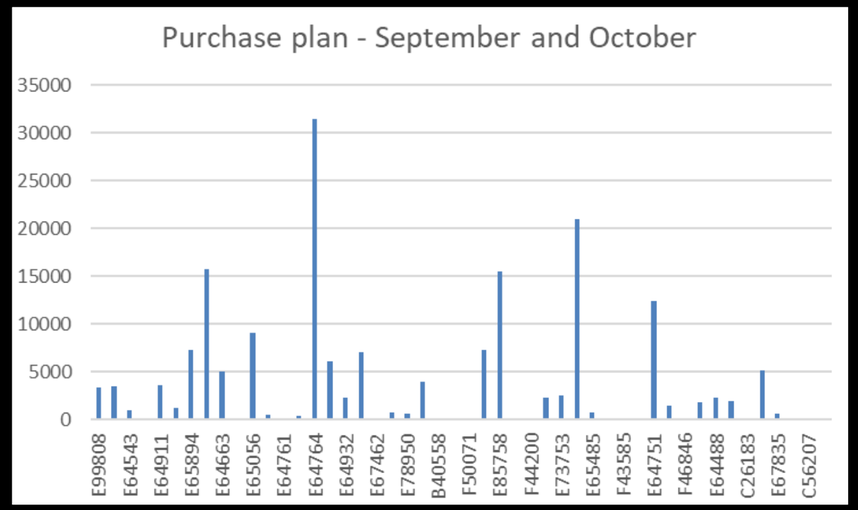
PURCHASE PLAN

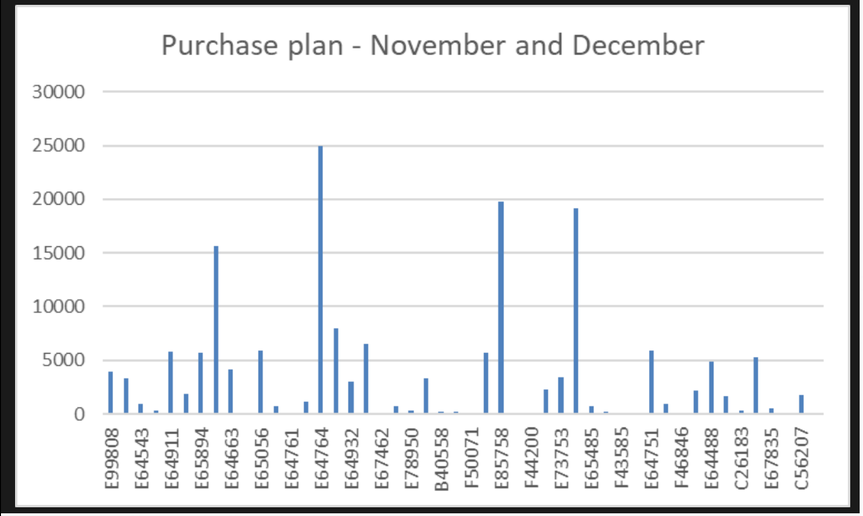




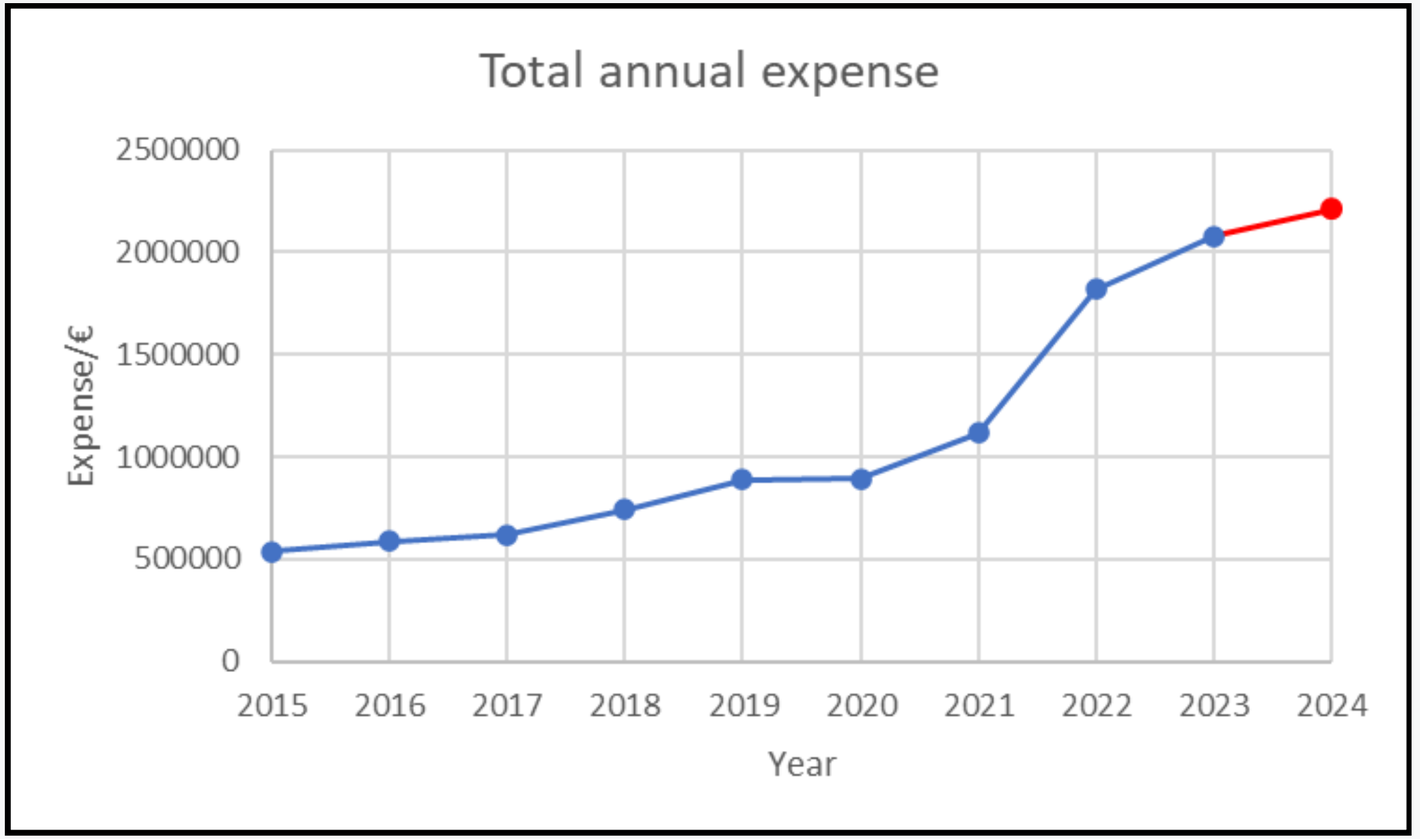








OVERALL COST



2.208.290€

ENVIROMENTAL IMPACT

- Our plan reduces the number of purchases by **99.65%**, which allows for more **optimized routes** to be organized with **fewer suppliers.** It also allows for more efficient **inventory management** to avoid urgent shipments, which are less sustainable.

- Planning larger-scale purchases requires **larger transport vehicles,** which **pollute less** than a greater number of small vehicles destined for small purchases.

- Overall, our purchasing planning not only reduces **transportation-related CO2 emissions**, but also allows for greater planning to improve the sustainability of **packaging** and **waste management** of each shipment.

THANKS FOR WATCHING

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