

# **Analysis of Kimia Farma's Business Performance (2020-2023)**

Kimia Farma - Big Data Analytics

Presented by  
Andi Muh. Alkahfi S.



# Andi Muh Alkahfi Samanglangi

## Data Analyst

I am a Bachelor of Electrical Engineering graduate from Universitas Muslim Indonesia and have completed a Data Science bootcamp at Purwadhika Digital Technology School. I possess skills in SQL, Python, Microsoft Excel, as well as data visualization using Power BI and Looker Studio. I gained internship experience as a Data Analyst Intern at PT Stargate Pacific Resources, where I was involved in data processing, price trend analysis, and dashboard development.



Bogor City



kafisamanglangi999@gmail.com



Andi Muh Alkahfi S.

# Courses and Certification

**<DataCamp/ Associate Data Analyst>**

| [link certificate](#)

**<Jul, 2025>**

**<HackerRank / SQL (Intermediate)>**

| [link certificate](#)

**<Jul, 2025>**

**<Udemy / Microsoft Excel: Learn Modern Excel for Data Analysis>**

| [link certificate](#)

**<May, 2025>**

**<Udemy / The Complete SQL Bootcamp: Go From Zero to Hero>**

| [link certificate](#)

**<Apr, 2025>**

**<Purwadhika Digital Technology School / Data Science Bootcamp>** | [link certificate](#)

**<Feb, 2025>**

# About Company

**PT Kimia Farma Tbk is the first pharmaceutical company in Indonesia, established in 1817. After undergoing nationalization in 1958 and transforming into a limited liability company in 1971, the company continued to grow and became a public company in 2001. Since 2020, Kimia Farma has officially joined the State-Owned Pharmaceutical Holding under PT Bio Farma (Persero) and now operates as an integrated healthcare provider in Indonesia.**



# Project Portfolio

## Background

As one of the largest pharmaceutical companies in Indonesia, Kimia Farma needs to conduct a comprehensive evaluation of its business performance. Analyzing transaction, inventory, product, and branch data is essential to understand business development, sales trends, product distribution, and operational effectiveness during the 2020–2023 period. By leveraging Big Data Analytics, the company can gain sharper insights to support strategic decision-making.

## Available Data

- kf\_final\_transaction.csv → Final transaction data (2020–2023) containing sales details such as transaction date, quantity, price, and customer information.
- kf\_inventory.csv → Inventory data for each branch.
- kf\_kantor\_cabang.csv → Branch office data including locations and related information.
- kf\_product.csv → Product data, including categories and prices.

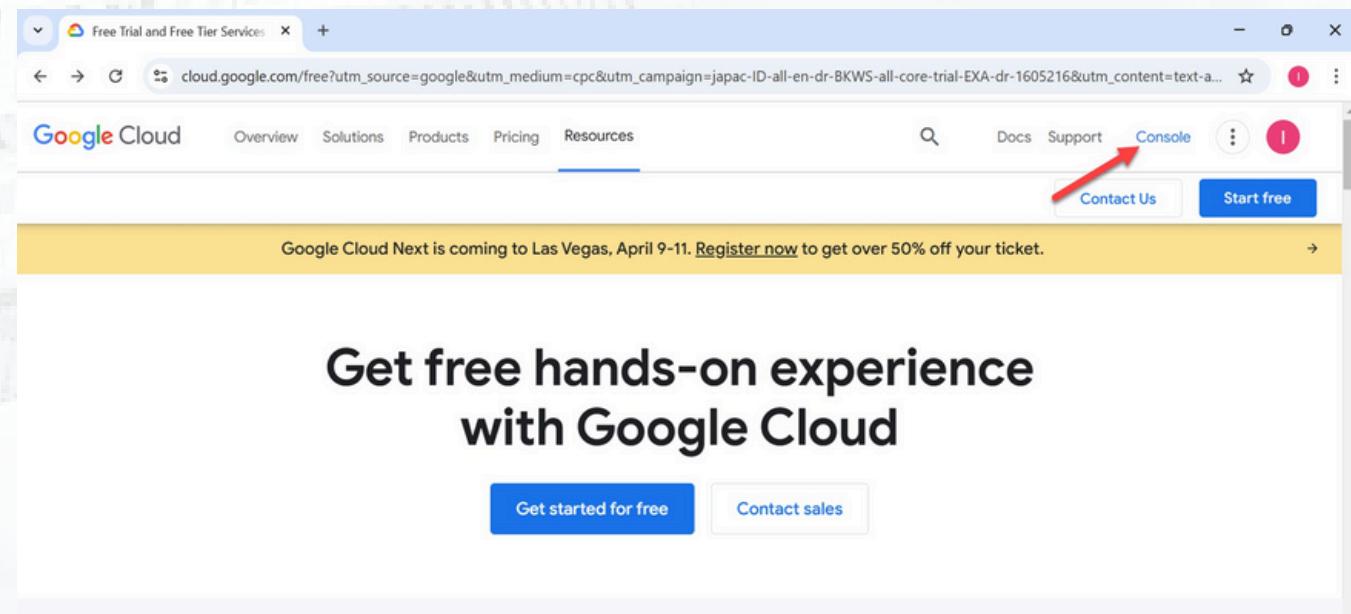
# Project Portfolio

## **Problem Statement Final Task Kimia Farma**

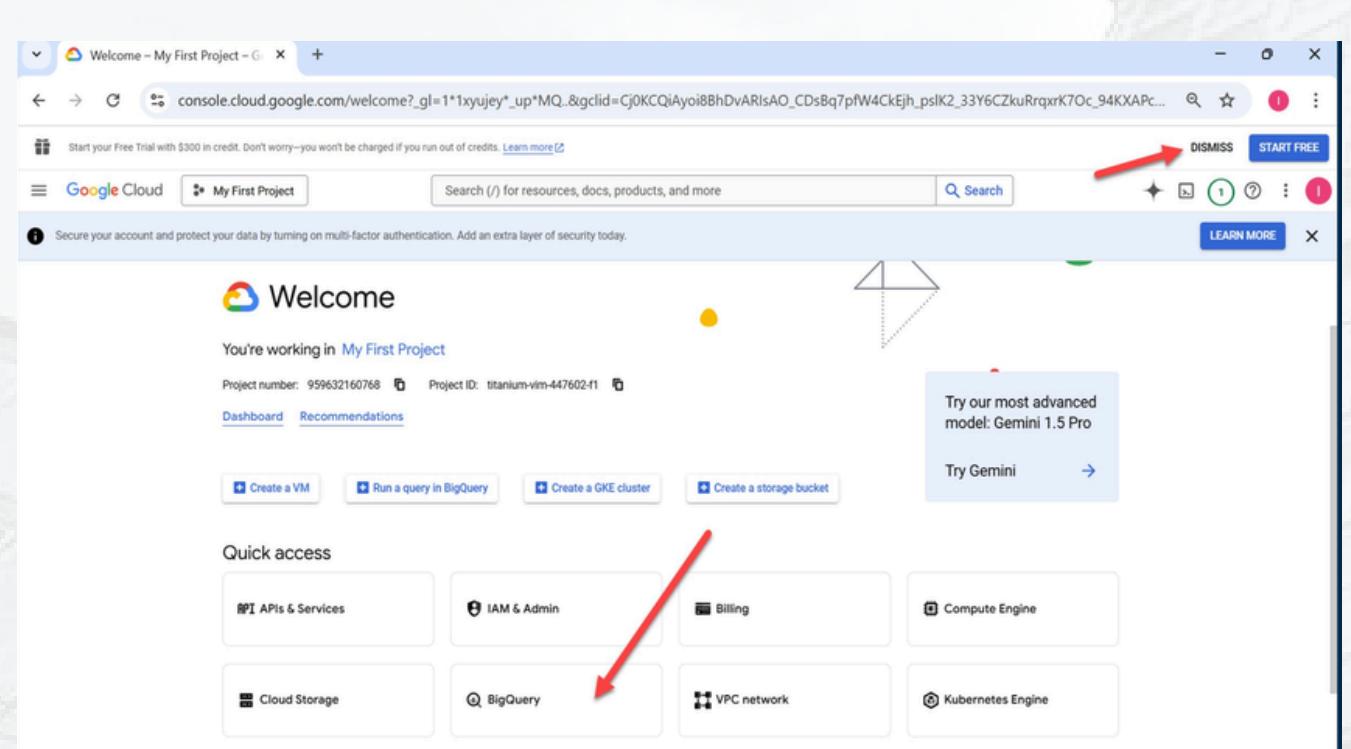
- How is the revenue trend of Kimia Farma from 2020 to 2023?
- Which provincial branches recorded the highest number of transactions and how do they compare?
- Which provincial branches generated the highest net sales ?
- Which branches achieved the highest ratings but relatively low transaction volumes ?
- How is the distribution of total profit across all provinces in Indonesia?

**Project explanation video [here!](#)**

# Importing Dataset to BigQuery

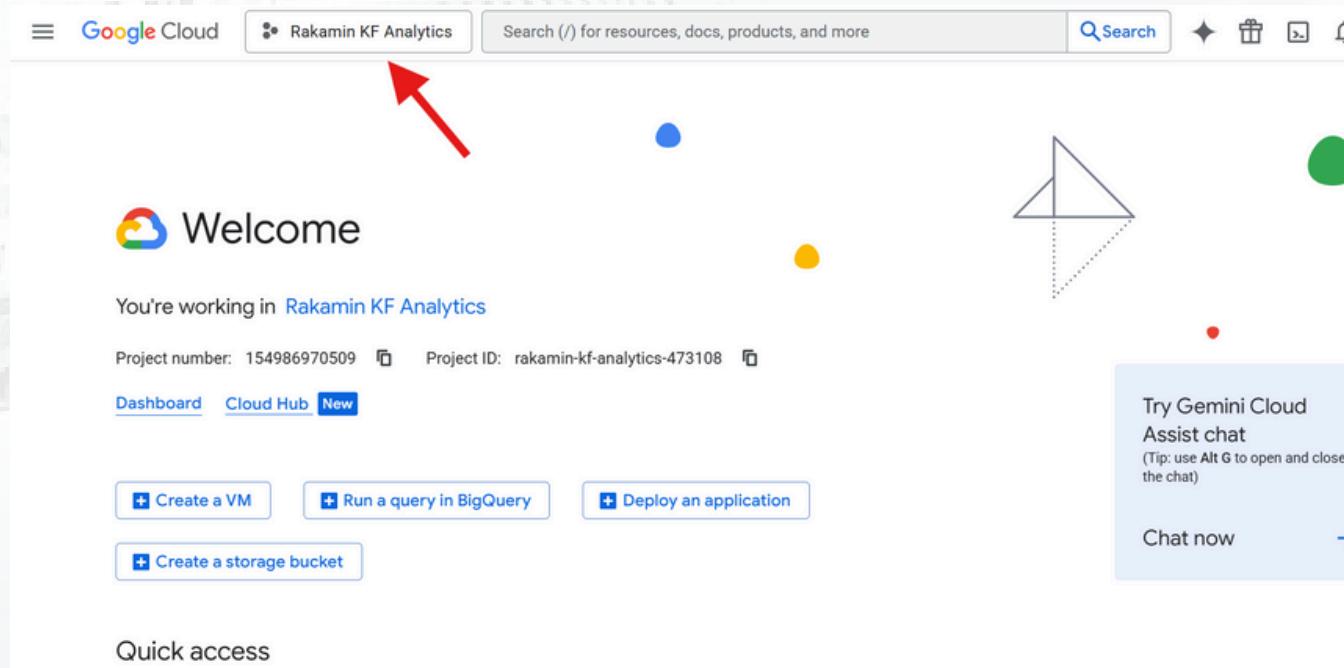


**1. Go to the Google Cloud Platform website, then select Console.**

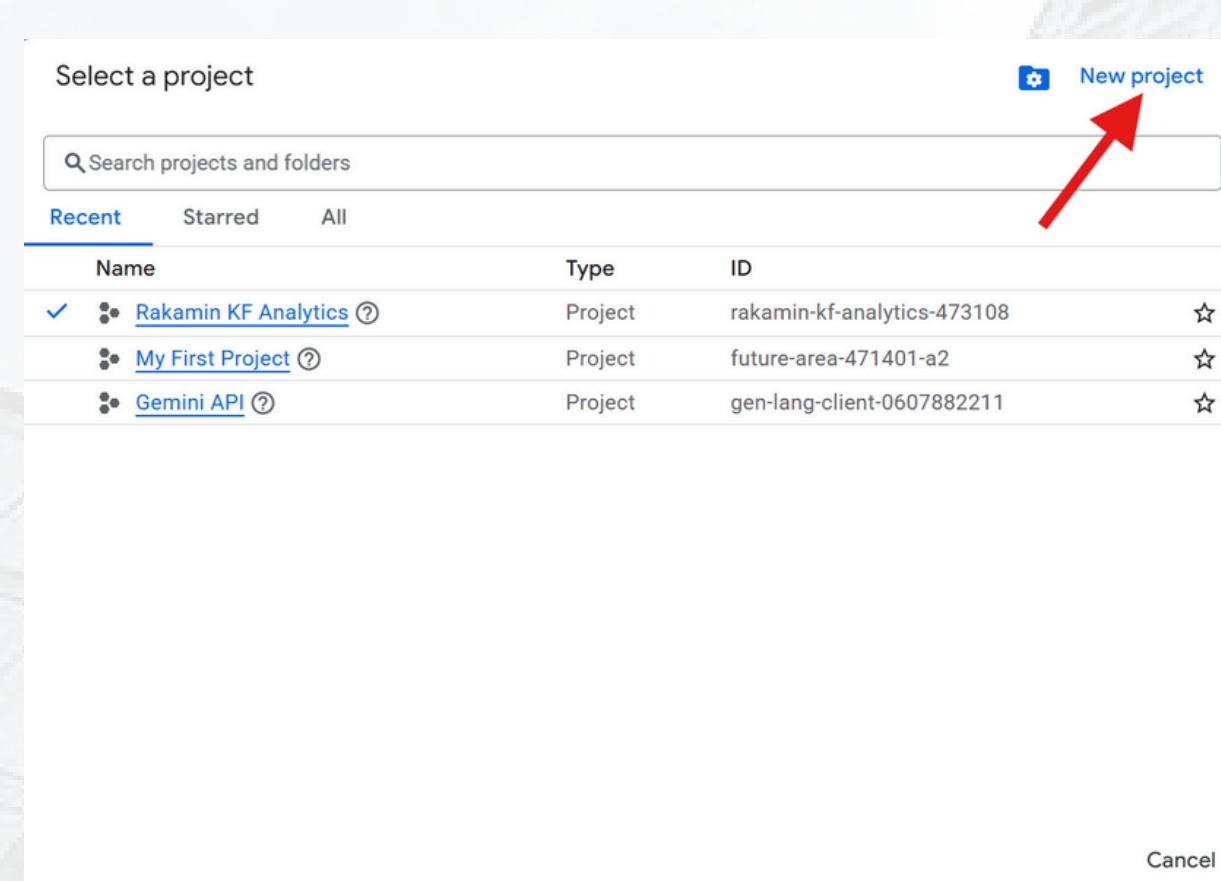


**2. Then, select BigQuery.**

# Importing Dataset to BigQuery

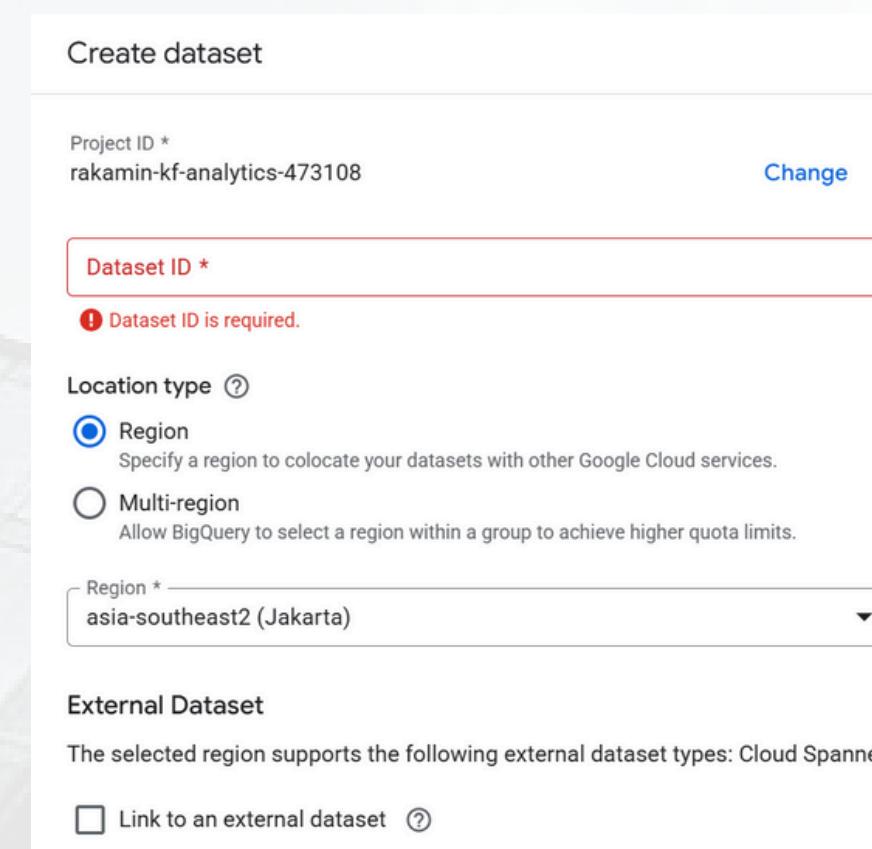
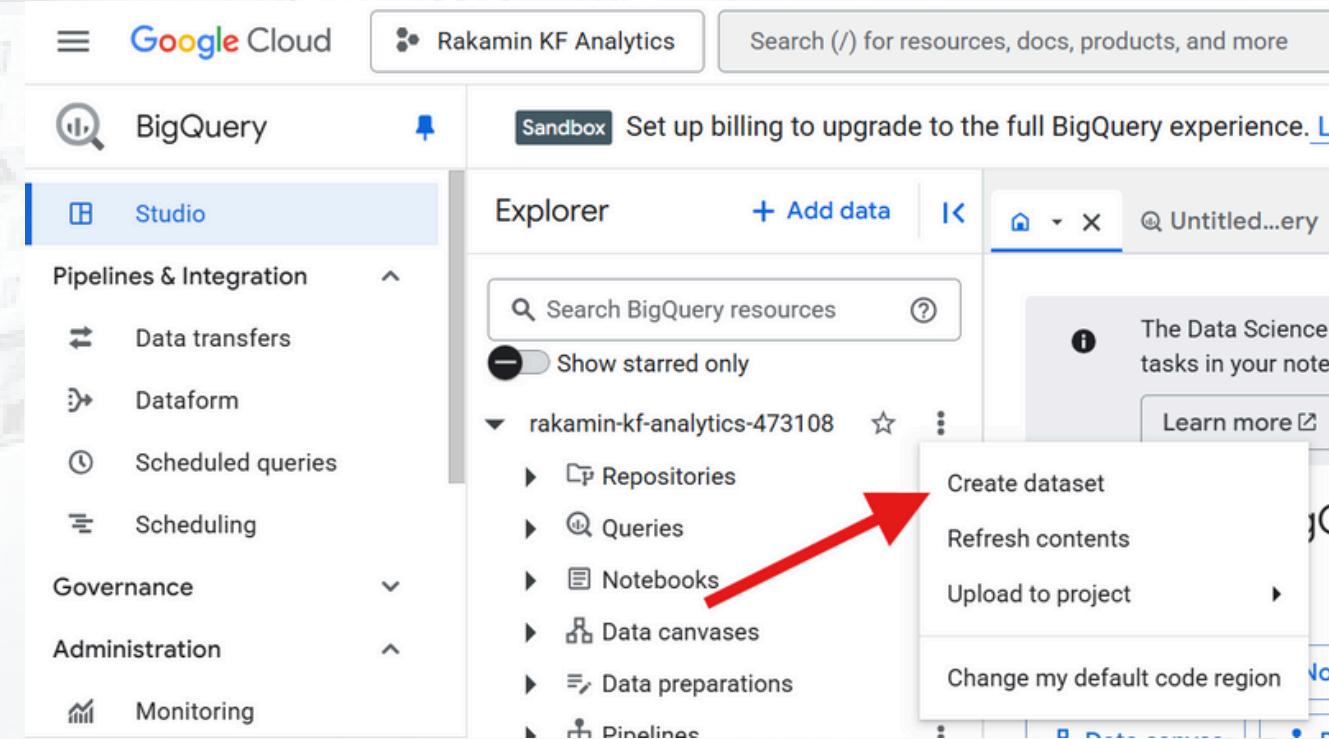


**3. Select the project section to choose or create a project.**



**4. Select 'New Project' if there is no existing project, or choose from the project list if you have previously created a project.**

# Importing Dataset to BigQuery



Create dataset

Project ID \*  
rakamin-kf-analytics-473108 [Change](#)

Dataset ID \*

Dataset ID is required.

Location type [?](#)

Region  
Specify a region to colocate your datasets with other Google Cloud services.

Multi-region  
Allow BigQuery to select a region within a group to achieve higher quota limits.

Region \*  
asia-southeast2 (Jakarta) [Change](#)

External Dataset

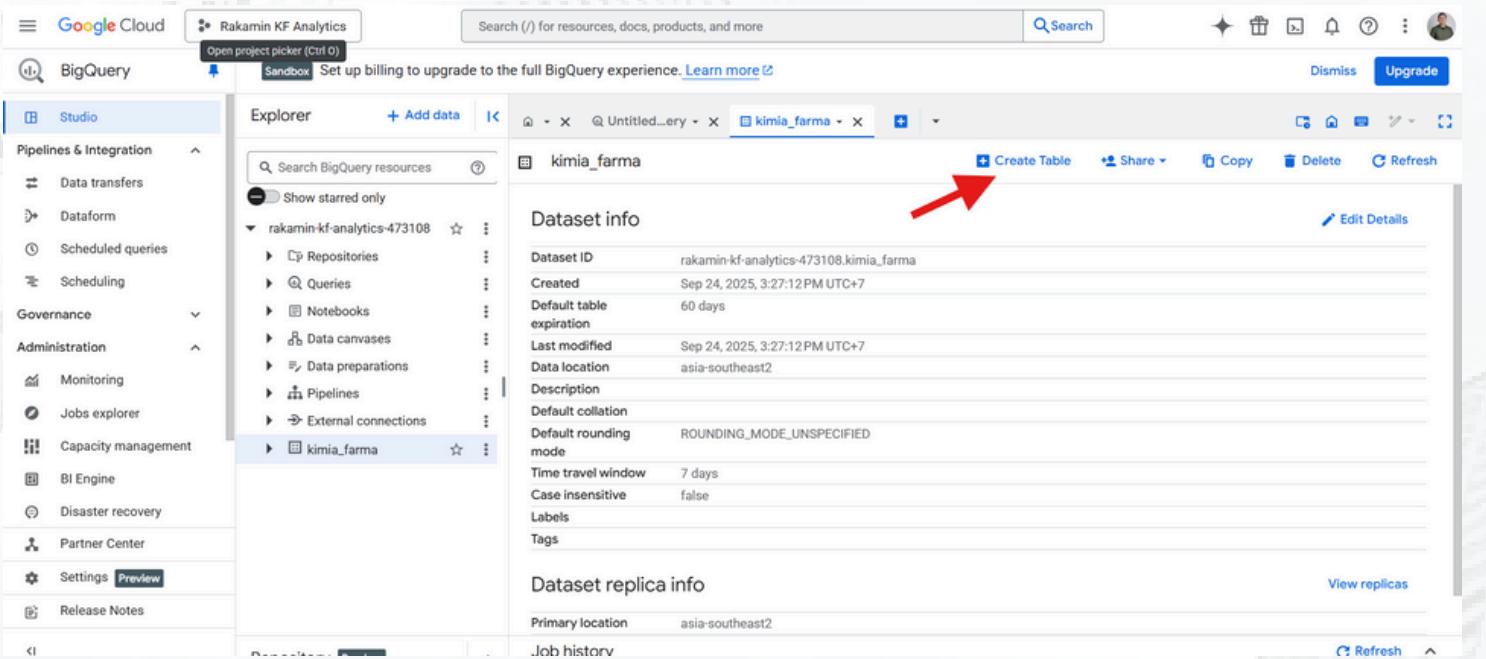
The selected region supports the following external dataset types: Cloud Spanner

Link to an external dataset [?](#)

## 5. Select Create Dataset

6. Create a dataset with the specified name and select the region as shown in the image.

# Importing Dataset to BigQuery



**7. Select the Create Table section.**

Create table

**Source**

- Create table from —
- 
- Select file \*
- 
- File format —  
CSV

**Destination**

- Project \* —  
rakamin-kf-analytics-473108
- Dataset \* —  
kimia\_farma
- 

Table \*

Maximum name size is 1,024 UTF-8 bytes. Unicode letters, marks, numbers, connectors, dashes, and spaces are allowed.

Table type  
Native table

**Schema**

Auto detect

**8. Upload the previously downloaded data, make sure the file type is set to 'CSV', check the 'Schema' section, and then select Create Table.**

# Importing Dataset to BigQuery

▼	kimia_farma	☆	:
	Tabel_Hasil_Ana	☆	:
	Tabel_Hasil_Ana	☆	:
	kf_final_transaksi	☆	:
	kf_final_transaksi	☆	:
	kf_inventori	☆	:
	kf_kantor_caban	☆	:
	kf_produk	☆	:

**9. Repeat the Create Table step until all files have been uploaded, then the results can be viewed in the project that has been created.**

# Tabel Analisa

The following are the columns in the analysis result table.

In total, it contains 16 columns and 2,700,663 rows.

Tabel_Hasil_Analisa									Query	Open in	Share	Copy	Snapshot	Delete	Export	
Schema	Details	Preview	Table Explorer	Preview	Insights	Lineage	Data Profile	Data Quality								
Filter Enter property name or value																
	Field name	Type	Mode	Key	Collation	Default Value	Policy Tags	Data Policies	Description							
	transaction_id	STRING	NULLABLE	-	-	-	-	-	-							
	date	DATE	NULLABLE	-	-	-	-	-	-							
	branch_id	INTEGER	NULLABLE	-	-	-	-	-	-							
	branch_name	STRING	NULLABLE	-	-	-	-	-	-							
	kota	STRING	NULLABLE	-	-	-	-	-	-							
	provinsi	STRING	NULLABLE	-	-	-	-	-	-							
	rating_cabang	FLOAT	NULLABLE	-	-	-	-	-	-							
	customer_name	STRING	NULLABLE	-	-	-	-	-	-							
	product_id	STRING	NULLABLE	-	-	-	-	-	-							
	product_name	STRING	NULLABLE	-	-	-	-	-	-							
	price	INTEGER	NULLABLE	-	-	-	-	-	-							
	discount_percentage	FLOAT	NULLABLE	-	-	-	-	-	-							
	persentase_gross_laba	FLOAT	NULLABLE	-	-	-	-	-	-							
	nett_sales	INTEGER	NULLABLE	-	-	-	-	-	-							
	nett_profit	INTEGER	NULLABLE	-	-	-	-	-	-							
	rating_transaksi	FLOAT	NULLABLE	-	-	-	-	-	-							

Row	transaction_id	date	branch_id	branch_name	kota	provinsi
1	TRX5758357	2023-07-20	83742	Kimia Farma - Apotek	Pematangsiantar	Sumatera Utara
2	TRX7662179	2022-12-17	59765	Kimia Farma - Apotek	Garut	Jawa Barat
3	TRX9380202	2020-11-26	98676	Kimia Farma - Apotek	Malang	Jawa Timur
4	TRX5777638	2021-02-20	11400	Kimia Farma - Apotek	Ambon	Maluku
5	TRX7734603	2021-10-28	31935	Kimia Farma - Apotek	Tangerang	Banten
6	TRX6917505	2022-12-26	37602	Kimia Farma - Apotek	Garut	Jawa Barat
7	TRX3719390	2020-05-24	63815	Kimia Farma - Apotek	Sukabumi	Jawa Barat
8	TRX6539812	2021-01-25	17275	Kimia Farma - Apotek	Banda Aceh	Aceh
9	TRX8477419	2023-01-26	46468	Kimia Farma - Apotek	Bima	Nusa Tenggara Barat
10	TRX6080961	2022-07-08	48130	Kimia Farma - Apotek	Tasikmalaya	Jawa Barat
11	TRX4618838	2022-03-29	30333	Kimia Farma - Apotek	Bekasi	Jawa Barat

rating_cabang	customer_name	product_id	product_name	price
4.8	Robin Brown	KF172	Psycholeptics drugs, Hypnotics ...	2100
4.1	Monica Kelly	KF172	Psycholeptics drugs, Hypnotics ...	2100
4.4	Michael Myers	KF172	Psycholeptics drugs, Hypnotics ...	2100
4.1	Warren Snyder	KF172	Psycholeptics drugs, Hypnotics ...	2100
4.4	Thomas Hayes	KF172	Psycholeptics drugs, Hypnotics ...	2100
4.5	Morgan Smith	KF172	Psycholeptics drugs, Hypnotics ...	2100
4.7	Elizabeth Gutierrez	KF172	Psycholeptics drugs, Hypnotics ...	2100
3.9	Linda Buchanan	KF172	Psycholeptics drugs, Hypnotics ...	2100
4.7	Kathryn Ross	KF172	Psycholeptics drugs, Hypnotics ...	2100
4.7	Sandra Mendez	KF172	Psycholeptics drugs, Hypnotics ...	2100
4.6	Samantha Ramos	KF172	Psycholeptics drugs, Hypnotics ...	2100
discount_per...	persentase...	nett_sales	nett_profit	rating_transa...
0.15	0.1	1785	179	3.1
0.15	0.1	1785	179	3.0
0.15	0.1	1785	179	4.2
0.15	0.1	1785	179	5.0
0.15	0.1	1785	179	4.9
0.15	0.1	1785	179	3.4
0.15	0.1	1785	179	4.6
0.15	0.1	1785	179	4.7
0.14	0.1	1806	181	4.8
0.14	0.1	1806	181	3.9
0.14	0.1	1806	181	3.6

# BigQuery Syntax

This syntax is used to create new columns named percentage\_gross\_profit, net\_sales, and net\_profit.

Membuat Kolom Baru Run Save query Download Share Schedule Open in More

```
1 CREATE OR REPLACE TABLE kimia_farma.kf_final_transaction_new AS
2 WITH base AS (
3   SELECT
4     *,
5     CASE
6       WHEN price <= 50000 THEN 0.10
7       WHEN price > 50000 AND price <= 100000 THEN 0.15
8       WHEN price > 100000 AND price <= 300000 THEN 0.20
9       WHEN price > 300000 AND price <= 500000 THEN 0.25
10      WHEN price > 500000 THEN 0.30
11    END AS persentase_gross_laba,
12    CAST(price * (1 - discount_percentage) AS INT64) AS nett_sales
13  FROM kimia_farma.kf_final_transaction
14 )
15 SELECT
16   *,
17   CAST(nett_sales * persentase_gross_laba AS INT64) AS nett_profit
18 FROM base;
```

# BigQuery Syntax

This syntax is used to create a table containing the columns that will be used for analysis and dashboard development.

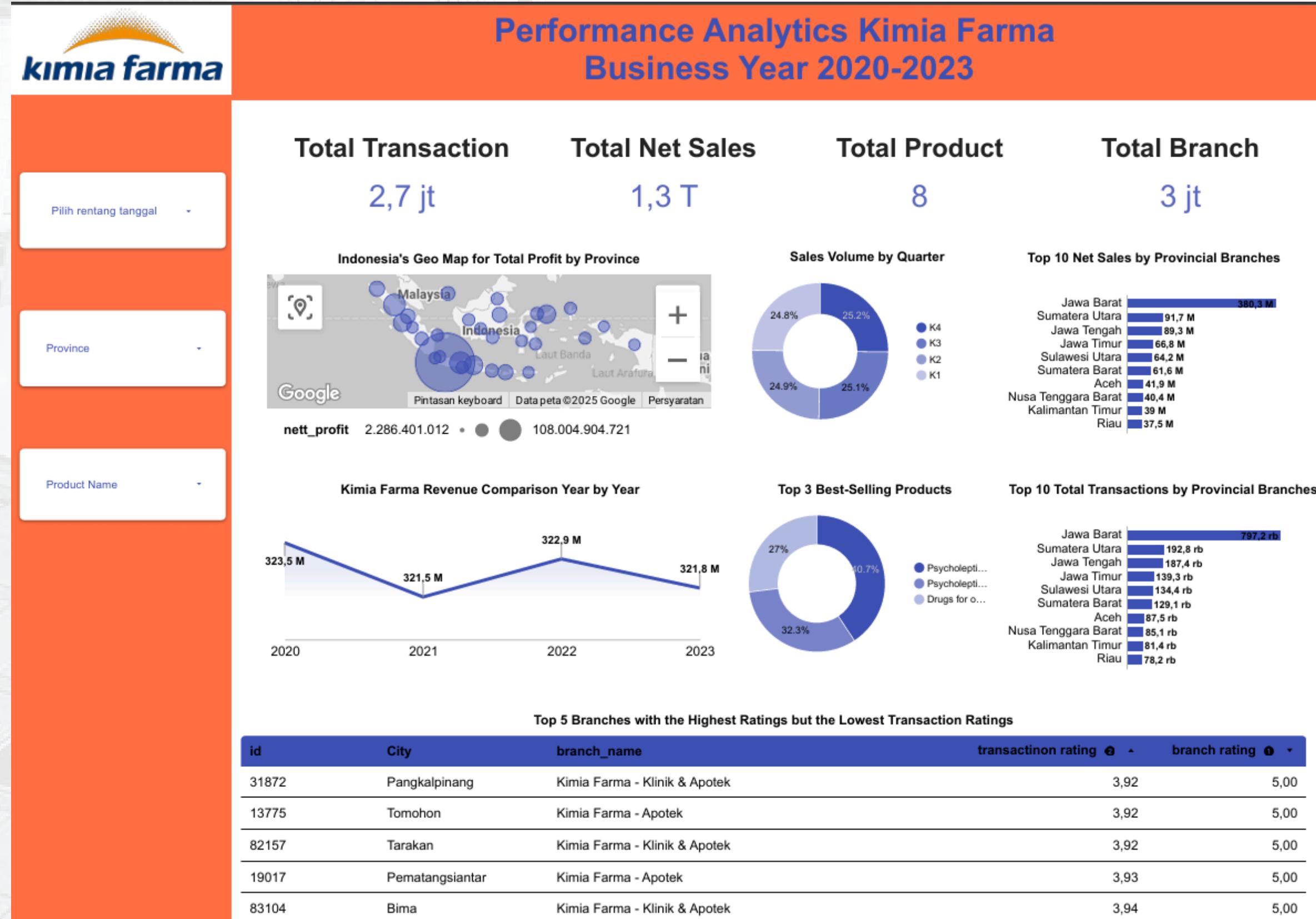
Membuat Tabel Analisa...

Run Save query Download Share Schedule Open in More

```
1 CREATE OR REPLACE TABLE kimia_farma.Tabel_Hasil_Analisa AS
2 SELECT
3     ft.transaction_id,
4     ft.date,
5     ft.branch_id,
6     kc.branch_name,
7     kc.kota,
8     kc.provinsi,
9     kc.rating as rating_cabang,
10    ft.customer_name,
11    ft.product_id,
12    p.product_name,
13    ft.price,
14    ft.discount_percentage,
15    ft.persentase_gross_laba,
16    ft.nett_sales,
17    ft.nett_profit,
18    ft.rating as rating_transaction
19 FROM kimia_farma.kf_final_transaction_new ft
20 LEFT JOIN kimia_farma.kf_product p
21     ON ft.product_id = p.product_id
22 LEFT JOIN kimia_farma.kf_kantor_cabang kc
23     ON ft.branch_id = kc.branch_id
24 LEFT JOIN kimia_farma.kf_inventory inv
25     ON ft.product_id = inv.product_id
26     AND ft.branch_id = inv.branch_id;
27
```

Table file and BigQuery  
syntax [here!](#)

# Dashboard Performance Analytics



# Dashboard Performance Analytics

**Total Transaction**

2,7 jt

**Total Net Sales**

1,3 T

**Total Product**

8

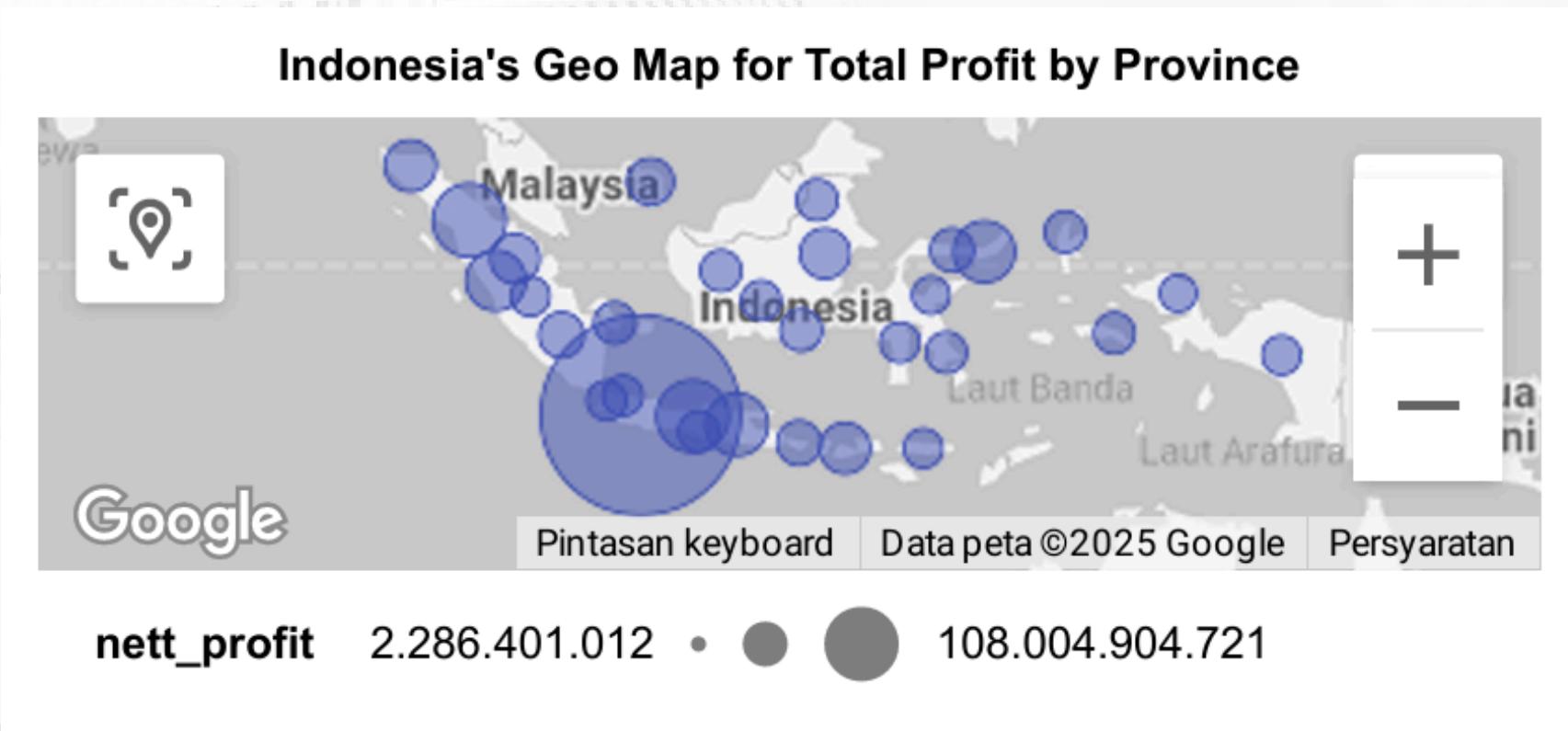
**Total Branch**

3 jt

Insight:

- 2.7M transactions show strong customer engagement.
- IDR 1.3B net sales reflect stable revenue performance.
- 8 products indicate a concentrated portfolio.
- 3 M branches highlight extensive nationwide reach.

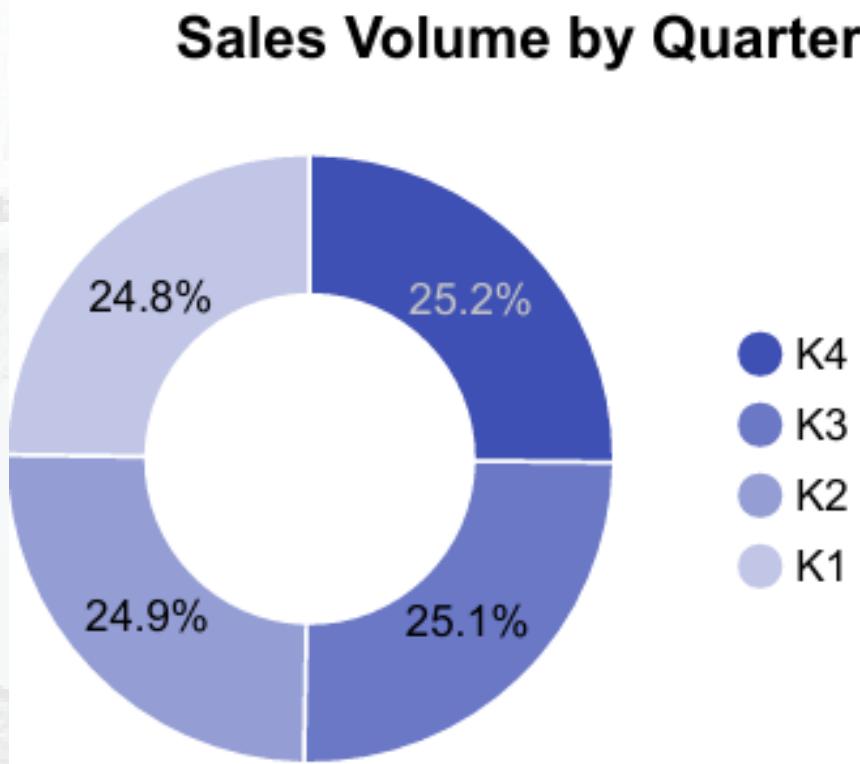
# Dashboard Performance Analytics



Insight:

- Profit distribution is concentrated in key provinces, with West Java leading as the top contributor.
- Several provinces record moderate to low profit, indicating untapped market potential.

# Dashboard Performance Analytics

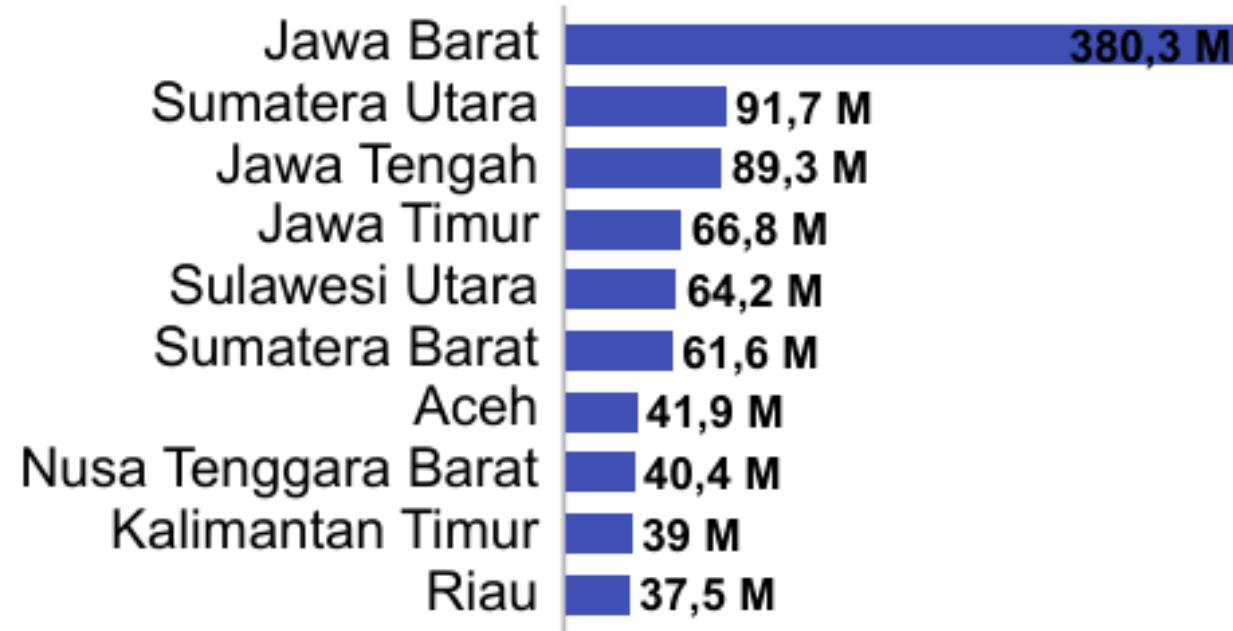


#### Insight:

- Sales volume remains relatively stable across all quarters,
- Showing consistent demand throughout the year with no significant seasonal spikes.

# Dashboard Performance Analytics

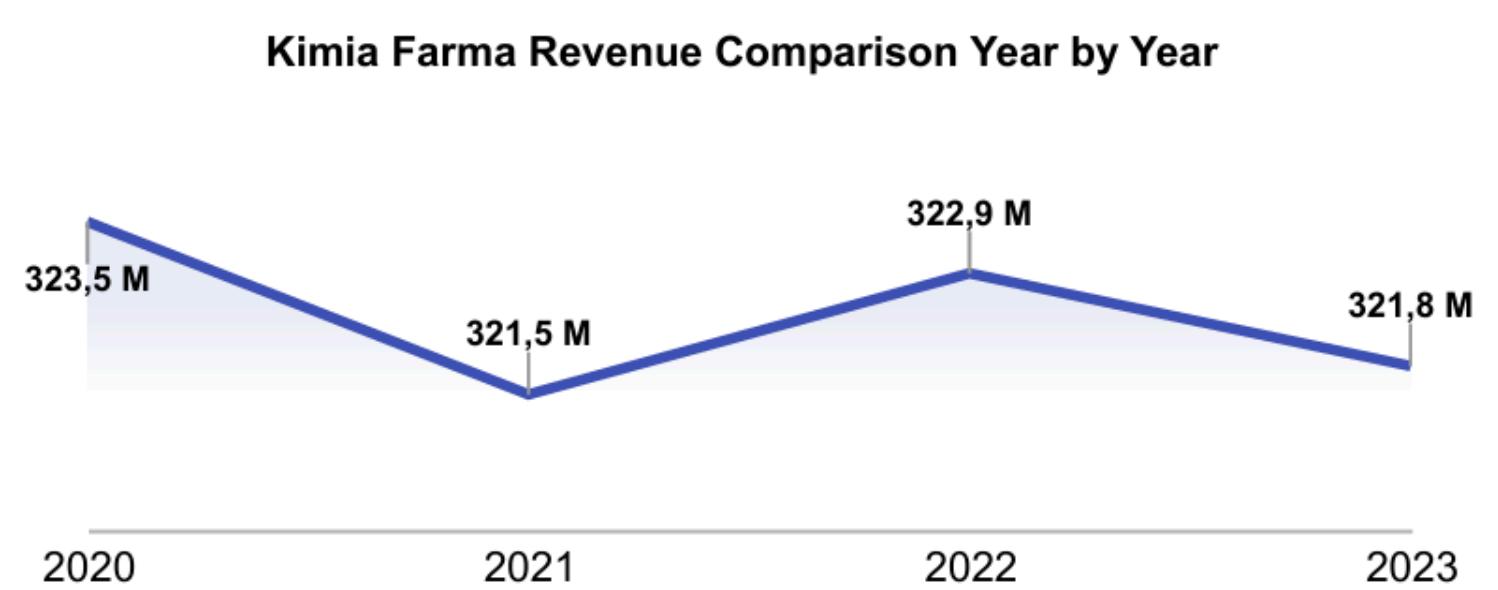
## Top 10 Net Sales by Provincial Branches



### Insight:

- West Java records the highest net sales, far surpassing all other provinces.
- This indicates that sales are highly concentrated in West Java, while other provinces contribute at a much smaller scale.

# Dashboard Performance Analytics

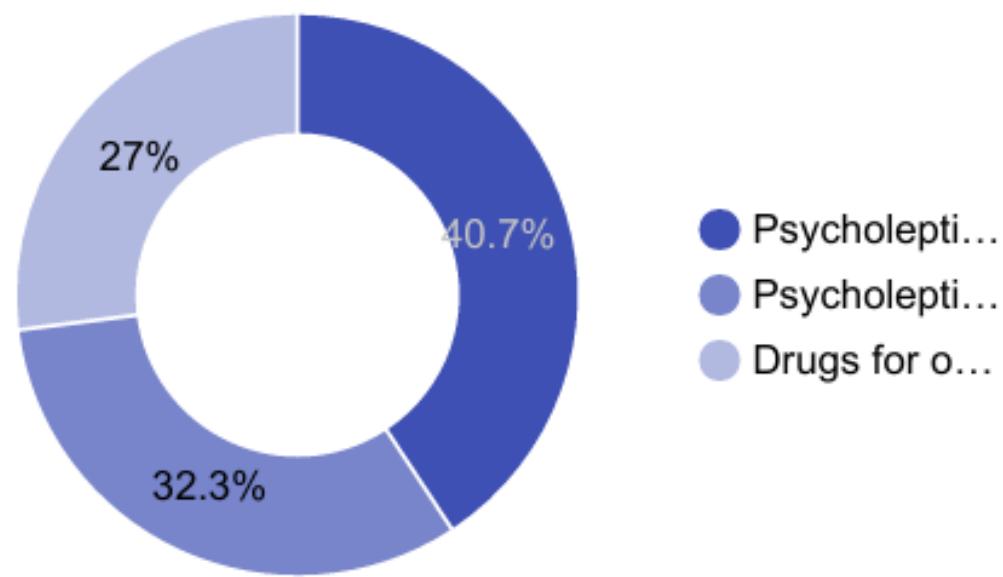


## Insight:

- Revenue across 2020–2023 shows only slight differences,
- indicating stable performance with no major growth or decline.

# Dashboard Performance Analytics

## Top 3 Best-Selling Products

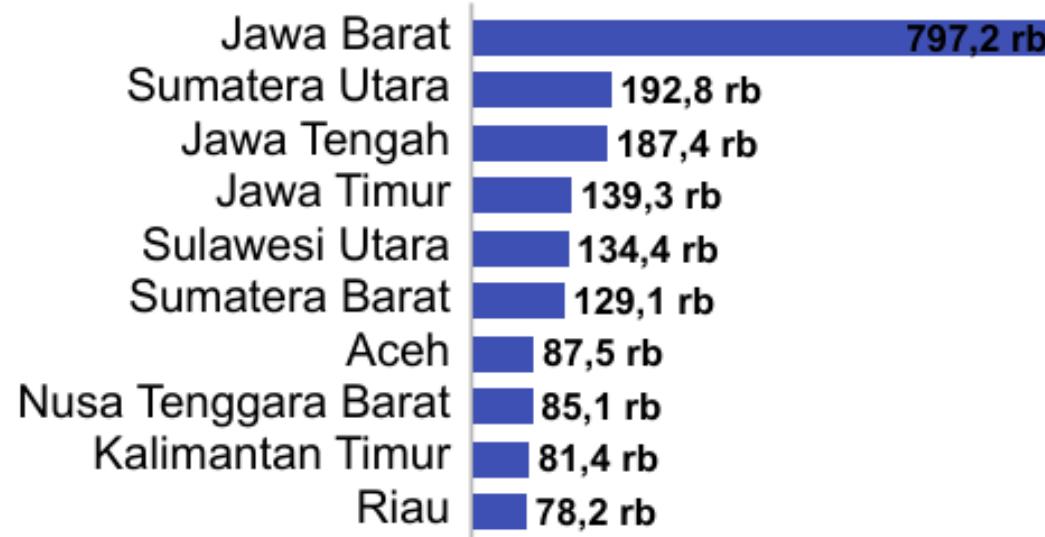


## Insight:

- Sales are dominated by three products, showing strong customer preference.
- Heavy reliance on these products indicates concentration risk if demand shifts.

# Dashboard Performance Analytics

## Top 10 Total Transactions by Provincial Branches



### Insight:

- West Java leads in total transactions, creating a wide gap compared to other provinces.
- The dominance of West Java indicates a strong customer base concentrated in this province, while other regions show much lower activity levels.

# Dashboard Performance Analytics

Top 5 Branches with the Highest Ratings but the Lowest Transaction Ratings

<b>id</b>	<b>City</b>	<b>branch_name</b>	<b>transaction rating</b> 	<b>branch rating</b> 
31872	Pangkalpinang	Kimia Farma - Klinik & Apotek	3,92	5,00
13775	Tomohon	Kimia Farma - Apotek	3,92	5,00
82157	Tarakan	Kimia Farma - Klinik & Apotek	3,92	5,00
19017	Pematangsiantar	Kimia Farma - Apotek	3,93	5,00
83104	Bima	Kimia Farma - Klinik & Apotek	3,94	5,00

Insight:

- These branches achieve high customer satisfaction ratings but record low transaction volumes.
- Indicates strong service quality, yet limited market reach or sales activity.

# Conclusion

- **Revenue Stability**

From 2020–2023, revenue remained relatively stable, with only small year-to-year differences. Quarterly sales also showed consistent performance without strong seasonal effects.

- **Regional Dominance**

West Java consistently ranked first in both net sales and total transactions, with a very large gap compared to other provinces. West Sumatra came second but at a much lower scale.

- **Customer Satisfaction Gap**

Some branches achieved high ratings but recorded low transaction volumes, showing good service quality but limited sales penetration.

- **Product Concentration**

Sales were heavily dominated by the top 3 products, creating dependency on a small portion of the portfolio.

- **Profit Distribution**

The geo map revealed that profit was concentrated in a few provinces, while many regions remained underperforming despite the large branch network.

# Recommendation

- **Expand Beyond West Java**

Reduce dependency on West Java by strengthening strategies in other provinces through local campaigns, partnerships, and targeted marketing.

- **Leverage High-Rated Branches**

Activate growth initiatives (promotions, loyalty programs, awareness campaigns) in branches with high ratings but low transactions to convert satisfaction into sales.

- **Diversify Product Portfolio**

Promote and develop lower-selling products to balance reliance on the top 3 best-sellers and minimize risk from shifting customer demand.

- **Regional Profitability Focus**

Identify underperforming provinces with potential market size and design specific interventions to increase profitability across more regions.

# Thank You

