

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

**Kimia Farma - Big Data Analytics**

Presented by  
**Qothrun Nadaa Chairunnisa**



# Qothrun Nadaa Chairunnisa

Mathematics Graduate | Aspiring Analyst

A fresh graduate from Brawijaya University with a strong foundation in analytical thinking and problem-solving. Experienced in using SQL and Python for data processing and analysis. Has hands-on experience in transforming raw data into insights through projects and internships. Passionate about turning numbers into meaningful stories and eager to grow in the data or business analysis field.



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# Courses and Certification

**Microsoft Office Desktop Application | Certificate**

**<October, 2024>**



# About Company

**Kimia Farma is one of the leading pharmaceutical companies in Indonesia, established in 1817. The company operates across the pharmaceutical value chain, including manufacturing, distribution, retail pharmacy, and clinical laboratory services. With a vast network of branches and outlets across the country, Kimia Farma is committed to improving public health by providing high-quality and affordable healthcare products and services. As a state-owned enterprise, the company plays a significant role in supporting national health programs and contributing to the growth of the healthcare industry in Indonesia.**



# Project Portfolio

**Kimia Farma, as a national pharmaceutical company, aims to evaluate its business performance over the years 2020 to 2023. Data-driven insights are required to support strategic decision-making processes across branches and products.**

## Available datasets:

- **kf\_final\_transaction.csv : Sales transaction data (price, discount, customer rating)**
- **kf\_kantor\_cabang.csv : Branch details (city, province)**
- **kf\_product.csv : Product information (medicine name, ID)**
- **kf\_inventory.csv : Stock and inventory data**

**How can Kimia Farma assess the performance of its branches in terms of transaction volume, profitability, and customer satisfaction, and visualize these insights through an interactive dashboard for better managerial decisions?**

Project explanation video [here!](#)

# 1. Importing Dataset to BigQuery

## Strategy Overview:

To analyze the datasets efficiently and enable integration with Looker Studio, all CSV files were imported into Google BigQuery under the dataset **kimia\_farma** within the project **kimia-farma-x-rakamin-458710**.

## Steps Taken:

1. Created a new dataset named **kimia\_farma** in BigQuery.
2. Upload all four CSV files as separate tables
  - **kf\_final\_transaction**
  - **kf\_kantor\_cabang**
  - **kf\_product**
  - **kf\_inventory**
3. Configured schema detection as auto and set the correct column data types.
4. Verified successful import by previewing table content and checking row counts.

## Tools Used:

- **Google Cloud Console**
- **BigQuery WEB UI**

# 2. Tabel Analisa

## Strategy Overview:

The tabel\_analisa was created in BigQuery as the central analytical table. It combines and enriches data from multiple sources to support deeper business insights and dashboard visualizations.

## How It Was Build:

- Base Table: kf\_final\_transaction as the core transaction log
- Join 1: kf\_kantor\_cabang to add branch name, city, and province
- Join 2: kf\_product to include product names
- Computed Files:
  - nett\_sales : actual\_price x (1 - discount)
  - nett\_profit : nett\_sales x gross profit percentage
  - persentase\_gross\_laba : calculated using a tiered logic based on price
  - rating\_cabang : calculated using AVG() over partition by branch\_id
- Result: A comprehensive table with 18 meaningful columns for analysis and reporting

## Purpose:

This table serves as the main source for Looker Studio dashboards, enabling visual insights into sales, profit, customer behavior, and branch performance.

## Example Output:

Schema	Details	Preview	Table Explorer	Preview	Insights	Lineage	Data Profile	Data Quality	
Row	transaction_id	date	branch_id	branch_name	kota	provinsi	rating_cabang	customer_name	
1	TRX6917505	2022-12-26	37602	Kimia Farma - Apotek	Garut	Jawa Barat	4.00048192...	Morgan Smith	
2	TRX2616052	2022-05-22	31604	Kimia Farma - Apotek	Pontianak	Kalimantan Barat	3.98834688...	Tiffany Berry	
3	TRX4621252	2020-11-14	28401	Kimia Farma - Apotek	Magelang	Jawa Tengah	3.99292452...	Jennifer Klein	
4	TRX2246416	2020-09-15	49520	Kimia Farma - Apotek	Subang	Jawa Barat	4.02037037...	Paul Wright	
5	TRX9076074	2022-12-29	12560	Kimia Farma - Apotek	Padang Sidempuan	Sumatera Utara	3.97743589...	Joann Daniels	
6	TRX3565472	2022-11-24	84922	Kimia Farma - Apotek	Tasikmalaya	Jawa Barat	3.99835680...	Susan Bradley	
7	TRX1232342	2023-05-30	62312	Kimia Farma - Apotek	Cianjur	Jawa Barat	3.98771929...	Linda Butler	
8	TRX6565400	2020-01-05	90734	Kimia Farma - Apotek	Sukabumi	Jawa Barat	4.02376237...	Belinda Flores	
9	TRX4605325	2022-05-09	99182	Kimia Farma - Apotek	Makassar	Sulawesi Selatan	4.00362694...	Keith Shaffer	
10	TRX6471973	2023-08-23	94051	Kimia Farma - Apotek	Gorontalo	Gorontalo	4.02301790...	Melissa Boyer	
11	TRX2571152	2021-04-13	61344	Kimia Farma - Apotek	Padang	Sumatera Barat	3.99946236...	Patricia Williams	
12	TRX1079785	2021-05-13	33816	Kimia Farma - Apotek	Kendari	Sulawesi Tenggara	4.00472222...	Kyle Conley	
13	TRX5886944	2023-09-07	64238	Kimia Farma - Apotek	Jakarta	DKI Jakarta	3.99740932...	James Kim	
14	TRX3719390	2020-05-24	63815	Kimia Farma - Apotek	Sukabumi	Jawa Barat	3.98005540...	Elizabeth Gutierrez	
15	TRX2619435	2022-10-17	59275	Kimia Farma - Apotek	Garut	Jawa Barat	3.99844155...	William Anderson	
16	TRX6231326	2020-02-02	96487	Kimia Farma - Apotek	Cikampek	Jawa Barat	3.95855614...	Jillian Adams	
17	TRX9876181	2023-07-08	47344	Kimia Farma - Apotek	Tanjungpinang	Kepulauan Riau	4.00265957...	Philip George	
18	TRX6802081	2020-08-20	34489	Kimia Farma - Apotek	Garut	Jawa Barat	4.03536895...	Paul Rivera	
19	TRX6591288	2022-06-07	99182	Kimia Farma - Apotek	Makassar	Sulawesi Selatan	4.00362694...	Kevin Bernard	

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# 3. BigQuery Syntax

## Strategy Overview:

**SQL syntax in BigQuery was utilized to transform raw transactional data into a clean, analysis-ready table enriched with calculated fields. The transformation emphasized clarity, efficiency, and reusability.**

## Key Techniques Used:

### 1. Window Function ( OVER ):

- Calculated average rating\_cabang per branch using **AVG(rating) OVER (PARTITION BY branch\_id)**

### 2. Conditional Logic ( CASE ):

- Defined persentase\_gross\_laba based on price thresholds

### 3. Join Operations:

- Combined multiple tables (**transaction**, **branch**, and **product**) using **LEFT JOIN**

### 4. Column Calculations:

- Created new fields like **nett\_sales** and **nett\_profit** using arithmetic expressions

## Result:

A new table (**tabel\_analisa**) was created using **CREATE OR REPLACE TABLE** with all transformations embedded in a single query.

# 3. BigQuery Syntax

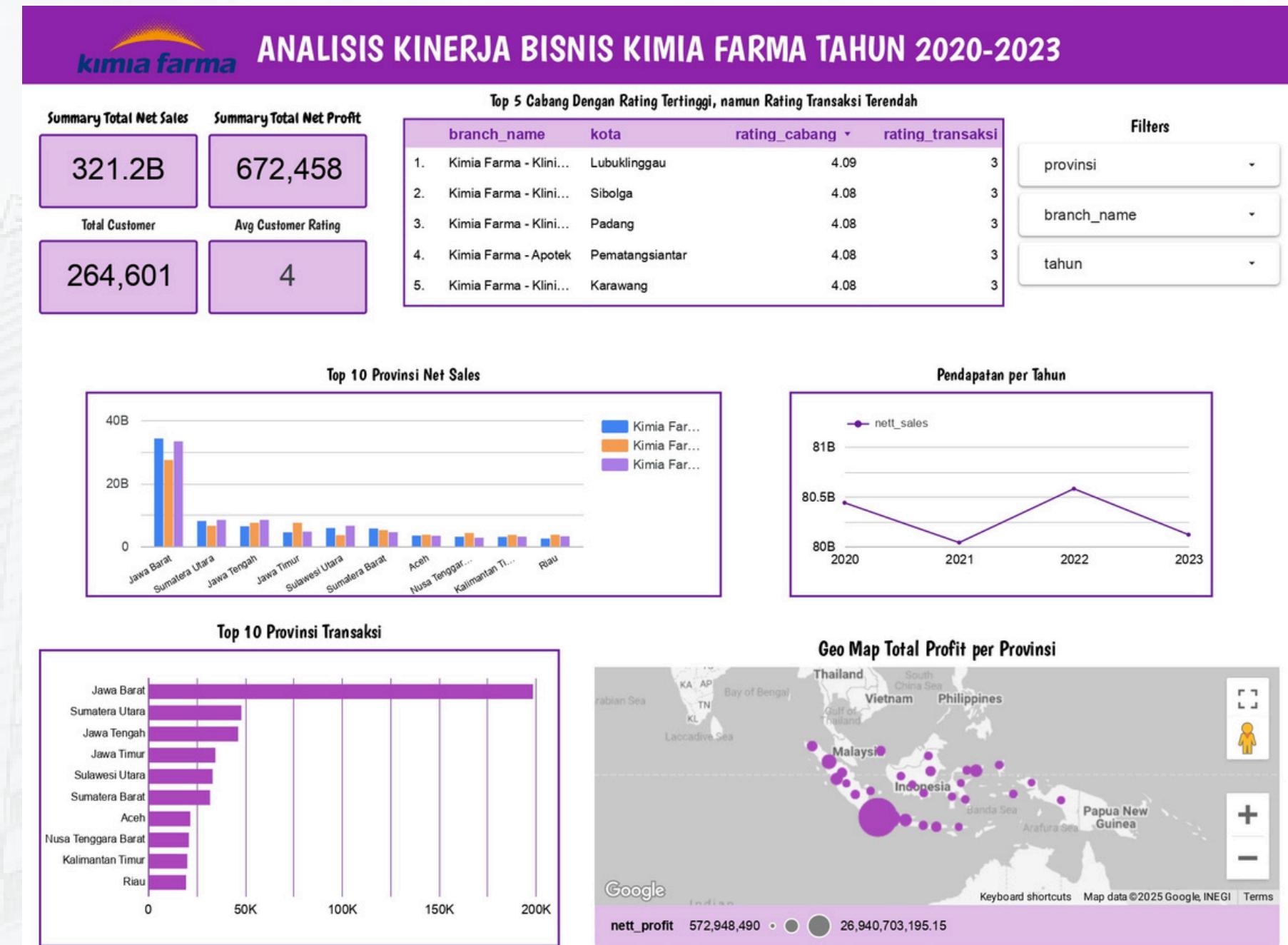
## Sample SQL Snippet: Creating Analytical Table

```
CREATE OR REPLACE TABLE `project.dataset.tabel_analisa` AS
SELECT
    t.transaction_id,
    DATE(t.date) AS date,
    kc.branch_name,
    kc.kota,
    kc.provinsi,
    AVG(t.rating) OVER (PARTITION BY t.branch_id) AS rating_cabang,
    t.rating AS rating_transaksi,
    t.price * (1 - t.discount_percentage) AS nett_sales,
    (t.price * (1 - t.discount_percentage)) *
CASE
    WHEN t.price <= 50000 THEN 0.10
    WHEN t.price <= 100000 THEN 0.15
    ELSE 0.20
END AS nett_profit
FROM
    `project.dataset.kf_final_transaction` t
JOIN
    `project.dataset.kf_kantor_cabang` kc ON t.branch_id =
kc.branch_id;
```

# 4. Dashboard Performance Analytics

The performance dashboard was built using Looker Studio to visualize Kimia Farma's business metrics from 2020 to 2023. Key indicators such as Total Net Sales, Total Net Profit, Customer Count, and Average Rating are summarized at the top.

Additional insights include top-performing branches by rating, yearly revenue trends, transaction distribution across provinces, and geographic net profit visualized on a map. Dynamic filters allow users to explore the data by province, branch, and year. These visualizations provide actionable insights to monitor performance and identify improvement opportunities across regions.



# Thank You



# Link Final Project

**1. Link Github**

**2. Link Dashboard Visualisasi**

**3. Link Video Presentasi**

Project explanation video [here!](#)