

Sales Performance Analysis

Kimia Farma - Big Data Analytics

Presented by

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Hai!

Wahyu **Tejakusuma** Kalpikajati

I am an undergraduate Management student at Universitas Sebelas Maret Surakarta, actively involved in various organizations. I am passionate about learning new things and constantly improving myself. I possess strong decision-making, leadership, and analytical skills, which I have developed through both academic and extracurricular activities.



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About **Kimia Farma**

Kimia Farma was established in 1817, making it one of the oldest pharmaceutical companies in Indonesia. Originally founded as a small drugstore by the Dutch East Indies colonial government, it has since evolved into a leading pharmaceutical company in the country. Over the years, Kimia Farma has expanded its operations to include the production, distribution, and retail of pharmaceuticals, health supplements, and medical devices. With a commitment to improving public health, Kimia Farma has grown into a trusted name in the healthcare industry, operating through a network of pharmacies, clinics, and distribution channels across Indonesia.

Kimia Farma is one of Indonesia's leading pharmaceutical companies, specializing in the production, distribution, and retail of pharmaceutical products, health supplements, and medical devices. Established in 1817, Kimia Farma has a long history of contributing to the healthcare sector, providing high-quality products and services that meet the needs of the Indonesian community. The company operates through a network of pharmacies, clinics, and distribution channels, with a strong commitment to improving public health and well-being.



Project Portfolio

The Big Data Analytics project at Kimia Farma focuses on utilizing data-driven insights to optimize business processes and enhance decision-making across various functions. As a leading pharmaceutical company in Indonesia, Kimia Farma has accumulated vast amounts of data from transactions, product inventories, and branch performance. However, there is a need to better analyze and leverage this data to drive improvements in sales performance, operational efficiency, and customer understanding. The project aims to aggregate and analyze data from four key datasets: transaction details from `kf_final_transaction.csv`, inventory data from `kf_inventory.csv`, branch information from `kf_kantor_cabang.csv`, and product data from `kf_product.csv`. The objective is to uncover patterns and trends that can help Kimia Farma make more informed decisions, identify growth opportunities, and enhance overall performance. The key challenge lies in transforming this data into actionable insights that can support the company's strategic goals and improve its competitive advantage in the pharmaceutical market.

Importing Dataset to BigQuery

The process starts with preparing the dataset, followed by creating a GCP project ('Rakamin KF Analytics') and opening the BigQuery Console. Next, the user creates a dataset ('kimiafarma') and imports data into BigQuery. After importing, they verify the data and perform data validation. Finally, the user runs an SQL query to create a new table for further analysis.

Project name *
 ?

Project ID: rakamin-kf-analytics-449515. It cannot be changed later. [Edit](#)

Location *
 [Browse](#)

Parent organization or folder

[Create](#) [Cancel](#)

Create dataset

Project ID *
rakaminkfanalytics-448816 [CHANGE](#)

Dataset ID *

Letters, numbers, and underscores allowed

| | | | |
|---|----------------------|---|---|
| ▼ | kimiafarma | ☆ | ⋮ |
| | kf_analysis | ☆ | ⋮ |
| | kf_final_transaction | ☆ | ⋮ |
| | kf_inventory | ☆ | ⋮ |
| | kf_kantor_cabang | ☆ | ⋮ |
| | kf_product | ☆ | ⋮ |

Create table

Source

Create table from

Select file *

File format

Tabel Analisa

This BigQuery table records transactional data for *Kimia Farma - Apotek*, tracking sales across multiple branches. It helps analyze sales trends, seasonal patterns, and branch performance by comparing transaction volumes across regions. The data also provides insights into market distribution, operational efficiency, and potential anomalies. When integrated with product and customer data, it enables deeper analysis of purchasing behavior and inventory optimization, supporting data-driven decision-making for business growth.

kf_analysis [QUERY](#) [SHARE](#) [COPY](#) [SNAPSHOT](#) [DELETE](#) [EXPORT](#) [REFRESH](#)

| | SCHEMA | DETAILS | PREVIEW | TABLE EXPLORER | PREVIEW | INSIGHTS | LINEAGE | DATA PROFILE | DATA QUALITY |
|-----|----------------|------------|-----------|----------------------|------------------|------------------|---------|--------------|--------------|
| Row | transaction_id | date | branch_id | branch_name | kota | provinsi | | | |
| 1 | TRX5700726 | 2022-02-25 | 63942 | Kimia Farma - Apotek | Bandung | Jawa Barat | | | |
| 2 | TRX5309371 | 2020-06-22 | 52192 | Kimia Farma - Apotek | Karawang | Jawa Barat | | | |
| 3 | TRX6519084 | 2021-07-19 | 82894 | Kimia Farma - Apotek | Tomohon | Sulawesi Utara | | | |
| 4 | TRX6347654 | 2020-04-18 | 18983 | Kimia Farma - Apotek | Solok | Sumatera Barat | | | |
| 5 | TRX2547704 | 2021-03-16 | 41085 | Kimia Farma - Apotek | Padang Sidempuan | Sumatera Utara | | | |
| 6 | TRX7390898 | 2022-08-15 | 46963 | Kimia Farma - Apotek | Sibolga | Sumatera Utara | | | |
| 7 | TRX6546900 | 2020-09-26 | 82095 | Kimia Farma - Apotek | Tomohon | Sulawesi Utara | | | |
| 8 | TRX2534048 | 2023-01-14 | 65560 | Kimia Farma - Apotek | Balikpapan | Kalimantan Timur | | | |
| 9 | TRX1835105 | 2021-02-25 | 82832 | Kimia Farma - Apotek | Purwakarta | Jawa Barat | | | |
| 10 | TRX3306143 | 2023-08-26 | 45072 | Kimia Farma - Apotek | Surabaya | Jawa Timur | | | |
| 11 | TRX6666285 | 2021-03-30 | 48667 | Kimia Farma - Apotek | Cikampek | Jawa Barat | | | |
| 12 | TRX4096078 | 2022-08-19 | 66717 | Kimia Farma - Apotek | Subang | Jawa Barat | | | |
| 13 | TRX2934060 | 2022-03-20 | 61007 | Kimia Farma - Apotek | Purwakarta | Jawa Barat | | | |

BigQuery Syntax

Create Table

This SQL creates the `kf_analysis` table in the `kimia_farma` database by integrating data from `kf_final_transaction`, `kf_inventory`, `kf_kantor_cabang`, and `kf_product`. It consolidates transaction records, inventory, branch details, and product data into a structured table, enabling efficient analysis of sales, stock, and operations to support strategic decision-making.

```
BigQuery Syntax for Task Sales Performance Big Data Analytics Kimia Farma Business Year 2020-2023  
CREATE TABLE `kimiafarma.kf_analysis` AS
```

Source : from GitHub Repository, [here!](#)

```
SELECT
  t.transaction_id,
  t.date,
  t.branch_id,
  c.branch_name,
  c.city,
  c.province,
  t.rating AS rating_transaction,
  t.customer_name,
  t.product_id,
  p.product_name,
  t.price,
  t.discount_percentage,
CASE
  WHEN t.price <= 50000 THEN 0.1
  WHEN t.price > 50000 AND t.price <= 100000 THEN 0.15
  WHEN t.price > 100000 AND t.price <= 300000 THEN 0.2
  WHEN t.price > 300000 AND t.price <= 500000 THEN 0.25
  ELSE 0.3
END AS gross_profit_percentage,
(t.price * (1 - (t.discount_percentage / 100))) AS nett_sales,
(t.price * (1 - (t.discount_percentage / 100))) *
CASE
  WHEN t.price <= 50000 THEN 0.1
  WHEN t.price > 50000 AND t.price <= 100000 THEN 0.15

  WHEN t.price > 100000 AND t.price <= 300000 THEN 0.2
  WHEN t.price > 300000 AND t.price <= 500000 THEN 0.25
  ELSE 0.3
END) AS nett_profit,
```

BigQuery Syntax

Data Select

This **SELECT** statement retrieves data from **kf_final_transaction**, **kf_kantor_cabang**, and **kf_product**, selecting specific columns while applying transformations. It computes **gross_profit_percentage** from the price, **nett_sales** by subtracting the discount, and **nett_profit** using **nett_sales** and **gross_profit_percentage** to enhance sales and profitability analysis.

Source : from GitHub Repository, [here!](#)

BigQuery Syntax

Data Joins

This BigQuery syntax retrieves data by joining three tables: `kf_final_transaction`, `kf_kantor_cabang`, and `kf_product`. It selects data from `kf_final_transaction` and joins it with `kf_kantor_cabang` on `branch_id` and with `kf_product` on `product_id`. The query returns records where there are matching `branch_id` and `product_id` values across all three tables, combining transaction, branch, and product details.

```
FROM `kimiafarma.kf_final_transaction` t
JOIN `kimiafarma.kf_kantor_cabang` c ON t.branch_id = c.branch_id
JOIN `kimiafarma.kf_product` p ON t.product_id = p.product_id;
```

BigQuery Syntax

Exploratory Data Analysis

This BigQuery syntax performs an exploratory data analysis on the `kf_analysis` table in the `kimia_farma` dataset. It aggregates various metrics by `branch_name`, including the total number of transactions, the earliest and latest transaction dates, the average price, discount percentage, and gross profit percentage. Additionally, it calculates the total net sales and net profit, as well as the average transaction and branch ratings. The query also counts the distinct number of customers per branch. Finally, the results are ordered by total net sales in descending order, providing insights into the performance of each branch.

```
SELECT
  COUNT(*) AS total_transactions,
  MIN(date) AS earliest_date,
  MAX(date) AS latest_date,
  AVG(price) AS average_price,
  AVG(discount_percentage) AS average_discount_percentage,
  AVG(gross_profit_percentage) AS average_gross_profit_percentage,
  SUM(nett_sales) AS total_net_sales,
  SUM(nett_profit) AS total_net_profit,
  AVG(rating_transaction) AS average_transaction_rating,
  AVG(rating_branch) AS average_branch_rating,
  branch_name,
  COUNT(DISTINCT customer_name) AS total_customers
FROM `kimiafarma.kf_analysis`
GROUP BY branch_name
ORDER BY total_net_sales DESC;
```

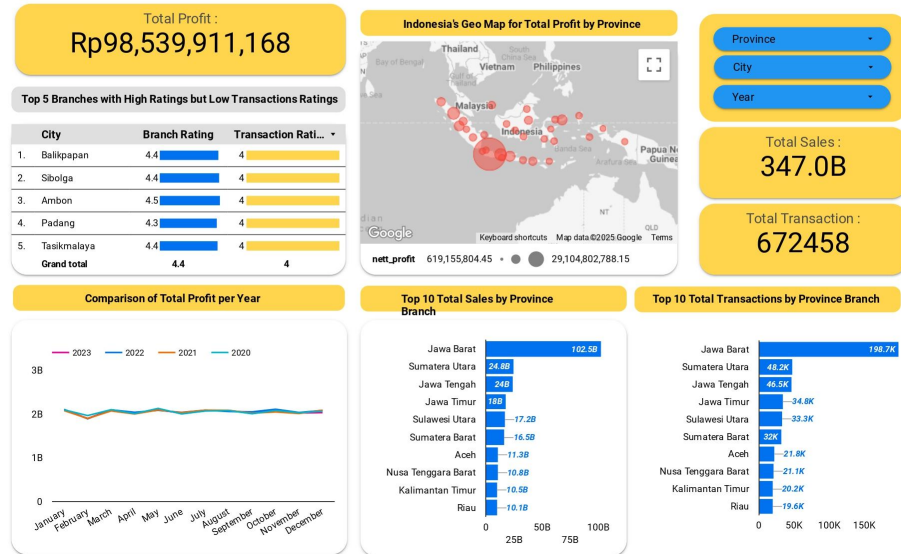
Source : from GitHub Repository, [here!](#)

Dashboard Performance Analytics

For my final task, I was assigned to create data visualizations using Google Looker Studio to effectively present and analyze the aggregated data from Kimia Farma's business performance.



Performance Analytics Kimia Farma Dashboard Business Year 2020-2023



Source : from Google Looker Studio, [here!](#)

Thank You



Rakamin
Academy



kimia farma