

Kimia Farma Business Performance Analysis (2020–2023)

Data-Driven Insights for Business Growth and Operational Excellence

Kimia Farma - Big Data Analytics

Presented by

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Data Enthusiast

I am an Electrical Engineering graduate with a strong interest in Data Science and Analytics. My engineering background has shaped me to be analytical and solution-oriented. I am currently developing skills in Python, SQL, and data visualization to generate insights that support data-driven decision-making.



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Courses and Certification



Data Science & Machine Learning Course | Purwadhika Digital Technology School
March - August 2025



Fundamental Python | Coding Studio
June, 2025



Fundamental Data Science | Coding Studio
June, 2025



Fundamental Database MySQL | Coding Studio
June, 2025



Data Science Intermediate | Coding Studio
June, 2025

Table of Content

1

Introduction

Overview of Kimia Farma and objectives of the performance analysis project.

2

Data & Analytics

Datasets, Tools, and BigQuery integration.

3

Dashboard Development

Designing Looker Studio dashboard, applying filters, visualizing KPIs, YoY revenue, top sales, branch ratings, and geo map.

4

Insights

Key findings from sales and performance analysis

5

Conclusion & Recommendations

Summary of analysis with strategic actions for Kimia Farma's business improvement

About Company

PT Kimia Farma Tbk. is one of Indonesia's oldest and leading pharmaceutical companies, established in 1817 and operating as a state-owned enterprise. The company manages an integrated business covering the production of medicines and health products, nationwide distribution, and healthcare services through a vast network of pharmacies, clinics, and laboratories. In addition, Kimia Farma continues to expand its retail and digital health infrastructure, with a strong commitment to providing high-quality, affordable, and accessible healthcare for the Indonesian people.



Project Deliverables (Code & Video)

This project provides supporting materials including the SQL syntax on GitHub and a presentation video explaining the dashboard and analysis.



SQL Syntax
[GitHub Repository](#)



Presentation Video
[YouTube](#)

Project Overview

Problem Statement & Object

Kimia Farma's nationwide pharmaceutical performance (2020–2023) has not been fully assessed, making it difficult to monitor revenue trends, regional variations, profit distribution, and customer satisfaction. To address this, the project aims to build a data-driven dashboard that provides clear business insights to support strategic decision-making.

Business Questions

- How has revenue grown year over year?
- Which provinces/branches contribute most to transactions and net sales?
- Which branches have high ratings but low transaction satisfaction?
- How is profit distributed across provinces?

Target

Deliver actionable insights and recommendations to support Kimia Farma's business strategy.

Datasets



kf_final_transaction.csv



kf_inventory.csv



kf_kantor_cabang.csv



kf_product.csv

Tools



Google
Big Query

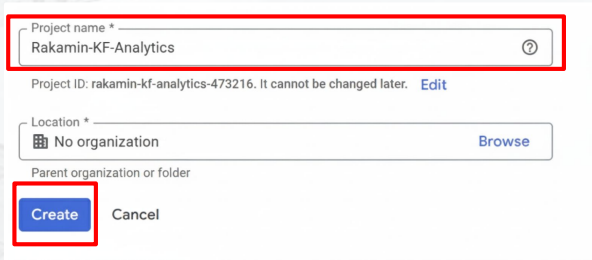


Looker Studio

Data Preparation: BigQuery Setup & Data Import

Preparing BigQuery environment by creating project, dataset, and uploading tables for analysis.

1. Creating a new project



Project name *
Rakamin-KF-Analytics

Project ID: rakamin-kf-analytics-473216. It cannot be changed later. [Edit](#)

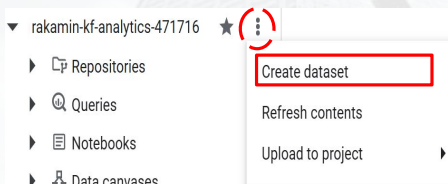
Location *
No organization [Browse](#)

Parent organization or folder

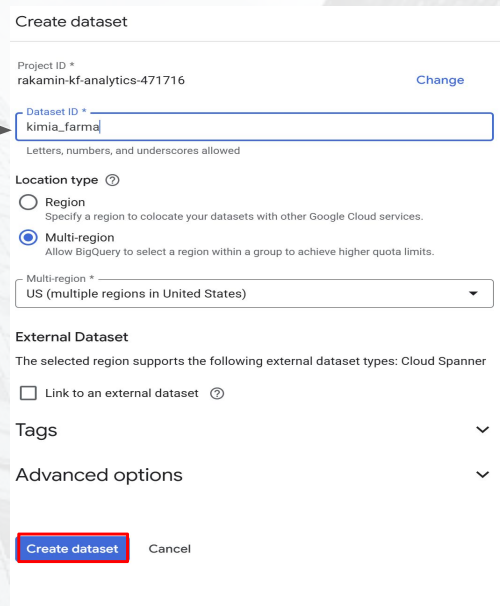
[Create](#) Cancel

Enter the project name (e.g., *Rakamin-KF-Analytics*) and confirm the details before clicking **Create**.

2. Creating dataset



Set up a dataset called '**kimia_farma**' to store analysis tables.



Create dataset

Project ID *
rakamin-kf-analytics-471716 [Change](#)

Dataset ID *
kimia_farma
Letters, numbers, and underscores allowed

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.

Multi-region *
US (multiple regions in United States)

External Dataset

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

☐ Link to an external dataset [?](#)

Tags

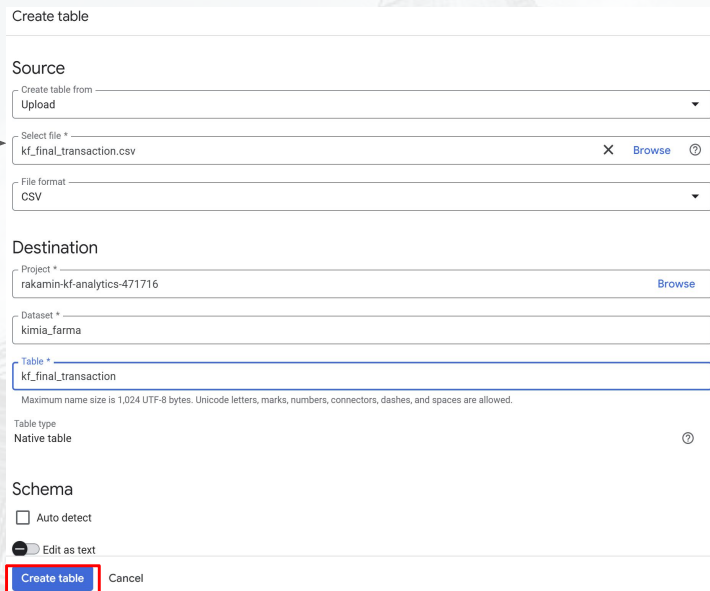
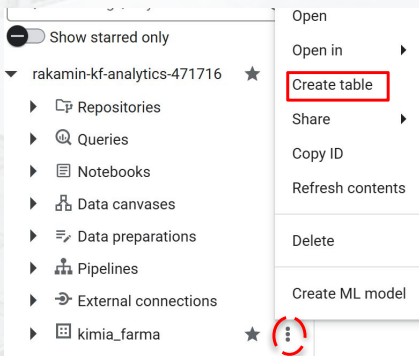
Advanced options

[Create dataset](#) Cancel

Data Preparation: BigQuery Setup & Data Import

Preparing BigQuery environment by creating project, dataset, and uploading tables for analysis.

3. Upload & Table created

A screenshot of the 'Create table' dialog box. The 'Source' section has 'Create table from' set to 'Upload'. The 'Select file' field contains 'kf_final_transaction.csv'. The 'File format' is set to 'CSV'. The 'Destination' section has 'Project' set to 'rakamin-kf-analytics-471716', 'Dataset' set to 'kimia_farma', and 'Table' set to 'kf_final_transaction'. The 'Table type' is 'Native table'. The 'Schema' section has 'Auto detect' checked. At the bottom, there are 'Create table' and 'Cancel' buttons. The 'Create table' button is highlighted with a red rectangle.

1. Import dataset from local files.
2. Assign it to the dataset 'kimia_farma'.
3. Keep the table name consistent with the original dataset.
4. Repeat the process for all datasets.

Data Schema: Kimia Farma Tables

Mapping available tables and selecting target columns for analysis

kf_final_transaction.csv	kf_inventory.csv	kf_kantor_cabang.csv	kf_product.csv
transaction_id	Inventory_ID	branch_id	product_id
date	branch_id	branch_category	product_name
branch_id	product_id	branch_name	product_category
customer_name	product_name	kota	price
product_id	opname_stock	provinsi	
price		rating	
discount_percentage			
rating			

Understanding table relationships and preparing data structure for queries.

Data Transformation: BigQuery Query Integration

Joining tables, applying calculations, and creating the final dataset for analysis.

```

1  -- Create Analysis Table for Kimia Farma (2020-2023)
2  CREATE OR REPLACE TABLE `rakamin-kf-analytics-471716.kimia_farma.kf_analysis_table` AS
3  SELECT
4    -- Transaction info
5    ft.transaction_id,
6    ft.date,
7    ft.branch_id,
8    ft.customer_name,
9    ft.rating AS rating_transaksi,
10
11   -- Branch info
12   kc.branch_name,
13   kc.kota,
14   kc.provinsi,
15   kc.rating AS rating_cabang,
16
17   -- Product info
18   p.product_id,
19   p.product_name,
20   p.price AS actual_price,
21
22   -- Discount & sales
23   ft.discount_percentage,
24   p.price * (1 - ft.discount_percentage/100.0) AS nett_sales,
25
26   -- Profit calculation
27   CASE
28     WHEN p.price <= 50000 THEN 0.10
29     WHEN p.price <= 100000 THEN 0.15
30     WHEN p.price <= 300000 THEN 0.20
31     WHEN p.price <= 500000 THEN 0.25
32     ELSE 0.30
33   END AS gross_profit_percentage,
34
35   (p.price * (1 - ft.discount_percentage/100.0)) *
36   CASE
37     WHEN p.price <= 50000 THEN 0.10
38     WHEN p.price <= 100000 THEN 0.15
39     WHEN p.price <= 300000 THEN 0.20
40     WHEN p.price <= 500000 THEN 0.25
41     ELSE 0.30
42   END AS nett_profit
43
44 -- Combine transaction data with branch and product information for analysis
45 FROM `rakamin-kf-analytics-471716.kimia_farma.kf_final_transaction` ft
46 LEFT JOIN `rakamin-kf-analytics-471716.kimia_farma.kf_kantor_cabang` kc
47   ON ft.branch_id = kc.branch_id
48 LEFT JOIN `rakamin-kf-analytics-471716.kimia_farma.kf_product` p
49   ON ft.product_id = p.product_id;

```

5

2

3

4

1

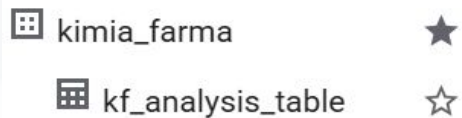
Step-by-Step Query Flow

- Join Tables**
Merge transaction data with branch and product information using **JOIN**.
- Select Key Columns**
Extract important fields such as transaction info, branch details, and product attributes.
- Calculate Nett Sales**
Compute sales after applying discount:
 $price * (1 - discount_percentage/100)$
- Calculate Profit Metrics**
Add gross profit percentage and nett profit based on price range.
- Save Final Dataset**
Store the results into a new analysis table: **kf_analysis_table**.

Final Dataset Ready for Dashboard

Consolidated dataset prepared in BigQuery, ready to be visualized in dashboards.

Final dataset for analysis:

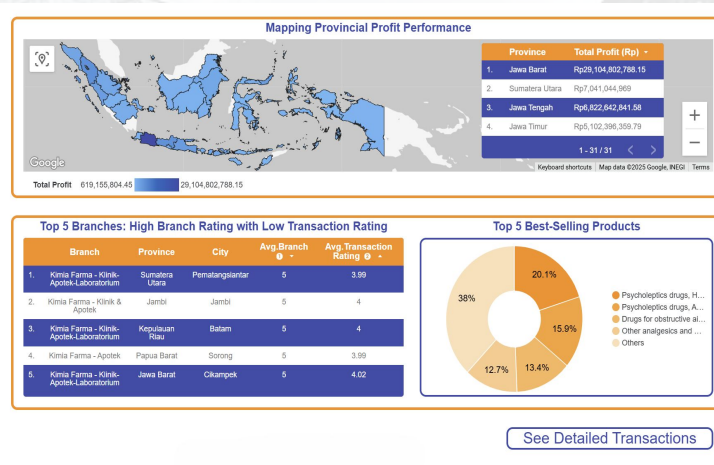
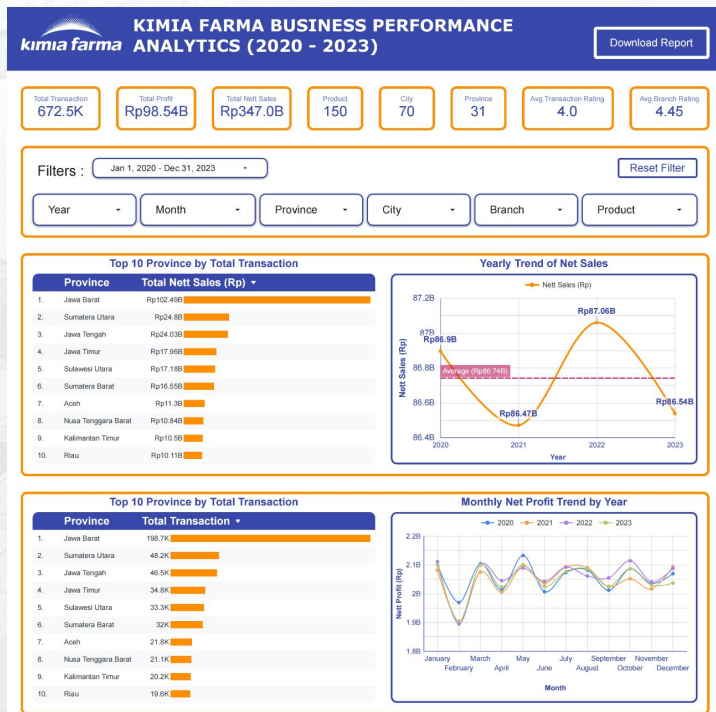


Transaction Info	Branch Info	Product Info	Calculated Metrics
<ul style="list-style-type: none">• transaction_id• date• branch_id• customer_name• rating_transaksi	<ul style="list-style-type: none">• branch_name• kota• provinsi• rating_cabang	<ul style="list-style-type: none">• product_id• product_name• actual_price• discount_percentage	<ul style="list-style-type: none">• nett_sales• gross_profit_percentage• nett_profit

This dataset will be the foundation for creating dashboards to analyze performance and gain insights.

Performance Dashboard



High-level visualization of Kimia Farma's business performance (2020–2023).



[Explore the Dashboard](#)

Transaction Detail Table

Detailed sales transaction records with interactive filters for deeper exploration.


TRANSACTION DETAIL TABLE


Year
Month
Reset Filter

Return to Dashboard

TRX ID	Date	Cust.Name	Province	City	Branch Name	Branch ID	Actual Price	Discount	Nett Sales	Profit	Trx Rate	Branch Rate
TRX1000004	Dec 5, 2021	Patricia Harris MD	Jawa Tengah	Purwokerto	Kimia Farma - Klinik-Aptek-Laboratorium	87800	455.9K	6.00%	455.6K	113.9K	3.70	4.60
TRX1000063	Apr 20, 2023	Savannah Long	Jawa Barat	Karawang	Kimia Farma - Klinik-Aptek-Laboratorium	30178	739.1K	5.00%	738.7K	221.6K	4.40	4.80
TRX1000068	Mar 9, 2020	Ashley Sandoval	Kalimantan Timur	Balikpapan	Kimia Farma - Klinik & Apotek	46605	411.3K	1.00%	411.3K	102.8K	3.90	4.20
TRX1000070	Jul 10, 2022	Antonio Hernandez	Jawa Barat	Karawang	Kimia Farma - Apotek	40625	296.9K	13.00%	296.5K	59.3K	3.10	4.40
TRX1000078	Jul 19, 2023	Lisa Lam	Maluku Utara	Ternate	Kimia Farma - Klinik-Aptek-Laboratorium	83862	723.8K	5.00%	723.4K	217K	4.00	4.70
TRX1000096	Jul 24, 2022	Amy Hoffman	Sumatera Utara	Delit Serdang	Kimia Farma - Klinik-Aptek-Laboratorium	74389	633K	2.00%	632.9K	189.9K	4.40	4.10
TRX1000110	Jan 12, 2023	Scott French	Maluku	Ambon	Kimia Farma - Klinik-Aptek-Laboratorium	17054	51.2K	1.00%	51.2K	7.7K	3.70	4.90
TRX1000132	Nov 1, 2021	Patricia Glass	Kalimantan Barat	Pontianak	Kimia Farma - Apotek	13792	2.1K	5.00%	2.1K	209.9	4.50	4.00
TRX1000142	Jul 30, 2020	Amanda Jones	Kalimantan Barat	Pontianak	Kimia Farma - Klinik & Apotek	42322	765.5K	12.00%	764.6K	229.4K	4.00	4.60

1 - 100 / 672458 < >

Find any transaction in seconds with Quick Search.

[Access Transaction Details](#)

Yearly Sales Performance Analysis

Tracking net sales trend from 2020 to 2023 to evaluate growth stability and yearly fluctuations.

Yearly Trend of Net Sales

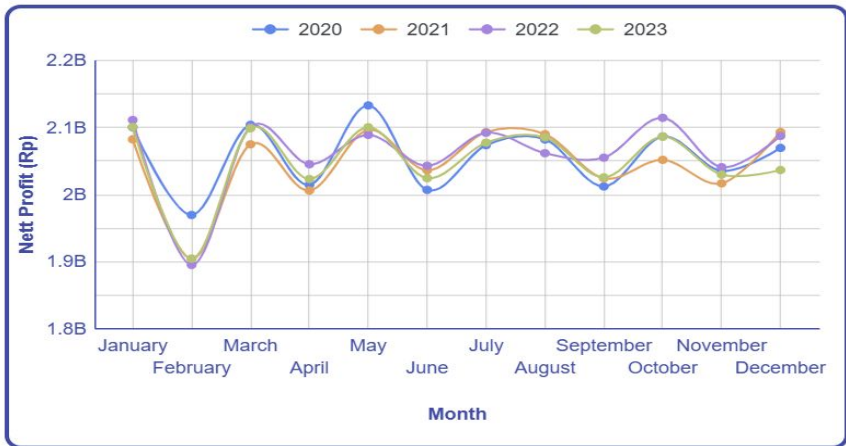


- **2020–2021 decline** → initial impact of COVID-19.
- **2021–2022 sharp growth** → recovery & successful adaptation.
- **2022–2023 decline again** → critical area requiring investigation.

Monthly Net Profit Trend by Year

Comparison of monthly net profit performance from 2020–2023.

Monthly Net Profit Trend by Year



- **February = lowest profit** each year.
- **May & October = peak profits**, showing consistent seasonal trend.
- This trend → opportunities for **seasonal promotion & inventory strategy**.

Top Provinces by Sales & Transactions

Analysis of provinces with the highest total sales and transaction volumes.

Top 10 Province by Total Transaction		
	Province	Total Transaction ▾
1.	Jawa Barat	198.7K
2.	Sumatera Utara	48.2K
3.	Jawa Tengah	46.5K
4.	Jawa Timur	34.8K
5.	Sulawesi Utara	33.3K
6.	Sumatera Barat	32K
7.	Aceh	21.8K
8.	Nusa Tenggara Barat	21.1K
9.	Kalimantan Timur	20.2K
10.	Riau	19.6K

Top 10 Province by Total Nett Sales		
	Province	Total Nett Sales (Rp) ▾
1.	Jawa Barat	Rp102.49B
2.	Sumatera Utara	Rp24.8B
3.	Jawa Tengah	Rp24.03B
4.	Jawa Timur	Rp17.96B
5.	Sulawesi Utara	Rp17.18B
6.	Sumatera Barat	Rp16.55B
7.	Aceh	Rp11.3B
8.	Nusa Tenggara Barat	Rp10.84B
9.	Kalimantan Timur	Rp10.5B
10.	Riau	Rp10.11B

- **West Java** = dominant in transactions (**198,723**), highly active customer base.
- **Rp102,49 Billion in net sales** → largest contribution & core market

Top 5 Branches: High Branch Rating with Low Transaction Rating

Branches with strong customer ratings but limited transaction volume – revealing potential growth opportunities.

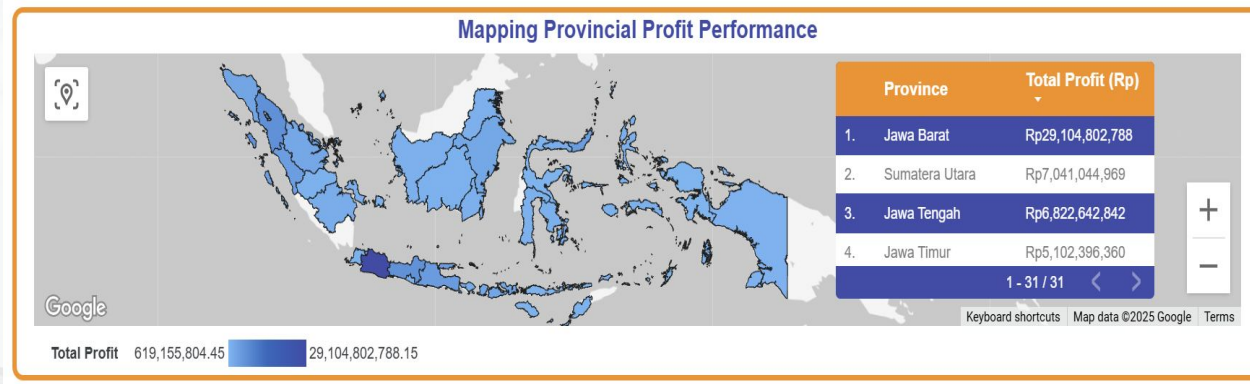
Top 5 Branches: High Branch Rating with Low Transaction Rating

	Branch	Province	City	Avg.Branch Rating ① ▾	Avg.Transaction Rating ② ▲
1.	Kimia Farma - Klinik & Apotek	Kalimantan Utara	Tarakan	5	3.91
2.	Kimia Farma - Klinik & Apotek	Kepulauan Riau	Batam	5	3.93
3.	Kimia Farma - Klinik & Apotek	Bangka Belitung	Pangkalpinang	5	3.93
4.	Kimia Farma - Apotek	Bali	Denpasar	5	3.96
5.	Kimia Farma - Klinik-Apotek-Laboratorium	Sumatera Barat	Solok	5	3.96

- Some branches have **high ratings but low transactions** → untapped market potential.
- Need **localized promotions & loyalty programs** to optimize branch performance.

Provincial Profit Mapping

Mapping provincial profit distribution to visualize financial performance.

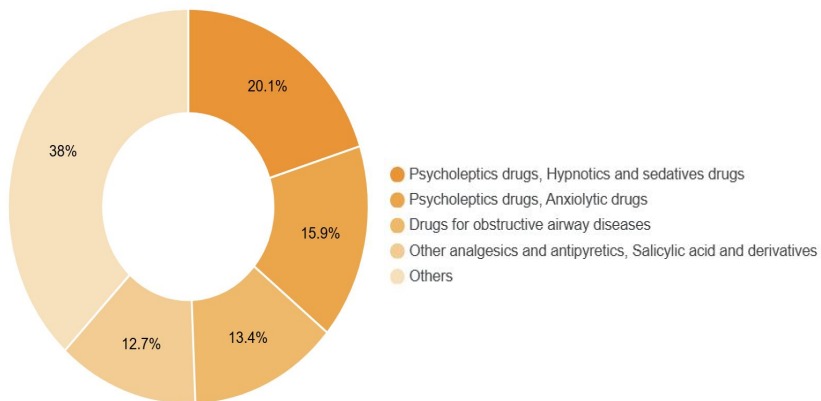


- **West Java** is the top contributor with **Rp29.1B**, far ahead of other provinces.
- **North Sumatra (Rp7.0B)** and **Central Java (Rp6.8B)** are in the Top 3, but still significantly behind West Java.
- **Profit distribution is uneven**, with Java island showing strong dominance.
- **Provinces outside Java** still contribute, but at a relatively smaller scale compared to Java's economic centers.

Top 5 Best-Selling Product

Distribution of sales contribution by product category.

Top 5 Best-Selling Product



- **‘Psycholeptic drugs, Hypnotics and Sedatives’** lead the market with **20.1%** share, making it the top contributing category.
- Closely followed by **‘Psycholeptic drugs, Anxiolytics’**, which also hold a significant share.
- Meanwhile, **‘Drugs for Obstructive Airway Diseases’** ranks next, securing a spot in the top three best-selling categories

Conclusion

Summarizing the performance analysis of Kimia Farma 2020–2023, highlighting trends, key strengths, and challenges to address.

The performance analysis of Kimia Farma (2020–2023) reveals:

- **2020–2021:** Revenue decline due to the early COVID-19 impact.
- **2021–2022:** Strong recovery with significant sales and profit growth.
- **2022–2023:** Another downturn, highlighting the need for sustainable strategies.
- **West Java** consistently emerges as the core market, leading in transactions, sales, and profit.
- **Psycholeptic Drugs** remain the top product category driving sales and transactions.
- Branch disparities (e.g., Tarakan with high branch rating but low transaction rating) highlight the need for operational review.

Recommendations

Data-driven strategic recommendations to support efficiency, sustainable growth, and enhance Kimia Farma's competitiveness.

- **Branch Optimization:** Enhance underperforming branches with high ratings but low transactions via localized promotions & loyalty programs.
- **Product Diversification:** Expand beyond Psycholeptic Drugs to balance revenue sources.
- **Seasonal Strategy:** Leverage monthly peaks (e.g., May & October) for promotional campaigns and inventory planning.
- **Non-Java Expansion:** Strengthen distribution and presence in provinces outside Java to grow the customer base.
- **Digital & CX Enhancement:** Improve digital services and customer experience to maintain satisfaction and boost transactions.

Thank You



Rakamin
Academy



kimia farma