

Sales Insights-Data Analysis

Dashboard for AtliQ Hardware

Problem statement / Project scope

AtliQ hardware is a company which delivers computer hardware & peripheral Manufacturers to his clients, which has several branches throughout India. The sales director of the company is facing a lot of issues in terms of understanding how the business is performing and what are all the problem company is facing currently as the sales are not as expected and declining gradually.

Solution approach

To address the problem statement, the following approach was used:

- * Data Import and Initial Analysis:

The sales data was provided in a SQL dump file, which was imported into a SQL database. Initial insights were drawn from the data using SQL queries and analysis techniques to gain a preliminary understanding of the sales trend.

- * Connecting SQL Database to Power BI:

The SQL database was connected to Power BI, establishing a live connection or importing the necessary data tables into Power BI.

- * Data Modeling and Relationship Creation:

Data modeling was performed within Power BI to create relationships between the relevant tables in the SQL database. This step ensured that the data could be properly analyzed and visualized.

* Dashboard Creation - Key Insights:

The first type of dashboard, "Key Insights," was created to provide an overview of the sales trend. This dashboard focused on presenting high-level metrics, such as total sales, top-selling products, sales by region, and sales by time period. Visualizations like charts, graphs, and KPIs were used to convey the key insights effectively.

* Dashboard Creation - Profit Analysis:

The second type of dashboard, "Profit Analysis," aimed to provide in-depth insights into the profitability of AtliQ hardware goods. This dashboard included visualizations and calculations related to profit margins, cost analysis, and product profitability. It allowed users to identify profitable products, assess cost effectiveness, and optimize pricing strategies.

* Dashboard Creation - Performance Insights:

The third type of dashboard, "Performance Insights," focused on analyzing the performance of AtliQ hardware goods. This dashboard provided visualizations and metrics related to sales performance, sales growth, customer segmentation, and market share. It enabled users to track performance trends, identify growth opportunities, and make data-driven decisions.

Each dashboard was designed to be interactive, allowing users to filter and drill down into specific dimensions or time periods of interest.

Data Analysis using MySQL

The screenshot displays the MySQL Data Import/Restore wizard. The left sidebar contains navigation menus for MANAGEMENT (Server Status, Client Connections, Users and Privileges, Status and System Variables, Data Export, Data Import/Restore), INSTANCE (Startup / Shutdown, Server Logs, Options File), PERFORMANCE (Dashboard, Performance Reports, Administration, Schemas), and Information. The main window is titled 'Data_imports' and shows the 'Administration - Data Import/Restore' tab. The 'Data Import' section is active, with 'Import from Disk' selected. Under 'Import Options', 'Import from Dump Project Folder' is chosen, with the path 'C:\Users\HP\Documents\dumps' entered. Below this, a 'Load Folder Contents' button is visible. The 'Import from Self-Contained File' option is also present, with the path 'C:\Users\HP\Documents\dumps\export.sql' entered. The 'Default Schema to be Imported To' section shows a dropdown for 'Default Target Schema' and a 'New...' button, with a note explaining its use. The 'Select Database Objects to Import' section includes two input fields for 'Imp...' and 'Schema'. The 'Output' section at the bottom shows 'Action Output' and a table with columns for '#', 'Time', 'Action', 'Message', and 'Duration / Fetch'. A right-hand pane titled 'SQLAdditions' contains a message about disabled automatic context help.

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Administration
- Schemas

Information

No object selected

Data Import

Import from Disk | Import Progress

Import Options

☒ Import from Dump Project Folder C:\Users\HP\Documents\dumps ...

Select the Dump Project Folder to import. You can do a selective restore.

Load Folder Contents

☐ Import from Self-Contained File C:\Users\HP\Documents\dumps\export.sql ...

Select the SQL/dump file to import. Please note that the whole file will be imported.

Default Schema to be Imported To

Default Target Schema: [Dropdown] New...

The default schema to import the dump into.
NOTE: this is only used if the dump file doesn't contain its schema, otherwise it is ignored.

Select Database Objects to Import (only available for Project Folders)

Imp... Schema Imp... Schema Objects

Output

Action Output

#	Time	Action	Message	Duration / Fetch
---	------	--------	---------	------------------

SQLAdditions

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Context Help Snippets

Queries:

The screenshot shows the SQL Developer interface with the following components:

- Navigator:** Displays a tree view with categories: MANAGEMENT (Server Status, Client Connections, Users and Privileges, Status and System Variables, Data Export, Data Import/Restore), INSTANCE (Startup / Shutdown, Server Logs, Options File), and PERFORMANCE (Dashboard, Performance Reports, Administration, Schemas). The 'Information' tab is selected, showing 'No object selected'.
- Query Editor:** The main workspace for writing SQL. It contains two queries:

```
1 /*Show all date records*/  
2 • SELECT * FROM sales.date;  
3  
4 /*Show transactions in 2020 join by date table*/  
5 • SELECT  
6     sales.transactions.*, sales.date.*  
7 FROM  
8     sales.transactions  
9     INNER JOIN  
10    sales.date ON sales.transactions.order_date = sales.date.date  
11 WHERE  
12    sales.date.year = 2020;  
13  
14 /*Show transactions in 2019 join by date table*/  
15 • SELECT  
16    sales.transactions.*, sales.date.*  
17 FROM
```
- SQL Additions:** A sidebar on the right with a 'Jump to' search bar and a message: 'Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.'
- Output:** A panel at the bottom showing 'Action Output' with columns for '#', 'Time', 'Action', 'Message', and 'Duration / Fetch'.

Data modelling in Power Pivot

The screenshot displays the Microsoft Power Pivot data modeling interface. The ribbon at the top includes tabs for File, Home, and Help, with various tool groups like Get data, Transform data, Manage relationships, and Calculations. The main workspace shows a star schema diagram with five tables:

- sales products**: product_code, product_type
- sales customers**: customer_name, customer_code, customer_type
- sales transactions**: currency, customer_code, market_code, norm_amount, order_date, product_code, sales_amount, sales_qty
- sales date**: cy_date, date, date_yy_mmm, month_name, year
- sales markets**: markets_code, markets_name, zone

The relationships are as follows:

- sales products** (1) to **sales transactions** (many) on product_code.
- sales customers** (1) to **sales transactions** (many) on customer_code.
- sales transactions** (1) to **sales date** (many) on order_date.
- sales transactions** (1) to **sales markets** (many) on market_code.

The right-hand pane shows the Data section with a list of tables: BaseMeasures, sales customers, sales date, sales markets, sales products, and sales transactions. The bottom status bar indicates 'All tables' and a zoom level of 62%.

Various Queries Used

```
SELECT * FROM sales.marke
```

```
SELECT * FROM sales.transactions;
```

1.To find of all customers records

```
SELECT * FROM sales.customers;
```

2.To find total number of customers

```
SELECT count(*) From sales.customers;
```

3.To find transactions for Chennai market (market code for chennai is Mark001

```
SELECT * FROM sales.transactions where market_code='Mark001';
```

4.To find distinct product codes that were sold in chennai

```
SELECT distinct product_code FROM sales.transactions where market_code='Mark001';
```

5.To find transactions for Chennai market (market code for chennai is Mark002

```
SELECT * FROM sales.transactions where market_code='Mark002';
```


Queries:

6.To find distinct product codes that were sold in Mumbai

```
SELECT distinct product_code FROM sales.transactions where market_code='Mark002';
```

7.To find transactions where currency is US dollars

```
SELECT * from sales.transactions where currency="USD";
```

8.To find transactions in 2020 join by date table

```
SELECT sales.transactions.*, sales.date.* FROM sales.transactions INNER JOIN sales.date ON sales.transactions.order_date=sales.date.date where sales.date.year=2020;
```

9.To find total revenue in year 2020,

```
SELECT SUM(sales.transactions.sales_amount) FROM sales.transactions INNER JOIN sales.date ON sales.transactions.order_date=sales.date.date where sales.date.year=2020 and sales.transactions.currency="INR\r" or sales.transactions.currency="USD\r";
```

10.To find total revenue in year 2019,

```
SELECT SUM(sales.transactions.sales_amount) FROM sales.transactions INNER JOIN sales.date ON sales.transactions.order_date=sales.date.date where sales.date.year=2019 and sales.transactions.currency="INR\r" or sales.transactions.currency="USD\r";
```

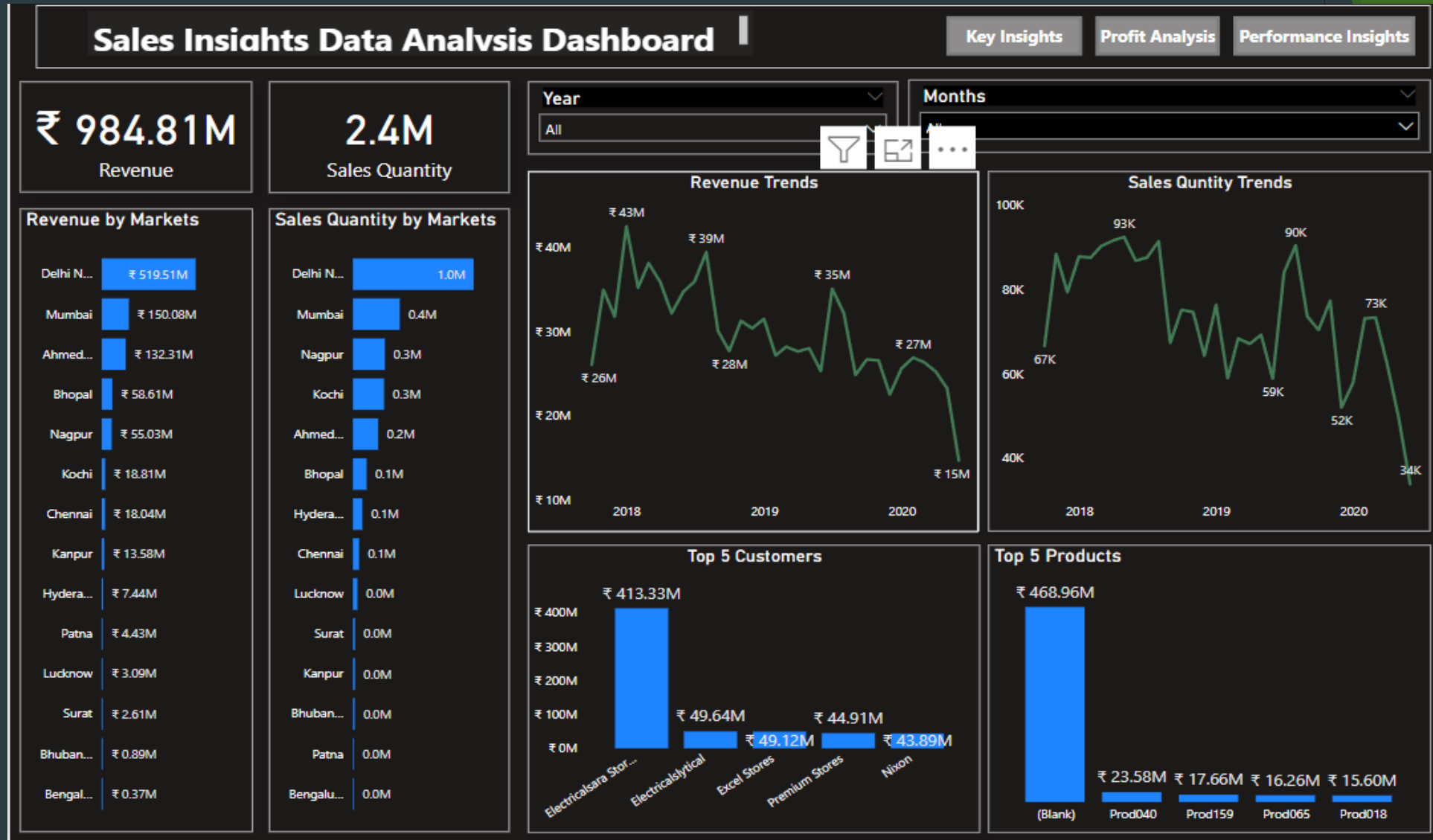
11.To find total revenue in year 2020, January Month,

```
SELECT SUM(sales.transactions.sales_amount) FROM sales.transactions INNER JOIN sales.date ON sales.transactions.order_date=sales.date.date where sales.date.year=2020 and sales.date.month_name="January" and (sales.transactions.currency="INR\r" or sales.transactions.currency="USD\r");
```

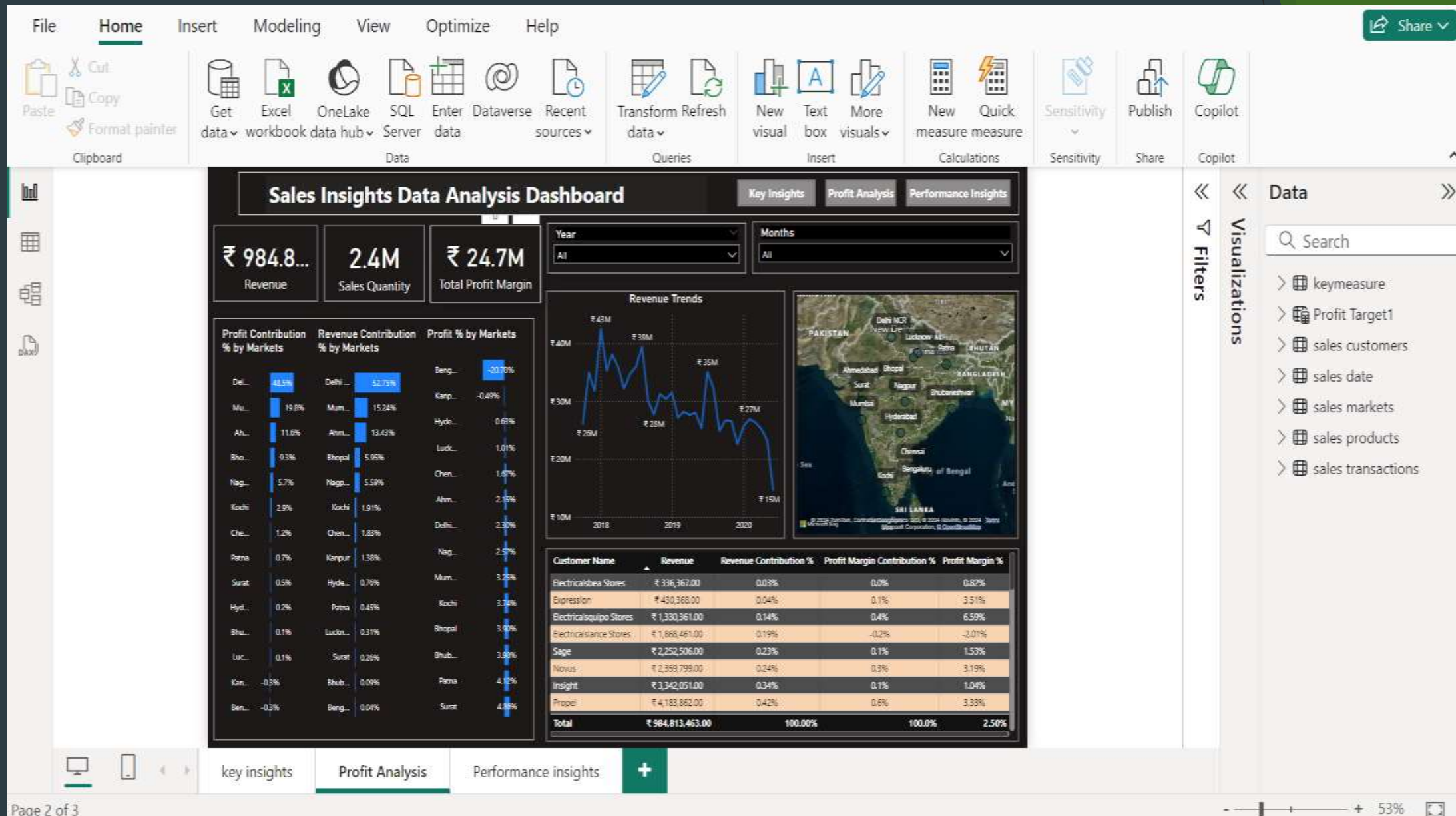
Data Cleaning

- ▶ ``SELECT count(*) from sales.transactions where sales.transactions.currency="INR\r";``
- ▶ 150000 - can't removed as it is large amount
- ▶ ``SELECT count(*) from sales.transactions where sales.transactions.currency="INR";``
- ▶ 279 - we can remove it as it is small record and can be considered as bad data
- ▶ ``SELECT count(*) from sales.transactions where sales.transactions.currency="USD\r";``
- ▶ ``SELECT count(*) from sales.transactions where sales.transactions.currency="USD";``
- ▶ ``SELECT * from sales.transactions where sales.transactions.currency='USD\r' or sales.transactions.currency='USD';``

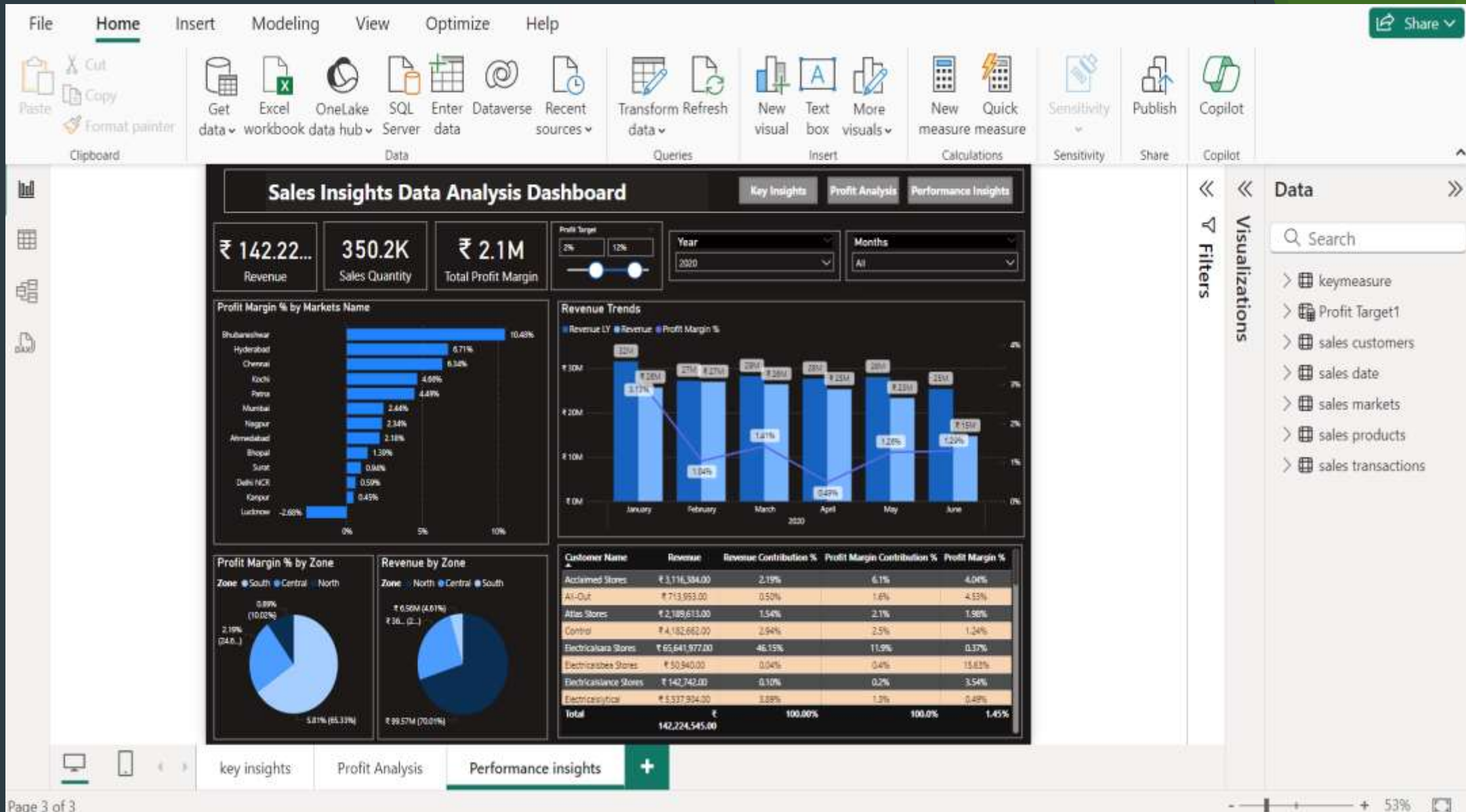
Dashboard



Profit Analysis



Performance Analysis



Insights

- ▶ In this dashboard, we can see company has generated total revenue in 4 years ₹ 985M, total profit margin ₹24.7M, Profit margin% 2.5%, Sales Qty ₹2M. in 2020 company has generated total revenue of ₹ 142M by selling a total of 350K and earned a profit of ₹ 2.1M.
- ▶ In 4 years Delhi NCR is our largest market in terms of revenue with ₹ 520M and total contribution of 52.8% with total revenue but if you look at the profit margin Delhi NCR is generating only 2.3% profit margin.
- ▶ If we check the profit margin then here In 2020 Bhubaneshwar comes into the picture which is generating the highest profit margin of 10.48%. Similarly, if we can check the Profit Contribution % by Market then here Mumbai is the largest player with 23.89% of total contribution in total profit.
- ▶ In 4 years Bengaluru generating the lowest profit margin of -20.8%.if we can check the Profit Contribution % by Market then here also Bengaluru is the Lower with -0.3% of total contribution in total profit.
- ▶ In our top 5 customers, the Electricalsara Stores is our biggest customer who has generated total ₹ 413 M revenue generated in 4 years.

Insights

- ▶ In our top 5 products, the Prod318 is our highest product has generated total ₹ 69M revenue generated in 4 years.
- ▶ In product type Distribution has generated the revenue of ₹494M and ownbrand revenue is ₹494M generated in entire 4 years.
- ▶ Revenue Trend is showing that in June 2020 revenue has been decreased drastically compared to the revenue last year and the profit margin was the least in April 2020.

Thank you!