

Qatar Export Analysis (2019–2024)

1. Project Overview & Objective

This project focuses on cleaning, transforming, and analysing Qatar’s export data using Microsoft Excel and creating an interactive Power BI dashboard to generate meaningful business insights.

The main objective of this project is to demonstrate:

- Data pre-processing and transformation techniques using Excel and Power Query
 - Data modelling and DAX calculations in Power BI
 - Interactive dashboard development to support informed, data-driven decision-making
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2. Data Source & Timeline

The dataset used in this project represents Qatar’s export transactions from 2019 to 2024. Data was collected from official government publications and publicly available international trade sources, ensuring reliability and accuracy.

- Domain: Commerce & International Trade Analytics
 - Time Period: 2019–2024
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3. Problem Statement

The purpose of this project is to analyse Qatar’s export performance to understand:

- Trade trends over time
- Product-wise export contributions
- Country-wise export distribution

Specific objectives include:

- Identifying yearly and quarterly export trends
- Analysing top export products using HS codes
- Examining export distribution across destination countries and regions
- Evaluating changes in export quantity, weight, and value

This analysis supports trade planning, economic evaluation, and strategic decision-making.

4. Attributes (Columns / Features) Description

Attribute Name	Data Type	Description
Year	Integer	Year of export transaction (2019–2024)
Quarter	Categorical	Quarter (Q1–Q4)

Month	Categorical	Month of export
HS4	Numeric / Categorical	4-digit HS product code
Arabic_Details	Text	Product description (Arabic)
English_Details	Text	Product description (English)
Destination_Country	Categorical	Export destination country
Quantity	Numeric	Number of units exported
Weight_KG	Numeric	Total weight in kilograms
Export_Value_QR	Numeric	Export value in Qatari Riyals

5 5. Tools & Technologies

- MicrosoftExcel:
Data cleaning, transformation, filtering, and Pivot Tables
- PowerBI:
Data modelling, DAX calculations, and interactive visualisation

6. Data Pre-Processing (Excel & Power Query)

Tasks Performed:

- Removed duplicates and handled missing values
- Standardised column formats and data types
- Created calculated fields where required
- Applied filtering and sorting for relevant records
- Created Pivot Tables for preliminary analysis
- Converted raw data into Fact and Dimension tables

7. Data Modelling & DAX (Power BI)

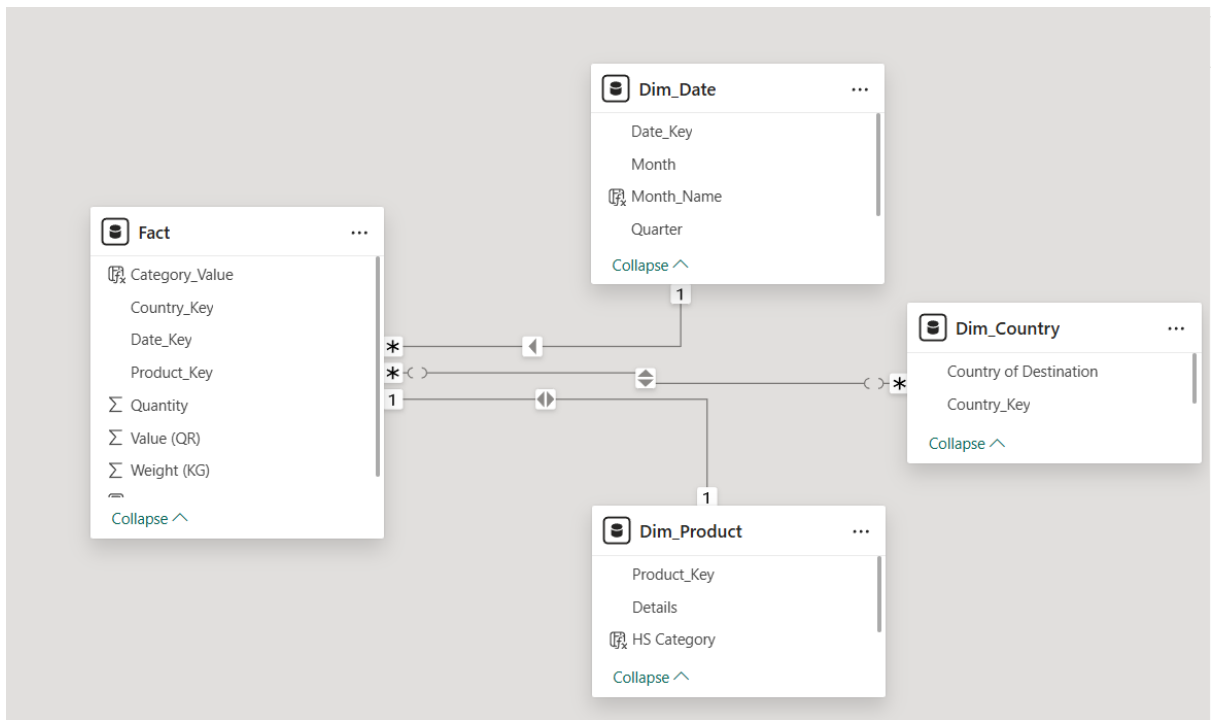
Data Model:

Implemented a star schema

Established relationships between Fact and Dimension tables

Defined appropriate cardinality and filter directions

SCREENSHOT OF DATA MODELLING



Key DAX Measures & Calculated Columns:

- Total Export Value

Total Export Value = SUM('Fact'[Value (QR)])

- Category Value

Category_Value =

IF('Fact'[Value (QR)] > 5000000, "Very High Value",

IF('Fact'[Value (QR)] > 1000000, "High Value",

IF('Fact'[Value (QR)] > 500000, "Medium Value",

"Low Value"))))

- HS Category

HS Category =

VAR HS2 = LEFT('Dim_Product'[HS4], 2)

RETURN

SWITCH(

TRUE(),

HS2 = "27", "Oil & Gas / Mineral Fuels",

HS2 = "29", "Organic Chemicals",

HS2 = "39", "Plastics",

HS2 = "72", "Iron & Steel",

HS2 = "73", "Articles of Iron & Steel",

HS2 = "76", "Aluminium",

HS2 = "84", "Machinery",

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HS2 = "85", "Electrical Equipment",
HS2 = "87", "Vehicles",
HS2 = "88", "Aircraft & Spacecraft",
HS2 = "90", "Optical & Medical Instruments",
BLANK()
)
    • Month Name
Month_Name = FORMAT(DATE(1,[Month],1),"MMMM")
    • Region
Region =
VAR Country = TRIM('Dim_Country'[Country of Destination])
RETURN
SWITCH(
    TRUE(),
    Country IN {"Qatar","UAE","Saudi Arabia","Oman","Kuwait","Bahrain"}, "Middle East",
    Country IN {"China","India","Japan","South Korea","Singapore","Malaysia","Indonesia"},
"Asia",
    Country IN {"Germany","UK","France","Italy","Spain","Netherlands","Belgium"},
"Europe",
    Country IN {"South Africa","Egypt","Kenya","Nigeria","Morocco"}, "Africa",
    Country IN {"USA","Canada","Mexico","Brazil","Argentina","Chile"}, "Americas",
    BLANK()
)

```

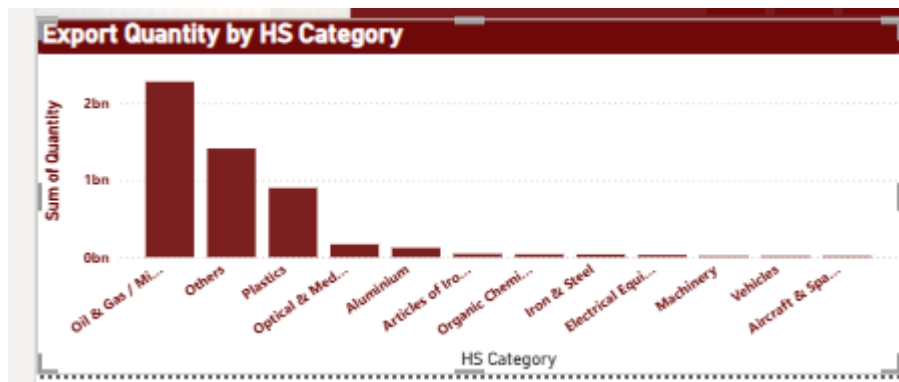
8. Analysis & Visualisations (Power BI)

Dashboard Features:

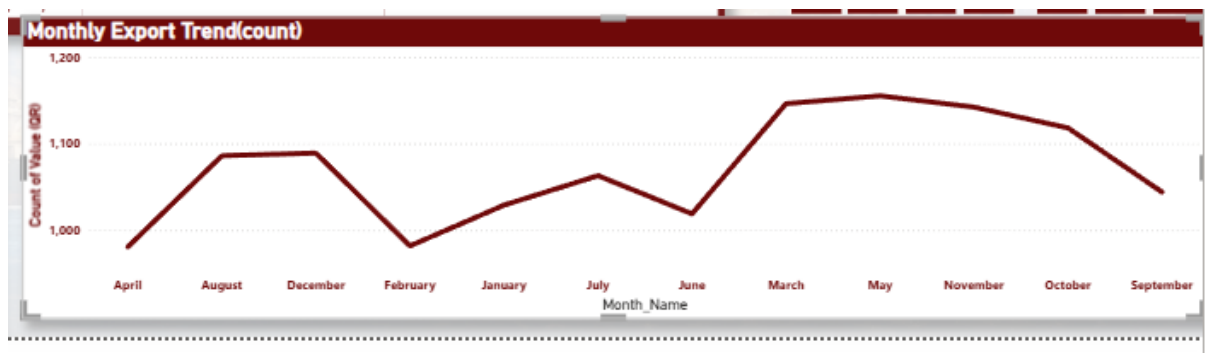
- KPI Cards (Total Export Value, Quantity, Weight, Countries)
- Stacked Column Charts (Export by HS Category)
- Line Charts (Yearly & Monthly Export Trends)
- Donut Charts (Product Contribution)
- Tables (Region-wise Export Summary)
- Interactive slicers (Year, Quarter, HS Category, Month)
- Drill-down functionality and bookmarks
- Clear titles, labels, and consistent formatting

Dashboard Features:

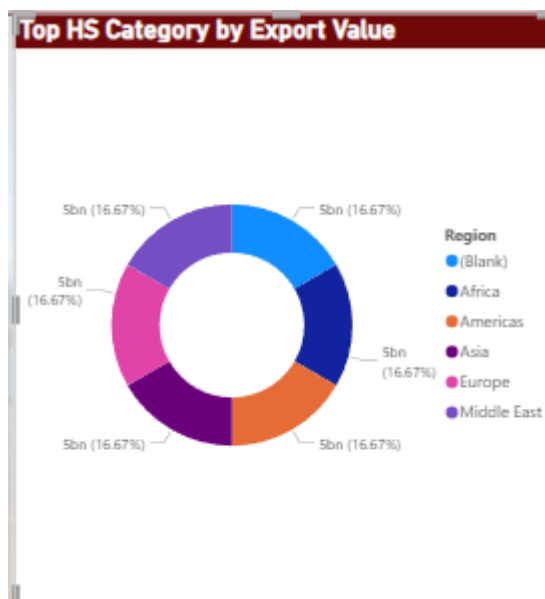
- Multiple Visualizations based on problem statement:
- **Stacked Column Chart**



- **Linecharts**



- **Donut Chart**



- **Table Chart**

Region	Sum of Value (QR)	Sum of Quantity	Total Export Value
Middle East	354,908,238,629	1136871371	354908238629
	355,007,631,424	1136166332	355007631424
Asia	355,109,936,677	1135629049	355109936677
Europe	354,831,038,331	1135626568	354831038331
Africa	354,705,141,507	1135418583	354705141507
Americas	354,702,253,879	1135414809	354702253879
Total	355,815,440,307	1138052672	355815440307

Monthly Export Trend(count)

- **Make your Report interactive Layout using Drill-down, Filters and slicers**

State of Data

Quarter ▼

All ▼

HS Category ▼

All ▼

Month_Name ▼

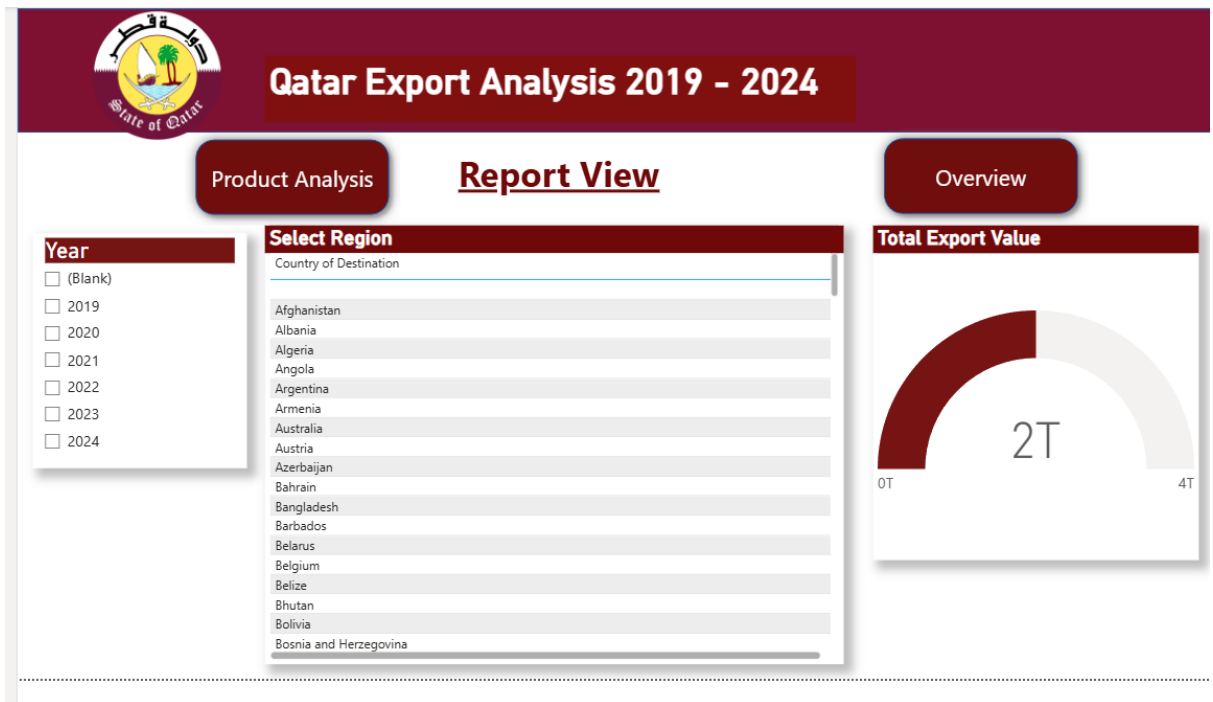
All ▼

Year			
(Blank)	2020	2022	2024
2019	2021	2023	

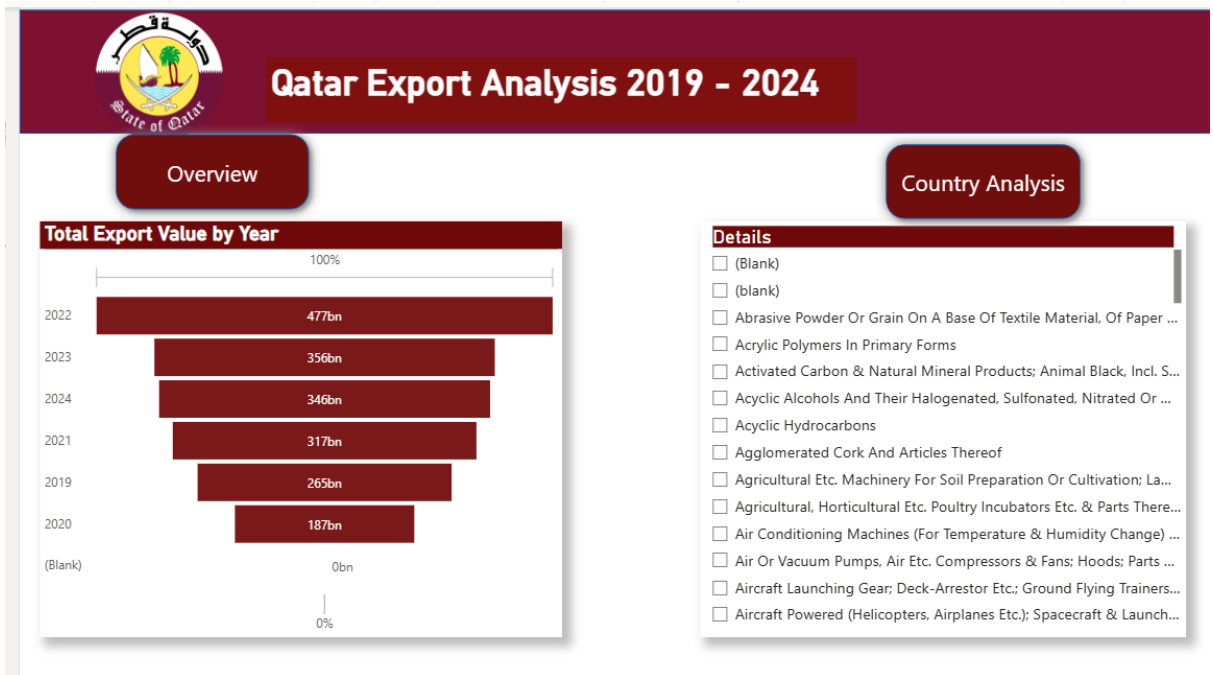
Top HS Category by Export Value

- **Bookmarks, Clear Titles for each visuals & Labels is must.**

- **Country Overview**

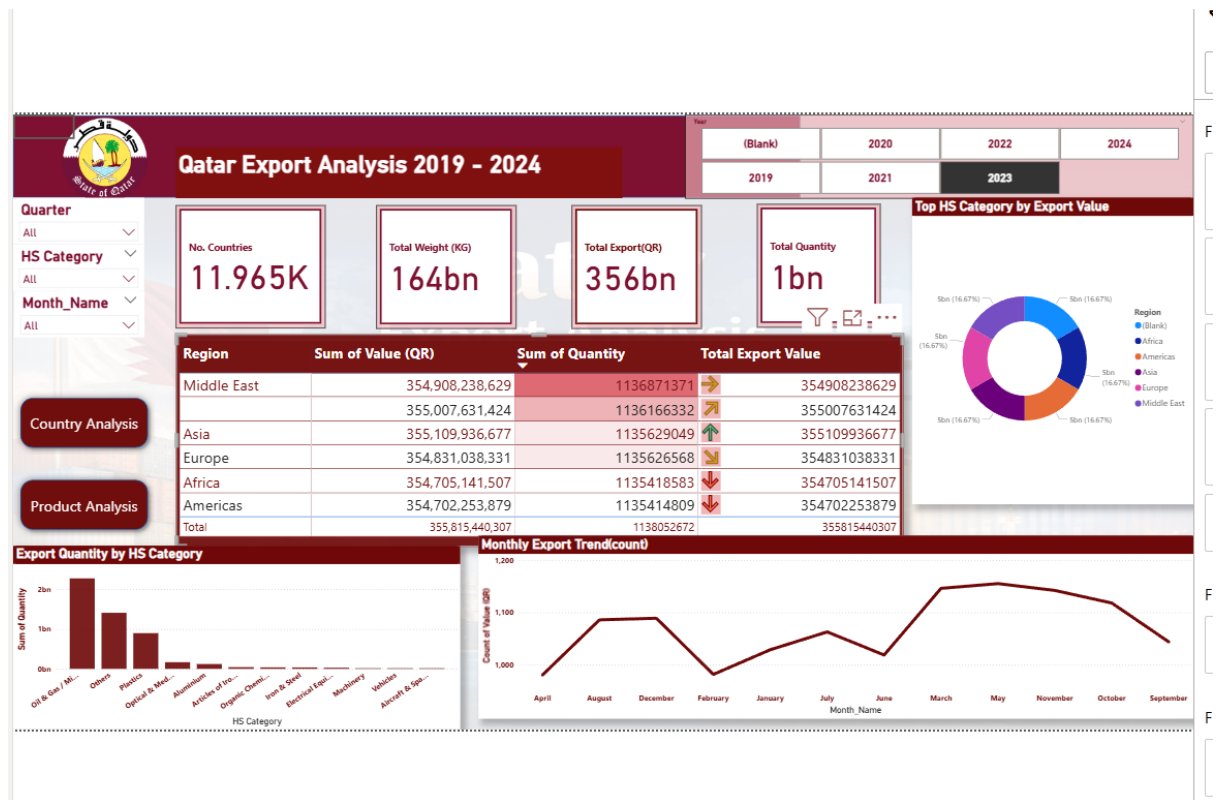


Product Overview



- Create a consolidated Report /Dashboard.

SCREENSHOT OF DASHBOARD /REPORT



9. Insights & Conclusions

Key Findings:

- Qatar's exports show an overall increasing trend from 2019 to 2024
- Oil & Gas / Mineral Fuels dominate export value
- Major export destinations include Asia, Europe, and the Middle East
- Export values declined during 2020–2021 due to COVID-19 but recovered strongly

Analysis Insights:

- Descriptive: Export growth driven primarily by energy-related products
- Diagnostic: Fluctuations influenced by global demand and pandemic disruptions
- Predictive: Continued growth expected, with Asia as a key market
- Prescriptive: Product diversification and market expansion can improve long-term sustainability

10. Final Conclusion

This project demonstrates an end-to-end data analysis workflow, from raw data processing in Excel to interactive reporting in Power BI. The insights derived highlight Qatar's strong export performance and provide actionable recommendations for strategic trade planning and economic decision-making.