

# Power BI Report: Sales, Employees & Global Population Analysis

## 1. Project Overview

This project demonstrates end-to-end data analysis using **Power BI** and **Power Query**, covering data extraction, cleaning, transformation, modeling, and insights generation. Multiple Excel datasets were used and uploaded to **GitHub** for version control and transparency.

## 2. Data Sources (Excel – GitHub)

- Sales Jan, Sales Feb, Sales March – Monthly sales transaction data
- Sales Data (Combined) – Cleaned and transformed sales dataset
- Employees – Employee master data
- List of Countries and Inhabited Territories – Global population dataset
- Folder Path Parameter – Dynamic folder-based data loading

## 3. Data Transformation (Power Query)

### 3.1 Global Population Dataset

- Extracted data from HTML table
- Promoted headers
- Changed data types (Text, Whole Number, Percentage)

The screenshot shows the Power BI Data Editor with the 'List of countries and inhabited territories' query selected. The 'APPLIED STEPS' pane on the right indicates the following steps:

- Source
- Extracted Table From Html
- Promoted Headers
- Changed Type

Country or territory	Population(1 July 2022)	Population(1 July 2023)	Change(%)	UN continentalregion[1]	UN statisticalsubregion[1]
World	8021407192	8091734930	+0.88%	-	-
India	1425423212	1438069596	+0.89%	Asia	Southern Asia
China[al]	1425179569	1422584933	-0.18%	Asia	Eastern Asia
United States	341534046	343477335	+0.57%	Americas	Northern America
Indonesia	278830529	281190067	+0.85%	Asia	South-eastern Asia
Pakistan	243700657	247504495	+1.56%	Asia	Southern Asia
Nigeria	223150896	227882945	+2.12%	Africa	Western Africa
Brazil	210306415	211140729	+0.40%	Americas	South America
Bangladesh	169384897	171466990	+1.23%	Asia	Southern Asia
Russia	145579899	145440500	-0.10%	Europe	Eastern Europe
Mexico	128613117	129739759	+0.88%	Americas	Central America
Ethiopia	125384287	128691692	+2.64%	Africa	Eastern Africa
Japan	124997578	124370947	-0.50%	Asia	Eastern Asia
Philippines	113964388	114891199	+0.81%	Asia	South-eastern Asia
Egypt	112618250	114535772	+1.70%	Africa	Northern Africa

## 3.2 Sales Data

- Cleaned text (Trim, Clean, Uppercase)
- Split columns using delimiters
- Renamed and reordered columns
- Converted Order Date to Day column
- Added conditional columns and Index column

The screenshot shows the Power BI Data Editor interface with the 'Sales Data' query selected. The table structure is as follows:

	Index	OrderID	Order Date	Day	Customer Name	City	State
1	1 06817		13-03-2025	13 CUSTOMER 1	City1	State1	
2	2 01781		04-01-2025	4 CUSTOMER 2	City2	State2	
3	3 06629		20-01-2025	20 CUSTOMER 3	City3	State3	
4	4 03204		05-03-2025	5 CUSTOMER 4	City4	State4	
5	5 04395		11-02-2025	11 CUSTOMER 5	City5	State5	
6	6 06615		15-01-2025	15 CUSTOMER 6	City6	State6	
7	7 04652		12-01-2025	12 CUSTOMER 7	City7	State7	
8	8 07452		13-03-2025	13 CUSTOMER 8	City8	State8	
9	9 06438		03-02-2025	3 CUSTOMER 9	City9	State9	
10	10 02142		26-03-2025	26 CUSTOMER 10	City10	State10	
11	11 08950		22-01-2025	22 CUSTOMER 11	City11	State11	
12	12 07175		07-02-2025	7 CUSTOMER 12	City12	State12	
13	13 03284		14-03-2025	14 CUSTOMER 13	City13	State13	
14	14 02219		13-02-2025	13 CUSTOMER 14	City14	State14	
15	15 01427		15-03-2025	15 CUSTOMER 15	City15	State15	
16	16 09212		14-02-2025	14 CUSTOMER 16	City16	State16	
17	17 05009		15-03-2025	15 CUSTOMER 17	City17	State17	
18	18 03713		20-03-2025	20 CUSTOMER 18	City18	State18	
19	19 04731		08-02-2025	8 CUSTOMER 19	City19	State19	
20	...	...	...	...	...	...	

The 'Properties' pane on the right shows the query settings and applied steps, including actions like Uppercased Text, Cleaned Text, and Reordered Columns.

## 3.3 Employees Dataset

- Promoted headers and changed data types
- Added Age column using formula: Age = Current Year – Birth Year

Queries [8] X ✓ fx = Table.AddColumn(#"Changed Type", "Age", each Date.Year(DateTime.LocalNow()) - Date.Year([Birthdate]))

Query Settings

**PROPERTIES**

- Name: Employees
- All Properties

**APPLIED STEPS**

- Source
- Navigation
- Promoted Headers
- Changed Type
- Added Custom

EmployeeID	Name	Department	Region	Join Date	Birthdate	Age
101	Employee 101	IT	South	07-02-2020	06-02-1995	15
102	Employee 102	Finance	West	18-04-2020	10-02-1995	10
103	Employee 103	HR	East	14-12-2020	13-09-1995	11
104	Employee 104	Sales	East	17-01-2020	13-01-1995	10
105	Employee 105	IT	West	10-02-2020	07-06-1995	14
106	Employee 106	Sales	North	12-05-2020	13-07-1995	13
107	Employee 107	Finance	North	13-08-2020	03-01-1995	15
108	Employee 108	IT	East	13-11-2020	19-12-1995	12
109	Employee 109	Sales	West	12-04-2020	26-07-1995	13
110	Employee 110	Finance	East	15-05-2020	22-06-1995	14

### 3.4 Merge & Aggregation

- Merged monthly sales datasets
- Grouped data by Region
- Calculated Total Sales, Average Order Value, and Transaction Count

Queries [8] X ✓ fx = Table.Group(Source, {"Region"}, {"Total Sales": each List.Sum([Revenue]), "Avg Order Value": each List.Average([Revenue])}, {"Transaction Count": each List.Count([Revenue])})

Query Settings

**PROPERTIES**

- Name: Merge Sales Data and Feb
- All Properties

**APPLIED STEPS**

- Source
- Grouped Rows

Region	Total Sales	Avg Order Value	Transaction Count
North	130955.22	9353.944286	14
West	147442.66	9829.510667	15
East	131193.21	9370.943571	14
South	172792.81	10164.28294	17

### Folder Path Parameter

## Queries [8]

- List of countries an...
- Sales Jan
- Sales Feb
- Sales March
- Sales Data
- Employees
- Merge Sales Data a...
- Folder\_path (C:\Use...

Current Value

C:\Users\Arnob\OneDrive\Desktop\Sales

[Manage Parameter](#)

## 4. Data Modeling

Region was used as a common key across Sales and Employees, forming a clean star-like structure suitable for dashboard visualization.

## 5. Key Insights

- South Region has the highest total sales
- West Region shows strong average order value
- North & East regions show stable transaction counts

## 6. Tools & Technologies Used

- Power BI Desktop
- Power Query (M Language)
- Microsoft Excel
- GitHub

## 7. Conclusion

This project showcases practical Power BI skills including data cleaning, transformation, merging, parameter usage, and aggregation. The project is fully reproducible using GitHub-hosted datasets.

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**Course:** BCA / Data Analytics & AI■ML

**Tool:** Power BI