Exploring Power BI Techniques on HR Data

Overview

   The HR (Human Resource) department is the heart of every organization. From Recruitment to compensation to performance appraisal and employee wellbeing, the HR department plays several roles in the enterprise. HR acts as a mediator or a Bridge between the employees and the management or enterprise. It's no surprise that the HR department is already burdened with work. Providing them access to the latest technology and the means to derive insights in real time will help reduce the workload and create a healthy environment throughout the organization.

Objective

1) Visualize HR data using all the important features of Power BI.
2) Connecting to various HR data sources.
3) Learn how to manage and append similar data coming from different sources.

Data Understanding

- ➢ Hiring Data – Divided into two parts
- • Hiring before 1st Jan 2023 - Kept as a CSV data dump
- • Hiring after 1st Jan 2023 – Kept in a SQL Server
- ➢ Employee data: Containing data of employees that are going to hire.
- ➢ Store Data: (Offices where hiring is done.) Data divided into four files region wise kept in a single folder.

Data Cleaning and Preparation

1) Load data from the different data sources (CSV, SQL, Folder).
2) Perform the required transformation in Power Query Editor Window.
3) HR Data Modeling and Relationships.

4) Visualizing HR Data using different Charts.
5) DAX for Advanced HR analytics.
6) Crafting Interactive HR reports in Power BI.

Transformations in Power Query Editor

1) Rename Hiring Data before2023 as Old Hiring Data, Hiring Data after2023 as New Hiring Data.
2) Checking all the data types of all the columns. And check all the columns.
3) Append Queries from New Hiring Data under Old Hiring Data.
4) In West region, in country column replace USA to United States.
5) Add conditional column for Age<30 is 'Young', Age<50='Middle Aged', Else ' Senior Citizen'.
6) Creating relationships between Store Data, Hiring Data and Employee Data.

## Add Visualization

- Bar Chart & Column Chart
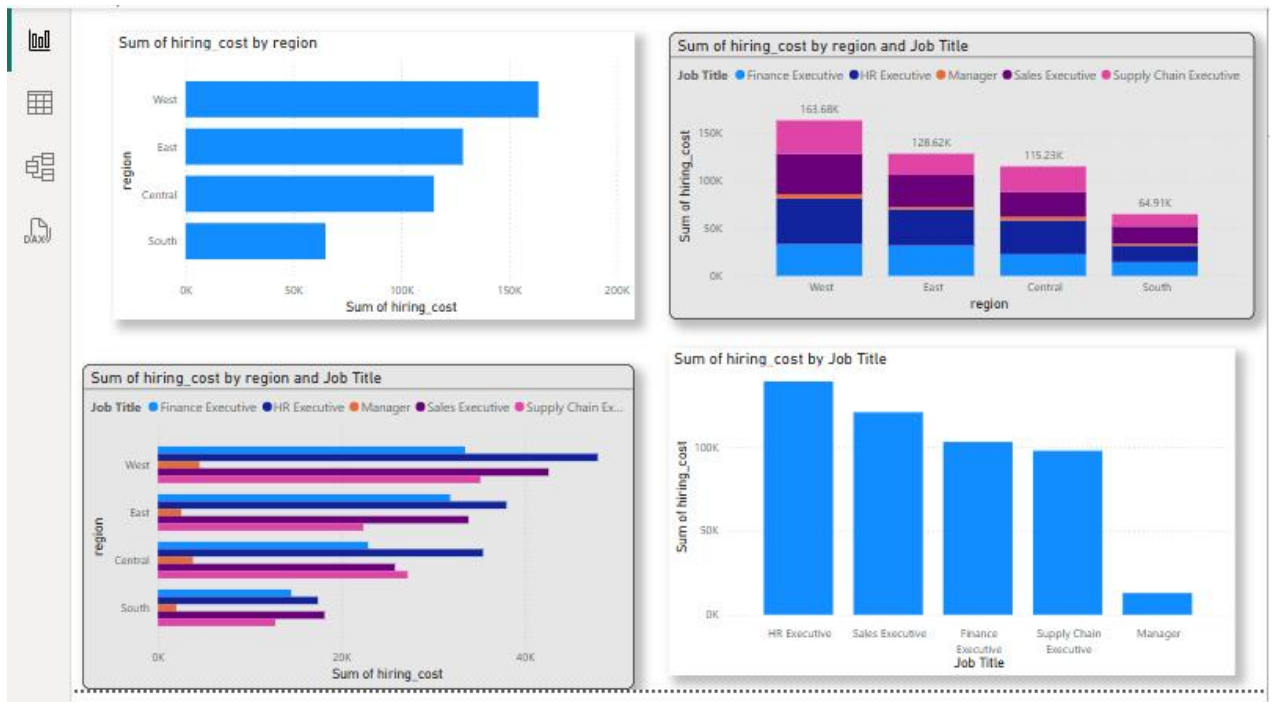
- **Top-Left (Hiring Cost by Region):**

  - The **West** region spends the most on hiring, while the **South** spends the least.

- **Top-Right (Hiring Cost by Region & Job Title):**

  - Across all regions, **HR Executives** and **Sales Executives** contribute the most to hiring costs.

- **Bottom-Left (Hiring Cost Breakdown by Region & Job Title):**

  - In every region, **HR Executive** roles are the expensive to fill, while **Manager** Roles are the least expensive.

- **Bottom-Right (Hiring Cost by Job Title):**

  - **HR Executives** top the hiring cost list, followed by **Sales** and **Finance Executives**; **Managers** have the lowest costs.
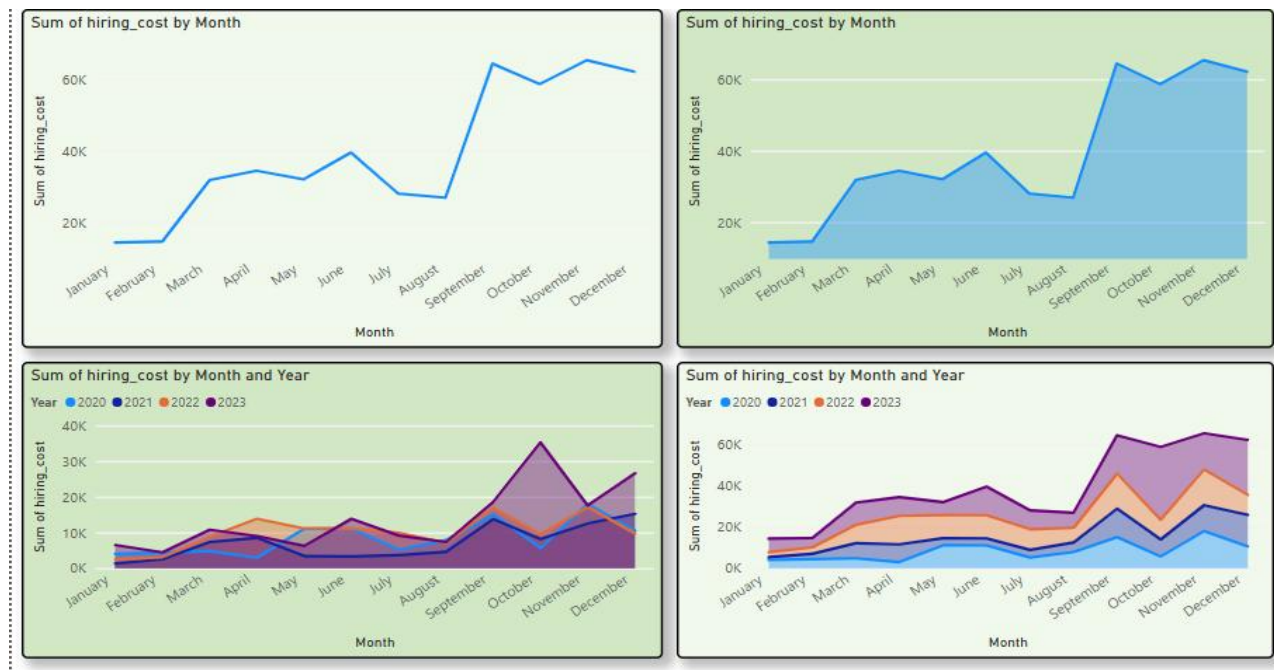
- ## Small Multiples Chart
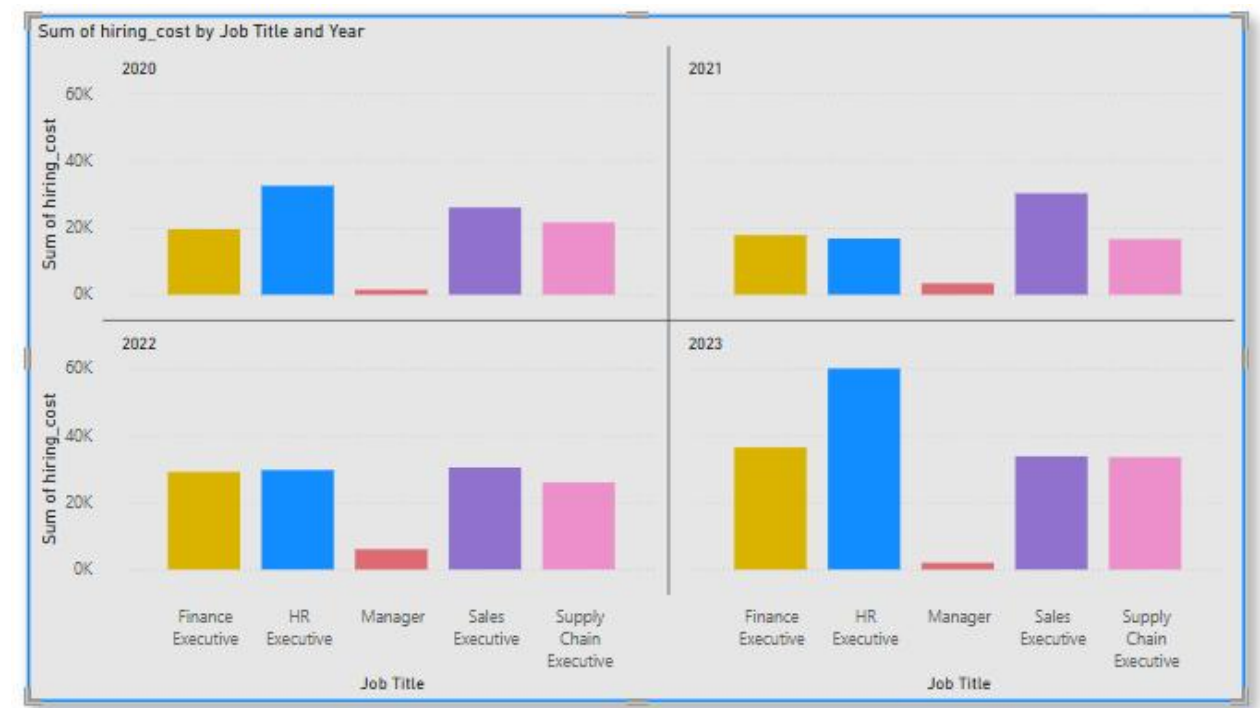
- **2020:** Hiring Cost highest for **HR Executives**, lowest for **Managers**.
- **2021 & 2022:** Hiring Cost highest for **Sales Executives**, lowest for **Managers**.
- **2023:** Sharp rise in hiring cost for **HR Executives**, **Managers** still lowest.

- ## Drill Through
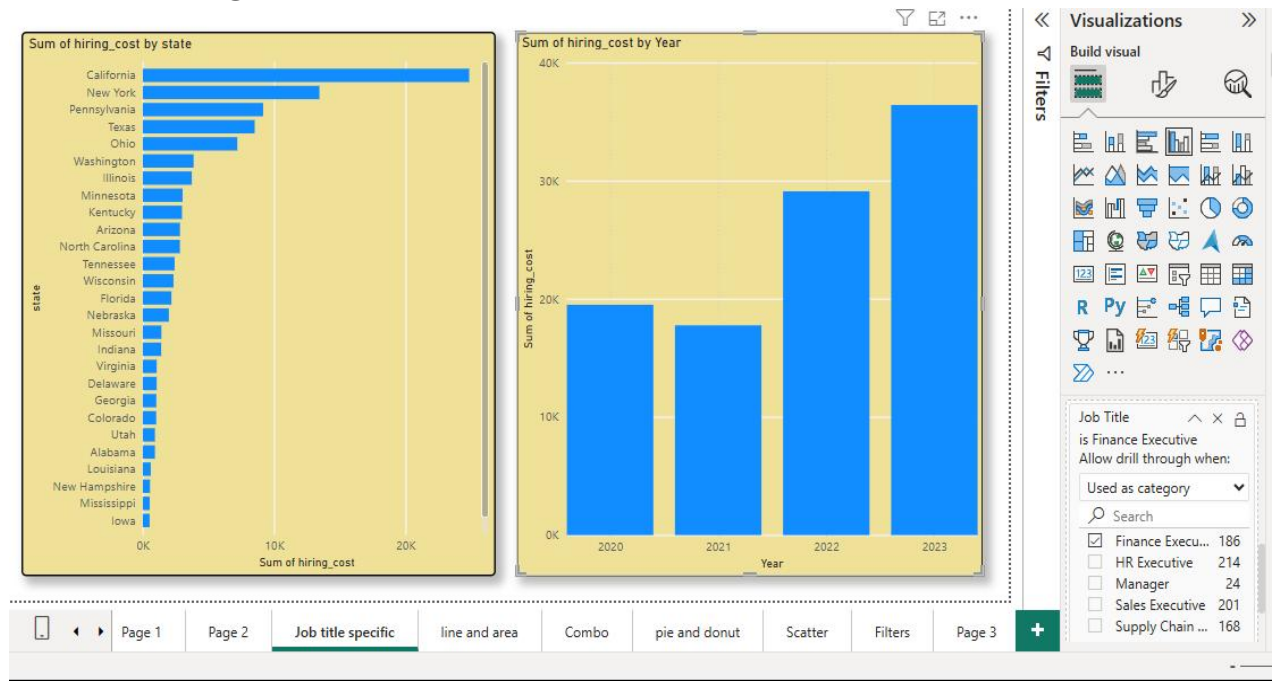
- ## Line Chart

- **Line Chart (Top-Left):** Hiring costs increased over the year, peaking from October to December.

- **Area Chart (Top-Right):** Hiring costs grew steadily with a sharp rise after September.
- **Line Chart by Year (Bottom-Left):** 2022 and 2023 had higher hiring costs, especially towards the end of the year.

- **Stacked Area Chart by Year (Bottom-Right):** Total hiring costs rose yearly, with 2022 and 2023 contributing the most to the increase.
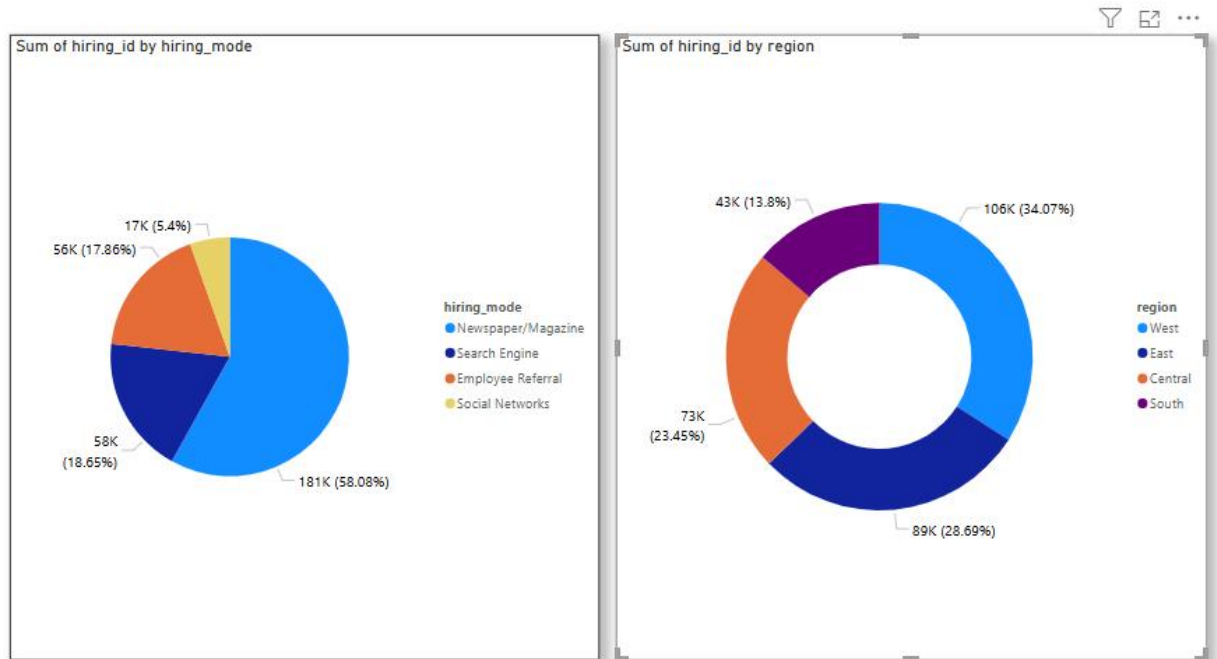
- ## <u>**Combo Chart:**</u>
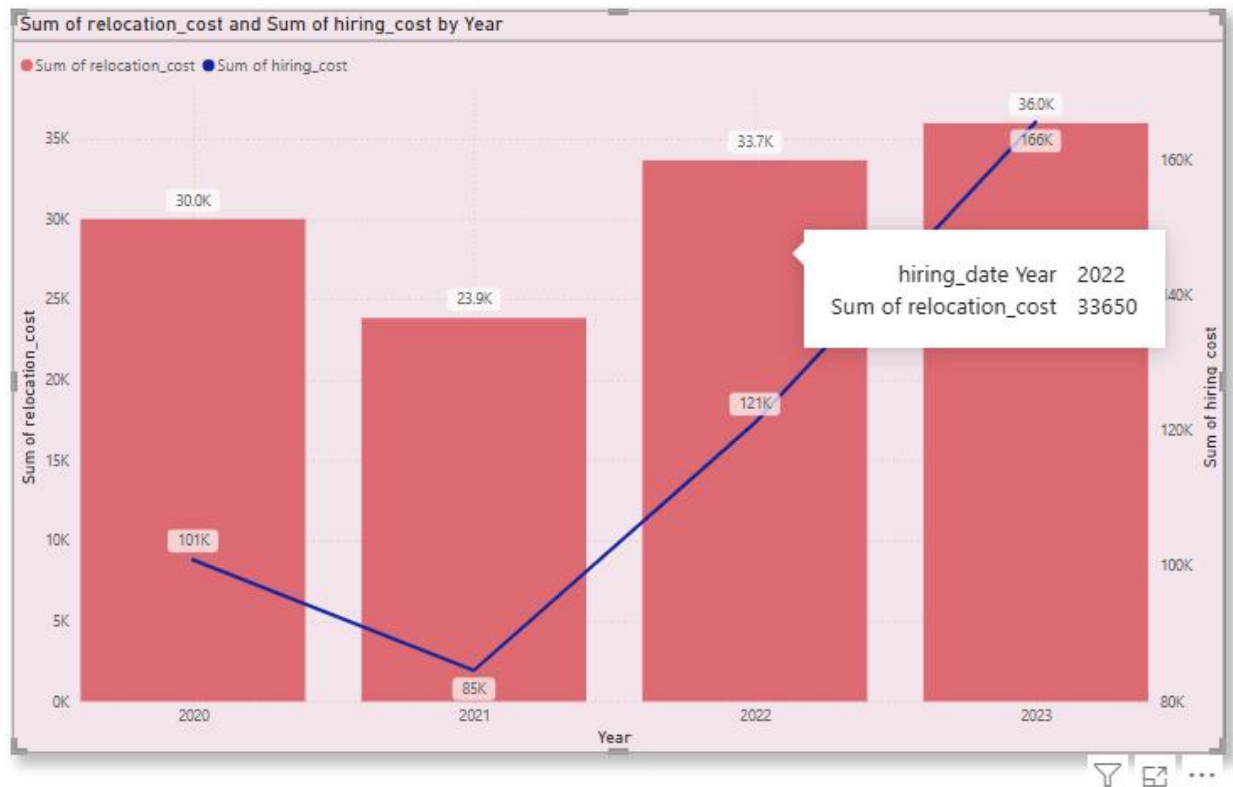

Clustered Column and Line Chart:
Relocation costs decreased in 2021 but rose steadily afterward, peaking in 2023. Hiring costs dropped in 2021, then sharply increased, reaching the highest point in 2023.

- ## <u>**Pie and Donut Chart**</u>

- **Hiring Mode:** Most hires came from **Newspaper/Magazine** (58%), followed by **Search Engine** (19%) and **Referral** (18%).
- **Region: West** led in hires (34%), with **East** (29%), **Central** (23%), and **South** (14%) following.

- ## Scatter Chart and Bubble Chart
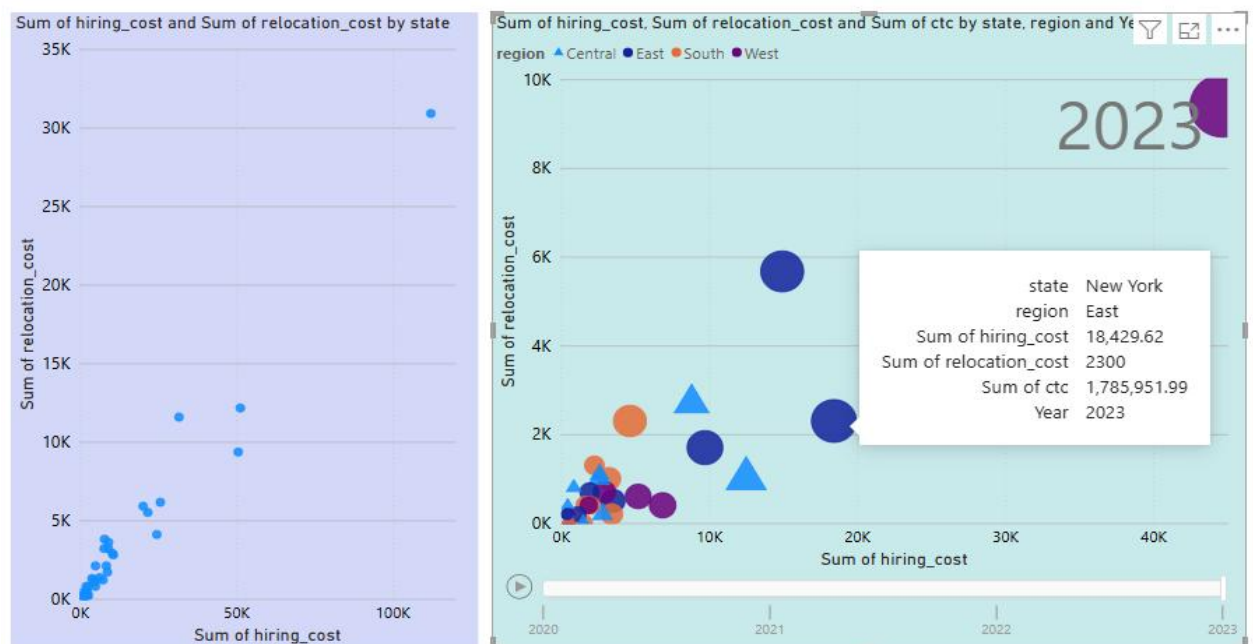
- The charts show that higher hiring costs are linked to higher relocation costs across states.
- In 2023, New York (East region) had a hiring cost of $18,429.62, relocation cost of $2,300, and a CTC of $1,785,951.99. Larger bubbles indicate higher CTC, while regional color coding highlights geographical cost variations.
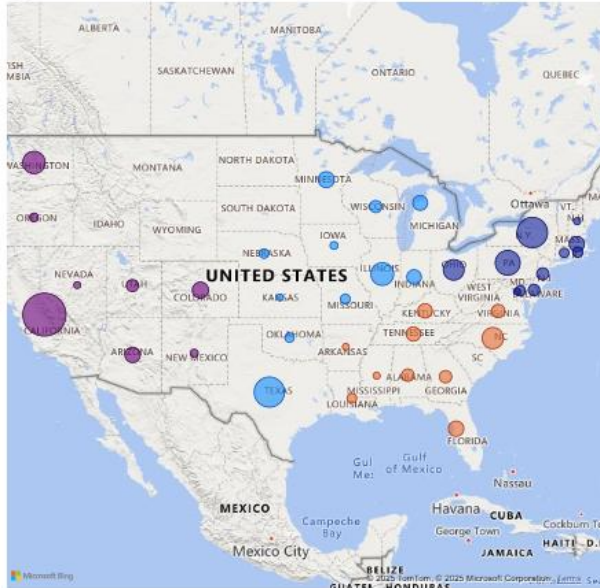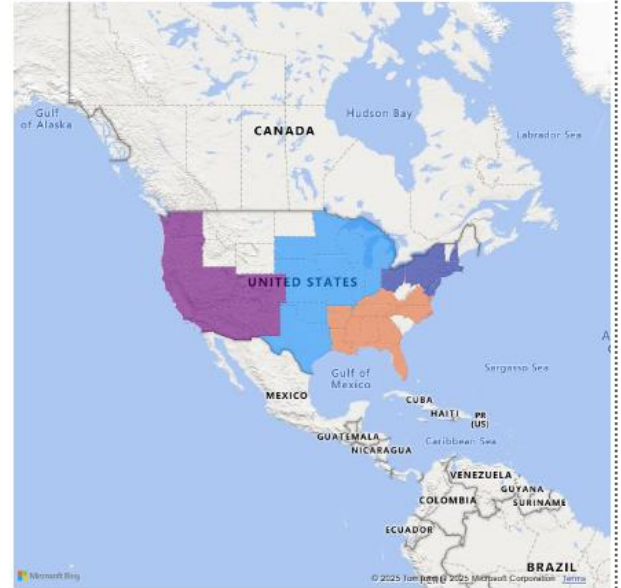
- ## **Tree Map**

Sum of hiring_cost by region and state
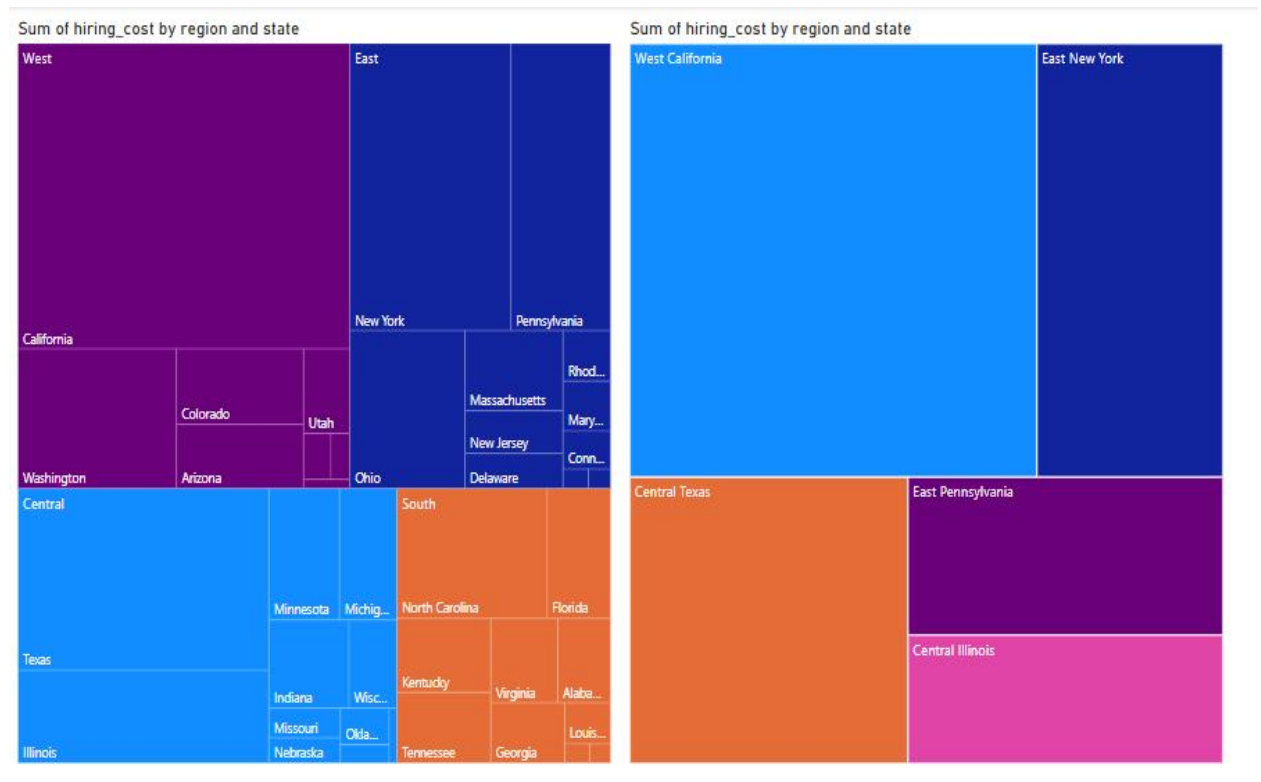
- ## **Map Visual**

Sum of hiring_cost by state and region

state and region

- Above Map Visual Showing Sum of Hiring Cost by State and region Where in Right Map large bubble size shows high hiring cost.

KPI

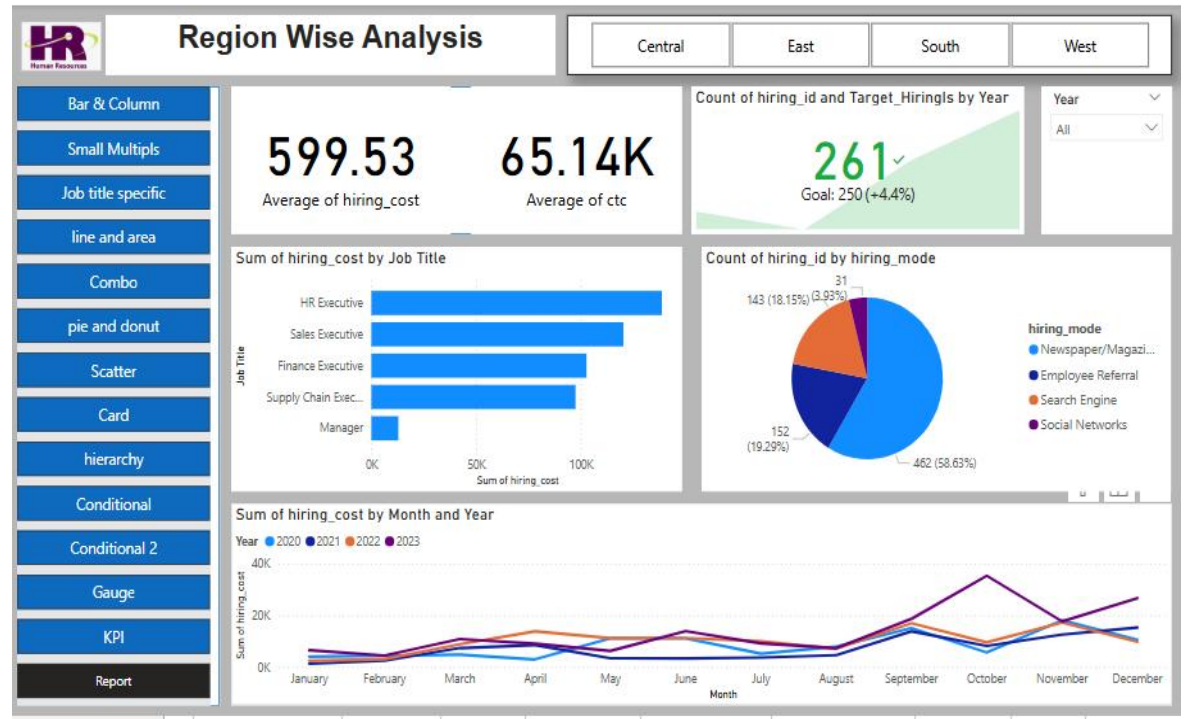Count of hiring_id and TargetHiring by Year

261
Goal: 250 (+4.4%)

- The chart shows the count of hires compared to the target. The actual hires (261) exceeded the goal (250) by 4.4%, indicating successful hiring efforts.

- **Report**

- **Hiring Performance**: 261 hires exceeded the goal of 250 (+4.4%).
- **Cost Metrics**: The average hiring cost is 599.53, and the average CTC is 65.14K.
- **Job Title Cost**: HR and Sales Executives have the highest hiring costs.
- **Hiring Mode**: Social networks are the primary hiring source (58.63%), followed by search engines (19.29%).
- **Monthly Hiring Cost Trends**: Costs fluctuate throughout the year.