

POWER BI

NARCOTICS DATA ANALYSIS

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NARCOTICS DATA ANALYSIS DASHBOARD

Problem Statement

The Narcotics Department faces challenges in effectively monitoring and analyzing drug-related offences across various districts. There is a need for a comprehensive data analysis tool to help identify trends, patterns, and hotspots in narcotics activity. The current manual reporting and analysis processes are time-consuming and prone to errors, hindering the department's ability to respond swiftly and efficiently.

Reason for Creating This Project

The primary reasons for creating this project are:

1. **Enhanced Data Analysis:** To provide a robust analytical framework that allows for detailed and accurate analysis of narcotics data.
2. **Improved Decision-Making:** To equip the Narcotics Department with the insights necessary for informed decision-making and strategic planning.
3. **Resource Allocation:** To assist in the optimal allocation of resources by identifying districts with the highest offences.
4. **Trend Identification:** To enable the department to identify trends over time, which can inform preventative measures and policy decisions.

How This Project Helps the Narcotics Department

This project aids the Narcotics Department by:

1. **Visualizing Data:** Providing clear visualizations of narcotics offences, making it easier to interpret large datasets.
2. **Identifying Hotspots:** Highlighting districts with the highest levels of narcotics activity, allowing for targeted interventions.
3. **Monitoring Trends:** Offering the ability to track changes in narcotics offences over time to identify emerging threats or improvements.
4. **Enhancing Reporting:** Streamlining the reporting process, making it more efficient and less prone to errors.

Explanation of DAX and KPIs, Slicers, Charts, Graphs, and Tables

DAX (Data Analysis Expressions)

DAX is used to create custom calculations in Power BI. In this project, DAX is employed to:

- Calculate the sums of different narcotics categories (e.g., total narcotics, total liquor).
- Determine the top districts for each type of offence.
- Generate year-over-year comparisons.

KPIs (Key Performance Indicators)

KPIs in this project include:

- **Total Narcotics (Kgs):** The cumulative weight of all seized narcotics.
- **Sum of LIQUOR (Ltrs):** The total volume of liquor seized.
- **Sum of CHARAS (Kgs):** The total weight of charas seized.
- **Sum of HEROIN (Kgs):** The total weight of heroin seized.
- **Sum of ICE (Kgs):** The total weight of ICE (crystal meth) seized.
- **Sum of OPIUM (Kgs):** The total weight of opium seized.

These KPIs provide a quick overview of the department's performance and the scale of narcotics issues.

Slicers

Slicers are used to filter the data dynamically. The slicers in this project include:

- **Year:** Allows users to filter data by a specific year or compare multiple years.
- **Month Name:** Enables filtering by specific months.
- **Offences:** Lets users focus on specific types of narcotics offences.
- **Districts:** Allows users to view data for particular districts.

Charts and Graphs

Various charts and graphs are used to visualize data:

- **Bar Charts:** Show the total offences by year and the top districts for each type of offence.
- **Column Charts:** Display the sum of different types of narcotics seized by month.
- **Stacked Bar Charts:** Compare the distribution of different narcotics offences across years.

Tables

Tables are used to present detailed data in a structured format:

- **Total Offences by Years:** Lists the quantities of different narcotics seized annually.
- **Monthly Sum Table:** Breaks down the sum of each type of narcotic seized by month.

Detailed Explanation of the Project Components

1. **Overall KPIs:** The top section of the dashboard displays the key metrics such as total narcotics in kilograms, and sums of liquor, charas, heroin, ICE, and opium. These provide a snapshot of the overall narcotics activity.
2. **Total Offences by Years:** A bar chart compares the quantities of different narcotics seized in 2022 and 2023. This helps in understanding year-over-year changes in narcotics offences.
3. **Top 3 Districts for Each Offence:** Bar charts for each type of narcotic show the top three districts where the highest quantities were seized. These charts are crucial for identifying hotspots and prioritizing areas for intervention.
4. **Monthly Sum Table:** This table provides a detailed month-by-month breakdown of the quantities of different narcotics seized. It helps in tracking seasonal trends and identifying any months with unusually high activity.
5. **Slicers:** Located at the top, slicers for Year, Month Name, Offences, and Districts allow users to filter the data and view specific subsets, making the analysis more flexible and targeted.

By combining these elements, the dashboard provides a powerful tool for the Narcotics Department to monitor, analyze, and respond to narcotics offences effectively.