DataSoc X nab

Datathon Case Brief

Overview

Problem statement

Provided to you in this case brief are 3 datasets. Using any number of datasets and data visualization techniques, analyse current trends in them and propose a comprehensive method or strategy to maintain long-term sustainability.

Dataset 1: Air pollution

Background

Amid growing concerns over declining global air quality, the Environmental Protection Agency (EPA) is actively seeking comprehensive insights into the current state of air pollution. The EPA aims to assess and understand the extent of air pollution worldwide to inform effective strategies and policies for combating this pressing environmental challenge.

Dataset 1: Air pollution

Goal

As part of a leading analytics consulting company, your task is to conduct an in-depth assessment of the provided data, summarizing the **development of pollutants by country.** Your analysis should focus on summarising the **changes in the chemicals in the air** throughout the 1990 - 2019, identifying trends and patterns within the data, and providing actionable **insights to support sustainable air pollution management methods.**

Your analysis should include insightful visualizations that highlight variables, relationships, and trends. By providing these valuable insights, you will contribute to addressing key challenges and shaping effective strategies for combating air pollution.

Dataset 1: Air pollution

Accessing the dataset

https://github.com/UNSW-Data-Science-Society/2023-NAB-Datathon-Dataset/blob/main/air_pollution.csv

Find the *Download Raw File* button,
Download the dataset in CSV form.

Dataset 2: Water & Waste

Background

The Australian government places a high priority on sustainable waste and water management to ensure the long-term viability of ecosystems and support economic growth. In line with this commitment, the aim of this analysis is to conduct an in-depth assessment of waste generation, management, and the economic response, as well as the physical and monetary supply and use of water in Australia.

Dataset 2: Water & Waste

Goal

As part of a leading analytics company, conduct an in-depth assessment of the waste and water management dataset, with a strong emphasis on **sustainability and strategy.** Your analysis should focus on trends and patterns in **waste generation, management, the economic response, as well as the physical and monetary supply and use of water** in Australia. Identify key changes and developments in waste and water management practices over time. Additionally, provide actionable insights to **support sustainable waste and water management** efforts, promote conservation strategies.

Dataset 2: Water & Waste

Goal

In your analysis, you may wish to consider:

- Water Availability and Sources
- Water Usage Patterns
- Water Stress and Scarcity
- Water Conservation and Demand Management
- Economic Value of Water
- Waste Generation Trends
- Waste Management Practices
- Circular Economy and Waste Reduction
- Economic Response and Incentives
- Policy and Regulatory Framework

The analysis can encompass various factors and is not limited to the previous aspects.

Dataset 2: Water & Waste

Access to Waste Dataset

https://www.abs.gov.au/statistics/environment/environmental-management/waste-account-australia-experimental-estimates/latest-release

Access to Water Dataset

https://www.abs.gov.au/statistics/environment/environmental-management/water-account-australia/latest-release

Please download the relevant xlsx datasets on both pages.

Dataset 3: National Land Cover Data

Background

The Australian government is deeply concerned about the development and sustainable management of land to ensure the long-term viability of ecosystems and support agricultural practices. To address these concerns, the Australian Bureau of Statistics has compiled experimental statistics on detailed land cover stock positions and changes in land cover from 1988 to 2020. This dataset plays a crucial role in monitoring the development of land and its sustainable management, providing valuable insights for biologists, environmental scientists, and policymakers.

Dataset 3: National Land Cover Data

Goal

Analyze the National Land Cover Account dataset, emphasizing **sustainability and strategy**. Summarize **land cover changes** from 1988 to 2020, provide actionable insights for sustainable land management and conservation.

Your analysis will contribute to addressing pressing challenges and shaping effective strategies for sustainable land management, ecosystem conservation, and agricultural practices in Australia, promoting **long-term environmental sustainability and resilience**.

Dataset 3: National Land Cover Data

Access to Land Cover Dataset

https://www.abs.gov.au/statistics/environment/environmental-management/national-land-cover-account/2020

Download the relevant xlsx datasets for analysis.

Rubric for dashboard

Business Knowledge

- Demonstrate a strong understanding of the business issue being analysed.
- Provide contextual knowledge that are relevant for understanding the practicality and impact of the proposed recommendations.

Visual Design

- Information is presented in a manner that is visually appealing and easily understood.
- The dashboard provide targeted audience with valuable, relevant and comprehensive insight to the business issue they are interested in.

Rubric for final presentation

Business Knowledge

- Accurate analyse the project requirements.
- Present recent and relevant knowledge to support arguments and discuss them with accuracy and depth.

Problem Solving

- Apply appropriate and rigorous analysis to understand the problem domain as presented in the project.
- Demonstrate capacity for independent critical enquiry.
- Propose evidence-based solutions that are relevant and practical, and clearly addressing the challenge proposed.

Business Communication

- Present relevant contents that can effectively address the specific target audience.
- Present contents in a clear logical flow, effectively delivering important information.
- Engaging and professional

Get in touch!