Week 2 By: Manisha Pal

Week 2.1

Government Data Sources

- **Role of Government**:
  - The government is a significant provider of data, essential for economic analysis.
  - Government data sources include comprehensive surveys like the census, conducted every 10 years, and more frequent surveys such as the National Sample Survey (NSS).
- **Types of Government Data**:
  - **Census**: Conducted every 10 years, capturing every household and firm.
  - **National Sample Survey (NSS)**: More frequent than the census, focusing on samples to infer broader trends.
  - **Annual Survey of Industries**: Conducted yearly, provides detailed data on industries.
  - **Economic Census**: Comprehensive data on every firm, though conducted less frequently.
  - **Other Data Sources**: Include tax data, Reserve Bank of India data, and various indexes like the Consumer Price Index (CPI).

Non-Government Data Sources

- **Private Data Providers**:
  - The Center for Monitoring Indian Economy (CMIE) is a key private data provider.
  - CMIE offers detailed data on consumer behavior (Consumer Pyramids Household Survey) and corporate investments (CAPEX Report).
- **Focus on CMIE Surveys**:
  - **Consumer Pyramids Household Survey**: Conducted three times a year, tracking consumption patterns and aspirations across 236,000 households.
  - **CAPEX Report**: Tracks corporate investments and trends in various sectors.

Data Collection Methodologies

- **Sampling Techniques**:
  - Surveys use advanced sampling techniques to ensure accurate and representative data.
  - Homogeneous regions are identified to minimize sampling bias, ensuring a representative sample across different demographics.
- **Survey Frequency and Longitudinal Studies**:
  - Government surveys like the census are infrequent, while others, like CMIE's surveys, are conducted multiple times a year.
  - Longitudinal surveys revisit the same households, providing insights into changes over time.

Insights from Government and Private Data

- **Economic Insights**:
    - Examples of insights drawn from surveys include employment patterns, financing methods for firms, and consumption trends.
    - Data visualization (charts, graphs) helps in understanding complex data sets, such as the distribution of establishments by state or the financing methods of rural vs. urban firms.
- **Practical Applications**:
    - These data sources help in strategic decision-making, both for policymakers and businesses.
    - The availability of data through platforms like the government's data.gov.in enhances transparency and accessibility.

Week 2.2

The second week is only about two primary datasets from the Center for Monitoring Indian Economy (CMIE).One dataset focuses on household consumption data, while the other is related to aspirational data.

Week 2.3

Creating a Pie Chart

Step-by-Step Instructions:

1. **Identify the Data:**
    - For example: You want to plot a pie chart showing the distribution of households based on the number of family members.
2. **Prepare the Data:**
    - Ensure you have a column with household sizes (e.g., 1 member, 2 members, etc.).
    - Remove any blanks or non-relevant data from this column.
3. **Get Unique Values:**
    - Use Excel's Advanced Filter to get a list of unique values from the household size column.
        - Go to Data > Advanced > Copy to another location.
        - Specify the range of your data and the location where you want the unique values to be copied.
        - Check Unique records only and click OK.
4. **Count Each Household Size:**
    - Use the COUNTIF function to count the occurrences of each unique household size.
        - For example, =COUNTIF(W$2:W$101, [criteria]), where [criteria] is each unique household size.
5. **Create the Pie Chart:**
    - Select the data range that includes household sizes and their counts.
    - Go to Insert > Charts > Pie Chart.

- Choose the pie chart style you prefer (e.g., 2D Pie).

6. **Format the Pie Chart:**
    - Add data labels by clicking on the chart, then Chart Elements > Data Labels > Add Data Labels.
    - Format data labels to show percentages: Click on a data label, then Format Data Labels, and select Percentage.

Creating a Bar Chart

Step-by-Step Instructions:

1. **Prepare Age Group Data:**
    - Follow a similar process to extract unique age groups from your dataset.
2. **Count Each Age Group:**
    - Use the COUNTIF function to count the occurrences of each unique age group.
3. **Create the Bar Chart:**
    - Select the data range for age groups and their counts.
    - Go to Insert > Charts > Bar Chart.
    - Choose the bar chart style you prefer (e.g., Clustered Bar).
4. **Format the Bar Chart:**
    - Add data labels and format them as needed.

Comparing Charts

1. **Create Separate Charts:**
    - Create a pie chart and a bar chart for the household sizes and age groups.
2. **Compare Data:**
    - Place the charts side by side for easy comparison.
    - Analyze which type of chart provides better visual insights.

Understanding Data Patterns

1. **Pie Chart Insights:**
    - Shows the proportion of each household size relative to the total. It is useful for understanding the distribution of household sizes.
2. **Bar Chart Insights:**
    - Shows the frequency of each category, making it easier to compare absolute numbers. It can reveal trends and patterns more clearly than a pie chart in some cases.

Week 2.4: it is all about the discussion about the analysis they have done.