

## Project Objectives:

1. **Analyze Marginal Worker Demographics:** Investigate the demographic characteristics of marginal workers within the dataset, such as age, gender, education level, and occupation.
2. **Understand Age and Gender Distribution:** Examine the age and gender distribution of the workforce to identify patterns or imbalances.
3. **Explore Industrial Categories:** Explore the dataset's industrial categories to understand the distribution of workers across different sectors and industries.

## Analysis Approach:

1. **Data Extraction:** Retrieve the dataset containing information about workers, including demographic data and employment details.
2. **Data Cleaning:** Clean the dataset by addressing missing values, outliers, and inconsistencies. Ensure data quality by validating entries and standardizing formats.
3. **Data Transformation:** Prepare the dataset for analysis by transforming categorical variables into numerical representations (e.g., one-hot encoding) and creating relevant calculated fields (e.g., age groups).
4. **Descriptive Statistics:** Calculate basic statistics such as mean, median, mode, standard deviation, and percentiles for relevant variables (e.g., age, gender, education level).
5. **Data Visualization:** Use various data visualization techniques to represent the findings effectively.

## Visualization Selection:

1. **Bar Charts:** Utilize bar charts to visualize the distribution of categorical variables like gender, education level, and occupation. Stacked bar charts can show the breakdown of these categories within marginal workers.
2. **Pie Charts:** Create pie charts to display the proportional distribution of workers across different industrial categories. Each slice of the pie represents a specific sector, making it easy to compare their relative sizes.
3. **Heatmaps:** Generate heatmaps to visualize correlations between variables, such as age and education level. This can help identify trends or patterns within the data.
4. **Scatterplots:** Use scatterplots to explore relationships between variables, such as age and occupation. This can reveal potential insights into the workforce composition.
5. **Histograms:** Create histograms to visualize the age distribution of workers. This can provide a clear view of age demographics.
6. **Box Plots:** Employ box plots to display the distribution of age within different industrial categories, helping identify variations and outliers.
7. **Line Charts:** If applicable, use line charts to depict trends in workforce demographics over time, if the dataset includes temporal data.

8. **Interactive Dashboards:** Consider building interactive dashboards using tools like Tableau or Power BI to allow for dynamic exploration of demographic data, providing stakeholders with more control over the analysis.

By defining clear objectives, planning a systematic analysis approach, and selecting appropriate visualization types, you can effectively analyze and present the demographic distributions of marginal workers and related insights from your dataset.

Age and After Call Work Time by Gender

