Makerble Data Analyst Pre-Interview Task: Analysing Employee Experience Survey Data

Task Overview:

Makerble is a data platform that enables nonprofit organisations to measure their impact. Surveys are one of the main methods used by nonprofits to measure their impact using the Makerble platform. Makerble enables them to design, distribute and analyse surveys. We don't expect you to be an expert on impact measurement but we do expect you to be able to analyse data. That's why for this task we have provided you with a sample dataset from an Employee Experience Survey conducted at a fictional nonprofit organisation. Your task is to analyse this dataset, present your findings in a short video (5-7 minutes), and submit the relevant work files (e.g. Google Sheets, Excel, Python or R script). You are expected to demonstrate both **descriptive** and **inferential statistics** skills to identify trends and insights from the survey responses.

Dataset:

Please download this file from Google Drive containing with the following columns:

- **Name**: Name of the employee (fictional, anonymized data)
- **Age Bracket**: Age group of the employee (e.g., 25-34, 35-44, etc.)
- **Gender**
- **Ethnicity**
- **Job Title**
- **Department**
- **Date Survey Completed**
- **Job Satisfaction**: Likert scale (Strongly Disagree to Strongly Agree)
- **Work-Life Balance**: Likert scale (Strongly Disagree to Strongly Agree)
- **Management Support**: Likert scale (Strongly Disagree to Strongly Agree)
- **Team Collaboration**: Likert scale (Strongly Disagree to Strongly Agree)
- **Workload Fairness**: Likert scale (Strongly Disagree to Strongly Agree)
- **Career Development Opportunities**: Likert scale (Strongly Disagree to Strongly Agree)
- **Workplace Inclusivity**: Likert scale (Strongly Disagree to Strongly Agree)
- **Company Communication**: Likert scale (Strongly Disagree to Strongly Agree)
- **Compensation Satisfaction**: Likert scale (Strongly Disagree to Strongly Agree)
- **Job Security**: Likert scale (Strongly Disagree to Strongly Agree)
- **Overall Engagement**: Likert scale (Strongly Disagree to Strongly Agree)

Requirements:

1. **Descriptive Statistics**:
    - Provide a summary of the dataset using descriptive statistics (e.g., mean, median, mode, standard deviation) for **Overall Engagement** and **Job Satisfaction**.

    - Identify any **key trends** in the survey results. For example:
        - Are employees in a certain age bracket or department more satisfied than others?
        - Does any demographic group (age, gender, ethnicity) show patterns in certain areas (e.g., Work-Life Balance or Compensation Satisfaction)?
2. **Inferential Statistics**:
    - Conduct a **hypothesis test** to see if there's a statistically significant difference in **Job Satisfaction** between two specific departments (e.g. **IT** and **HR**). State your null hypothesis, test method (e.g., t-test), and explain your results.
    - Perform a **correlation analysis** to determine if there is any relationship between **Work-Life Balance** and **Overall Engagement**. Interpret the correlation coefficient and explain what it means in the context of employee experience.
3. **Presentation**:
    - Create a 5-7 minute video presentation explaining your analysis, results, and key takeaways.
    - Discuss any **business implications** or recommendations you would make to the fictional nonprofit based on your findings. For example:
        - What areas of employee experience need improvement?
        - Are there any differences in experience across departments or demographics that the organisation should address?

Submission Details:

- Submit your work files (Excel, Python, R scripts, etc.) along with your video presentation.
- The video should clearly demonstrate your thought process and how you arrived at your conclusions.
- Make separate Google Drive folders as following:

1. FOLDER 1 - Work files (Excel, Python, R etc)
2. FOLDER 2- Video presentation

IMP NOTICE- Make these google drive folders visible to ALL, otherwise application might be rejected.

Submit these files here - https://zrec.in/LZeta?source=CareerSite

Evaluation Criteria:

- **Clarity of Explanation**: Can you explain your results in a clear and understandable way?
- **Statistical Rigour**: How well do you apply both descriptive and inferential statistics?
- **Business Insight**: Can you translate data insights into meaningful recommendations for the business?

- **Technical Proficiency**: Do your files/scripts demonstrate an ability to clean, analyse, and visualise survey data effectively?