Cowry Data Scientist Interview Task

Objective

These task assesses your ability to:

- Frame and solve complex behavioural data problems.
- Design and defend a rigorous, scalable methodology.
- Extract and communicate actionable insights from structured and unstructured data.
- Balance statistical sophistication with interpretability and business impact.

You will respond to two real-life client briefs. Your submission will be presented in a 1-hour session:

- 45 minutes to walk through your approach, models, insights, and recommendations.
- 15 minutes for Q&A and technical discussion.

Prepare all of your slides in Google Slides. Provide figures to illustrate your findings throughout. Provide all code/notebooks in advance of your interview.

Task 1: Predicting Career Preparedness Across Cultures and Modalities

Context (Predictive Modelling & Segmentation)

Following widespread disruption caused by global crises (e.g. pandemics, automation, AI displacement), people across regions face unique psychological and structural barriers to career advancement. A global talent solutions firm wants to understand and quantify the latent and explicit factors influencing career preparedness across 6 global regions and multiple sectors.

You are provided with:

- Primary research which assessed behavioural science-informed readiness factors, split into emotional/psychological and workplace/functional categories each with:
    - Implicit reaction-time based agreement data (fast choice test, 0 = Strongly Disagree, 100 = Strongly Agree).
    - Explicit Likert-scale agreement scores (traditional survey).
- Qualitative open-text responses
- Demographics (e.g., age, gender, sector).
- Country identifiers and regional groupings.

Your Challenge

You are tasked with understanding:

1. What drives feelings of preparedness for career advancement
2. Do people differ in what they report implicitly and explicitly
3. Do these differences vary by region

Your Tasks

1. Global Drivers (Slide 1-2)
    a. Identify the most predictive emotional and workplace factors of preparedness.

b. Compare implicit vs. explicit predictors
c. Evaluate whether implicit responses add incremental predictive value over explicit ones.

2. Analysis of Qualitative-Data (optional)
    i. Analyse open-text responses key themes and drivers
3. Country-Level Modelling
    a. Show how factor importance varies by country.
4. Segmentation
    a. Segment the audiences based on their barriers and drivers using whatever methods you deem appropriate
    b. Depict and describe the main segments, describing their behavioural profiles

Deliverables:

1. Slides outlining key insights from the above tasks.
2. Provide notebooks (Python) and all data sets/iteration (bonus for modular, reusable)

Evaluation Criteria

- Clearly distinguishes between implicit and explicit responses, and evaluates their unique and combined predictive value.
- Selects appropriate modelling techniques and justifies the approach.
- Demonstrates model reliability using validation techniques and clearly interprets feature importance or coefficients.
- Highlights the limitations, assumptions, and potential biases in the data and modelling (e.g. response bias).
- Presents a clear and useful segmentation with behavioural profiles linked to barriers or drivers.

- Analyses are reproducible and well-organised, with clean, modular code.
- Communicates insights clearly and prioritises the most relevant findings.
- Includes appropriate visualisations to support interpretation and storytelling.
- Acknowledges business value and reflects on how insights could be applied impactfully.