### **Project Outline: Resole CIC - Understanding Communities in Need**

#### **Project Overview**

* The project focuses on analyzing and modeling areas of deprivation across the UK to support Resole CIC in optimizing footwear redistribution.
* The analysis includes socio-economic factors, population demographics, and access to resources.
* The final deliverables include a **dashboard or notebook**, a **final report**, and a **presentation**.

### **Key Objectives**

1. **Identify High-Need Geographic Areas**
   * Use publicly available data to determine where the need for footwear is greatest.
2. **Analyze Trends in Deprivation**
   * Examine emerging trends and shifts in deprivation to anticipate future demand.
3. **Predict Demand for Footwear Redistribution**
   * Investigate whether demand can be predicted using socio-economic indicators.
4. **Assess the Impact of Redistribution Efforts**
   * Determine how footwear distribution affects communities in need.

### **Scope of Work**

#### **1. Data Collection & Integration**

* Identify and gather publicly available datasets related to:
  + **Deprivation indices** (e.g., UK Indices of Multiple Deprivation).
  + **Demographics** (population density, age distribution, etc.).
  + **Economic factors** (income levels, unemployment rates).
  + **Access to resources** (transportation, social services, etc.).
* Clean and integrate datasets for analysis.

#### **2. Exploratory Data Analysis (EDA)**

* Identify correlations between socio-economic indicators and deprivation levels.
* Rank geographical areas based on deprivation and visualize the data using a **dashboard**.

#### **3. Trend Analysis & Predictive Modeling**

* Use statistical and operational research techniques to:
  + Identify patterns in deprivation levels over time.
  + Forecast future deprivation trends and predict footwear demand.
* Select appropriate performance metrics to evaluate model accuracy.

#### **4. Business Report & Recommendations**

* Document key findings, limitations, and recommendations.
* Highlight data gaps and areas where additional data would be beneficial.
* Provide actionable insights on where and how Resole should focus its efforts.

### **Project Deliverables**

1. **Final Report (Due: April 3, 2025)**
   * 3,000-word report detailing findings, methods, analysis, and recommendations.
   * Includes GitHub repository link with code and data.
2. **Technical Code & Dashboard**
   * Upload all scripts, models, and visualization tools to GitHub.
   * Ensure the dashboard effectively communicates insights.
3. **10-Minute Presentation (March 24, 2025)**
   * Summary of research, methods, key findings, and recommendations.

### **Assessment Criteria**

* **Background & Problem Definition (15%)**
* **Project Planning (20%)**
* **Data Analysis & Methodology (20%)**
* **Findings & Recommendations (20%)**
* **Report Structure & Communication (10%)**
* **Technical Implementation (5%)**
* **Individual Reflection (10%)**