

TAMILNADU MARGINAL WORKERS ASSESSMENT
Data Analytics with cognos – Phase 2
DOCUMENTATION

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Phase 2: Innovation

PROJECT DEFINITION:

Consider conducting clustering analysis to identify patterns among different industrial categories and age groups.

Dataset Link:

<https://tn.data.gov.in/resource/marginal-workers-classified-age-industrial-category-and-sex-scheduled-caste-2011-tamil>

OVERVIEW:

Marginal workers play a critical role in the labour force of Tamil Nadu, contributing to the economy in various sectors. We suggest running a clustering study to find patterns among various industrial sectors and age groups in order to address the particular issues this population faces. Understanding these tendencies will help us create creative solutions that are tailored to the unique requirements and tastes of marginal workers. This document discusses the procedures for putting this analysis into practice and offers creative ideas for enhancing the welfare of marginal workers in Tamil Nadu.

Implementation Steps:

- **Data Collection and Preparation:**
 - Obtain thorough information about Tamil Nadu's marginal employees, such as their employment

status, industry, age, income, level of education, and location.

- To assure the quality and applicability of the data for clustering analysis, clean and preprocess it.

- **Feature Selection:**

- Choose important characteristics, such as industry type and age group, that can assist in identifying distinct trends among marginal workers.
- Use socioeconomic and demographic variables that are known to affect employees' welfare and working conditions.

- **Clustering Analysis:**

- Utilize appropriate clustering algorithms (e.g., K-means, hierarchical clustering, or DBSCAN) to group marginal workers based on common characteristics.
- The ideal number of clusters for effective segmentation should be determined.

Interpretation of Clusters:

- Determine the essential traits, difficulties, and opportunities present in each cluster by analyzing them.
- Recognize the connections among age groups, industries, and socioeconomic variables

- **Innovative Solutions:**

- Create creative solutions that are suited to the distinct requirements of each group after the clusters have been established. Here are a few instances:

- **Skill Enhancement Programs:** Develop industry-specific skill training programs for each cluster in order to improve employability.
- **Financial Inclusion Initiatives:** Offering individualized financial literacy and inclusion training depending on income levels is part of the financial inclusion initiatives.
- **Healthcare Access:** Make sure clusters with various age-related health requirements have targeted access to healthcare.
- **Social Support Networks:** Form support networks and community networks based on clusters' shared problems.
- **Policy Suggestions:**
 - Offer policymakers ideas that are supported by data in order to enhance the working circumstances and general wellbeing of marginal workers. Propose policy modifications that take into account the identified clusters' particular requirements.
- **Monitoring and Assessment:**
 - Keep an eye on the effects of the creative solutions and make any necessary updates. Get input from low-wage workers to make sure the initiatives are effective.
- **Reporting and documentation:**
 - From the gathering of data to the application of solutions, document the entire process. For stakeholders, such as governmental agencies, NGOs, and other pertinent groups, create thorough reports.

Platform Features:

To implement the proposed innovative clustering analysis, we recommend the development of a dedicated platform with the following key features:

- **Data Integration:**

- The platform ought to permit the fusion of different data sources, enabling either continuous or sporadic data updates. □

- **Data preprocessing:**

- With built-in tools for handling missing data and outliers, users should be able to clean and preprocess data effectively.

- **Machine Learning Models:**

- Implement clustering algorithms like K-means, hierarchical clustering, or DBSCAN, providing users with options to experiment with different techniques.

- **Visualization Tools:**

- Incorporate data visualization libraries to generate interactive graphs and charts for clear and concise insights. Utilize data visualization libraries to create interactive graphs and charts that provide clear, succinct insights.

- **User-Friendly Interface:**

- Design a user-friendly user interface with simple-to-use features so that

polymakers, researchers, and data analysts can use it.

- **Customization:**

- ☐ Allow users to adjust analysis parameters and clustering strategies to suit particular research requirements.

- **Export and Reporting:**

- ☐ Allow users to export clustering results and create detailed reports for additional analysis and policymaking.

- **Security:**

- ☐ Use strong encryption and access control mechanisms to ensure data security and privacy.

SITEMAP OF OUR PLATFORMS

A basic site map of the suggested platform is provided below:

- **Home Page:**

- ☐ Overview of the platform's features and purpose on the home page

- **About Us**

- ☐ Details about the entity that created the platform
Information on the company responsible for the platform

- **Data Analysis**

- Results of cluster analysis are available.

- **Resources**

- Resources, information, and direction for disadvantaged workers

- **Blog/News**

- Updates on regulations, headlines, and success tales
Contact Us Options for support and contact information

- **User profiles**

- Registered user accounts for employees and decision-makers
Tools for interaction
Instruments for analyzing data and trends

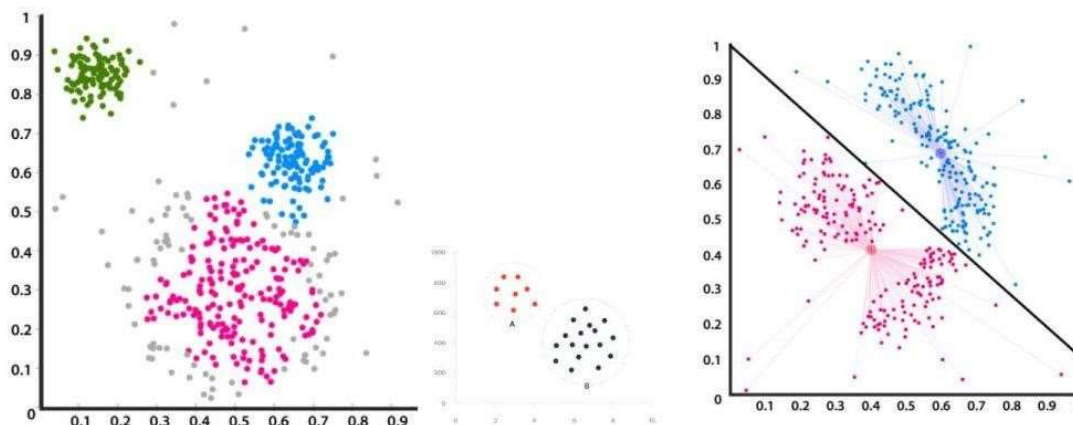
- **Help Page**

- FAQs, guides, and assistance

- **Terms and Conditions**

- Conditional clauses
Terms of Service and Privacy Notice for the Platform

Cluster Analysis



Features and Functionalities:

1. User registration and policymakers' and workers' profiles
2. Tools for exploring clustering findings using data visualization
3. a collection of resources containing details on employment possibilities, education, and assistance
4. Blog and news section with updates on regulations and achievements Interactive tools to model the effects of changing policy
5. Support and help are available from the support center.
6. a responsive and accessible design