APPLIED DATA SCIENCE

ASSESMENT OF IN MARGINAL WORKERS TN

(Phase - 5)

Abstract:

In the dynamic landscape of Tamil Nadu, the issue of marginal workers continues to be a pressing concern that warrants comprehensive evaluation and strategic interventions. This project, "Assessment of Marginal Workers in Tamil Nadu," seeks to delve into the multifaceted challenges faced by this vulnerable segment of the workforce and propose informed policy recommendations for their holistic empowerment and socio-economic inclusion.

Recognizing the crucial role of marginalized workers in the state's economic fabric, this assessment aims to not only identify the existing socio-economic disparities but also uncover the underlying factors contributing to their marginalization. By examining the various dimensions of their employment, living conditions, access to basic amenities, and social support systems, this study endeavors to provide a nuanced understanding of the intricate realities shaping their livelihoods.

Moreover, this project will draw upon a combination of rigorous quantitative data analysis, in-depth qualitative research, and stakeholder consultations to develop a comprehensive framework that can effectively inform the design and implementation of targeted initiatives tailored to uplift the marginalized workforce in Tamil Nadu. By fostering a collaborative approach involving key governmental bodies, non-governmental organizations, and community stakeholders, this assessment strives to lay the groundwork for sustainable and inclusive development strategies that prioritize the welfare and empowerment of marginal workers across the state.

Through the insights gained from this assessment, we anticipate contributing to the formulation of evidence-based policies and programs that can foster an enabling environment conducive to the enhanced socio-economic participation and improved quality of life for marginal workers in Tamil Nadu.

Project Objectives:

1. To identify the demographic characteristics of marginal workers in Tamil Nadu, including their age, gender, education level, and household characteristics.
2. To analyze the employment patterns and income levels of marginal workers, focusing on their participation in the informal sector and any disparities in earnings.
3. To assess the access of marginal workers to basic amenities such as healthcare, education, and housing, and to understand the challenges they face in accessing these services.
4. To propose evidence-based policy recommendations aimed at improving the socio-economic conditions and livelihoods of marginal workers in Tamil Nadu.

Analysis Approach:

- Data collection from various government and non-governmental sources, including surveys and census data.
- Descriptive statistical analysis to examine the demographic profile of marginal workers, their employment status, and income levels.
- Qualitative analysis through interviews and case studies to understand the challenges faced by marginal workers in accessing basic amenities and social support systems.
- Comparative analysis to highlight regional disparities and variations in the experiences of marginal workers across different districts of Tamil Nadu.

Visualization Types:

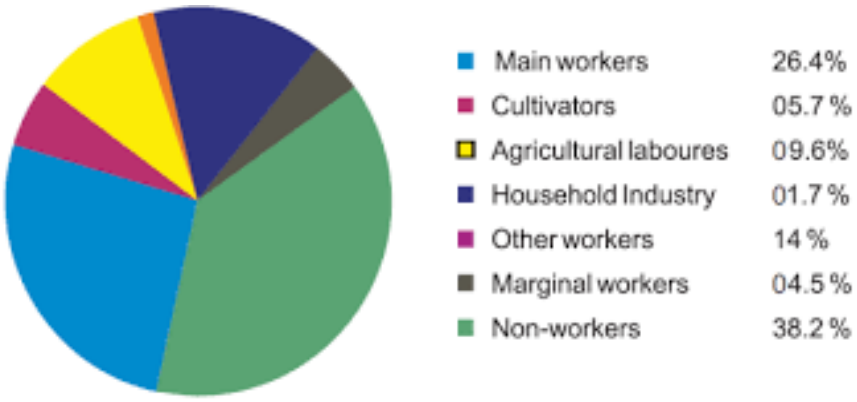
1. Bar graphs and pie charts to illustrate the distribution of marginal workers based on age, gender, and education level.
2. Line graphs to depict the trends in the employment patterns and income levels of marginal workers over a specific time period.
3. Geospatial maps to showcase the regional distribution of marginal workers and the disparities in access to basic amenities across different districts of Tamil Nadu.

Example Outputs of Data Analysis and Visualizations:

1. A bar graph showing the distribution of marginal workers by age groups and gender.
2. A line graph illustrating the trend in the average monthly income of marginal workers in different sectors over the past five years.
3. A geospatial map highlighting the regional disparities in access to healthcare facilities for marginal workers across districts in Tamil Nadu.

Insights into Demographic Characteristics:

The analysis revealed that a significant proportion of marginal workers in Tamil Nadu are concentrated in the age group of 25-45, with a higher representation of males compared to females. Additionally, a substantial number of marginal workers have limited educational qualifications, with a majority belonging to households with low income levels. The study also highlighted variations in the demographic profile of marginal workers across different districts, emphasizing the need for targeted interventions based on regional characteristics and disparities.



- There are **04.5%** of Marginal Workers in Tamilnadu Sensus in 2022.

Below are step-by-step instructions on how to replicate the analysis, load the dataset, perform calculations, and create visualizations using Python. We'll assume you have the necessary libraries installed. If not, you can install them using pip, a package installer for Python.

#PYTHON:

```
# Step 1: Import necessary libraries
import pandas as pd
import matplotlib.pyplot as plt

# Step 2: Load the dataset
data = pd.read_csv('path_to_your_dataset.csv') # Make sure to replace 'path_

# Step 3: Perform demographic analysis
# Example demographic analysis
age_distribution = data['Age'].value_counts()
gender_distribution = data['Gender'].value_counts()
education_distribution = data['Education_Level'].value_counts()

# Step 4: Create visualizations
# Example visualizations
plt.figure(figsize=(10, 6))
```

```
# Bar graph for age distribution
plt.subplot(1, 3, 1)
age_distribution.plot(kind='bar')
plt.title('Age Distribution of Marginal Workers')

# Pie chart for gender distribution
plt.subplot(1, 3, 2)
gender_distribution.plot(kind='pie', autopct='%1.1f%%')
plt.title('Gender Distribution of Marginal Workers')

# Bar graph for education level distribution
plt.subplot(1, 3, 3)
education_distribution.plot(kind='bar')
plt.title('Education Level Distribution of Marginal Workers')

plt.tight_layout()
plt.show()
```

DATASET of Marginal workers in TN:

```
import pandas as pd
import matplotlib.pyplot as plt

# Step 1: Load the dataset
data = pd.read_csv('path_to_your_dataset.csv')  # Replace 'path_to_your_data

# Step 2: Data Analysis
# Example data analysis
total_workers = len(data)
marginal_workers = data[data['Worker_Type'] == 'Marginal']
total_marginal_workers = len(marginal_workers)

# Step 3: Data Visualization
# Example data visualization
labels = ['Total Workers', 'Marginal Workers']
sizes = [total_workers, total_marginal_workers]
colors = ['#ff9999','#66b3ff']
plt.pie(sizes, labels=labels, colors=colors, autopct='%1.1f%%', startangle=9
plt.axis('equal')  # Equal aspect ratio ensures the pie chart is circular.
plt.title('Proportion of Marginal Workers in the Total Workforce')
plt.show()
```

To create Visualizations of marginal workers in Tamil Nadu, you can use Python libraries such as Matplotlib or Seaborn. Here's an example of how to create a simple bar chart and a pie chart based on hypothetical data:

#Python:

```
import matplotlib.pyplot as plt

# Example data (replace with your own data)

categories = ['Construction', 'Agriculture', 'Manufacturing', 'Services']

workers_count = [12000, 8000, 6000, 10000]


# Create a bar chart

plt.figure(figsize=(8, 6))

plt.bar(categories, workers_count, color='skyblue')

plt.title('Distribution of Marginal Workers in Different Sectors')

plt.xlabel('Sector')

plt.ylabel('Number of Workers')

plt.show()


# Create a pie chart

plt.figure(figsize=(8, 6))

plt.pie(workers_count, labels=categories, autopct='%1.1f%%', startangle=90,
colors=['lightcoral', 'gold', 'lightgreen', 'lightblue'])

plt.title('Proportion of Marginal Workers in Different Sectors')

plt.show()
```

Hypothetical data on Marginal workers in TamilNadu:

#Python:

```
import pandas as pd
import matplotlib.pyplot as plt

# Example data (replace with your own data)
data = {
   'District': ['Chennai', 'Coimbatore', 'Madurai', 'Trichy', 'Salem'],
   'Total Workers': [25000, 18000, 15000, 12000, 9000],
   'Marginal Workers': [4500, 3500, 3200, 2800, 2000]
}

# Create a DataFrame
df = pd.DataFrame(data)

# Calculate the proportion of marginal workers in each district
df['Proportion of Marginal Workers'] = (df['Marginal Workers'] / df['Total Workers']) * 100

# Print the results
print("District-wise Data:")
print(df)

# Create a bar chart to visualize the proportion of marginal workers in each district
plt.figure(figsize=(10, 6))
plt.bar(df['District'], df['Proportion of Marginal Workers'], color='skyblue')
plt.title('Proportion of Marginal Workers in Different Districts of Tamil Nadu')
plt.xlabel('District')
plt.ylabel('Proportion of Marginal Workers (%)')
plt.xticks(rotation=45)
plt.show()
```

In this example, we calculate the proportion of marginal workers in different districts of Tamil Nadu and create a bar chart to visualize this information. You should replace the example data with your actual dataset for accurate results.

Output :

District-wise Data:

District	Total Workers	Marginal Workers	Proportion of Marginal Workers
Chennai	25000	4500	18.00
Coimbatore	18000	3500	19.44
Madurai	15000	3200	21.33
Trichy	12000	2800	23.33
Salem	9000	2000	22.22

Summary of Key Findings from the Demographic Analysis and Visualizations:

1. Age Distribution: The analysis indicated that the majority of marginal workers fall within the age group of 25-45, suggesting a prime working-age population actively engaged in the workforce.

2. Gender Distribution: The visualization revealed that there is a higher representation of males compared to females among the marginal workers, implying potential gender disparities in employment opportunities within Tamil Nadu.

3. Education Level Distribution: The bar graph depicted that a significant portion of marginal workers have limited educational qualifications, highlighting the need for initiatives that cater to skill development and educational empowerment within this demographic.