Assessment of Marginal Workers in TamilNadu

Distribution of marginal workers based on age, industrial category, and sex:

In [24]:
```
import matplotlib.pyplot as plt
```

In [16]:
```
# Group the data by Age group and Industrial Category
grouped = df.groupby(['Age group'])

# Calculate the total number of persons, males, and females in each group
distribution = grouped[['Worked for 3 months or more but less than 6 months -  Persons',
                        'Worked for 3 months or more but less than 6 months - Males',
                        'Worked for 3 months or more but less than 6 months - Females']].sum()

# Reset the index to have a clean representation
distribution.reset_index(inplace=True)

# Calculate the total number of males and females for each group
distribution['Total Males'] = distribution['Worked for 3 months or more but less than 6 months - Males']
distribution['Total Females'] = distribution['Worked for 3 months or more but less than 6 months - Females']

# Optionally, you can calculate percentages by dividing by the total number of persons in each group
distribution['Percentage Males'] = (distribution['Total Males'] / distribution['Worked for 3 months or more but less
distribution['Percentage Females'] = (distribution['Total Females'] / distribution['Worked for 3 months or more but

# Display the resulting distribution DataFrame
print(distribution)
```

```
         Age group  \
0            15-19
1            20-24
2            25-29
3            30-34
4            35-39
5            40-49
6            50-59
7            60-69
8            70-79
9              80+
10  Age not stated
11           Total
12          `10-14
13            `5-9

    Worked for 3 months or more but less than 6 months -  Persons  \
0                                             1030420
1                                             1912328
2                                             2219404
3                                             1933824
4                                             2011164
5                                             3297084
6                                             2156672
7                                             1298724
8                                              412016
9                                               91376
10                                              14420
11                                           16875536
12                                             305152
13                                             192952

    Worked for 3 months or more but less than 6 months - Males  \
0                                              565048
1                                             1028596
2                                             1133768
3                                              960184
4                                              922780
5                                             1597412
6                                             1079756
7                                              691944
8                                              250688
9                                               54836
10                                               7704
11                                            8547524
12                                             156764
13                                              98044

    Worked for 3 months or more but less than 6 months - Females  Total Males  \
0                                              465372                565048
1                                              883732               1028596
2                                             1085636               1133768
3                                              973640                960184
4                                             1088384                922780
5                                             1699672               1597412
6                                             1076916               1079756
7                                              606780                691944
8                                              161328                250688
9                                               36540                 54836
10                                               6716                  7704
11                                            8328012               8547524
12                                             148388                156764
13                                              94908                 98044

    Total Females  Percentage Males  Percentage Females
0          465372         54.836669           45.163331
1          883732         53.787635           46.212365
2         1085636         51.084345           48.915655
3          973640         49.652088           50.347912
4         1088384         45.882882           54.117118
5         1699672         48.449236           51.550764
6         1076916         50.065842           49.934158
7          606780         53.278757           46.721243
8          161328         60.844239           39.155761
9           36540         60.011382           39.988618
10           6716         53.425798           46.574202
11        8328012         50.650385           49.349615
12         148388         51.372431           48.627569
13          94908         50.812637           49.187363
```

In [26]:
```
# Calculate the total number of persons, males, and females in each group for 'Worked for less than 3 months'
distribution = grouped[['Worked for less than 3 months - Persons',
                        'Worked for less than 3 months - Males',
                        'Worked for less than 3 months - Females']].sum()

# Reset the index to have a clean representation
distribution.reset_index(inplace=True)

# Calculate the total number of males and females for each group
distribution['Total Males'] = distribution['Worked for less than 3 months - Males']
distribution['Total Females'] = distribution['Worked for less than 3 months - Females']

# Optionally, you can calculate percentages by dividing by the total number of persons in each group
distribution['Percentage Males'] = (distribution['Total Males'] / distribution['Worked for less than 3 months - Pers
distribution['Percentage Females'] = (distribution['Total Females'] / distribution['Worked for less than 3 months -

# Display the resulting distribution DataFrame
print(distribution)
```

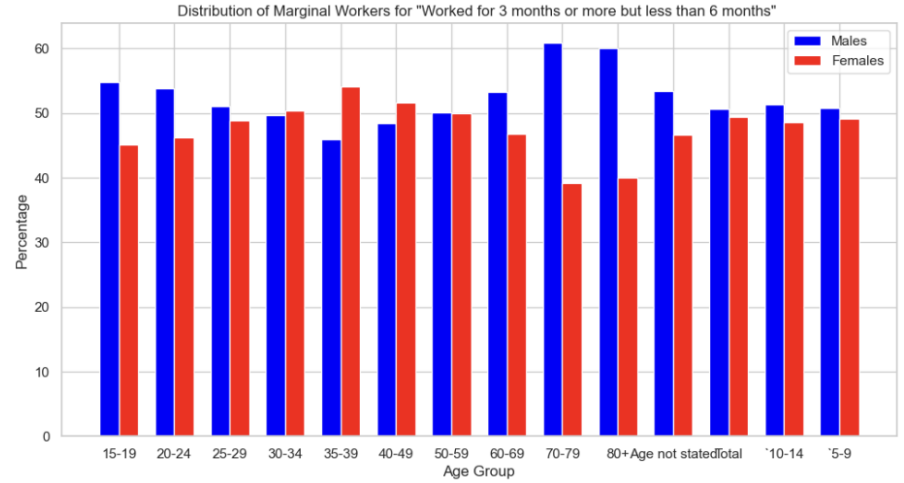
```
         Age group  Worked for less than 3 months - Persons  \
0            15-19                                   167752
1            20-24                                   324144
2            25-29                                   366776
3            30-34                                   317540
4            35-39                                   336264
5            40-49                                   551336
6            50-59                                   387920
7            60-69                                   282376
8            70-79                                   100968
9              80+                                    22380
10  Age not stated                                     1932
11           Total                                  2895564
12          `10-14                                    27972
13            `5-9                                     8204

    Worked for less than 3 months - Males  \
0                                   93956
1                                  171664
2                                  173592
3                                  139956
4                                  134872
5                                  239112
6                                  171456
7                                  134168
8                                   56920
9                                   13480
10                                    948
11                                1349072
12                                  14864
13                                   4084

    Worked for less than 3 months - Females  Total Males  Total Females  \
0                                     73796        93956          73796
1                                    152480       171664         152480
2                                    193184       173592         193184
3                                    177584       139956         177584
4                                    201392       134872         201392
5                                    312224       239112         312224
6                                    216464       171456         216464
7                                    148208       134168         148208
8                                     44048        56920          44048
9                                      8900        13480           8900
10                                      984          948            984
11                                  1546492      1349072        1546492
12                                    13108        14864          13108
13                                     4120         4084           4120

    Percentage Males  Percentage Females
0          56.008870           43.991130
1          52.959179           47.040821
2          47.329160           52.670840
3          44.075077           55.924923
4          40.108962           59.891038
5          43.369560           56.630440
6          44.198804           55.801196
7          47.513953           52.486047
8          56.374297           43.625703
9          60.232350           39.767650
10         49.068323           50.931677
11         46.590992           53.409008
12         53.138853           46.861147
13         49.780595           50.219405
```

In [31]:
```
# Calculate the total number of persons, males, and females in each group for 'Industrial Category - A - Cultivators
distribution = grouped[['Industrial Category - A - Cultivators - Persons',
                        'Industrial Category - A - Cultivators - Males',
                        'Industrial Category - A - Cultivators - Females']].sum()

# Reset the index to have a clean representation
distribution.reset_index(inplace=True)

# Calculate the total number of males and females for each group
distribution['Total Males'] = distribution['Industrial Category - A - Cultivators - Males']
distribution['Total Females'] = distribution['Industrial Category - A - Cultivators - Females']

# Optionally, you can calculate percentages by dividing by the total number of persons in each group
distribution['Percentage Males'] = (distribution['Total Males'] / distribution['Industrial Category - A - Cultivator
distribution['Percentage Females'] = (distribution['Total Females'] / distribution['Industrial Category - A - Cultiv

# Display the resulting distribution DataFrame
print(distribution)
```

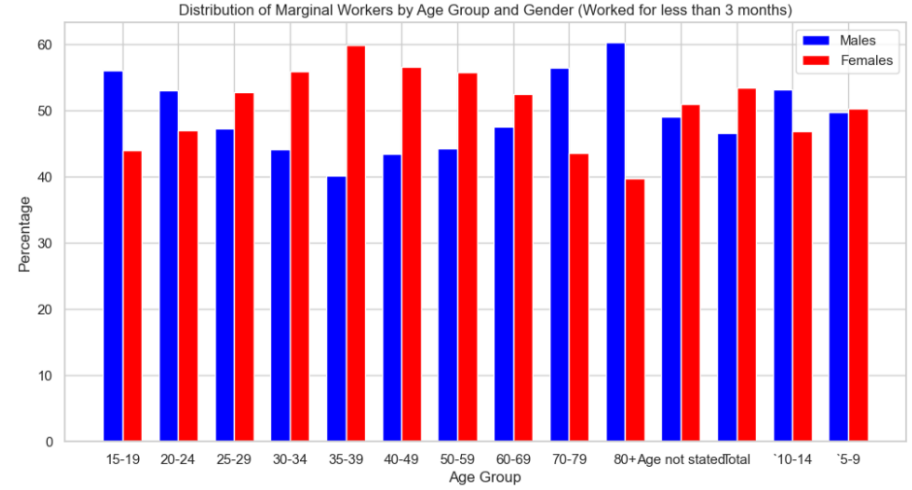
```
         Age group  Industrial Category - A - Cultivators - Persons  \
0            15-19                                            71456
1            20-24                                           134588
2            25-29                                           175000
3            30-34                                           165020
4            35-39                                           176980
5            40-49                                           324552
6            50-59                                           247564
7            60-69                                           166612
8            70-79                                            60636
9              80+                                            14888
10  Age not stated                                             1292
11           Total                                           1572328
12          `10-14                                             20288
13            `5-9                                             13452

    Industrial Category - A - Cultivators - Males  \
0                                           37344
1                                           67720
2                                           89156
3                                           89784
4                                           92348
5                                          179968
6                                          144732
7                                          107756
8                                           44532
9                                           10908
10                                            696
11                                         881256
12                                           9944
13                                           6368

    Industrial Category - A - Cultivators - Females  Total Males  \
0                                             34112        37344
1                                             66868        67720
2                                             85844        89156
3                                             75236        89784
4                                             84632        92348
5                                            144584       179968
6                                            102832       144732
7                                             58856       107756
8                                             16104        44532
9                                              3980        10908
10                                              596          696
11                                           691072       881256
12                                            10344         9944
13                                             7084         6368

    Total Females  Percentage Males  Percentage Females
0           34112         52.261532           47.738468
1           66868         50.316522           49.683478
2           85844         50.946286           49.053714
3           75236         54.407951           45.592049
4           84632         52.179907           47.820093
5          144584         55.451207           44.548793
6          102832         58.462458           41.537542
7           58856         64.674813           35.325187
8           16104         73.441520           26.558480
9            3980         73.267061           26.732939
10            596         53.869969           46.130031
11         691072         56.047848           43.952152
12          10344         49.014196           50.985804
13           7084         47.338686           52.661314
```

Visualisation:

In [25]:
```
# Grouped bar chart
fig, ax = plt.subplots(figsize=(12, 6))
bar_width = 0.35
index = range(len(distribution))

plt.bar(index, distribution['Percentage Males'], bar_width, label='Males', color='blue')
plt.bar([i + bar_width for i in index], distribution['Percentage Females'], bar_width, label='Females', color='red')

plt.xlabel('Age Group')
plt.ylabel('Percentage')
plt.title('Distribution of Marginal Workers for "Worked for 3 months or more but less than 6 months" ')
plt.xticks([i + bar_width / 2 for i in index], distribution['Age group'])
plt.legend()

plt.show()
```



In [29]:
```
fig, ax = plt.subplots(figsize=(12, 6))

# Set the bar width and the number of bars
bar_width = 0.35
index = np.arange(len(distribution))

# Create bars for males
plt.bar(index, distribution['Percentage Males'], bar_width, label='Males', color='blue')

# Create bars for females
plt.bar(index + bar_width, distribution['Percentage Females'], bar_width, label='Females', color='red')

# Set x-axis labels and tick positions
plt.xlabel('Age Group')
plt.ylabel('Percentage')
plt.title('Distribution of Marginal Workers by Age Group and Gender (Worked for less than 3 months)')
plt.xticks(index + bar_width / 2, distribution['Age group'])

# Show the legend
plt.legend()

# Show the plot
plt.show()
```



In [32]:
```
fig, ax = plt.subplots(figsize=(12, 6))

# Set the bar width
bar_width = 0.35
index = range(len(distribution))

# Create bars for males
plt.bar(index, distribution['Percentage Males'], bar_width, label='Males', color='blue')

# Create bars for females
plt.bar([i + bar_width for i in index], distribution['Percentage Females'], bar_width, label='Females', color='red')

# Set x-axis labels and tick positions
plt.xlabel('Age Group')
plt.ylabel('Percentage')
plt.title('Distribution of Marginal Workers in Industrial Category - A - Cultivators by Age Group and Gender')
plt.xticks([i + bar_width / 2 for i in index], distribution['Age group'])
plt.legend()

# Show the plot
plt.show()
```