

**Date:25.10.2023**

**Team ID:4498**

**Project Title:Assessment of Marginal Workers in Tamil Nadu- A Socioeconomic Analysis**

### Importing the necessary packages

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
```

### Loading dataset

```
dataset = pd.read_csv("/content/DDW_B06SC_3300_State_TAMIL_NADU-
2011.csv")

dataset.info()

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 594 entries, 0 to 593
Data columns (total 69 columns):
 #   Column
Non-Null Count  Dtype
---  -
0    Table Code
594 non-null    object
1    State Code
594 non-null    object
2    District Code
594 non-null    object
3    Area Name
594 non-null    object
4    Total/ Rural/ Urban
594 non-null    object
5    Age group
594 non-null    object
6    Worked for 3 months or more but less than 6 months - Persons
594 non-null    int64
7    Worked for 3 months or more but less than 6 months - Males
594 non-null    int64
8    Worked for 3 months or more but less than 6 months - Females
594 non-null    int64
9    Worked for less than 3 months - Persons
594 non-null    int64
10   Worked for less than 3 months - Males
594 non-null    int64
```

11	Worked for less than 3 months - Females	594 non-null	int64
12	Industrial Category - A - Cultivators - Persons	594 non-null	int64
13	Industrial Category - A - Cultivators - Males	594 non-null	int64
14	Industrial Category - A - Cultivators - Females	594 non-null	int64
15	Industrial Category - A - Agricultural labourers - Persons	594 non-null	int64
16	Industrial Category - A - Agricultural labourers - Males	594 non-null	int64
17	Industrial Category - A - Agricultural labourers - Females	594 non-null	int64
18	Industrial Category - A - Plantation, Livestock, Forestry, Fishing, Hunting and allied activities - Persons	594 non-null	int64
19	Industrial Category - A - Plantation, Livestock, Forestry, Fishing, Hunting and allied activities - Males	594 non-null	int64
20	Industrial Category - A - Plantation, Livestock, Forestry, Fishing, Hunting and allied activities - Females	594 non-null	int64
21	Industrial Category - B - Persons	594 non-null	int64
22	Industrial Category - B - Males	594 non-null	int64
23	Industrial Category - B - Females	594 non-null	int64
24	Industrial Category - C - HHI - Persons	594 non-null	int64
25	Industrial Category - C - HHI - Males	594 non-null	int64
26	Industrial Category - C - HHI - Females	594 non-null	int64
27	Industrial Category - C - Non HHI - Persons	594 non-null	int64
28	Industrial Category - C - Non HHI - Males	594 non-null	int64
29	Industrial Category - C - Non HHI - Females	594 non-null	int64
30	Industrial Category - D & E - Persons	594 non-null	int64
31	Industrial Category - D & E - Males	594 non-null	int64
32	Industrial Category - D & E - Females	594 non-null	int64
33	Industrial Category - F - Persons		

594 non-null int64  
34 Industrial Category - F - Males  
594 non-null int64  
35 Industrial Category - F - Females  
594 non-null int64  
36 Industrial Category - G - HHI - Persons  
594 non-null int64  
37 Industrial Category - G - HHI - Males  
594 non-null int64  
38 Industrial Category - G - HHI - Females  
594 non-null int64  
39 Industrial Category - G - Non HHI - Persons  
594 non-null int64  
40 Industrial Category - G - Non HHI - Males  
594 non-null int64  
41 Industrial Category - G - Non HHI - Females  
594 non-null int64  
42 Industrial Category - H - Persons  
594 non-null int64  
43 Industrial Category - H - Males  
594 non-null int64  
44 Industrial Category - H - Females  
594 non-null int64  
45 Industrial Category - I - Persons  
594 non-null int64  
46 Industrial Category - I - Males  
594 non-null int64  
47 Industrial Category - I - Females  
594 non-null int64  
48 Industrial Category - J - HHI - Persons  
594 non-null int64  
49 Industrial Category - J - HHI - Males  
594 non-null int64  
50 Industrial Category - J - HHI - Females  
594 non-null int64  
51 Industrial Category - J - Non HHI - Persons  
594 non-null int64  
52 Industrial Category - J - Non HHI - Males  
594 non-null int64  
53 Industrial Category - J - Non HHI - Females  
594 non-null int64  
54 Industrial Category - K to M - Persons  
594 non-null int64  
55 Industrial Category - K to M - Males  
594 non-null int64  
56 Industrial Category - K to M - Females  
594 non-null int64

---

```
57  Industrial Category - N to O - Persons
594 non-null      int64
58  Industrial Category - N to O - Males
594 non-null      int64
```



```

594 non-null      int64
    60 Industrial Category - P to Q - Persons
594 non-null      int64
    61 Industrial Category - P to Q - Males
594 non-null      int64
    62 Industrial Category - P to Q - Females
594 non-null      int64
    63 Industrial Category - R to U - HHI - Persons
594 non-null      int64
    64 Industrial Category - R to U - HHI - Males
594 non-null      int64
    65 Industrial Category - R to U - HHI - Females
594 non-null      int64
    66 Industrial Category - R to U - Non HHI - Persons
594 non-null      int64
    67 Industrial Category - R to U - Non HHI - Males
594 non-null      int64
    68 Industrial Category - R to U - Non HHI - Females
594 non-null      int64 dtypes:
int64(63), object(6) memory
usage: 320.3+ KB
dataset.head()

```

	Table Code	State Code	District Code	Area Name
Total/				
Rural/ Urban \				

0	B0806SC	`33	`000	State - TAMIL
NADU				

Tota

1	B0806SC	`33	`000	State - TAMIL
---	---------	-----	------	---------------

NADU

Tota

2	B0806SC	`33	`000	State - TAMIL
---	---------	-----	------	---------------

NADU

Tota

3	B0806SC	`33	`000	State - TAMIL
---	---------	-----	------	---------------

NADU

Tota

4	B0806SC	`33	`000	State - TAMIL
---	---------	-----	------	---------------

NADU

Tota

Age group	Worked for 3 months or more but less than 6 months
-----------	--

-

Persons \

0	Total
---	-------

1200828



2	15-34	514340	3
35-59		542581	
4	60+	115103	



Worked for 3 months or more but less than 6 months - Males	
\	
0	589003
1	1412
2	259560
3	251957
4	6283
Worked for 3 months or more but less than 6 months - Females	
\	
0	611825
1	1366
2	254780
3	290624
4	5227
Worked for less than 3 months - Persons ... \	
0	221386 ..
1	2447 ..
2	92423 ..
3	99202 ..
4	27165 ..
Industrial Category - N to O - Females \	
0	3565
1	1
2	1754
3	1619
4	175
Industrial Category - P to Q - Persons \	
0	1108
1	12
2	753
3	320
4	21
Industrial Category - P to Q - Males \	
0	401
1	7
2	271
3	113
4	9
Industrial Category - P to Q - Females \	
0	7061
1	5
2	4818
3	2074
4	118

Industrial Category - R to U - HHI - Persons \			
0	16833		
1	42		
2	834		
3	659		
4	145		
Industrial Category - R to U - HHI - Males \			
0	4266		
1	169		
2	2127		
3	1487		
4	483		
Industrial Category - R to U - HHI - Females \			
0	12567		
1	25		
2	621		
3	510		
4	97		
Industrial Category - R to U - Non HHI - Persons \			
0	122088		
1	19305		
2	68929		
3	26498		
4	706		
Industrial Category - R to U - Non HHI - Males \			
0	5580		
1	977		
2	3280		
3	967		
4	339		
Industrial Category - R to U - Non HHI - Females			
0	66287	1	
9531	2	36126	
3		16823	4
3671			

[5 rows x 69 columns]

dataset.columns

Index(['Table Code', 'State Code', 'District Code', 'Area Name',  
'Total/ Rural/ Urban', 'Age group',  
'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',  
 'Worked for less than 3 months - Persons',  
 'Worked for less than 3 months - Males',  
 'Worked for less than 3 months - Females',  
 'Industrial Category - A - Cultivators - Persons',  
 'Industrial Category - A - Cultivators - Males',  
 'Industrial Category - A - Cultivators - Females',  
 'Industrial Category - A - Agricultural labourers - Persons',  
 'Industrial Category - A - Agricultural labourers - Males',  
 'Industrial Category - A - Agricultural labourers - Females',  
 'Industrial Category - A - Plantation, Livestock, Forestry,  
 Fishing, Hunting and allied activities - Persons',  
 'Industrial Category - A - Plantation, Livestock, Forestry,  
 Fishing, Hunting and allied activities - Males',  
 'Industrial Category - A - Plantation, Livestock, Forestry,  
 Fishing, Hunting and allied activities - Females',  
 'Industrial Category - B - Persons', 'Industrial Category - B -  
 Males',  
 'Industrial Category - B - Females',  
 'Industrial Category - C - HHI - Persons',  
 'Industrial Category - C - HHI - Males',  
 'Industrial Category - C - HHI - Females',  
 'Industrial Category - C - Non HHI - Persons',  
 'Industrial Category - C - Non HHI - Males',  
 'Industrial Category - C - Non HHI - Females',  
 'Industrial Category - D & E - Persons',  
 'Industrial Category - D & E - Males',  
 'Industrial Category - D & E - Females',  
 'Industrial Category - F - Persons', 'Industrial Category - F -  
 Males',  
 'Industrial Category - F - Females',  
 'Industrial Category - G - HHI - Persons',  
 'Industrial Category - G - HHI - Males',  
 'Industrial Category - G - HHI - Females',  
 'Industrial Category - G - Non HHI - Persons',  
 'Industrial Category - G - Non HHI - Males',  
 'Industrial Category - G - Non HHI - Females',  
 'Industrial Category - H - Persons', 'Industrial Category - H -  
 Males',  
 'Industrial Category - H - Females',  
 'Industrial Category - I - Persons', 'Industrial Category - I -  
 Males',  
 'Industrial Category - I - Females',  
 'Industrial Category - J - HHI - Persons',  
 'Industrial Category - J - HHI - Males',  
 'Industrial Category - J - HHI - Females',

```

'Industrial Category - J - Non HHI - Persons',
'Industrial Category - J - Non HHI - Males',
'Industrial Category - J - Non HHI - Females',
'Industrial Category - K to M - Persons',
'Industrial Category - K to M - Males',
'Industrial Category - K to M - Females',
'Industrial Category - N to O - Persons',
'Industrial Category - N to O - Males',
'Industrial Category - N to O - Females',
'Industrial Category - P to Q - Persons',
'Industrial Category - P to Q - Males',
'Industrial Category - P to Q - Females',
'Industrial Category - R to U - HHI - Persons',
'Industrial Category - R to U - HHI - Males',
'Industrial Category - R to U - HHI - Females',
'Industrial Category - R to U - Non HHI - Persons',
'Industrial Category - R to U - Non HHI - Males',
'Industrial Category - R to U - Non HHI - Females'],
dtype='object') dataset.isnull()

```

	Table Code	State Code	District Code	Area Name	Total/ Rural/
Urban \					
0	False	False	False	False	
False					
1	False	False	False	False	
False					
2	False	False	False	False	
False					
3	False	False	False	False	
False					
4	False	False	False	False	
False					
..	...	...	...	...	
...					
589	False	False	False	False	
False					
590	False	False	False	False	
False					
591	False	False	False	False	
False					
592	False	False	False	False	
False					
593	False	False	False	False	
	False				

```

Age group Worked for 3 months or more but less than 6 months -
Persons \

```

0	False	False
1	False	False

---

2	False	False	
3	False	False	
4	False	False	..
...		...	
589	False	False	
590	False	False	
591	False	False	
592	False	False	
593	False	False	
Worked for 3 months or more but less than 6 months - Males			
\			
0		False	
1		False	
2		False	
3		False	
4		False	
..		..	
589		False	
590		False	
591		False	
592		False	
593		False	
Worked for 3 months or more but less than 6 months - Females			
\			
0		False	
1		False	
2		False	
3		False	
4		False	
..		..	
589		False	
590		False	
591		False	
592		False	
593		False	
Worked for less than 3 months - Persons ... \			
0	False	...	
1	False	...	
2	False	...	

3	False	...
4	False	...
..	...	...
589	False	...
590	False	...
591	False	...
592	False	...
593	False	...

Industrial Category - N to O - Females \

0	Fals	
	e	
1	Fals	
	e	
2	Fals	.
	e	
3	Fals	
	e	
4	Fals	
	e	
..	..	
589	Fals	
	e	
590	Fals	
	e	
591	Fals	
	e	
592	Fals	
	e	
593	Fals	
	e	

Industrial Category - P to Q - Persons \

0	Fals	
	e	
1	Fals	
	e	
2	Fals	.
	e	
3	Fals	
	e	
4	Fals	
	e	
..	..	
589	Fals	
	e	
590	Fals	
	e	

591	Fals
	e
592	Fals
	e
593	Fals
	e

	Industrial Category - P to Q - Males \
0	Fals
1	Fals
2	Fals
3	Fals
4	Fals

..	..
589	Fals
590	Fals
591	Fals
592	Fals
593	Fals

	Industrial Category - P to Q - Females \
0	False



```

1      False
2      False
3      False
4      False    ..
...    589
False
590                                False
591                                False
592                                False
593                                False
      Industrial Category - R to U - HHI - Persons
\
0                                Fals
1                                Fals
2                                Fals
3                                Fals
4                                Fals
..                                ..
589                                Fals
590                                Fals
591                                Fals
592                                Fals
593                                Fals
      Industrial Category - R to U - HHI - Males
\
0                                Fals
                                e
1                                Fals
                                e
2                                Fals
                                e
3                                Fals
                                e
4                                Fals
                                e
..                                ..
589                                Fals
                                e
590                                Fals
                                e
591                                Fals
                                e
592                                Fals
                                e
593                                Fals
                                e

```

Industrial Category - R to U - HHI - Females	
\	
0	Fals
1	Fals
2	Fals
3	Fals
4	Fals
..	..
589	Fals
590	Fals
591	Fals
592	Fals
593	Fals

```

Industrial Category - R to U - Non HHI - Persons \
0      Fals
1      Fals
2      Fals
3      Fals
4      Fals
..      ..
589    Fals
590    Fals
591    Fals
592    Fals
593    Fals
Industrial Category - R to U - Non HHI - Males \
0      False
1      False
2      False
3      False
4      False .
..      ..
589    False
590    False
591    False
592    False
593    False
Industrial Category - R to U - Non HHI - Females
0      False
1      False
2      False
3      False
4      False ..
...
589    False
590    False
591    False
592    False
593    False
[594 rows x 69 columns]

```

### Data aggregation

```

age_distribution = dataset.groupby('Age group')['Industrial Category -
R to U - Non HHI - Males'].mean()
print(age_distribution)
Age group
15-34      1325.373737

```

```

35-59          390.909091
60+            137.131313
Age not stated    6.262626
Total           2254.585859
`5-14          394.909091
Name: Industrial Category - R to U - Non HHI - Males, dtype: float64
max_value_by_category = dataset.groupby('Industrial Category - A -
Cultivators - Persons')['Industrial Category - A - Agricultural
labourers - Persons'].max()
min_value_by_category = dataset.groupby('Worked for 3 months or more
but less than 6 months - Persons')['Worked for less than 3 months -
Persons'].min()
dataset.max()
Table Code          B0806SC
State Code          `33
District Code       `633
Area Name           State - TAMIL NADU
Total/ Rural/ Urban          Urban
...
Industrial Category - R to U - HHI - Males          4266
Industrial Category - R to U - HHI - Females        12567
Industrial Category - R to U - Non HHI - Persons    122088
Industrial Category - R to U - Non HHI - Males      55801
Industrial Category - R to U - Non HHI - Females    66287
Length: 69, dtype: object

dataset.min()

Table Code
B0806SC
State Code
`33
District Code
`000
Area Name           District -
Ariyalur
Total/ Rural/ Urban
Rural
...

Industrial Category - R to U - HHI - Males
0
Industrial Category - R to U - HHI - Females
0
Industrial Category - R to U - Non HHI - Persons
0
Industrial Category - R to U - Non HHI - Males

```

```

0
Industrial Category - R to U - Non HHI - Females
0
Length: 69, dtype: object

median_price_by_category = dataset.groupby('Industrial Category - A -
Plantation, Livestock, Forestry, Fishing, Hunting and allied
activities - Persons')['Industrial Category - B - Persons'].median()
dataset.median()

<ipython-input-41-e22d0dc743ec>:1: FutureWarning: The default value of
numeric_only in DataFrame.median is deprecated. In a future version,
it will default to False. In addition, specifying 'numeric_only=None'
is deprecated. Select only valid columns or specify the value of
numeric_only to silence this warning.  dataset.median()

Worked for 3 months or more but less than 6 months - Persons
2225.5
Worked for 3 months or more but less than 6 months - Males
1147.0
Worked for 3 months or more but less than 6 months - Females
1076.0
Worked for less than 3 months - Persons
430.0
Worked for less than 3 months - Males
198.5
...

Industrial Category - R to U - HHI - Males
7.5
Industrial Category - R to U - HHI - Females
20.0
Industrial Category - R to U - Non HHI - Persons
263.5
Industrial Category - R to U - Non HHI - Males
123.0
Industrial Category - R to U - Non HHI - Females
135.0
Length: 63, dtype: float64

std_dev_by_category = dataset.groupby('Industrial Category - A -
Cultivators - Persons')['Industrial Category - A - Agricultural
labourers - Persons'].std() dataset.std()

<ipython-input-45-d926424df4d9>:1: FutureWarning: The default value of
numeric_only in DataFrame.std is deprecated. In a future version, it
will default to False. In addition, specifying 'numeric_only=None' is
deprecated. Select only valid columns or specify the value of
numeric_only to silence this warning.  dataset.std()

```

```

Worked for 3 months or more but less than 6 months - Persons
76071.715917
Worked for 3 months or more but less than 6 months - Males
36864.822704
Worked for 3 months or more but less than 6 months - Females
39259.545337
Worked for less than 3 months - Persons
13909.621137
Worked for less than 3 months - Males
6127.047670

..
Industrial Category - R to U - HHI - Males
265.230865
Industrial Category - R to U - HHI - Females
776.206806
Industrial Category - R to U - Non HHI - Persons
7325.241597
Industrial Category - R to U - Non HHI - Males
3352.811737
Industrial Category - R to U - Non HHI - Females
3988.125301
Length: 63, dtype: float64

```

## DATA MANIPULATION

```

marginal_workers = dataset[dataset['Industrial Category - A -
Cultivators - Persons'] == 'Industrial Category - A - Agricultural
labourers - Persons'] print(marginal_workers)

Empty DataFrame
Columns: [Table Code, State Code, District Code, Area Name, Total/
Rural/ Urban, Age group, 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,
Worked for less than 3 months - Persons, Worked for less than 3 months
- Males, Worked for less than 3 months - Females, Industrial Category
- A - Cultivators - Persons, Industrial Category - A - Cultivators -
Males, Industrial Category - A - Cultivators - Females, Industrial
Category - A - Agricultural labourers - Persons, Industrial Category -
A - Agricultural labourers - Males, Industrial Category - A -
Agricultural labourers - Females, Industrial Category - A -
Plantation, Livestock, Forestry, Fishing, Hunting and allied
activities - Persons, Industrial Category - A - Plantation, Livestock,
Forestry, Fishing, Hunting and allied activities - Males, Industrial
Category - A - Plantation, Livestock, Forestry, Fishing, Hunting and
allied activities - Females, Industrial Category - B - Persons,
Industrial Category - B - Males, Industrial Category - B - Females,

```

```

Industrial Category - C - HHI - Persons, Industrial Category - C - HHI
- Males, Industrial Category - C - HHI - Females, Industrial Category
- C - Non HHI - Persons, Industrial Category - C - Non HHI - Males,
Industrial Category - C - Non HHI - Females, Industrial Category - D &
E - Persons, Industrial Category - D & E - Males, Industrial Category
- D & E - Females, Industrial Category - F - Persons, Industrial
Category - F - Males, Industrial Category - F - Females, Industrial
Category - G - HHI - Persons, Industrial Category - G - HHI - Males,
Industrial Category - G - HHI - Females, Industrial Category - G - Non
HHI - Persons, Industrial Category - G - Non HHI - Males, Industrial
Category - G - Non HHI - Females, Industrial Category - H - Persons,
Industrial Category - H - Males, Industrial Category - H - Females,
Industrial Category - I - Persons, Industrial Category - I - Males,
Industrial Category - I - Females, Industrial Category - J - HHI -
Persons, Industrial Category - J - HHI - Males, Industrial Category -
J - HHI - Females, Industrial Category - J - Non HHI - Persons,
Industrial Category - J - Non HHI - Males, Industrial Category - J -
Non HHI - Females, Industrial Category - K to M - Persons, Industrial
Category - K to M - Males, Industrial Category - K to M - Females,
Industrial Category - N to O - Persons, Industrial Category - N to O
Males, Industrial Category - N to O - Females, Industrial Category - P
to Q - Persons, Industrial Category - P to Q - Males, Industrial
Category - P to Q - Females, Industrial Category - R to U - HHI -
Persons, Industrial Category - R to U - HHI - Males, Industrial
Category - R to U - HHI - Females, Industrial Category - R to U - Non
HHI - Persons, Industrial Category - R to U - Non HHI - Males,
Industrial Category - R to U - Non HHI - Females]
Index: []

```

```
[0 rows x 69 columns]
```

```
age_distribution = marginal_workers['Industrial Category - A -
Cultivators - Persons'].value_counts().sort_index()
```

```
print(age_distribution)
```

```
Series([], Name: Industrial Category - A - Cultivators - Persons,
dtype: int64)
```

```
sex_distribution = marginal_workers['Industrial Category - A -
Agricultural labourers - Persons'].value_counts()
```

```
print(sex_distribution)
```

```
Series([], Name: Industrial Category - A - Agricultural labourers -
Persons, dtype: int64)
```

```
x=dataset.drop('District Code',axis=1)
```

```
y =dataset['Area Name'] print(x)
```

	Table Code	State Code	Area Name	Total/ Rural/ Urban	\
0	B0806SC	`33	State - TAMIL NADU	Total	
1	B0806SC	`33	State - TAMIL NADU	Total	
2	B0806SC	`33	State - TAMIL NADU	Total	
3	B0806SC	`33	State - TAMIL NADU	Total	
4	B0806SC	`33	State - TAMIL NADU	Total..	
...	...	...	...	589	B0806SC
`33	District - Tiruppur		Urban		
590	B0806SC	`33	District - Tiruppur	Urban	
591	B0806SC	`33	District - Tiruppur	Urban	
592	B0806SC	`33	District - Tiruppur	Urban	
593	B0806SC	`33	District - Tiruppur	Urban	

	Age group	\
0	Total	
1	`5-1	
2	15-3	
3	35-5	
4	60	
..	..	.
589	`5-1	4
590	15-3	
591	35-5	
592	60	
593	Age not stated	

	Worked for 3 months or more but less than 6 months - Persons	\
0	1200828	
1	27791	
2	514340	
3	542581	
4	115103	
..	..	
589	27	
590	3285	
591	3672	
592	69	
593		

	Worked for 3 months or more but less than 6 months - Males	\
0	589003	
1	14125	
2	259560	
3	251957	
4	62833	



..	...
589	129
590	1654
591	1769
592	399
593	1
Worked for 3 months or more but less than 6 months	
- Females \	
0	611825
1	13666
2	254780
3	290624
4	52270
..	..
589	14
590	1631
591	1903
592	29
593	
Worked for less than 3 months - Persons \	
0	221386
1	244
2	9242
3	9920
4	2716 5
..	..
589	1
590	47
591	52
592	11
593	
Worked for less than 3 months - Males ... \	
0	99368 ..
1	1247 ..
2	43892 ..
3	40691 ..
4	13465 ..
..	... ..
589	6 ..
590	238 ..
591	247 ..
592	50 ..
593	0 ..

Industrial Category - N to O - Females		\
0	356	
1	1	
2	175	

3	1619		
4	175	..	
...			
589			0
590			20
591			33
592			0
593			0
	Industrial Category - P to Q - Persons \		
0			11080
1			12
2			753
3			320
4			21
..		..	.
589			0
590			4
591			3
592			
593			
	Industrial Category - P to Q - Males \		
0			4019
1			7
2			2718
3			1131
4			9
..		...	
589			
590			1
591			1
592			
593			
	Industrial Category - P to Q - Females \		
0			706
1			5
2			481
3			207
4			11
..		..	.
589			0
590			2
591			2
592			
593			

Industrial Category - R to U - HHI -
Persons \
0 1683

1	427	
2	8346	
3	6591	
4	1457	..
...		
589		0
590		62
591		36
592		10
593		0
	Industrial Category - R to U - HHI - Males \	
0	4266	
1	169	
2	2127	
3	1487	
4	483..	...
589		0
590		6
591		9
592		3
593		0
	Industrial Category - R to U - HHI - Females	
\		
0		1256
1		25
2		621
3		510
4		97
..		..
589		
590		5
591		2
592		
593		
	Industrial Category - R to U - Non HHI -	
Persons \		
0		12208
1		1930
2		6892
3		2649
4		706
..		..
589		22

590	67
591	27
592	8
593	

```

Industrial Category - R to U - Non HHI - Males \
0 55801 1
9774 2 32803
3 9675
4 3394 ..
...
589 104
590 247
591 103

592 35
593 0

Industrial Category - R to U - Non HHI - Females 0
66287
1 9531
2 36126
3 16823
4 3671 ..
...
589 124
590 428
591 176
592 46
593 0
[594 rows x 68 columns]
print(y)
0 State - TAMIL NADU
1 State - TAMIL NADU
2 State - TAMIL NADU
3 State - TAMIL NADU
4 State - TAMIL NADU
..
589 District - Tiruppur
590 District - Tiruppur
591 District - Tiruppur
592 District - Tiruppur
593 District - Tiruppur
Name: Area Name, Length: 594, dtype: object
from sklearn.model_selection import train_test_split

X_train, X_test, y_train, y_test = train_test_split(X, y,
train_size=0.7, random_state=42)
X_train.shape, X_test.shape

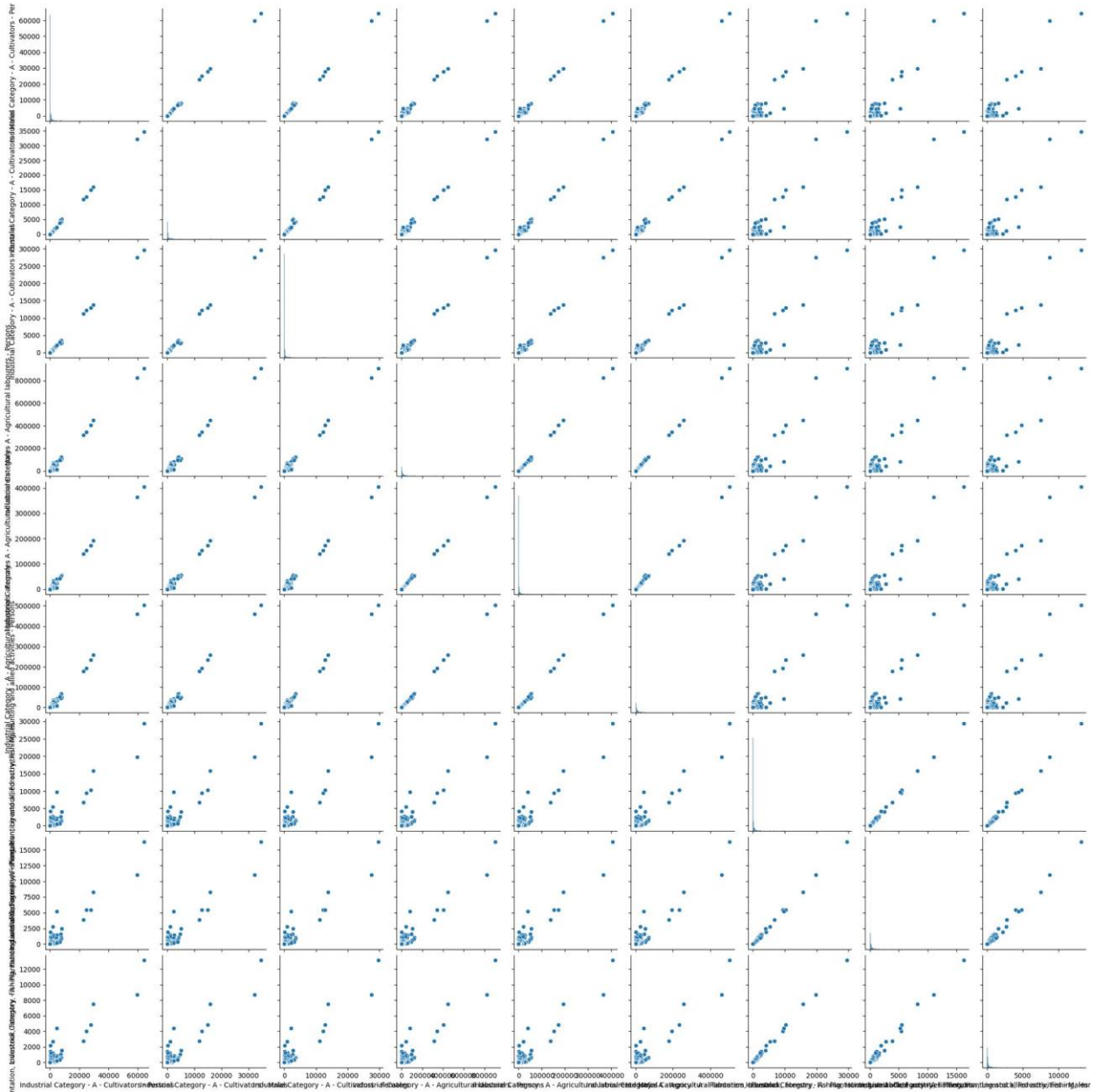
((415, 68), (179, 68))

```

## INDUSTRIAL CATEGORY A

```
IndustrialCategoryA = dataset[['Industrial Category - A - Cultivators  
- Persons',  
'Industrial Category - A - Cultivators - Males',  
'Industrial Category - A - Cultivators - Females',  
'Industrial Category - A - Agricultural labourers - Persons',  
'Industrial Category - A - Agricultural labourers - Males',  
'Industrial Category - A - Agricultural labourers - Females',  
'Industrial Category - A - Plantation, Livestock, Forestry, Fishing,  
Hunting and allied activities - Persons',  
'Industrial Category - A - Plantation, Livestock, Forestry, Fishing,  
Hunting and allied activities - Males',  
'Industrial Category - A - Plantation, Livestock, Forestry, Fishing,  
Hunting and allied activities - Females']]  
  
plt.figure(figsize=(10,10))  
sns.pairplot(IndustrialCategoryA)  
<seaborn.axisgrid.PairGrid at 0x7fb694b298a0>  
<Figure size 1000x1000 with 0 Axes>
```





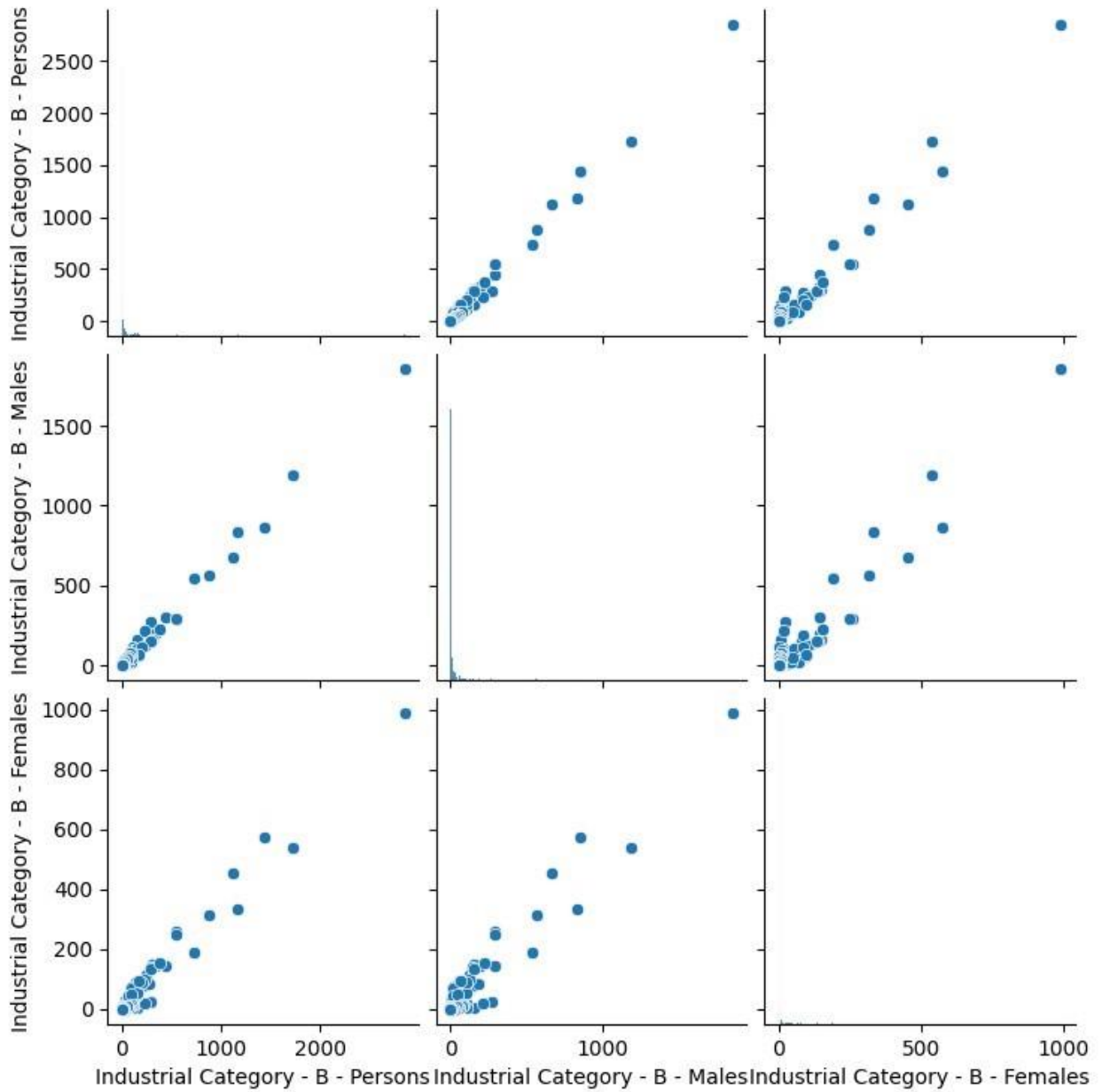
## INDUSTRIAL CATEGORY B

```
IndustrialCategoryB = dataset[['Industrial Category - B - Persons',
'Industrial Category - B - Males',
'Industrial Category - B - Females',]]
```

```
sns.pairplot(IndustrialCategoryB)
plt.xticks(rotation=30)
```

```
(array([-500.,    0.,   500.,  1000.,  1500.]),
[Text(-500.0, 0, '-500'),
Text(0.0, 0, '0'),
Text(500.0, 0, '500')],
```

```
Text(1000.0, 0, '1000'),
Text(1500.0, 0, '1500')])
```

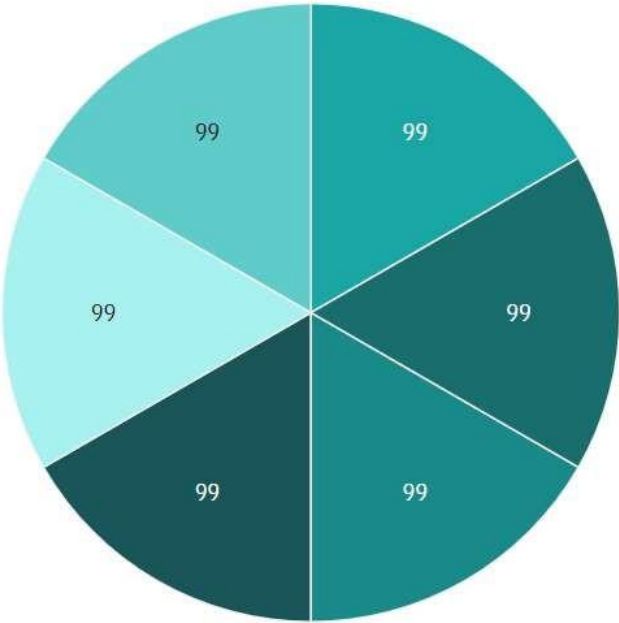


Age group by Age group



Age group

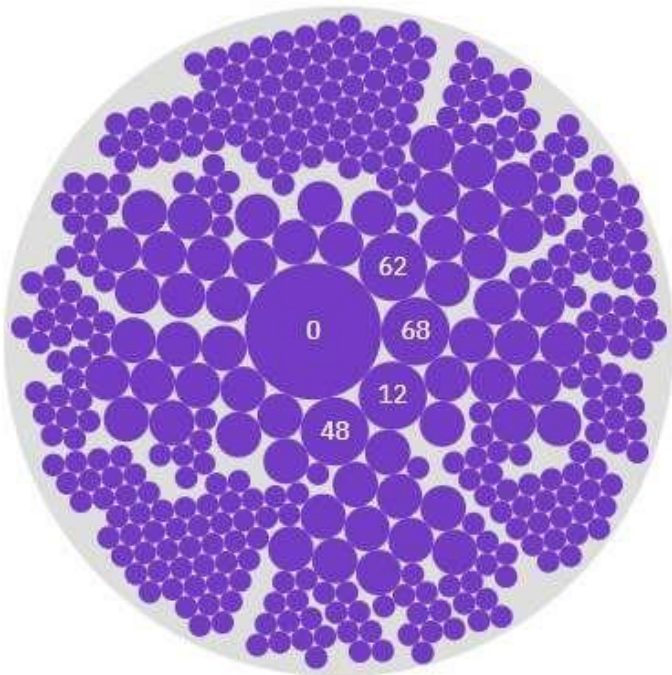
- Total
- 15-34
- 60+
- Age not stated
- 5-14
- 35-59



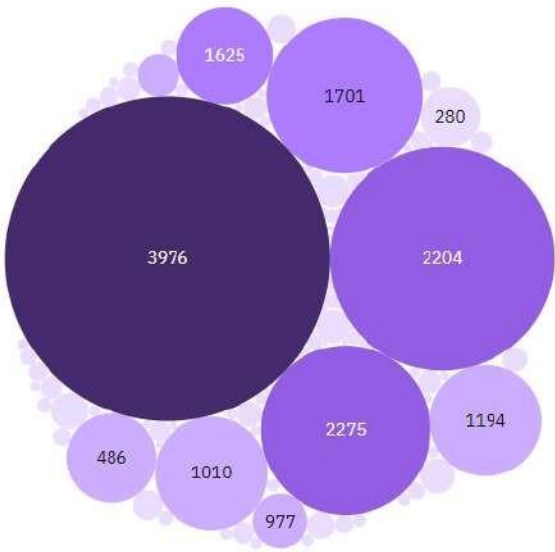
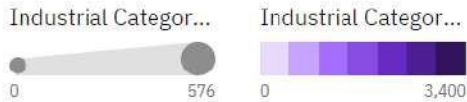
Industrial Category - R to U - Non HHI - Persons, Age group



Age group (Count ...



Industrial Category - K to M - Persons colored by Industrial Category - K to M - Males sized by Industrial Category - K to M - Females

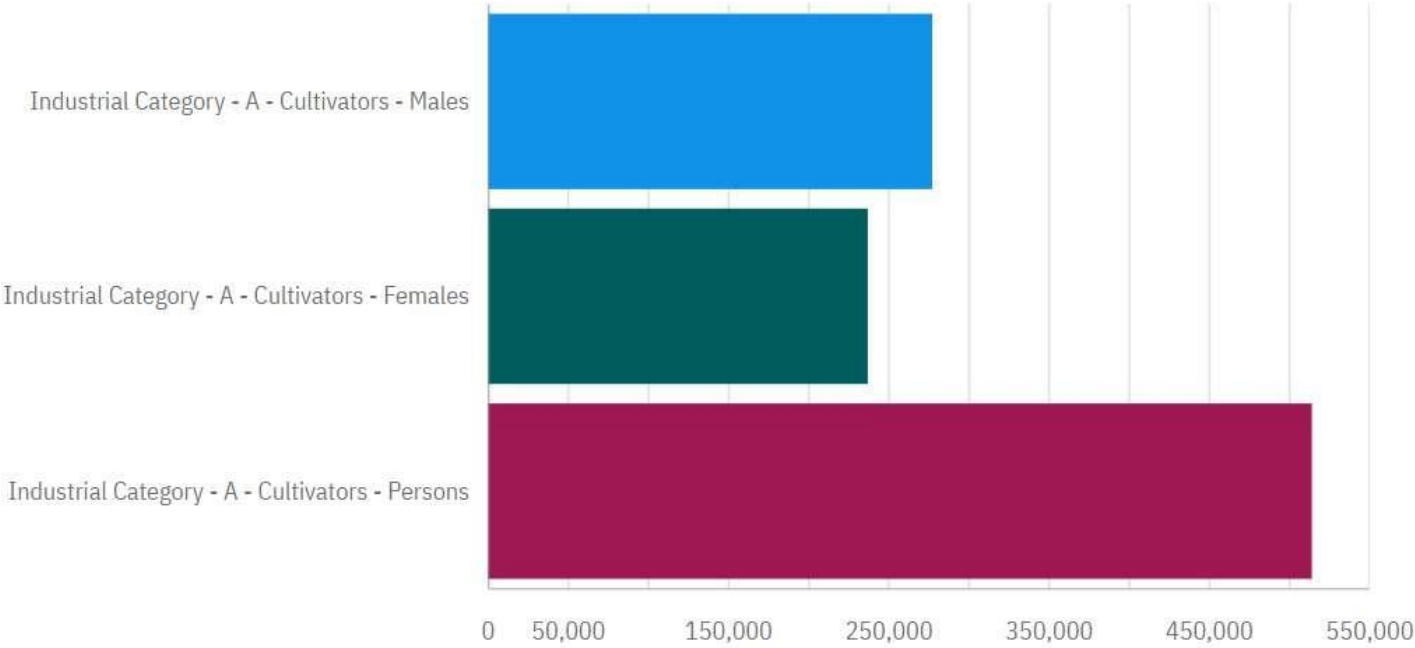


Industrial Category - A - Cultivators - Males, Industrial Category - A - Cultivators - Females, Industrial Category - A - Cultivators - Persons

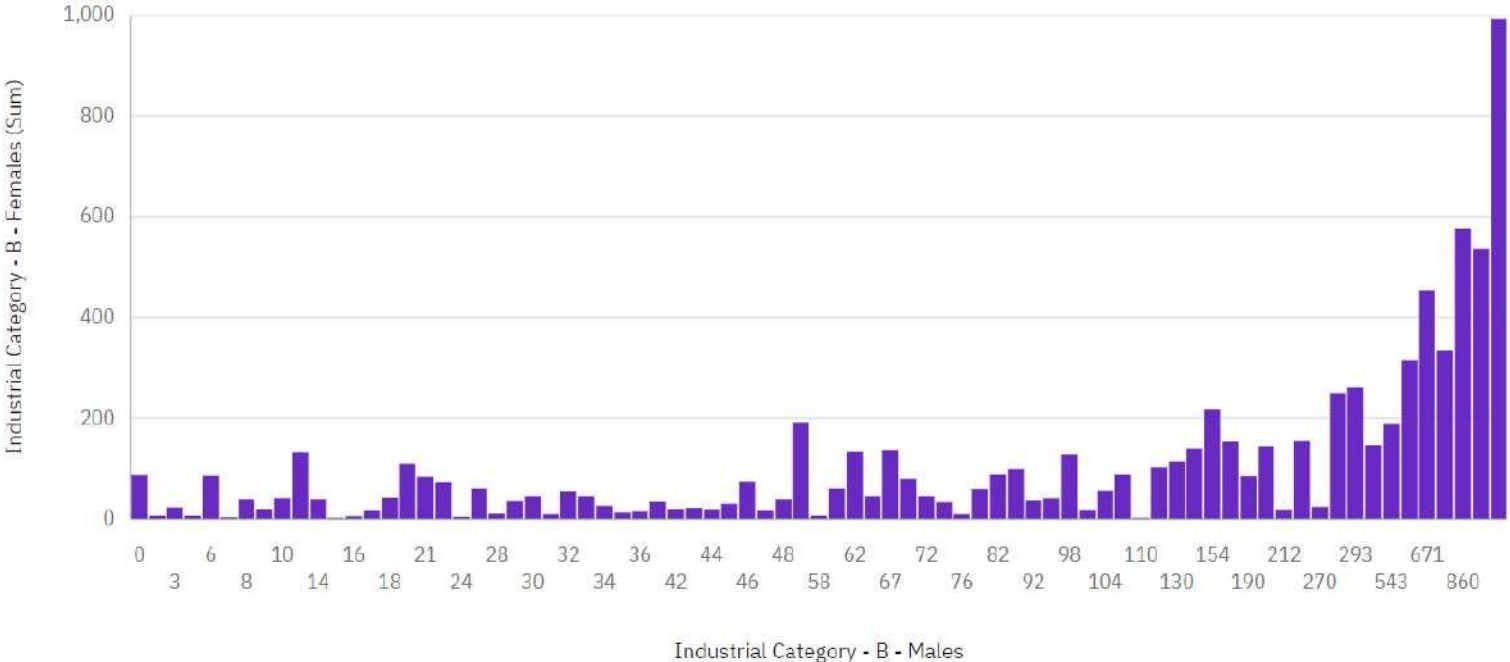
Measures



Measures

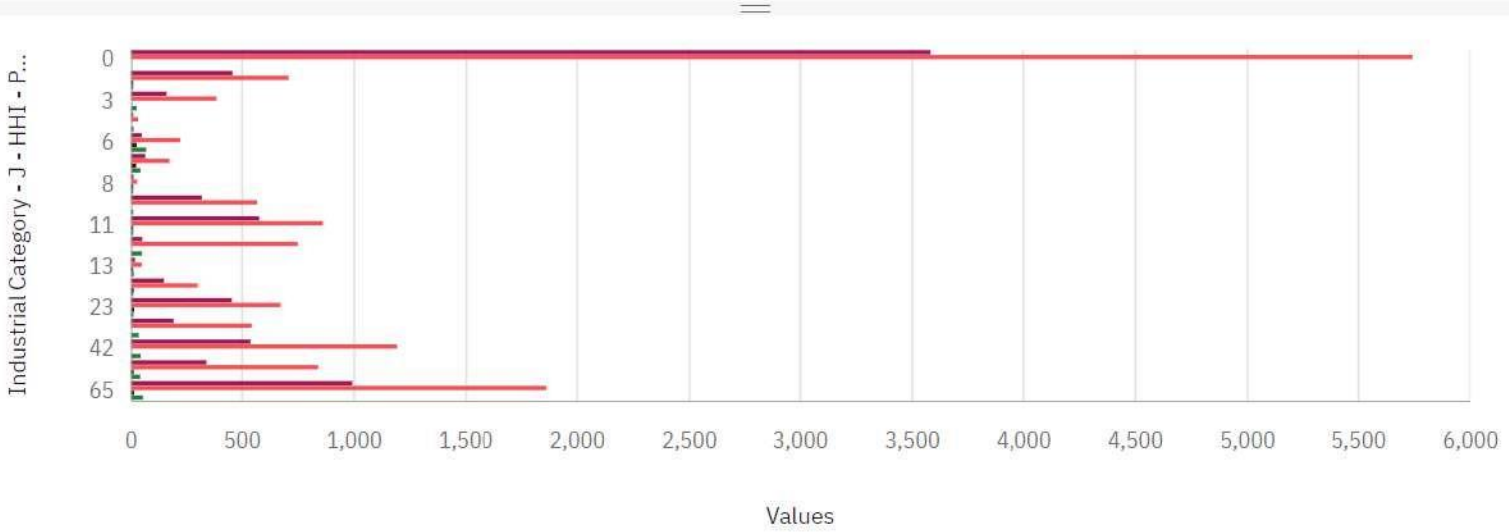


Industrial Category - B - Females by Industrial Category - B - Males



Industrial Category - B - Females, Industrial Category - B - Males, Industrial Category - J - HHI - Females and Industrial Category - J - HHI - Males by Industrial Category - J - HHI - Persons

- Measures
- Industrial Category - B - Females
  - Industrial Category - B - Males
  - ...
  - ...





Industrial Category - A - Agricultural labourers - Females by  
Industrial Category - A - Agricultural labourers - Males colored by  
Industrial Category - A - Agricultural labourers - Persons



Industrial Category - A - Agricultural labourers - Persons

- 0

1

2

3

4

5

6

7

8

9

10

11
- 12

13

14

15

16

17

18

19

20

21

22

24



0

45

116

233

437

706

1,011

1,485

2,127

2,743

4,081

5,994

10,161

23,762

16

73

175

291

545

805

1,212

1,829

2,460

3,408

5,005

7,257

14,732