

# tn-marginal-dac-phase3

October 16, 2023

## Table based on estimates Industrial Categories-

A: Agriculture, Forestry and Fishing;  
B: Mining and Quarrying  
C: Manufacturing  
D: Electricity, Gas, steam and Air conditioning Supply  
E: Water Supply(Sewerage, Waste Management and remediation activities)  
F: Construction  
G: Wholesale and Retail Trade (Repair of motor vehicles and motor cycles)  
H: Transportation and Storage  
I: Accommodation and food service activities  
J: Information and Communication  
K: Financial and Insurance activities  
L: Real Estate activities  
M: Professional, Scientific and Technical activities  
N: Administrative and support service activities  
O: Public Administration and Defence, Compulsory Social Security  
P: Education  
Q: Human Health and Social Work activities  
R: Arts, Entertainment and recreation  
S: Other Service Activities  
T: Activities of Households as Employers: Undifferentiated Goods and Services  
U: Activities of Extra-Territorial Organisations and Bodies.

```
[2]: import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
```

```
[5]: data=pd.read_csv("C:/Users/abuba/Downloads/DDW_B06SC_3300_State_TAMIL_NADU-2011.
↪CSV")
data.head(10)
```

```
[5]: Table Code State Code District Code Area Name Total/ Rural/ Urban \
0 B0806SC `33 `000 State - TAMIL NADU Total
1 B0806SC `33 `000 State - TAMIL NADU Total
2 B0806SC `33 `000 State - TAMIL NADU Total
3 B0806SC `33 `000 State - TAMIL NADU Total
4 B0806SC `33 `000 State - TAMIL NADU Total
```

5	B0806SC	`33	`000	State - TAMIL NADU	Total
6	B0806SC	`33	`000	State - TAMIL NADU	Rural
7	B0806SC	`33	`000	State - TAMIL NADU	Rural
8	B0806SC	`33	`000	State - TAMIL NADU	Rural
9	B0806SC	`33	`000	State - TAMIL NADU	Rural

	Age group \
0	Total
1	`5-14
2	15-34
3	35-59
4	60+
5	Age not stated
6	Total
7	`5-14
8	15-34
9	35-59

	Worked for 3 months or more but less than 6 months - Persons \
0	1200828
1	27791
2	514340
3	542581
4	115103
5	1013
6	966645
7	17239
8	406847
9	444800

	Worked for 3 months or more but less than 6 months - Males \
0	589003
1	14125
2	259560
3	251957
4	62833
5	528
6	459738
7	8713
8	198575
9	199573

	Worked for 3 months or more but less than 6 months - Females \
0	611825
1	13666
2	254780
3	290624

4	52270
5	485
6	506907
7	8526
8	208272
9	245227

	Worked for less than 3 months - Persons	...	\
0	221386	...	
1	2447	...	
2	92423	...	
3	99202	...	
4	27165	...	
5	149	...	
6	174443	...	
7	1977	...	
8	71974	...	
9	77922	...	

	Industrial Category - N to O - Females	\
0	3565	
1	11	
2	1754	
3	1619	
4	175	
5	6	
6	1544	
7	0	
8	728	
9	731	

	Industrial Category - P to Q - Persons	\
0	11080	
1	122	
2	7536	
3	3205	
4	211	
5	6	
6	6147	
7	74	
8	4545	
9	1456	

	Industrial Category - P to Q - Males	\
0	4019	
1	71	
2	2718	

3	1131
4	93
5	6
6	2336
7	41
8	1720
9	535

	Industrial Category - P to Q - Females \
0	7061
1	51
2	4818
3	2074
4	118
5	0
6	3811
7	33
8	2825
9	921

	Industrial Category - R to U - HHI - Persons \
0	16833
1	427
2	8346
3	6591
4	1457
5	12
6	11656
7	285
8	5885
9	4455

	Industrial Category - R to U - HHI - Males \
0	4266
1	169
2	2127
3	1487
4	483
5	0
6	3166
7	115
8	1653
9	1033

	Industrial Category - R to U - HHI - Females \
0	12567
1	258

2	6219
3	5104
4	974
5	12
6	8490
7	170
8	4232
9	3422

	Industrial Category - R to U - Non HHI - Persons \
0	122088
1	19305
2	68929
3	26498
4	7065
5	291
6	57324
7	9916
8	33710
9	10432

	Industrial Category - R to U - Non HHI - Males \
0	55801
1	9774
2	32803
3	9675
4	3394
5	155
6	28217
7	5041
8	17139
9	4438

	Industrial Category - R to U - Non HHI - Females
0	66287
1	9531
2	36126
3	16823
4	3671
5	136
6	29107
7	4875
8	16571
9	5994

[10 rows x 69 columns]

```
[7]: data.shape
```

```
[7]: (594, 69)
```

```
[9]: data.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  
 59 Industrial Category - N to O - Females  
 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

```

```
[10]: data.columns
```

```

[10]: 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')

```

```
[11]: data.isnull().sum()
```

```

[11]: Table Code          0
      State Code         0
      District Code      0
      Area Name          0
      Total/ Rural/ Urban 0
      ..
      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: int64

```

```
[13]: dummy=data.copy()
dummy.head(5)
```

```
[13]: Table Code State Code District Code Area Name Total/ Rural/ Urban \
0 B0806SC `33 `000 State - TAMIL NADU Total
1 B0806SC `33 `000 State - TAMIL NADU Total
2 B0806SC `33 `000 State - TAMIL NADU Total
3 B0806SC `33 `000 State - TAMIL NADU Total
4 B0806SC `33 `000 State - TAMIL NADU Total
```

```
Age group Worked for 3 months or more but less than 6 months - Persons \
0 Total 1200828
1 `5-14 27791
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 14125
2 259560
3 251957
4 62833
```

```
Worked for 3 months or more but less than 6 months - Females \
0 611825
1 13666
2 254780
3 290624
4 52270
```

```
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 11
2 1754
3 1619
4 175
```

```
Industrial Category - P to Q - Persons \
0 11080
```

1	122
2	7536
3	3205
4	211

	Industrial Category - P to Q - Males \
0	4019
1	71
2	2718
3	1131
4	93

	Industrial Category - P to Q - Females \
0	7061
1	51
2	4818
3	2074
4	118

	Industrial Category - R to U - HHI - Persons \
0	16833
1	427
2	8346
3	6591
4	1457

	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	258
2	6219
3	5104
4	974

	Industrial Category - R to U - Non HHI - Persons \
0	122088
1	19305
2	68929
3	26498
4	7065

	Industrial Category - R to U - Non HHI - Males \
0	55801
1	9774
2	32803
3	9675
4	3394

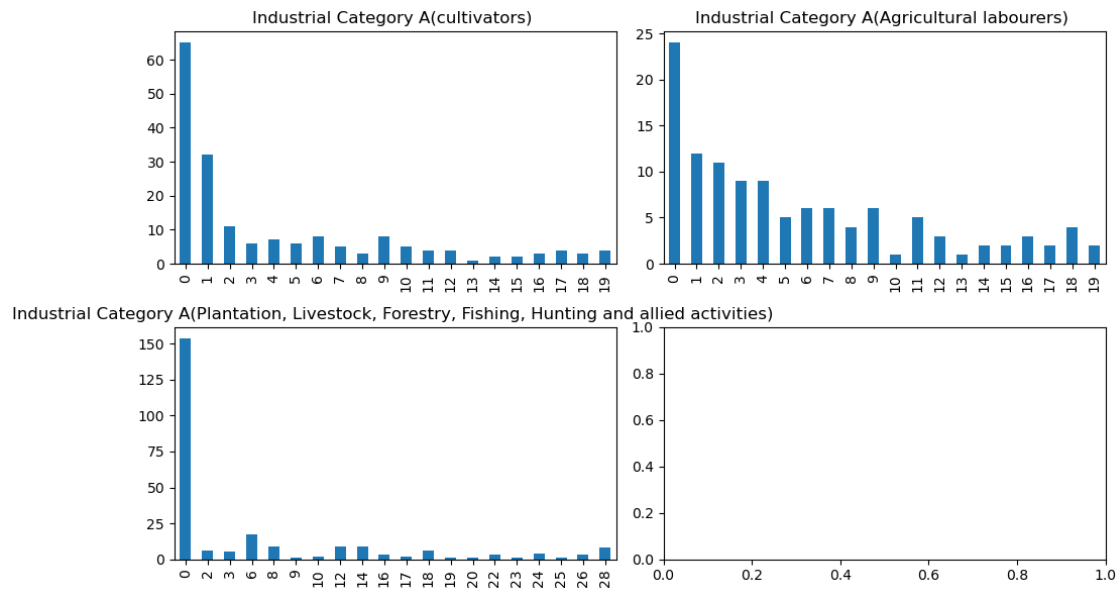
	Industrial Category - R to U - Non HHI - Females
0	66287
1	9531
2	36126
3	16823
4	3671

[5 rows x 69 columns]

```
[72]: fig,axrr=plt.subplots(2,2,figsize=(10,6))
ax=axrr[0][0]
ax.set_title("Industrial Category A(cultivators) ")
dummy['Industrial Category - A - Cultivators - Persons'].value_counts().
    ↪sort_index().head(20).plot.bar(ax=axrr[0][0])

ax=axrr[0][1]
ax.set_title("Industrial Category A(Agricultural labourers) ")
dummy['Industrial Category - A - Agricultural labourers - Persons'].
    ↪value_counts().sort_index().head(20).plot.bar(ax=axrr[0][1])

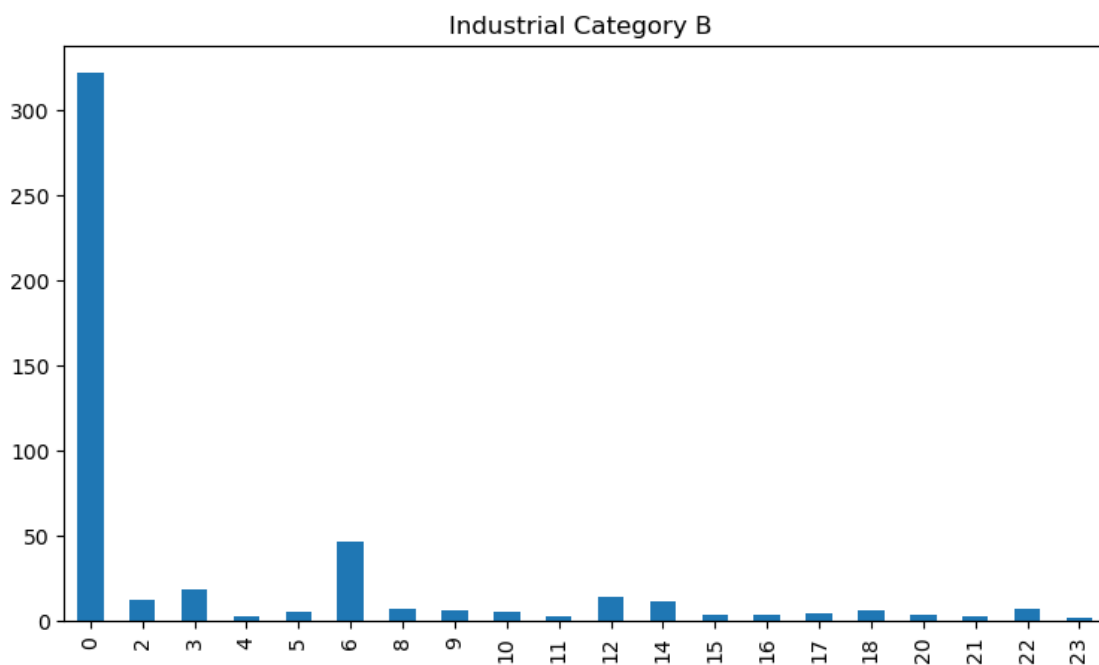
ax=axrr[1][0]
ax.set_title("Industrial Category A(Plantation, Livestock, Forestry, Fishing,
    ↪Hunting and allied activities) ")
dummy['Industrial Category - A - Plantation, Livestock, Forestry, Fishing,
    ↪Hunting and allied activities - Persons'].value_counts().sort_index().
    ↪head(20).plot.bar(ax=axrr[1][0])
plt.tight_layout()
plt.show()
```



```
[ ]:
```

```
[70]: fig,axrr=plt.subplots(1,1,figsize=(9,5))
plt.title("Industrial Category B ")
dummy['Industrial Category - B - Persons'].value_counts().sort_index().head(20).
    plot.bar()
```

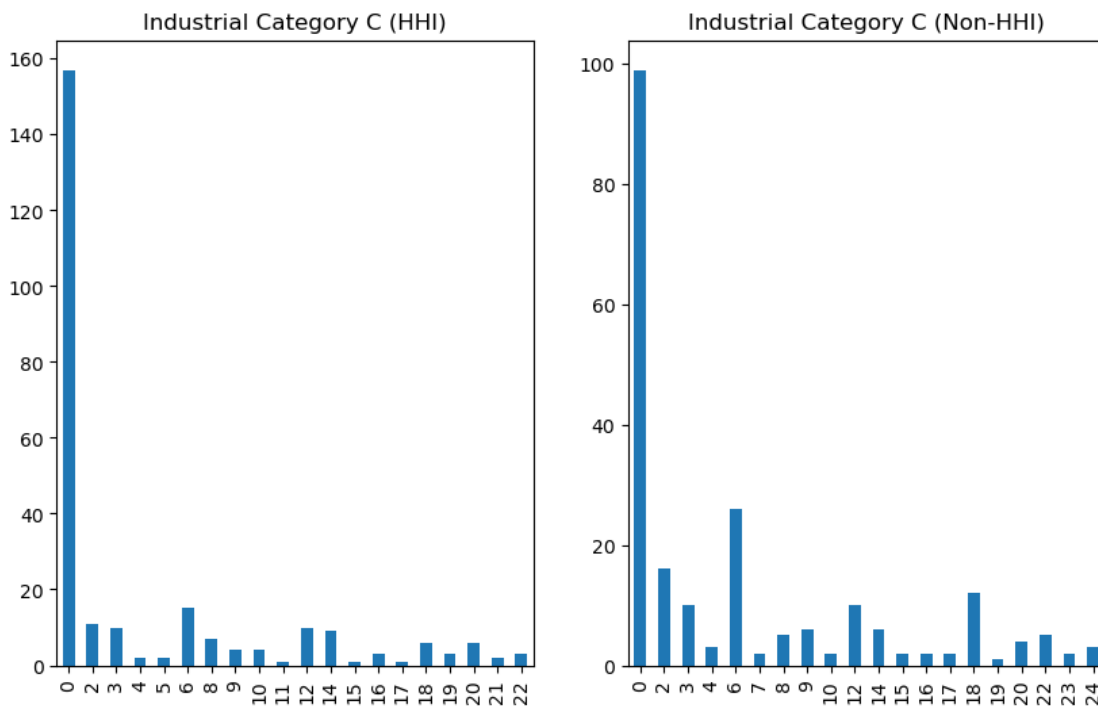
```
[70]: <Axes: title={'center': 'Industrial Category B '}>
```



```
[51]: fig,axrr=plt.subplots(1,2,figsize=(10,6))
ax=axrr[0]
ax.set_title("Industrial Category C (HHI)")
dummy['Industrial Category - C - HHI - Persons'].value_counts().sort_index().
    ↪head(20).plot.bar(ax=axrr[0])

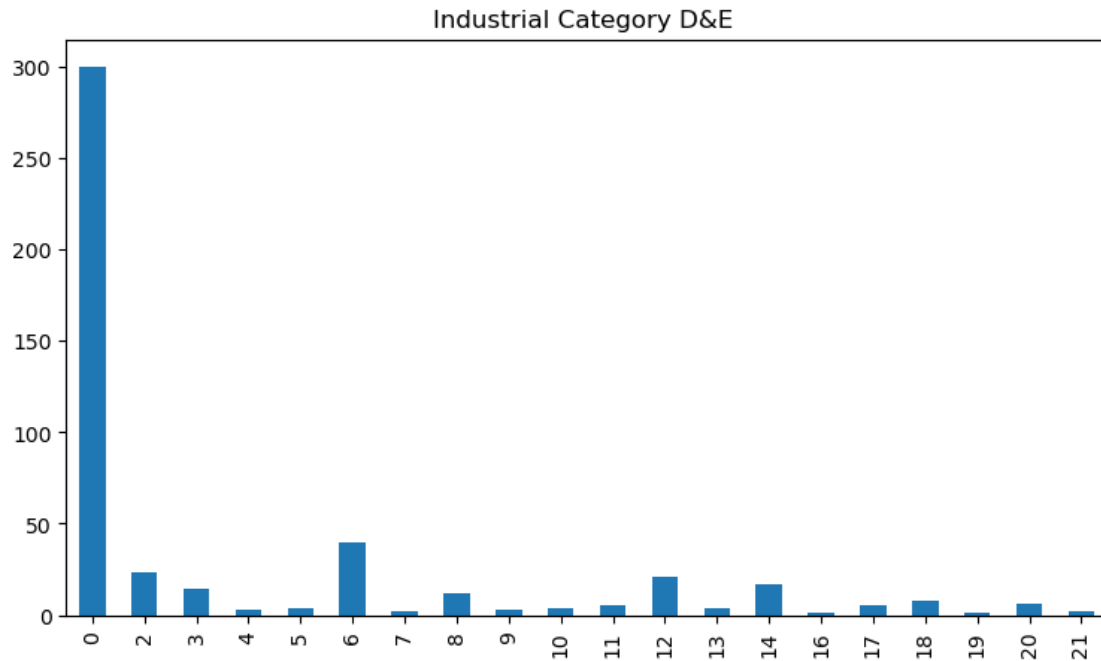
ax=axrr[1]
ax.set_title("Industrial Category C (Non-HHI)")
dummy['Industrial Category - C - Non HHI - Persons'].value_counts().
    ↪sort_index().head(20).plot.bar(ax=axrr[1])
```

```
[51]: <Axes: title={'center': 'Industrial Category C (Non-HHI)'}>
```



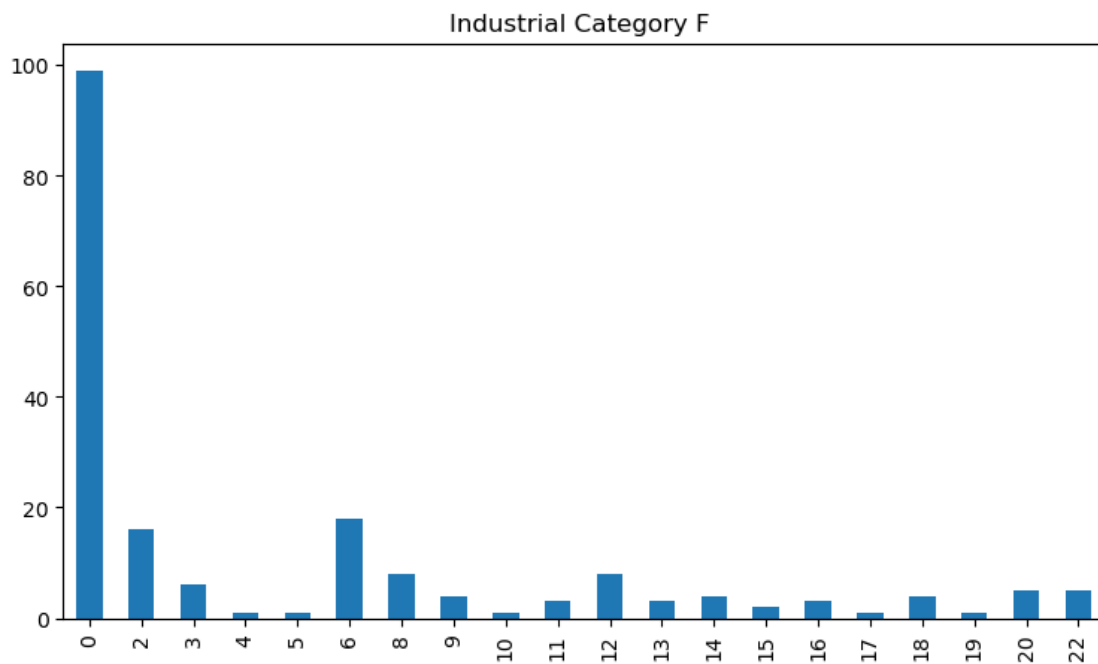
```
[55]: fig,axrr=plt.subplots(1,1,figsize=(9,5))
plt.title("Industrial Category D&E ")
dummy['Industrial Category - D & E - Persons'].value_counts().sort_index().
    ↪head(20).plot.bar()
```

```
[55]: <Axes: title={'center': 'Industrial Category D&E '}>
```



```
[57]: fig,axrr=plt.subplots(1,1,figsize=(9,5))
plt.title("Industrial Category F ")
dummy['Industrial Category - F - Persons'].value_counts().sort_index().head(20).
    ↪plot.bar()
```

[57]: <Axes: title={'center': 'Industrial Category F '}>

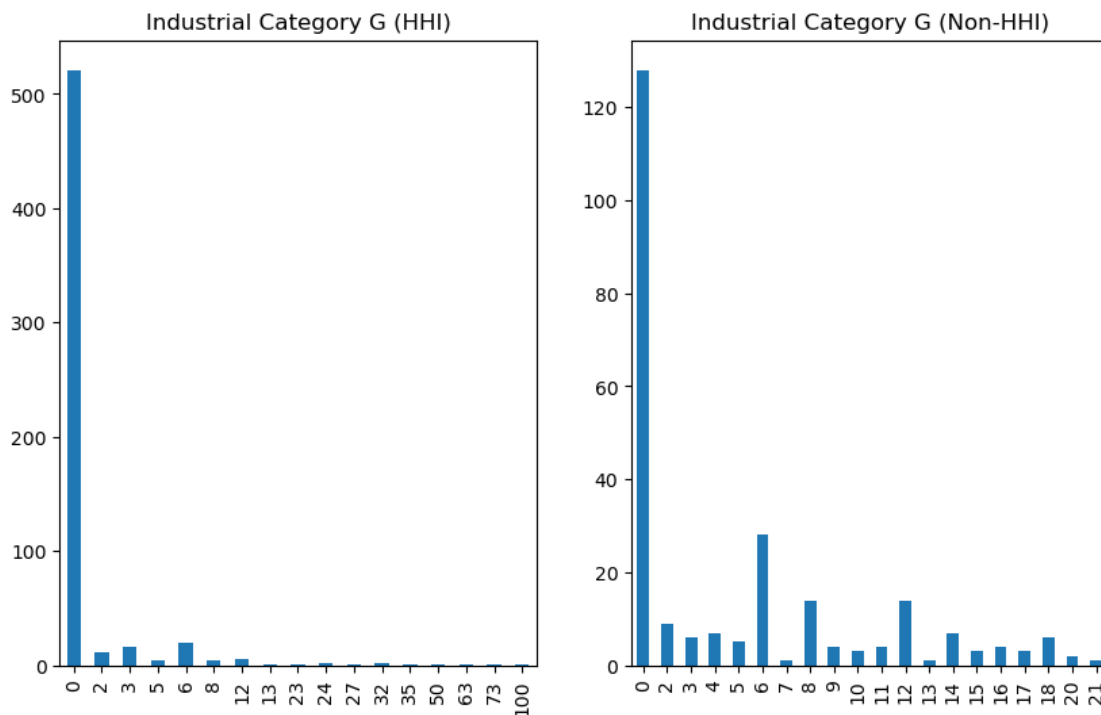




```
[58]: fig,axrr=plt.subplots(1,2,figsize=(10,6))
ax=axrr[0]
ax.set_title("Industrial Category G (HHI)")
dummy['Industrial Category - G - HHI - Persons'].value_counts().sort_index().
    ↳head(20).plot.bar(ax=axrr[0])

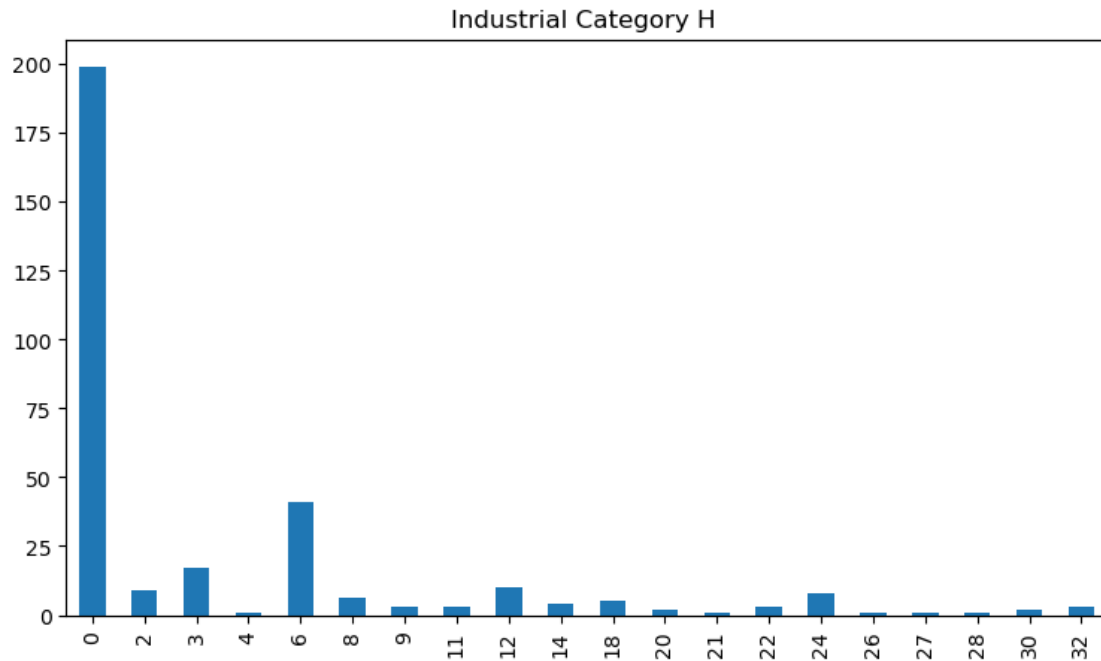
ax=axrr[1]
ax.set_title("Industrial Category G (Non-HHI)")
dummy['Industrial Category - G - Non HHI - Persons'].value_counts().
    ↳sort_index().head(20).plot.bar(ax=axrr[1])
```

[58]: <Axes: title={'center': 'Industrial Category G (Non-HHI)'}>



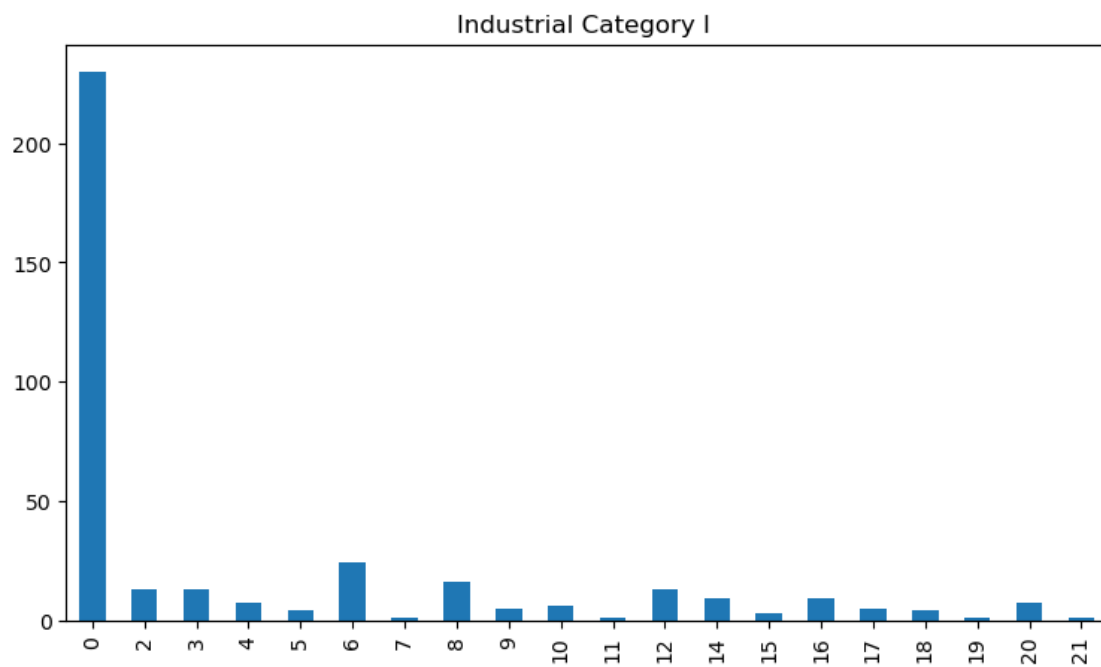
```
[59]: fig,axrr=plt.subplots(1,1,figsize=(9,5))
plt.title("Industrial Category H ")
dummy['Industrial Category - H - Persons'].value_counts().sort_index().head(20).
    ↳plot.bar()
```

[59]: <Axes: title={'center': 'Industrial Category H '}>



```
[60]: fig,axrr=plt.subplots(1,1,figsize=(9,5))
plt.title("Industrial Category I ")
dummy[''].value_counts().sort_index().head(20).plot.bar()
```

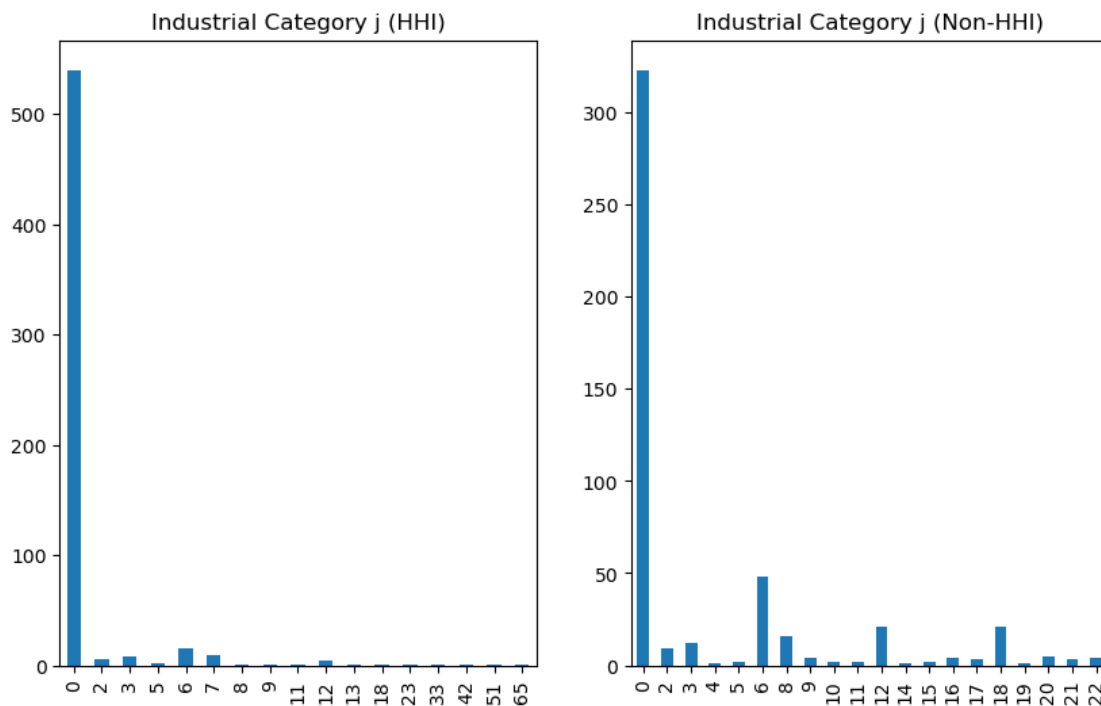
```
[60]: <Axes: title={'center': 'Industrial Category I '}>
```



```
[62]: fig,axrr=plt.subplots(1,2,figsize=(10,6))
ax=axrr[0]
ax.set_title("Industrial Category j (HHI)")
dummy['Industrial Category - J - HHI - Persons'].value_counts().sort_index().
    ↪head(20).plot.bar(ax=axrr[0])

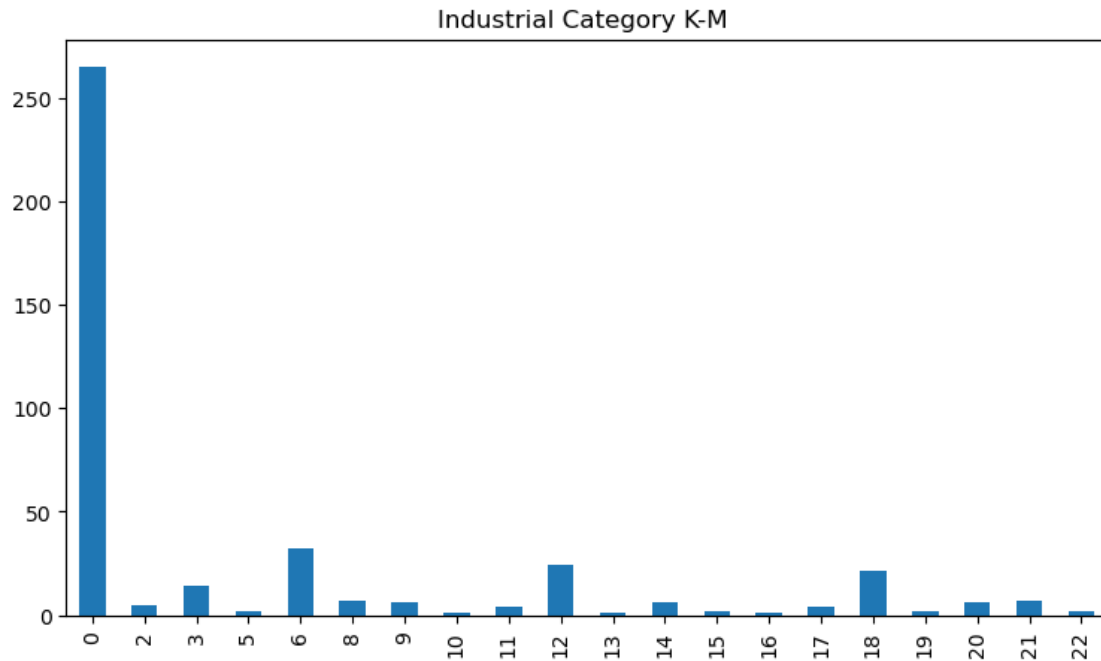
ax=axrr[1]
ax.set_title("Industrial Category j (Non-HHI)")
dummy['Industrial Category - J - Non HHI - Persons'].value_counts().
    ↪sort_index().head(20).plot.bar(ax=axrr[1])
```

```
[62]: <Axes: title={'center': 'Industrial Category j (Non-HHI)'}>
```



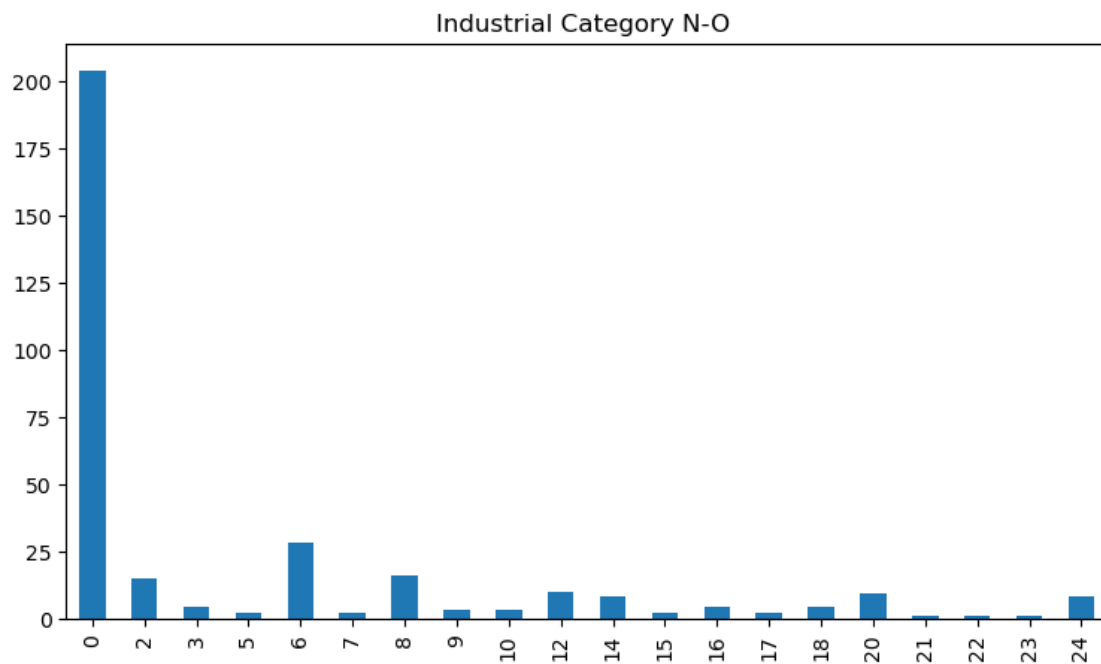
```
[63]: fig,axrr=plt.subplots(1,1,figsize=(9,5))
plt.title("Industrial Category K-M ")
dummy['Industrial Category - K to M - Persons'].value_counts().sort_index().
    ↪head(20).plot.bar()
```

```
[63]: <Axes: title={'center': 'Industrial Category K-M '}>
```



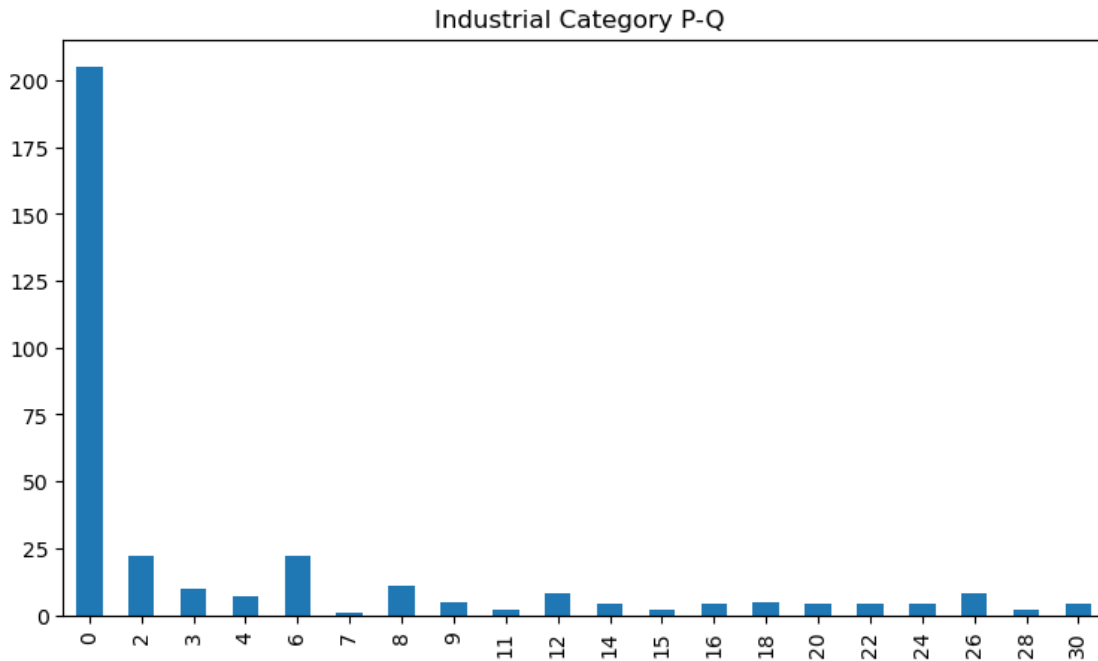
```
[65]: fig,axrr=plt.subplots(1,1,figsize=(9,5))
plt.title("Industrial Category N-0 ")
dummy['Industrial Category - N to 0 - Persons'].value_counts().sort_index().
↳head(20).plot.bar()
```

```
[65]: <Axes: title={'center': 'Industrial Category N-0 '}>
```



```
[66]: fig,axrr=plt.subplots(1,1,figsize=(9,5))
plt.title("Industrial Category P-Q ")
dummy['Industrial Category - P to Q - Persons'].value_counts().sort_index().
↳head(20).plot.bar()
```

```
[66]: <Axes: title={'center': 'Industrial Category P-Q '}>
```



```
[67]: fig,axrr=plt.subplots(1,2,figsize=(10,6))
ax=axrr[0]
ax.set_title("Industrial Category R-U(HHI)")
dummy['Industrial Category - R to U - HHI - Persons'].value_counts().
↳sort_index().head(20).plot.bar(ax=axrr[0])

ax=axrr[1]
ax.set_title("Industrial Category R-U (Non-HHI)")
dummy['Industrial Category - R to U - Non HHI - Persons'].value_counts().
↳sort_index().head(20).plot.bar(ax=axrr[1])
```

```
[67]: <Axes: title={'center': 'Industrial Category R-U (Non-HHI)'}>
```

