

Progressivism index by state upon veganism trend, LGBT community, feminism index score, etc.

January 11, 2023

```
[1]: import pandas as pd
import seaborn as sns
import numpy as np
import matplotlib.pyplot as plt
from sklearn.preprocessing import MinMaxScaler
```

```
[2]: dat = pd.read_csv("veganism.csv")
```

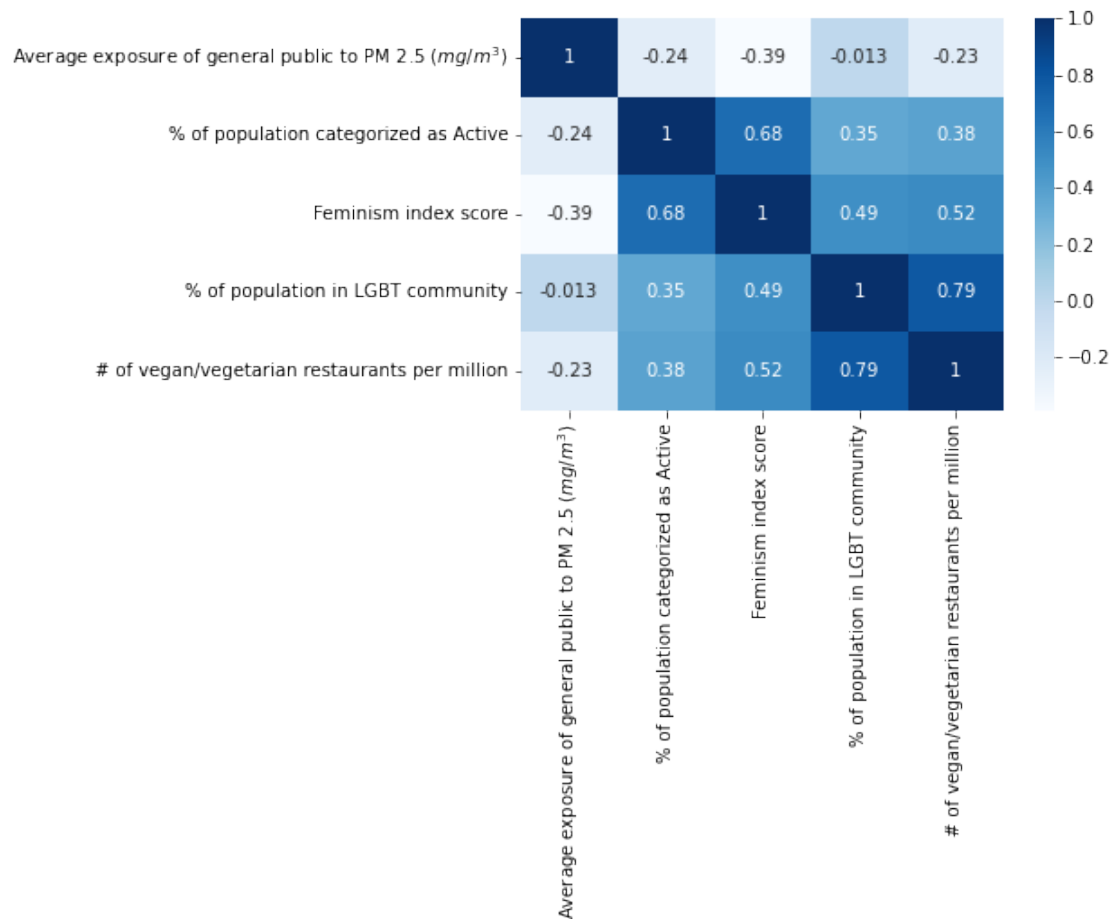
```
[3]: dat['perc_phys_activity'] = 100 - dat['perc_phys_inactivity']
```

```
[4]: dat = dat[["state", "air_pollution", "perc_phys_activity", "feminism_index",
↪ "perc_lgbt_2017", "vegan_veget_restaurants_per_million"]]
```

Correlation Matrix

```
[5]: x_axis_labels = ["Average exposure of general public to PM 2.5" + " " + r"$(mg/
↪ m^3)$",
"% of population categorized as Active",
"Feminism index score",
"% of population in LGBT community",
"# of vegan/vegetarian restaurants per million"] # labels for x-axis
y_axis_labels = ["Average exposure of general public to PM 2.5" + " " + r"$(mg/
↪ m^3)$",
"% of population categorized as Active",
"Feminism index score",
"% of population in LGBT community",
"# of vegan/vegetarian restaurants per million"] # labels for y-axis
sns.heatmap(dat.corr(), annot = True, cmap = "Blues",
xticklabels=x_axis_labels, yticklabels=y_axis_labels)
```

```
[5]: <AxesSubplot:>
```



Bar Graph of Progressive Index (Z-Score)

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[6]: dat_stand = dat.copy()
```

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[7]: minmax_scaler = MinMaxScaler()
dat_stand.iloc[:,1:6] = minmax_scaler.fit_transform(dat_stand.iloc[:,1:6])
```

```
[8]: fig, ax = plt.subplots(1, figsize = (15,20))

dat_stand['progressivism_index'] = dat_stand.sum(axis=1)
dat_stand.sort_values('progressivism_index', inplace=True)

labels = ["Average exposure of general public to PM 2.5" + " " + r"$(mg/
\mu m^3)$",
          "% of population categorized as Active",
          "Feminism index score",
          "% of population in LGBT community",
          "# of vegan/vegetarian restaurants per million"]
```

```

dat_stand[["state", "air_pollution", "perc_phys_activity", "feminism_index",
↪ "perc_lgbt_2017", "vegan_veget_restaurants_per_million"]].plot(kind='barh',
↪ stacked=True, color = ['#4682B4', '#B0C4DE', '#708090', '#B0E0E6',
↪ '#66CDAA'], figsize = (15,20), x = "state", ax = ax)
ax.legend(labels, loc = 'lower right')
ax.set_xlabel('State')
ax.set_ylabel('Progressivism Index')
ax.set_axisbelow(True)
ax.xaxis.grid(color = 'gray', linestyle='dashed')
ax.set_title('Progressivism Index by State')

```

```

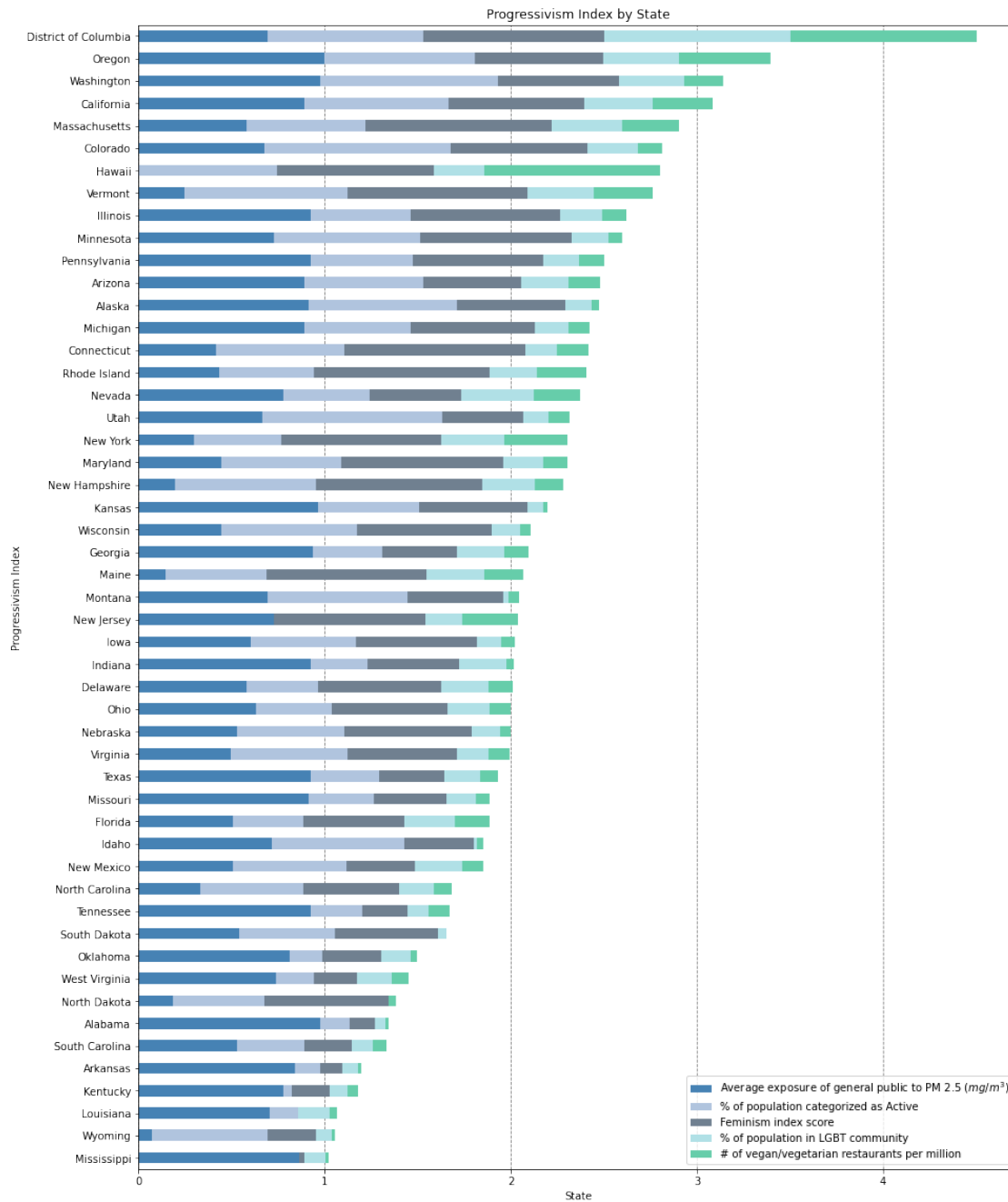
/var/folders/sy/hs9clzfn7gzf8wzmhtvypgjc0000gn/T/ipykernel_18757/2399038476.py:3
: FutureWarning: Dropping of nuisance columns in DataFrame reductions (with
'numeric_only=None') is deprecated; in a future version this will raise
TypeError. Select only valid columns before calling the reduction.
dat_stand['progressivism_index'] = dat_stand.sum(axis=1)

```

```

[8]: Text(0.5, 1.0, 'Progressivism Index by State')

```



```
[11]: fig, ax = plt.subplots(1, figsize = (15,20))

dat_stand['progressivism_index'] = dat_stand.sum(axis=1)
dat_stand.sort_values('progressivism_index', inplace=True)

labels = ["% of population categorized as Active",
          "Feminism index score",
```

```

        "% of population in LGBT community",
        "# of vegan/vegetarian restaurants per million"]

dat_stand[["state", "perc_phys_activity", "feminism_index", "perc_lgbt_2017",
↪ "vegan_veget_restaurants_per_million"]].plot(kind='barh', stacked=True,
↪ color = ['#BOC4DE', '#708090', '#BOE0E6', '#66CDAA'], figsize = (15,20), x =
↪ "state", ax = ax)
ax.legend(labels, loc = 'lower right')
ax.set_xlabel('State')
ax.set_ylabel('Progressivism Index')
ax.set_axisbelow(True)
ax.xaxis.grid(color = 'gray', linestyle='dashed')
ax.set_title('Progressivism Index by State')

```

```

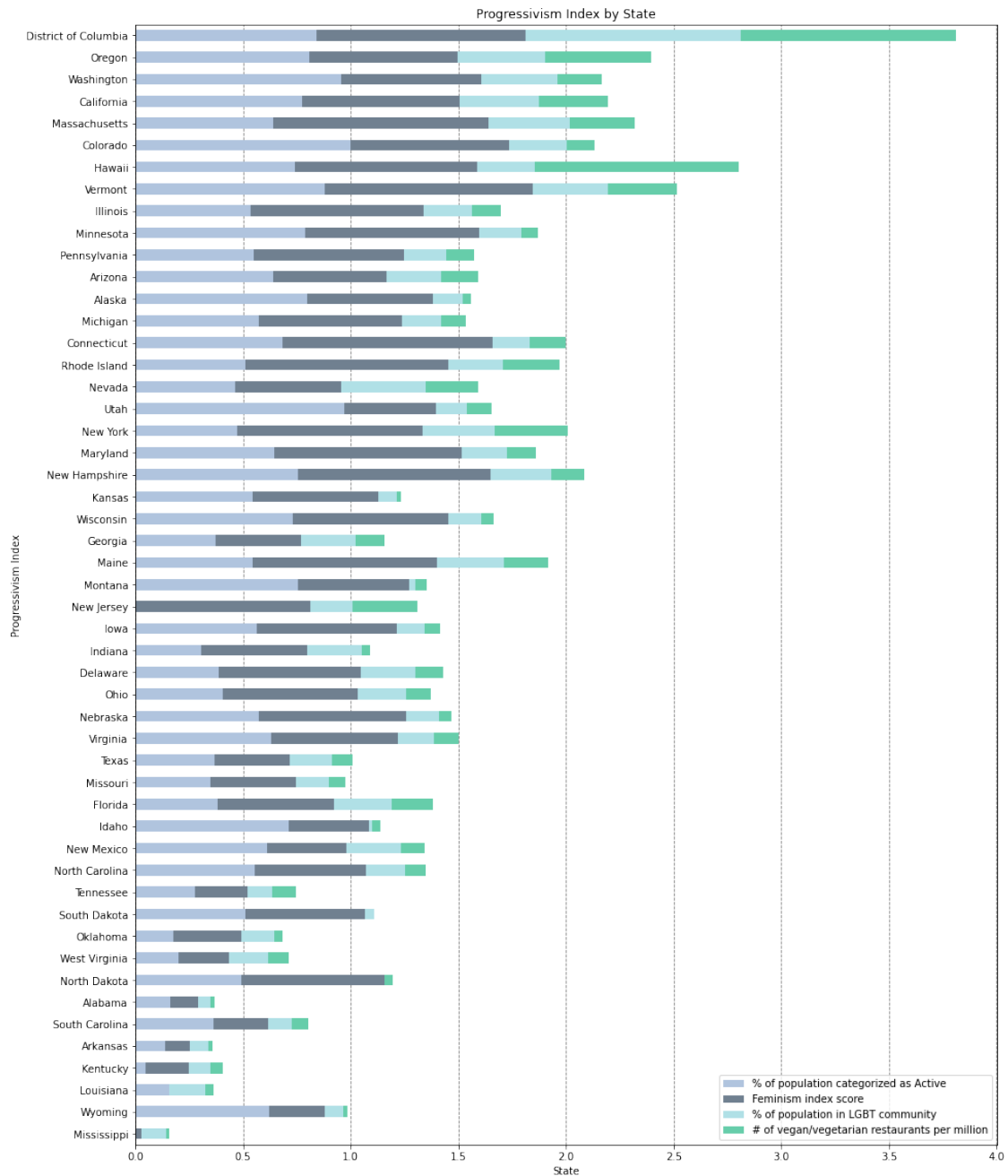
/var/folders/sy/hs9clzfn7gzf8wzmhtvypgjc0000gn/T/ipykernel_18757/1855687295.py:3
: FutureWarning: Dropping of nuisance columns in DataFrame reductions (with
'numeric_only=None') is deprecated; in a future version this will raise
TypeError. Select only valid columns before calling the reduction.
dat_stand['progressivism_index'] = dat_stand.sum(axis=1)

```

```

[11]: Text(0.5, 1.0, 'Progressivism Index by State')

```



```
[10]: dat_stand.sort_values(by = "progressivism_index", ascending = False).head()
```

```
[10]:
```

	state	air_pollution	perc_phys_activity	feminism_index	\
8	District of Columbia	0.691358	0.838710	0.974170	
37	Oregon	1.000000	0.806452	0.690037	
47	Washington	0.975309	0.954839	0.651292	
4	California	0.888889	0.774194	0.732472	

21	Massachusetts	0.580247	0.638710	1.000000
	perc_lgbt_2017	vegan_veget_restaurants_per_million	progressivism_index	
8	1.000000	1.000000	9.008475	
37	0.408451	0.490566	6.791011	
47	0.352113	0.207547	6.282197	
4	0.366197	0.320755	6.165013	
21	0.380282	0.301887	5.802250	