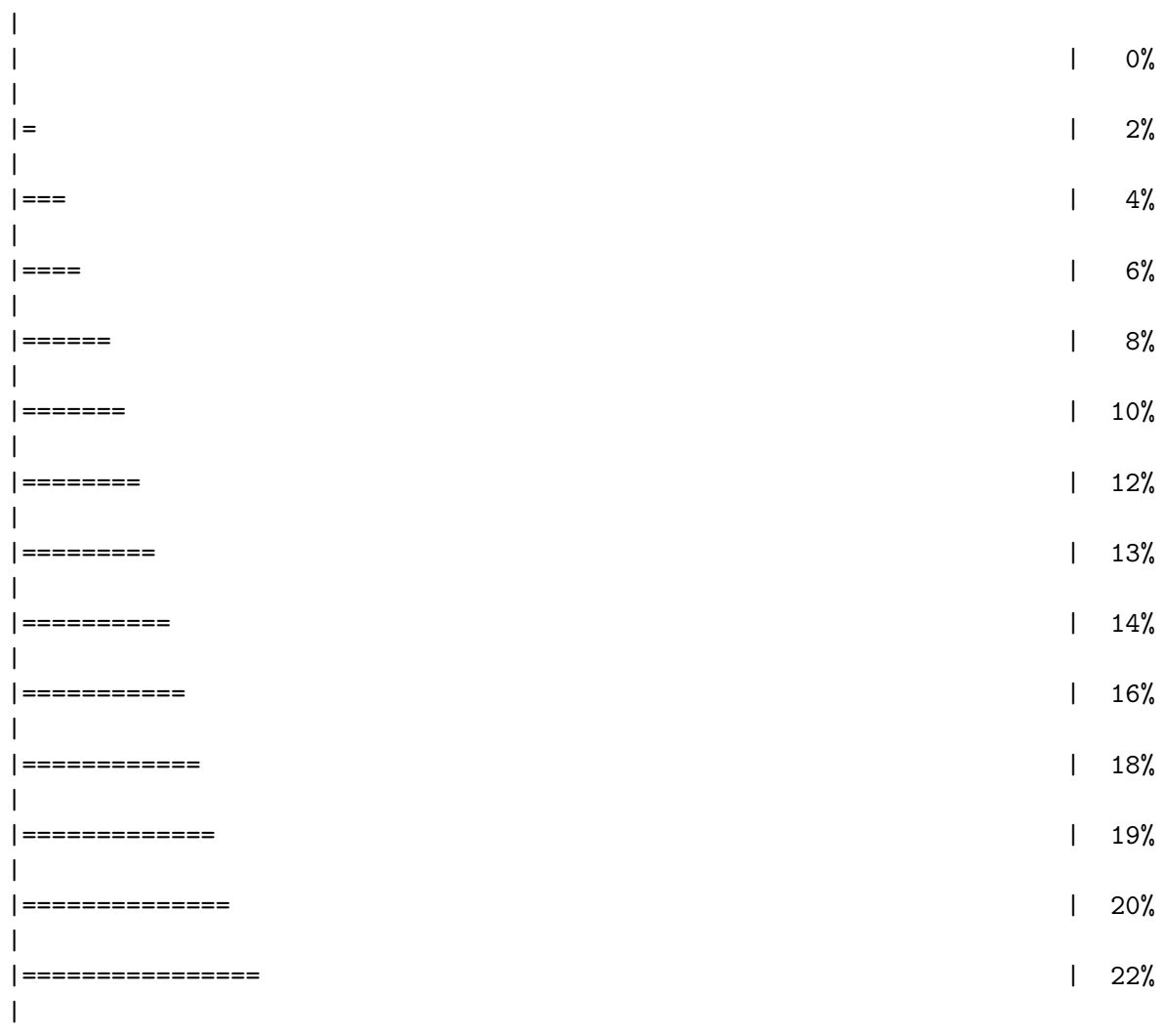
descriptives

Maps with ALL estimates included



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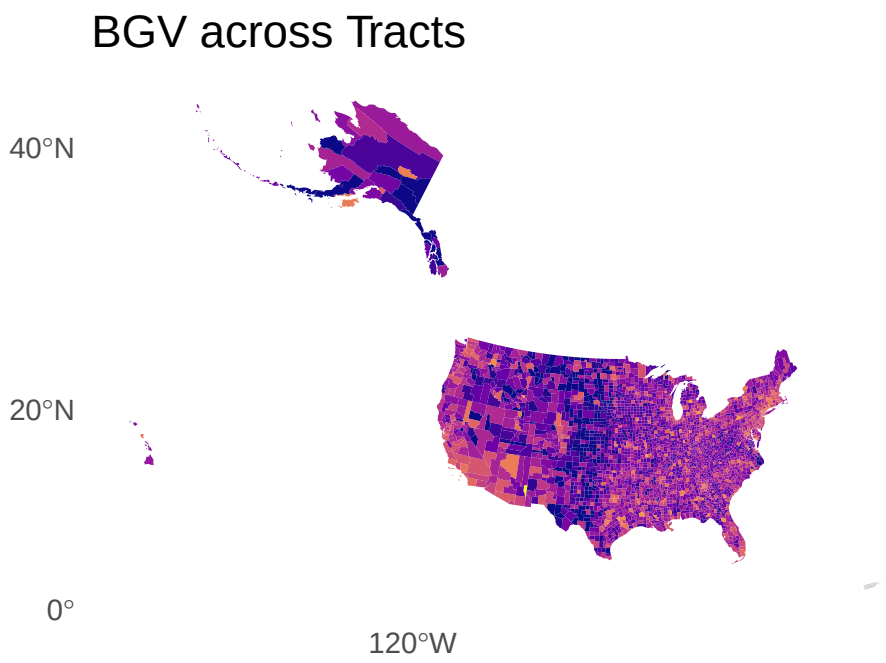
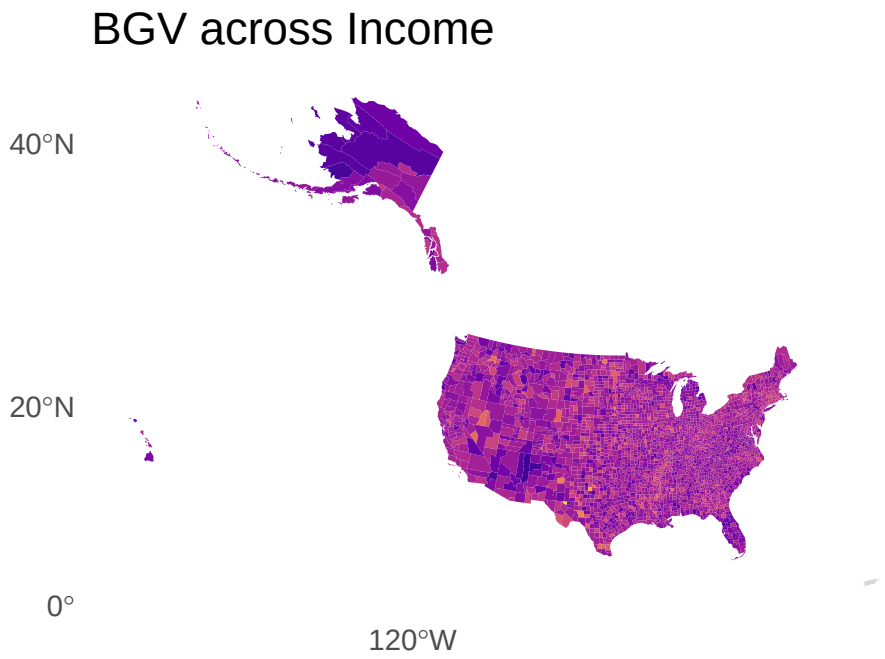
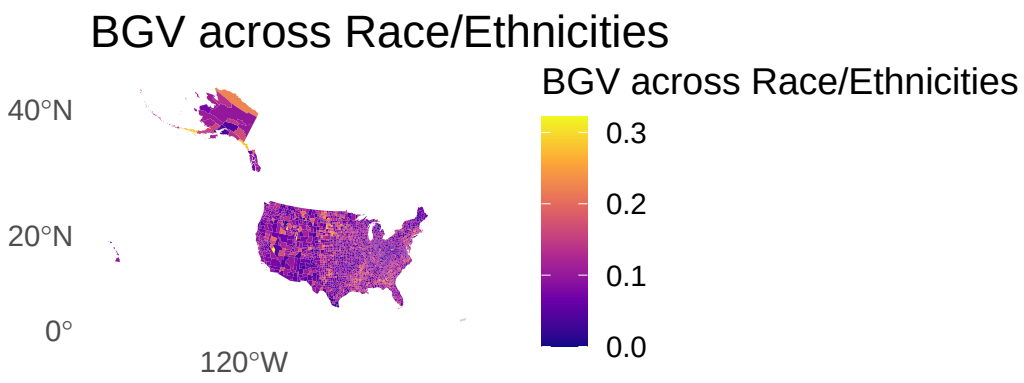


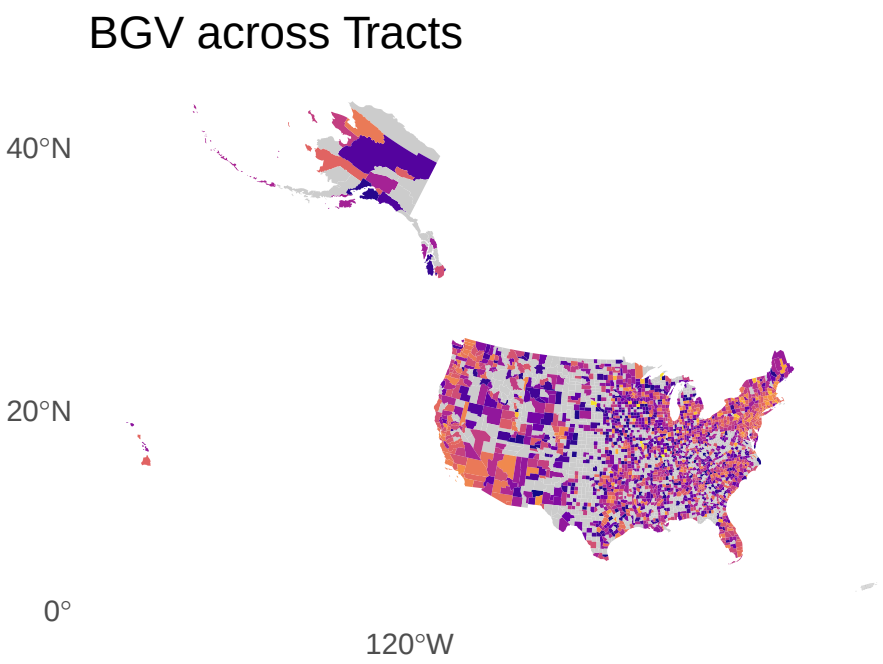

BGV across Income
40°N
20°N
0°
120°W

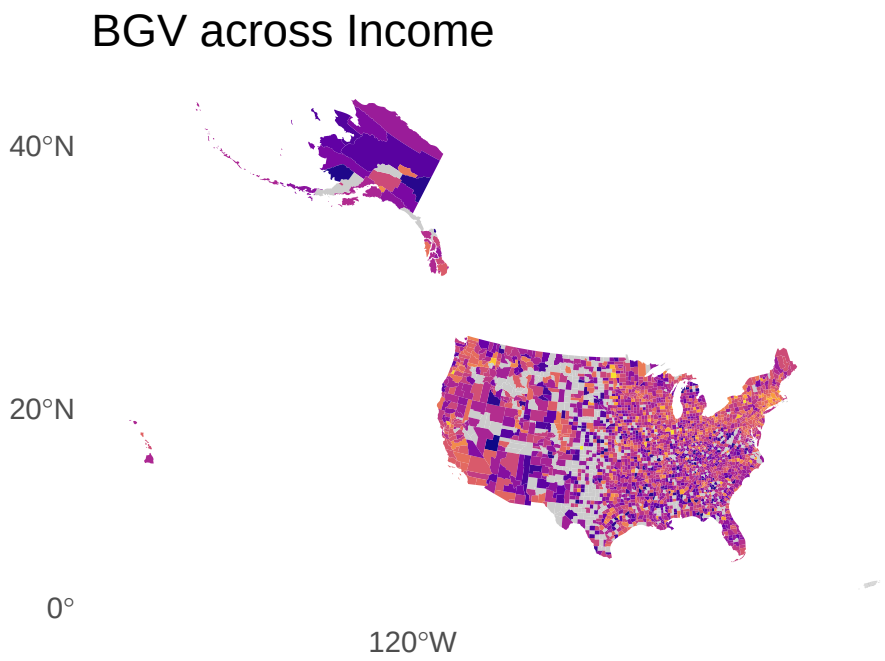

BGV across Race/Ethnicities
40°N
20°N
0°
120°W
BGV across Race/Ethnicities
0.3
0.2
0.1
0.0

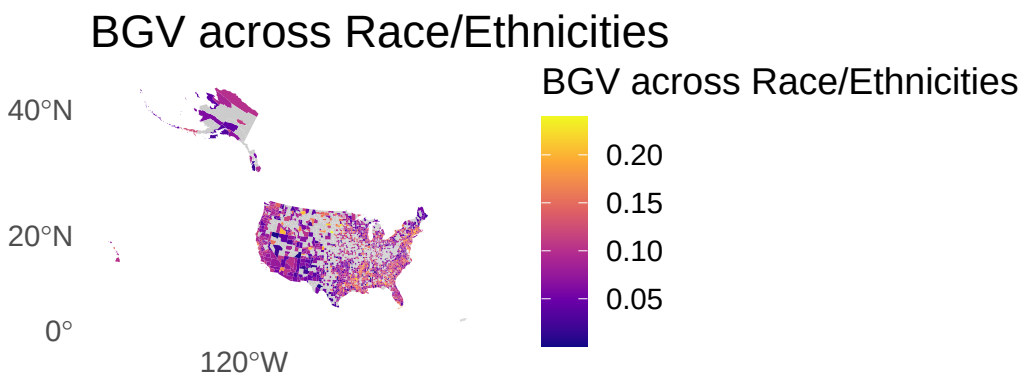
Maps with unstable estimates removed

Note that BGV is a sum..... so counties without reliable estimates end up with BGV = 0. I manually set BGV = 0 to NA to produce these maps.

The coasts (California and New England) appear to have high tract and income disparities but possibly lower race disparities. Perhaps we should do some regional and/or state-level exploration.







Histograms of Race, Income, Tract with and without unstable estimates included

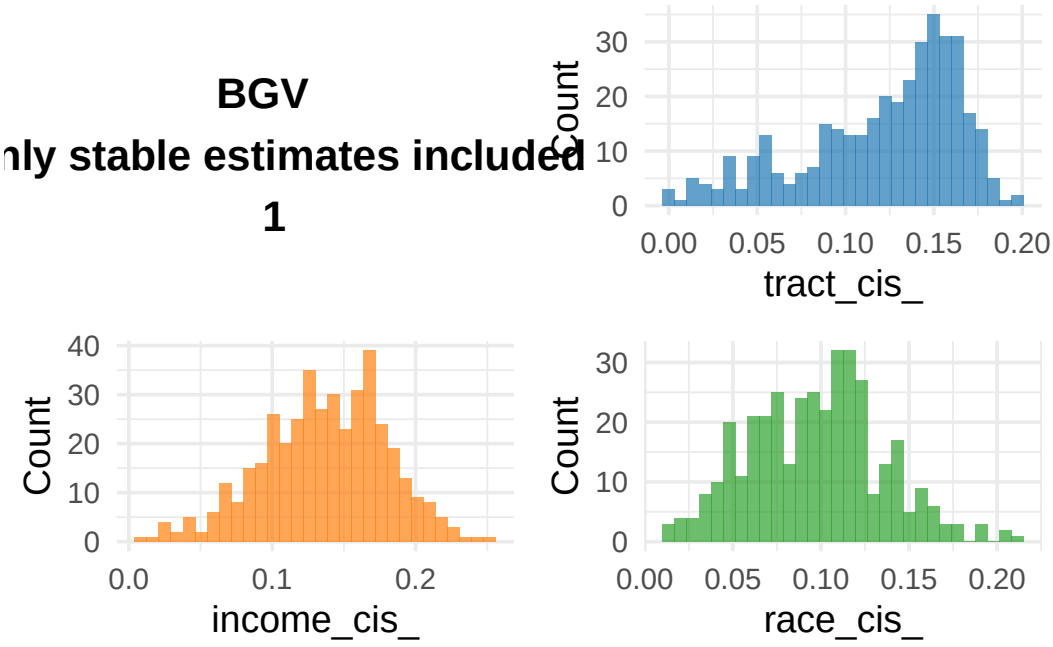
Note: the number corresponds to the urbanicity category.

1 is the most urban and 9 is the most rural.

BGV values become less meaningful after we remove instable estimates for the most rural (8 and 9) categories.

Across urbanicity categories, the tract domain appears to be most affected by stability. When unstable estimates are removed, the distribution of tract tends to skew right or left; when all estimates are included, the distribution of tract tends Normal.

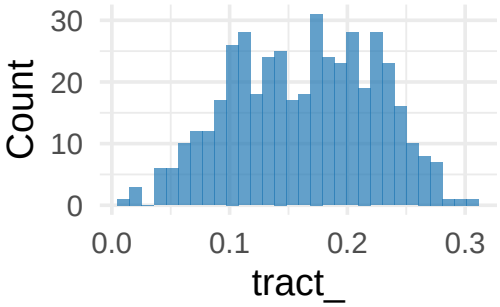
Note that BGV is a sum…. so counties with unstable estimates end up with BGV values of 0, not NA.

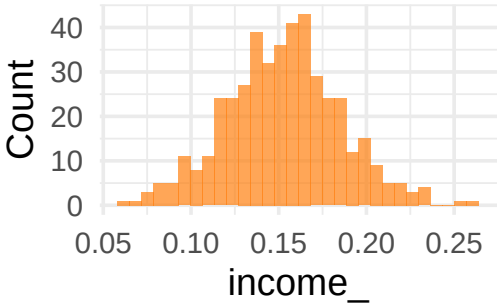


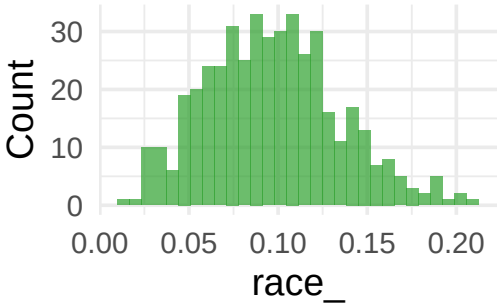
BGV

All estimates included

1



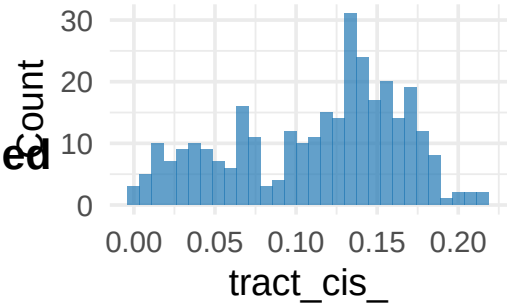


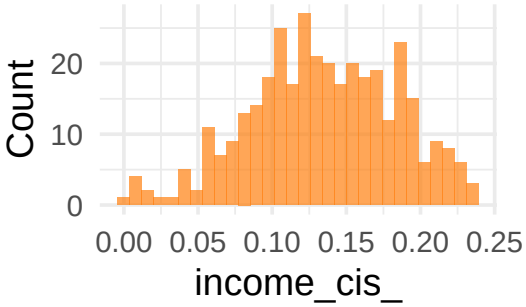


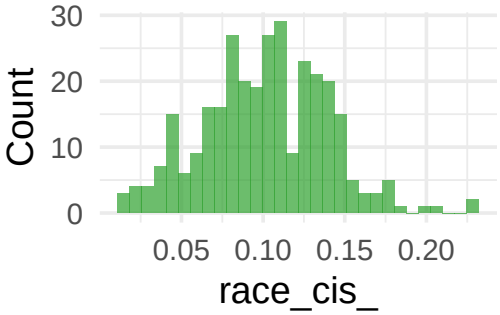
BGV

nly stable estimates included

2



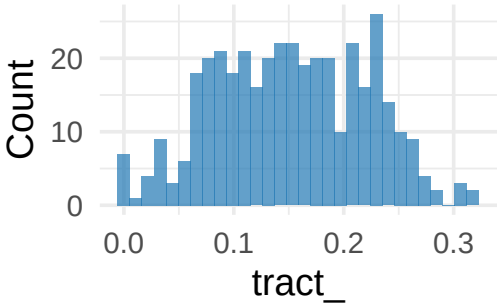


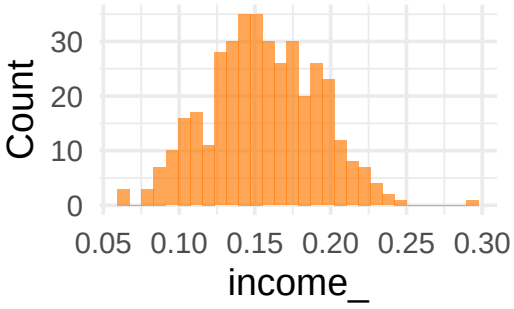


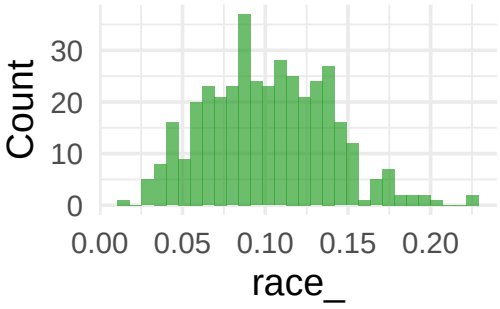
BGV

All estimates included

2



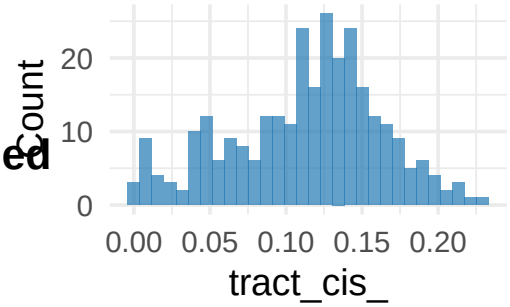


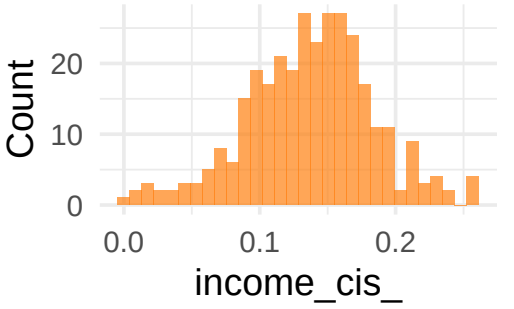


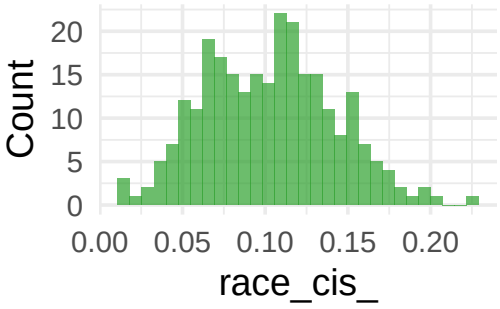
BGV

nly stable estimates included

3



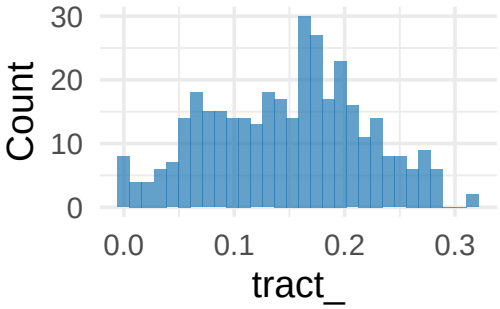


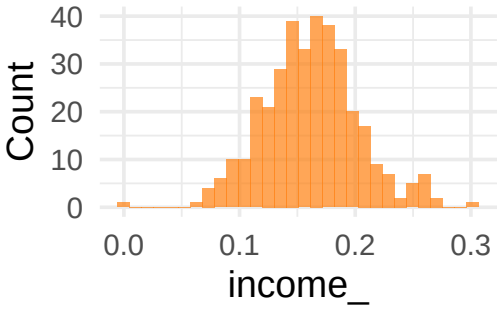


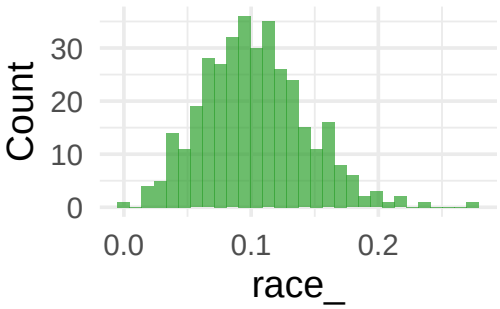
BGV

All estimates included

3



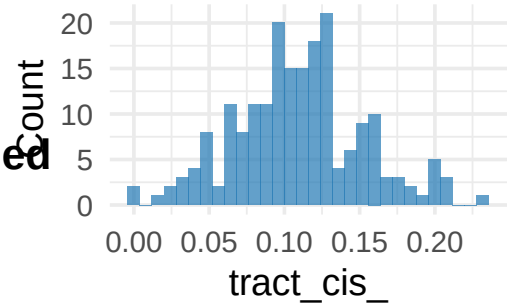


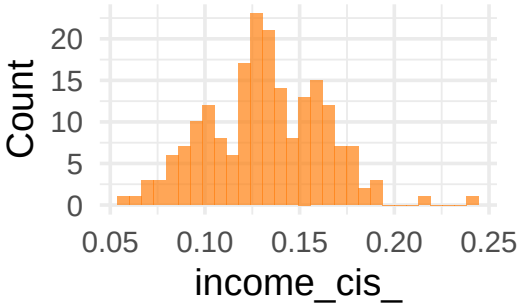


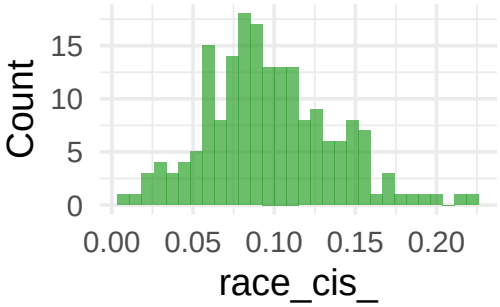
BGV

nly stable estimates included

4



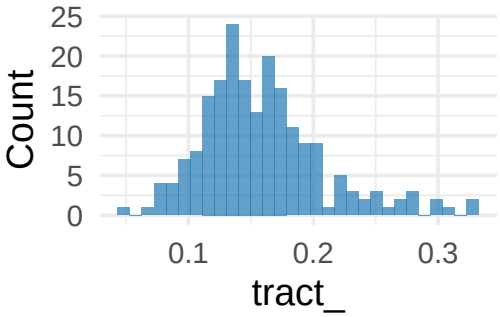


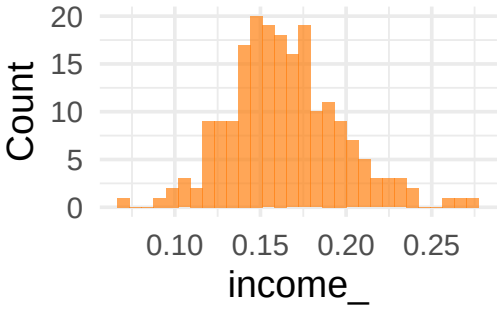


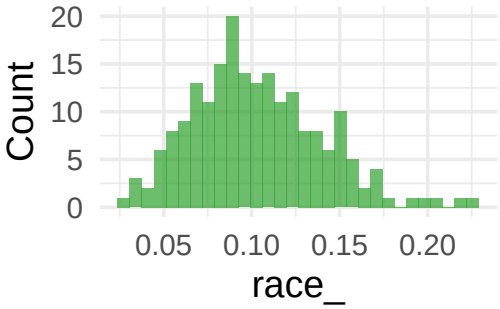
BGV

All estimates included

4



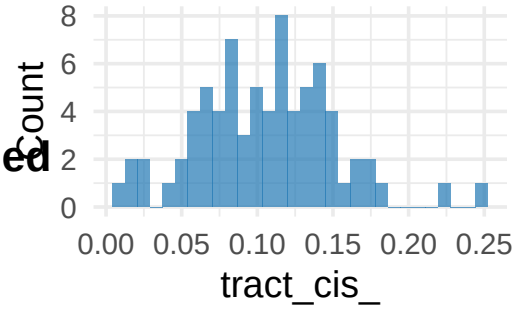


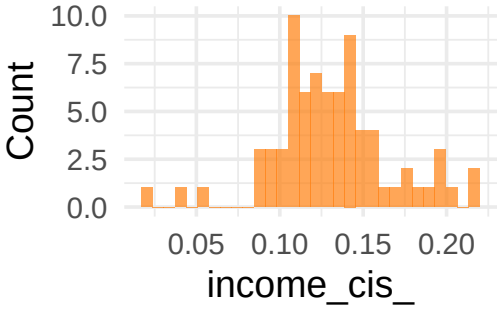


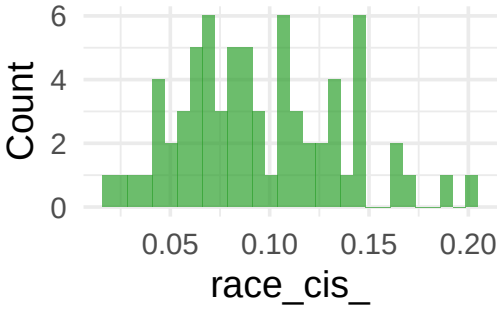
BGV

nly stable estimates included

5



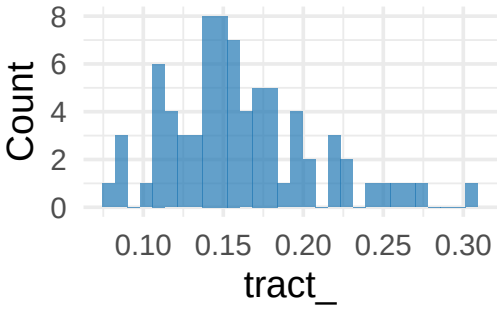


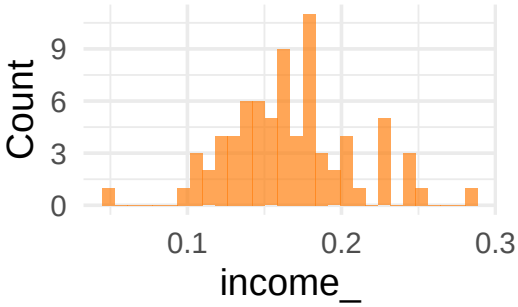


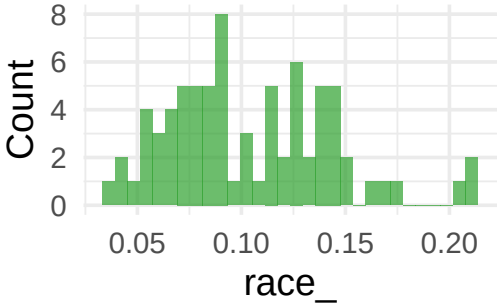
BGV

All estimates included

5



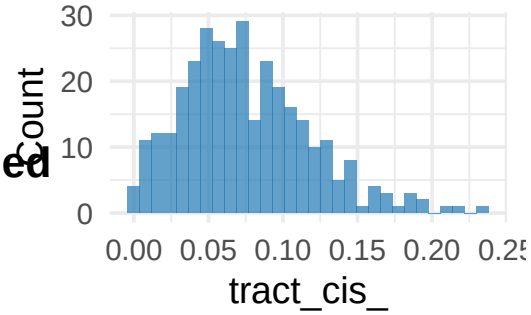


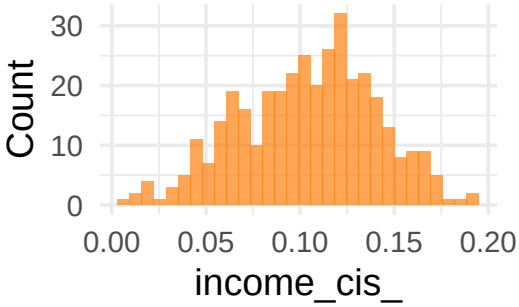


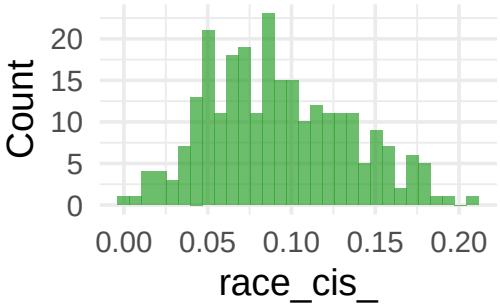
BGV

nly stable estimates included

6



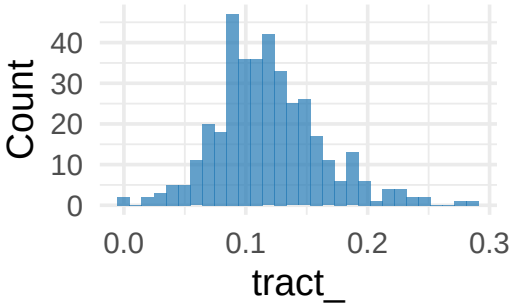


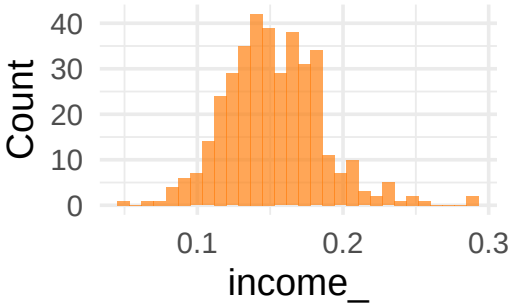


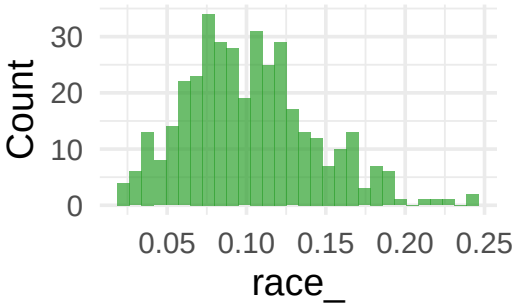
BGV

All estimates included

6



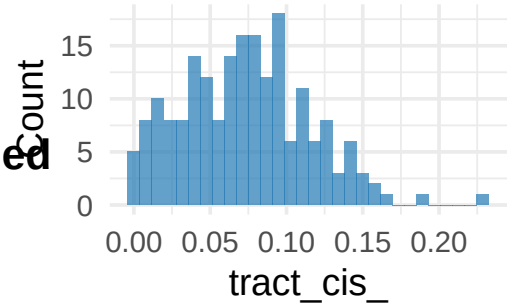


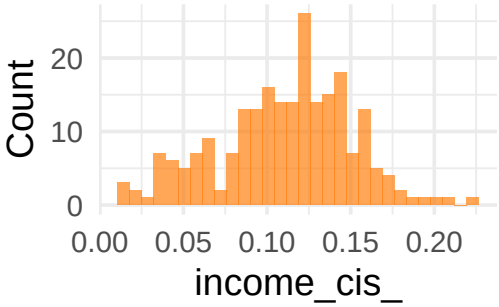


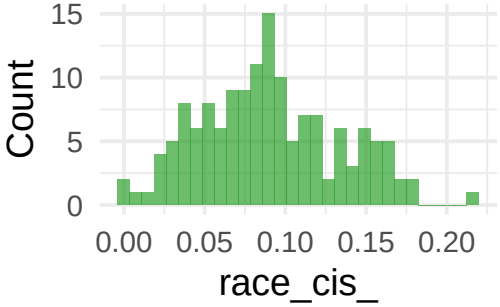
BGV

nly stable estimates included

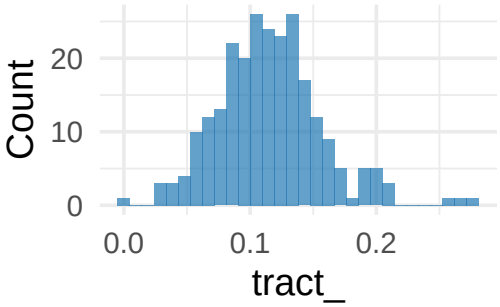
7

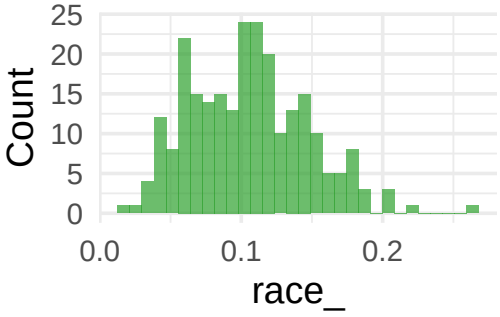




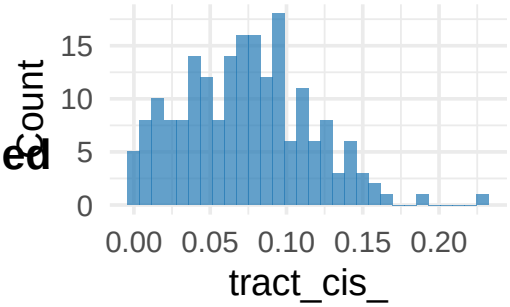


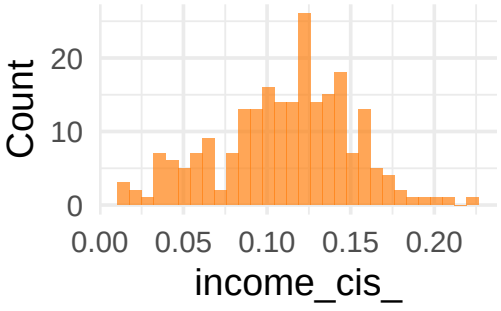
BGV
All estimates included
7

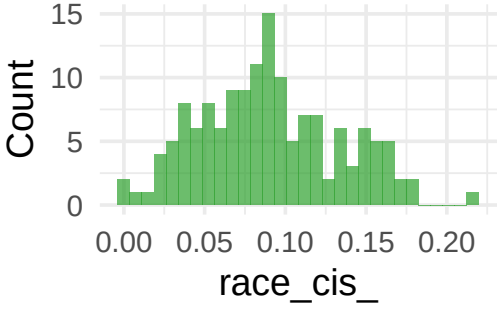




BGV
nly stable estimates included
7



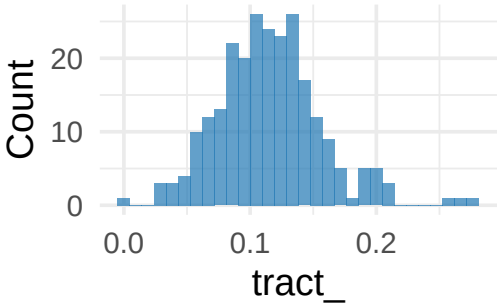


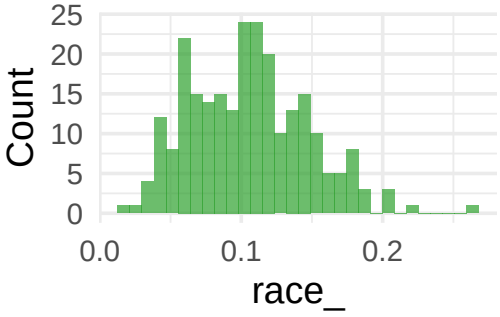


BGV

All estimates included

7

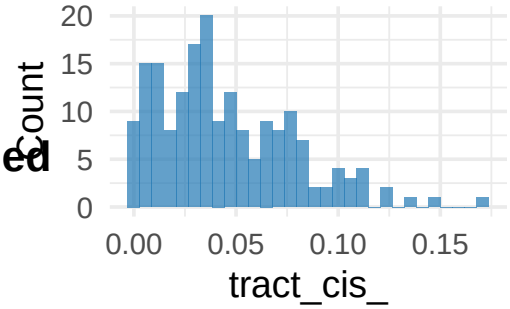


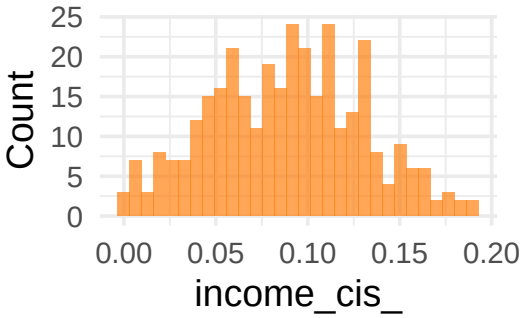


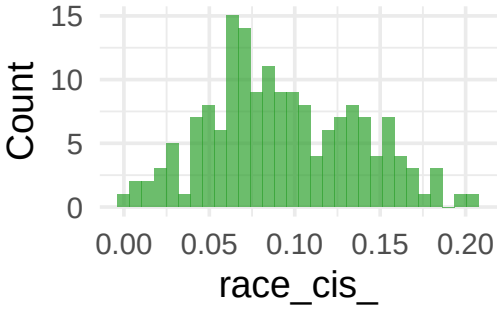
BGV

nly stable estimates included

8



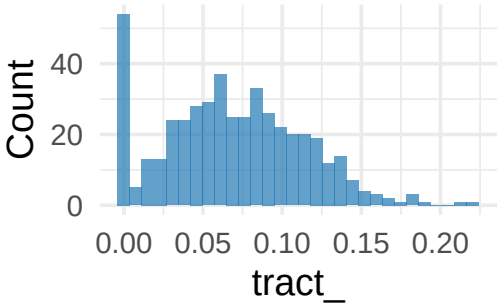


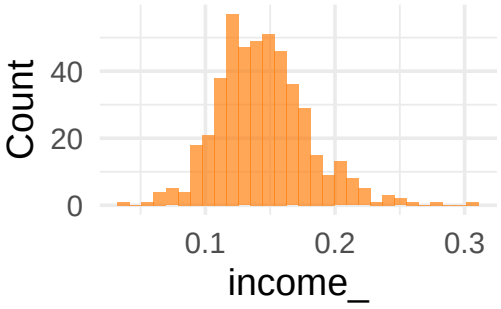


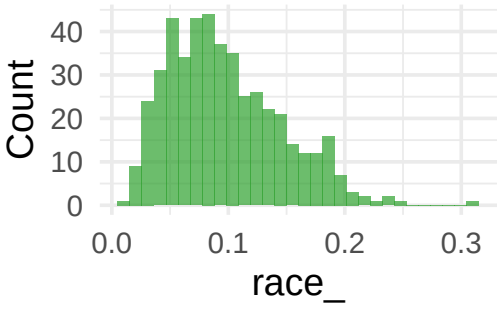
BGV

All estimates included

8



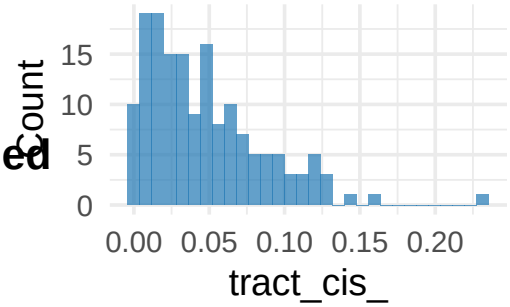


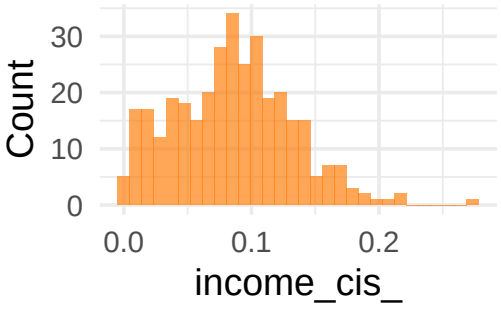


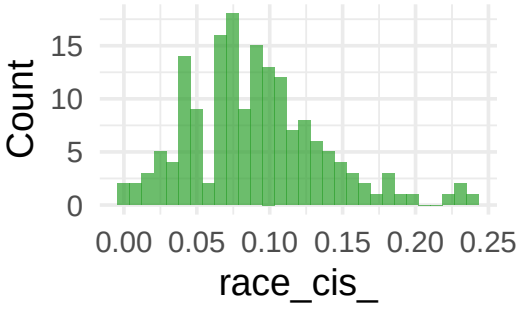
BGV

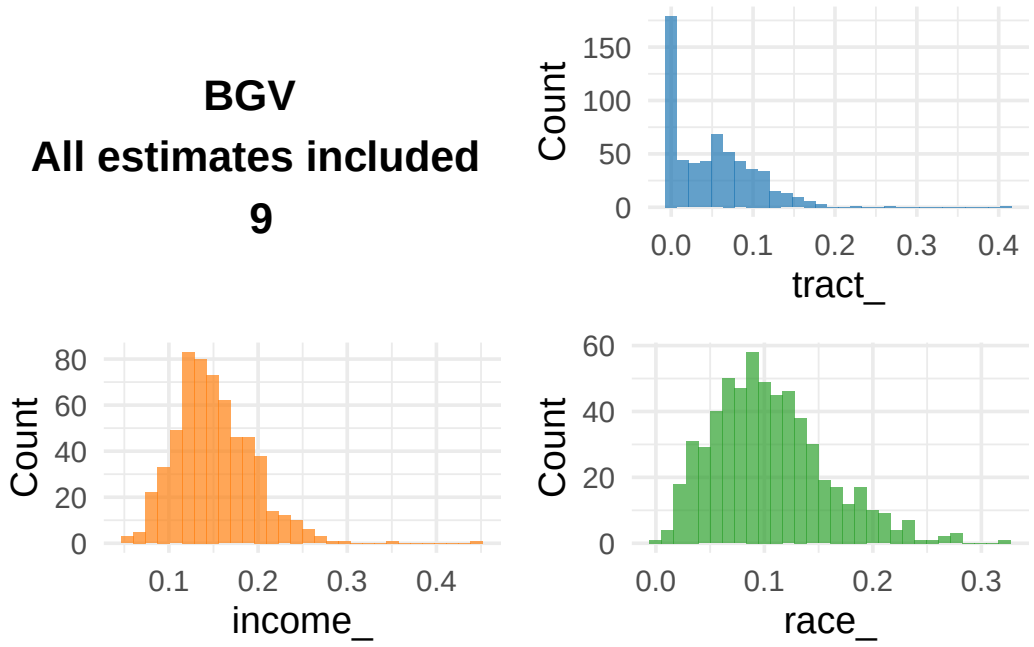
nly stable estimates included

9







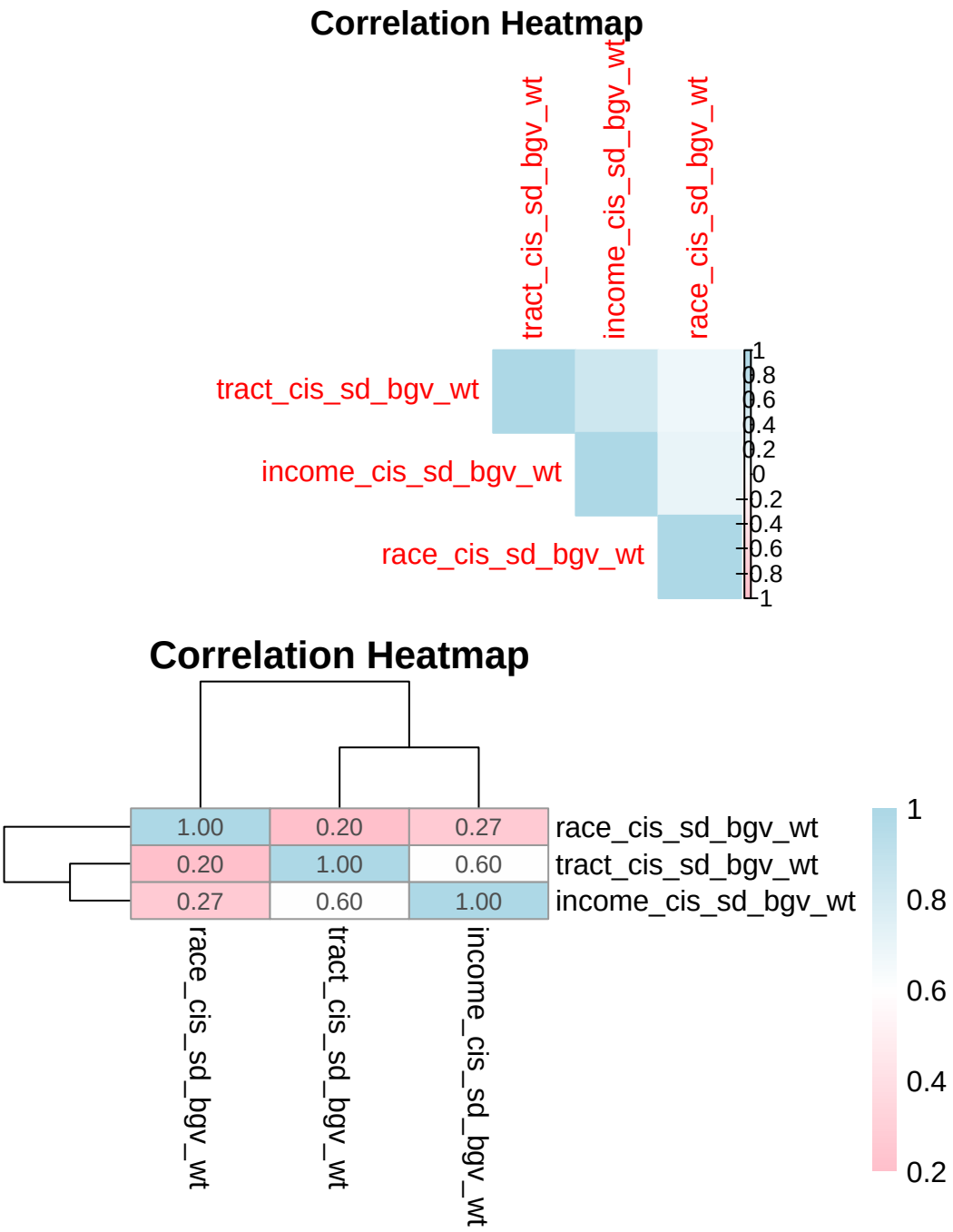


Correlations

Tract disparities and income disparities are more strongly correlated than tract disparities and race disparities. Income and race disparities are /slightly/ more correlated than tract and race disparities.

The strength of the correlation between tract disparities and income disparities is much lower when we include ALL estimates, not just stable ones. This could be because 94.6% of counties that have missing (unstable) values for income estimates also have missing (unstable) values for tract estimates, resulting in artificially high correlation when we use stable estimates only.

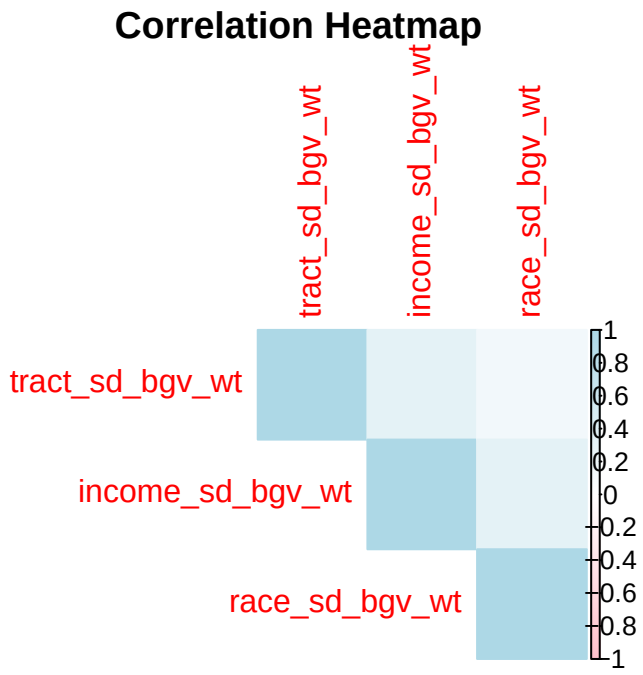
Stable estimates only

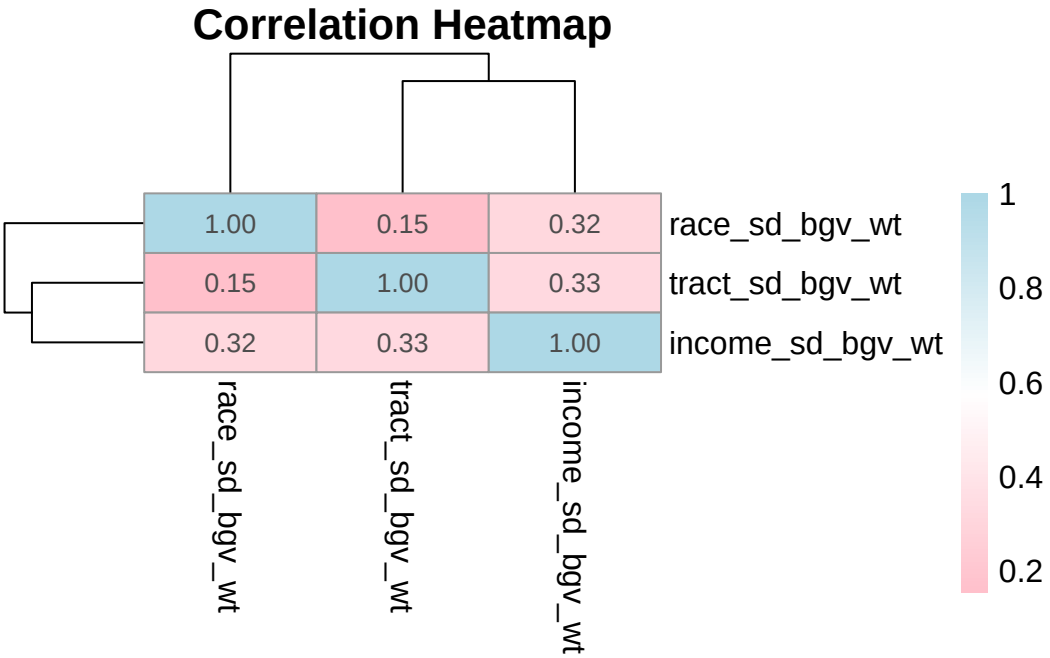


The strongest correlation occurs between tract and income, weakest between tract and race. All correlations are significant.

```
    Spearman's rank correlation rho

data:  hist_data$race_cis_sd_bgv_wt and hist_data$income_cis_sd_bgv_wt
S = 789697472, p-value < 2.2e-16
alternative hypothesis: true rho is not equal to 0
sample estimates:
      rho
0.2800483


    Spearman's rank correlation rho

data:  hist_data$tract_cis_sd_bgv_wt and hist_data$income_cis_sd_bgv_wt
S = 635021642, p-value < 2.2e-16
alternative hypothesis: true rho is not equal to 0
sample estimates:
      rho
0.5802439


    Spearman's rank correlation rho

data:  hist_data$tract_cis_sd_bgv_wt and hist_data$race_cis_sd_bgv_wt
S = 630540796, p-value < 2.2e-16
alternative hypothesis: true rho is not equal to 0
sample estimates:
      rho
0.2258608
```

ALL data

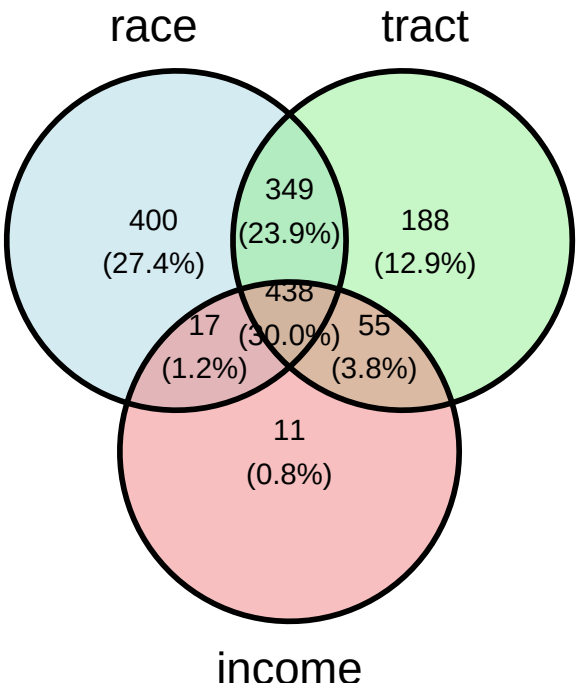

Correlation Heatmap
tract_sd_bgv_wt
income_sd_bgv_wt
race_sd_bgv_wt
tract_sd_bgv_wt
income_sd_bgv_wt
race_sd_bgv_wt
1
0.8
0.6
0.4
0.2
0
0.2
0.4
0.6
0.8
1


Correlation Heatmap
1.00
0.15
0.32
0.15
1.00
0.33
0.32
0.33
1.00
race_sd_bgv_wt
tract_sd_bgv_wt
income_sd_bgv_wt
race_sd_bgv_wt
tract_sd_bgv_wt
income_sd_bgv_wt
1
0.8
0.6
0.4
0.2

Missing Data by Category

Category	Count	Percent Missing
Race	1204	38.29517
Tract	1030	32.76081
Income	521	16.57125

Missingness



Descriptive stats by RUCC code

The largest percent missing occurs for race estimates. The smallest percent missing occurs for tract estimates.

Among very rural counties (9) the percent missing for tract and race disparities is over 13%, but only 8% missing for income disparities.

The magnitude of the median BGV value is highest among urban to suburban (codes 1 through 5) counties across income groups.

Missing Data and Summary Statistics by RUCC_2023 Category

	Missing Counts and Percentages			
RUCC Code	Race Missing Count	Race Percent Missing	Income Missing Count	Income Percent M
1	71	2.2582697	31	0.98
2	74	2.3536896	31	0.98
3	96	3.0534351	41	1.30
4	15	0.4770992	0	0.00
5	6	0.1908397	0	0.00
6	121	3.8486005	14	0.4
7	101	3.2124682	19	0.60
8	300	9.5419847	134	4.26
9	420	13.3587786	251	7.98

Missing Data and Summary Statistics by Urban/Rural Category

	Missing Counts and Pe			
Urban/Rural Category	Race Missing Count	Race Percent Missing	Income Missing Count	Income
Rural	963	30.629771	418	
Urban	241	7.665394	103	

The magnitude of the median BGV value is lowest among urban counties (codes 1, 2, 3) across racial groups. Median BGV values are also relatively low for rural (codes 8 and 9) counties across census tracts.

Only two RUCC groups

Split is here: https://www.ers.usda.gov/data-products/rural-urban-continuum-codes/documentation#:~:text=For%20Rural%2DUrban%20Continuum%20Codes,below%20250%2C000%20(code%203).