

Examine homophily in co-stop and co-arrest networks

Missings

Stops

- 13 stop ties have at least one officer missing their race.
- 0 stop ties have at least one officer missing their sex.
- 0 stop ties have at least one officer missing their Spanish speaking ability.
- 0 stop ties have at least one officer missing their age.

Arrests

- 8 arrest ties have at least one officer missing their race.
- 0 arrest ties have at least one officer missing their sex.
- 0 arrest ties have at least one officer missing their Spanish speaking ability.
- 0 arrest ties have at least one officer missing their age.

How often are officers working together when they make a stop/arrest?

How should we determine if two officers were working together? There are many different definitions we could use. The least restrictive would be both officers simply have to have been assigned to the same beat (removing all letters). The most restrictive would be that both officers have to have been assigned to the same beat (including letters), during the same shift, as part of the same unit.

I prefer to use the least restrictive definition of working together. Why? This biases our results against our hypothesis (that work assignments contribute to homophily). By using the least restrictive definition, we may be including some officers who were not actually working together. The differences are very slight, though, so I do not expect results to change much depending on which definition is used.

Stops

- Total number of stop-ties: 946912
- Number of stop-ties which involve multiple officers: 756246 (79.86%)
 - Number of stop-ties which involve officers working together (least restrictive definition): 427222 (56.49%)
 - Number of stop-ties which involve officers working together (most restrictive definition): 415775 (54.98%)
 - Number of stop-ties where at least one officer did not have a work assignment: 242685 (32.09%)
 - Number of stop-ties between officers from the same unit: 512926 (67.83%)

Arrests

- Total number of arrest-ties: 164807
- Number of arrest-ties which involve multiple officers: 157073 (95.31%)
 - Number of arrest-ties which involve officers working together (least restrictive definition): 75250 (47.91%)
 - Number of arrest-ties which involve officers working together (most restrictive definition): 72935 (46.43%)
 - Number of arrest-ties where at least one officer did not have a work assignment: 54794 (34.88%)
 - Number of arrest-ties between officers from the same unit: 102158 (65.04%)

Homophily

Stops

- When officers make stops while working together vs. not working together (least strict definition):
 - They are the same race 61.62% vs. 56.72% of the time.
 - They are the same sex 78.14% vs. 68.56% of the time.
 - They both speak Spanish 81.08% vs. 77.61% of the time.
 - The mean difference in age is 5.91 vs. 6.91.
- When officers make stops while working together vs. not working together (most strict definition):
 - They are the same race 61.76% vs. 56.71% of the time.
 - They are the same sex 78.09% vs. 69.92% of the time.
 - They both speak Spanish 81.13% vs. 77.79% of the time.

- The mean difference in age is 5.9 vs. 6.83.
- When officers make stops and it is uncertain if they were working together:
 - They are the same race 57.5% of the time.
 - They are the same sex 74.82% of the time.
 - They both speak Spanish 79.91% of the time.
 - The mean difference in age is 6.63.

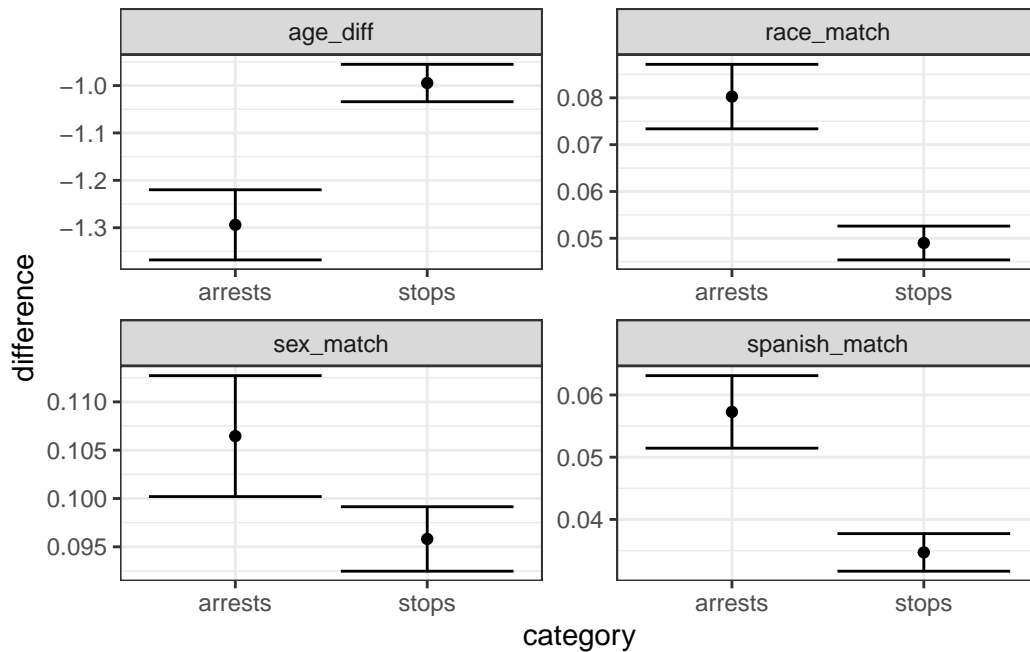
Arrests

- When officers make arrests while working together vs. not working together (least strict definition):
 - They are the same race 61.57% vs. 53.54% of the time.
 - They are the same sex 79.04% vs. 68.39% of the time.
 - They both speak Spanish 81.35% vs. 75.62% of the time.
 - The mean difference in age is 5.69 vs. 6.98.
- When officers make arrests while working together vs. not working together (most strict definition):
 - They are the same race 61.73% vs. 53.78% of the time.
 - They are the same sex 78.97% vs. 69.39% of the time.
 - They both speak Spanish 81.39% vs. 75.97% of the time.
 - The mean difference in age is 5.66 vs. 6.94.
- When officers make arrests and it is uncertain if they were working together:
 - They are the same race 55.64% of the time.
 - They are the same sex 75.89% of the time.
 - They both speak Spanish 80.34% of the time.
 - The mean difference in age is 6.67.

Statistical significance

The below graphs demonstrate stops and arrests which were made between officers who were working together are more homophilous (compared to stops and arrests made between officers who were not working together) on race, sex, Spanish-speaking ability, and age. For example looking at race, arrests which were made between officers who were working together are 8 percentage points more likely to have been made between officers of the same race (compared to officers who made an arrest together and were not working together). For stops, it is about 5 percentage points.

It does not appear as if stops or arrest are particularly more or less homophilous than each other, though.



Projecting Number of stops

- There are 513561 stop-ties where the the work assignment was identified for all involved officers.
 - There are 427222 stop-ties which involve officers from the same work-assignment.
 - * Of these stop-ties, 263269 stop-ties involves officers of the same race.
 - * Of these stop-ties, 333845 stop-ties involves officers of the same sex.
 - There are 86339 stop-ties which involve officers from different work-assignments.
 - * Of these stop-ties, 48975 stop-ties involves officers of the same race.
 - * Of these stop-ties, 59196 stop-ties involves officers of the same sex.
- In total, there are 312244 stop-ties involving officers of the same race.
- In total, there are 393041 stop-ties involving officers of the same sex.

Racial homophily

- If all these co-stops came from officers who were working together, based on the racial homophily among those working together, we project that the number of racially homophilous co-stops **would increase** to: 316456 (a 1.35% increase).

- If all these co-stops came from officer who were not working together, based on racial homophily among those not working together, we project that the number of racially homophilous co-stops **would decrease** to: 291292 (a 6.71% increase).

Sex homophily

- If all these co-stops came from officers who were working together, based on the sex homophily among those working together, we project that the number of sexually homophilous co-stops **would increase** to: 401297 (a 2.1% increase).
- If all these co-stops came from officer who were not working together, based on sex homophily among those not working together, we project that the number of sexually homophilous co-stops **would decrease** to: 352097 (a 10.42% decrease).

Projecting Number of arrests

- There are 102279 arrest-ties where the the work assignment was identified for all involved officers.
 - There are 75250 arrest-ties which involve officers from the same work-assignment.
 - * Of these arrest-ties, 46330 arrest-ties involves officers of the same race.
 - * Of these arrest-ties, 59474 arrest-ties involves officers of the same sex.
 - There are 27029 arrest-ties which involve officers from different work-assignments.
 - * Of these arrest-ties, 14472 arrest-ties involves officers of the same race.
 - * Of these arrest-ties, 18485 arrest-ties involves officers of the same sex.
 - In total, there are 60802 arrest-ties involving officers of the same race.
 - In total, there are 77959 arrest-ties involving officers of the same sex.

Racial homophily

- If all these co-arrests came from officers who were working together, based on the racial homophily among those working together, we project that the number of racially homophilous co-arrests **would increase** to: 62973 (a 3.57% increase).
- If all these co-arrests came from officer who were not working together, based on racial homophily among those not working together, we project that the number of racially homophilous co-arrests **would decrease** to: 54760 (a 9.94% increase).

Sex homophily

- If all these co-arrests came from officers who were working together, based on the sex homophily among those working together, we project that the number of sexually homophilous co-arrests **would increase** to: 80841 (a 3.7% increase).
- If all these co-arrests came from officer who were not working together, based on sex homophily among those not working together, we project that the number of sexually homophilous co-arrests **would decrease** to: 69949 (a 10.27% decrease).