APPLICATION OF DATA SCIENCE IN DEMOGRAPHY: EFFECTS OF LATINO IMMIGRANTS ON AFRICAN AMERICAN LABOR AND WAGES IN THE US
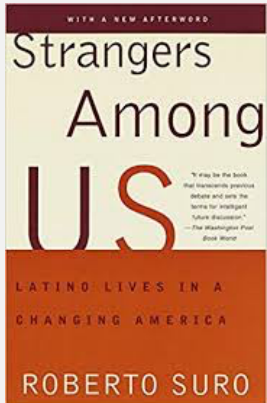
Varsha Vaidyanath

Data Science, UC Berkeley

Mentor: Professor Carl Mason, Director of Demography Lab, UC Berkeley

1

BACKGROUND

- In Roberto Suro's book, *Strangers Among US: Latino Lives in a Changing America*, he describes how the arrival of Latino immigrants led to them performing work that was typically done by African Americans and affected their wages. (See Reference slide for quote)

- This idea that the author explains inspired me to think about the influences of immigration on the labor and income of those currently living in the country.

GOAL

- Explore how the immigration of Latino Immigrants to the United States, in the labor force, affected African Americans in the US labor force during 2000 and 2017.

- **Null hypothesis**: There is no difference between the effects of Latino immigration on African American labor and wages in 2000 and 2017. Any difference observed is due to random chance.

- **Alternative hypothesis**: There is a difference between the effects of Latino immigration on African American labor and wages in 2000 and 2017. Any difference observed is not due to ran-dom chance.

DATA

- Used US Census data from IPUMS, factored for certain variables: 'YEAR' (2000 and 2017), 'AGE' (20-60, typical working age), 'HISPAN' and 'RACBLK' (Hispanic or African American origin), (those in labor force), 'INCTOT' (total income in a year), and 'MET2013' (larger metropolitan areas that make it easier to map out differences over time)

]:

YEAR	DATANUM	SERIAL	CBSERIAL	HHWT	MET2013	GQ	PERNUM	PERWT	AGE	HISPAN	HISPAND	RACBLK	EMPSTAT	EMPSTATD	INCTOT
2000	1	17	nan	1147.01	39300	1	1	1446.23	42	0	0	1	2	20	0
2000	1	67	nan	1296.62	39300	1	1	1446.23	25	0	0	1	1	10	40000
2000	1	117	nan	1047.27	39300	1	1	1296.62	41	4	460	1	1	10	30000
2000	1	166	nan	748.05	39300	1	1	398.96	41	0	0	2	1	10	35300
2000	1	216	nan	1047.27	39300	1	1	748.05	20	0	0	1	1	10	25000
2000	1	266	nan	947.53	39300	1	5	1047.27	31	0	0	1	1	10	16730
2000	1	565	nan	349.09	39300	4	1	349.09	58	0	0	1	1	10	5200
2000	1	665	nan	947.53	39300	1	2	897.66	57	0	0	1	1	10	47500
2000	1	915	nan	1296.62	39300	1	1	1944.93	26	0	0	1	1	10	48100
2000	1	964	nan	648.31	39300	1	1	897.66	43	2	200	1	1	10	15000

... (250387 rows omitted)

4

PROCESS

1. Created tables for Latino immigrants and African Americans in 2000 and 2017

2. Used regression and made scatterplots to plot the percentage of Latino immigrants in the dataset to African American wages in 2000 and 2017
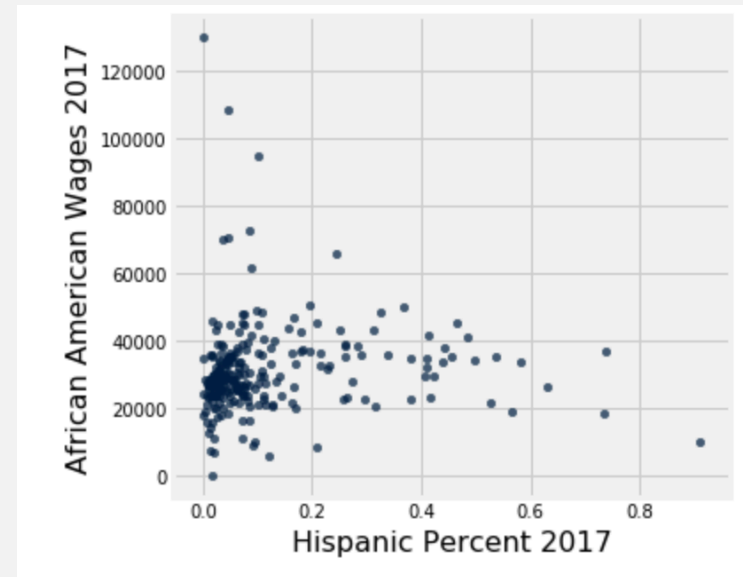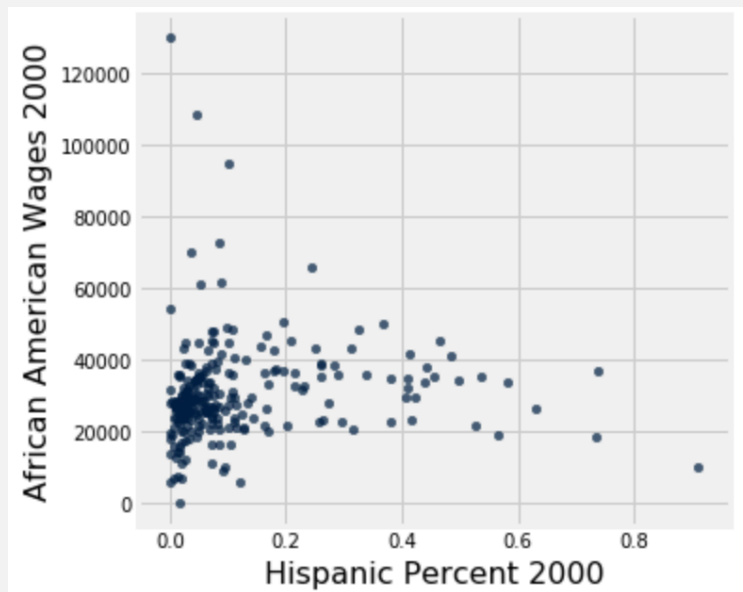
PROCESS, CONTINUED

3. Calculated bootstraps for 2000 and 2017, along with differences between them

4. Created histogram of bootstrapped data sets for 2000 and 2017, as well as their differences, marked by 95% confidence intervals

The 95% confidence interval for the difference between the two data sets is: -0.008780615933924875 and 0.009234843797733906
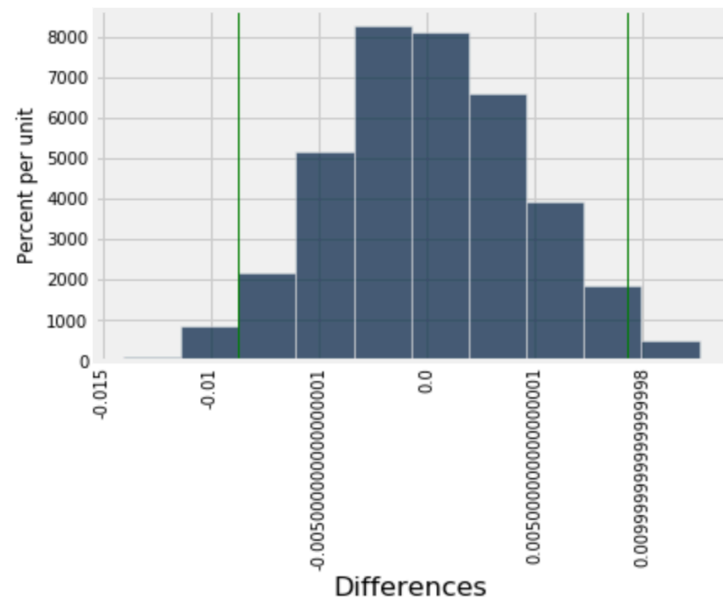
CONCLUSION

- As shown by the 95% confidence interval for the differences in the previous slide, 0 is within the confidence interval. This means I fail to reject the null hypothesis, and conclude that there is no difference between the effects of Latino immigration on African American labor and wages in 2000 and 2017.

- Why might this be possible?

  1. For the 2000 and 2017 data themselves, the slopes are very close to 0, indicating almost no correlation between the two variables chosen; choosing two slightly different variables may have made a higher correlation more evident and created more significant results.

  2. Perhaps one of the factors I listed earlier that could have made my test statistic prone to bias was true and affected the end result of this test.

  3. During the time periods, the niches of job sectors that Latinos and African Americans occupied could have been different, meaning the increased immigration of Latinos would not have made a difference at all.

  4. It may be that the metropolitan areas used had higher concentrations of Latinos or African Americans, which would affected the results of the differences.

FUTURE RESEARCH

- I believe that in order to come to a decisive conclusion, more data extracts and tests would need to be done, possibly factoring for more of the biases that I mentioned (in Conclusion slide and Research Report on GitHub).

- Based on my own results, I conclude that there was practically no difference between the Latino immigration effect on African American labor and wages in 2000 and 2017. I could look further into and modify the way I classified people in this dataset and the variables used, such as gender, level of education, and geographic location.

REFERENCE

- "The arrival of fresh Latino immigrants was only one part of all this churning, but because they were so new, so noticeable, and so numerous, they became the face of the change. One of the ways people saw the results was when whole job categories changed hands and newly arrived Latinos suddenly began doing work that had been performed by native-born workers before, usually African-Americans. It happened at car washes and on construction crews, in hotel banquet rooms and supermarkets. At first glance, it seemed easy to conclude that the new Latinos had 'taken' the jobs once held by blacks. That certainly seemed to be the case with an important job category that changed drastically in Los Angeles: the work of cleaning offices.

- In 1980, many, if not most, of the janitors in big L.A. office buildings were African Americans, especially in the traditional downtown business district. They could count on wages and benefits worth more than twelve dollas an hour as part of secure, long-standing union contracts. Ten years later, most of the janitors in big buildings, especially in the newly developing areas such as Century City, were Latinos, usually recently arrived, often illegals. They worked for something close to the minimum wage with no contract, no vacation, no health insurance, no benefits, no overtime. The social contract that had provided thousands of black workers a decent wage was broken, and it was replaced with the sweatshop labor of immigrants" (Suro 213).

THANK YOU