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Emitting under the radar: The Environmental Justice implications of Concrete Batch Plants in Houston

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What are Concrete Batch Plants?

- Small, industrial facilities that mix cement, water and aggregates (sand, gravel, etc.) to produce concrete.
- To avoid cement hardening, suppliers try to minimize transportation time by siting concrete plants close to consumers, which can exacerbate pollution exposure of those living near CBPs.

Why should you care about Concrete Batch Plants?

- **Nationally:** We know very little about them.
 - Because of their small size they are not required to report emissions to state environmental agencies or the EPA (Figure 1).
 - For the few states that do report CBP emissions data, we know that these facilities collectively rank as the 58th most polluting industry.
- **In Texas:** We know nothing about their operation as the state collects no information on their emissions. Yet there are over 500 CBPs in Texas alone.

Why Houston?

- Only major city in the US without formal zoning regulations. Allows CBPs a less restrictive location choice set.
- Houston has the highest number of CBPs in the county (128 plants).
- CBPs in Houston tend to locate close to residential areas increasing exposure for nearby communities.
- We collect data from the original siting permits of all active CBPs in Houston. Collectively those CBPs emit as much PM₁₀ as three refineries (Figure 2).

Environmental Justice implications

- We estimate the incidence of environmental injustice in the citing of CBPs in Houston using data from the 2019 5-year ACS.
- We find that Houston CBPs tend to locate closer to:
 - Low income census tracts (Figure 3)
 - Majority Hispanic census tracts (Figure 4).
- We find no evidence of disproportionate citing based on % white or % black population in a census tract.
- Those findings account for median tract income, population density and highway access.

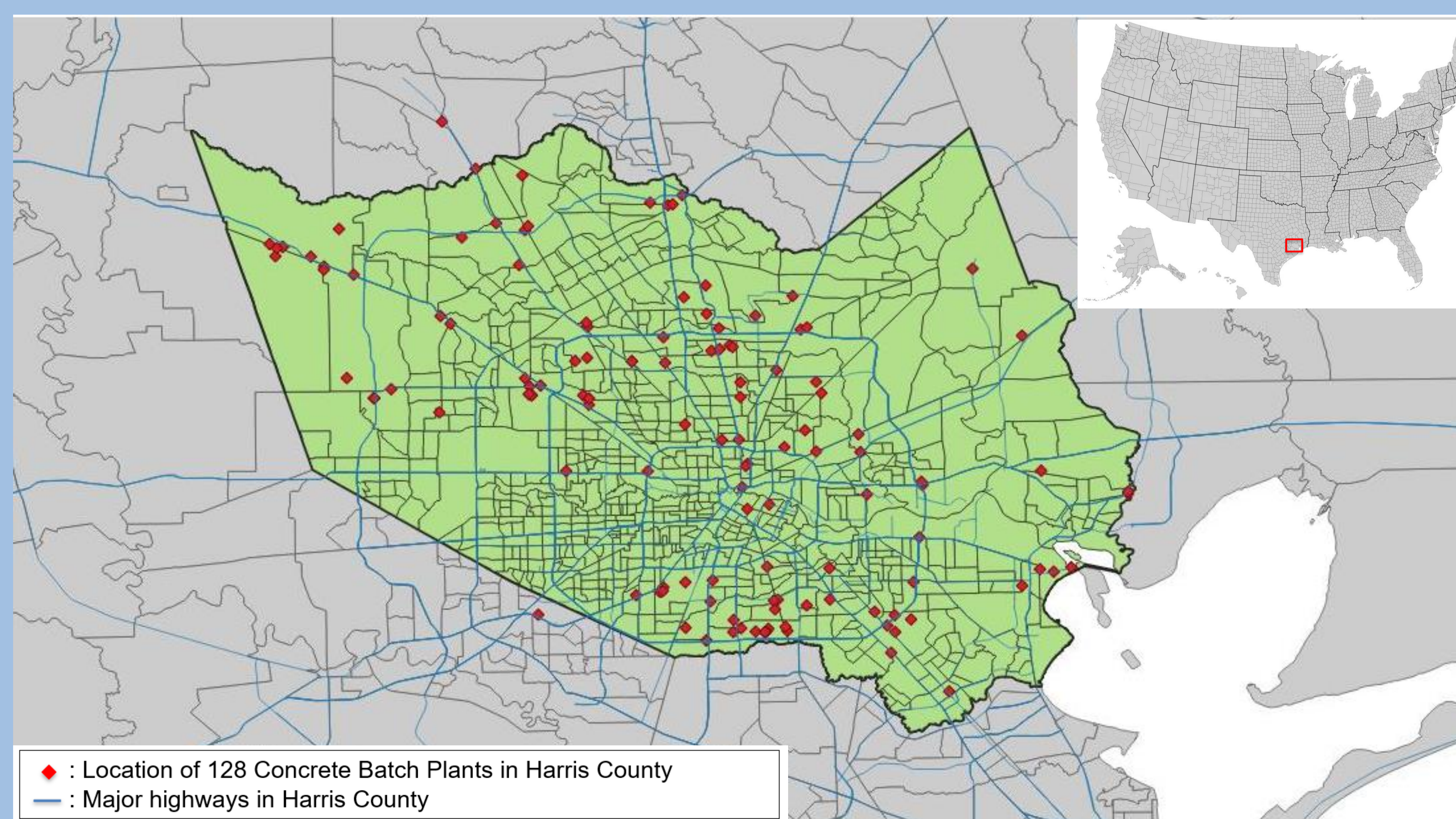
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Source: <https://www.concretebatchingplants.com/en/stationary-concrete-batching-plants/elkomix-240>



◆ : Location of 128 Concrete Batch Plants in Harris County
— : Major highways in Harris County

Figure 1: Large gap between the number of CBPs counted in the 2017 Economic Census and the 2017 National Emissions Inventory

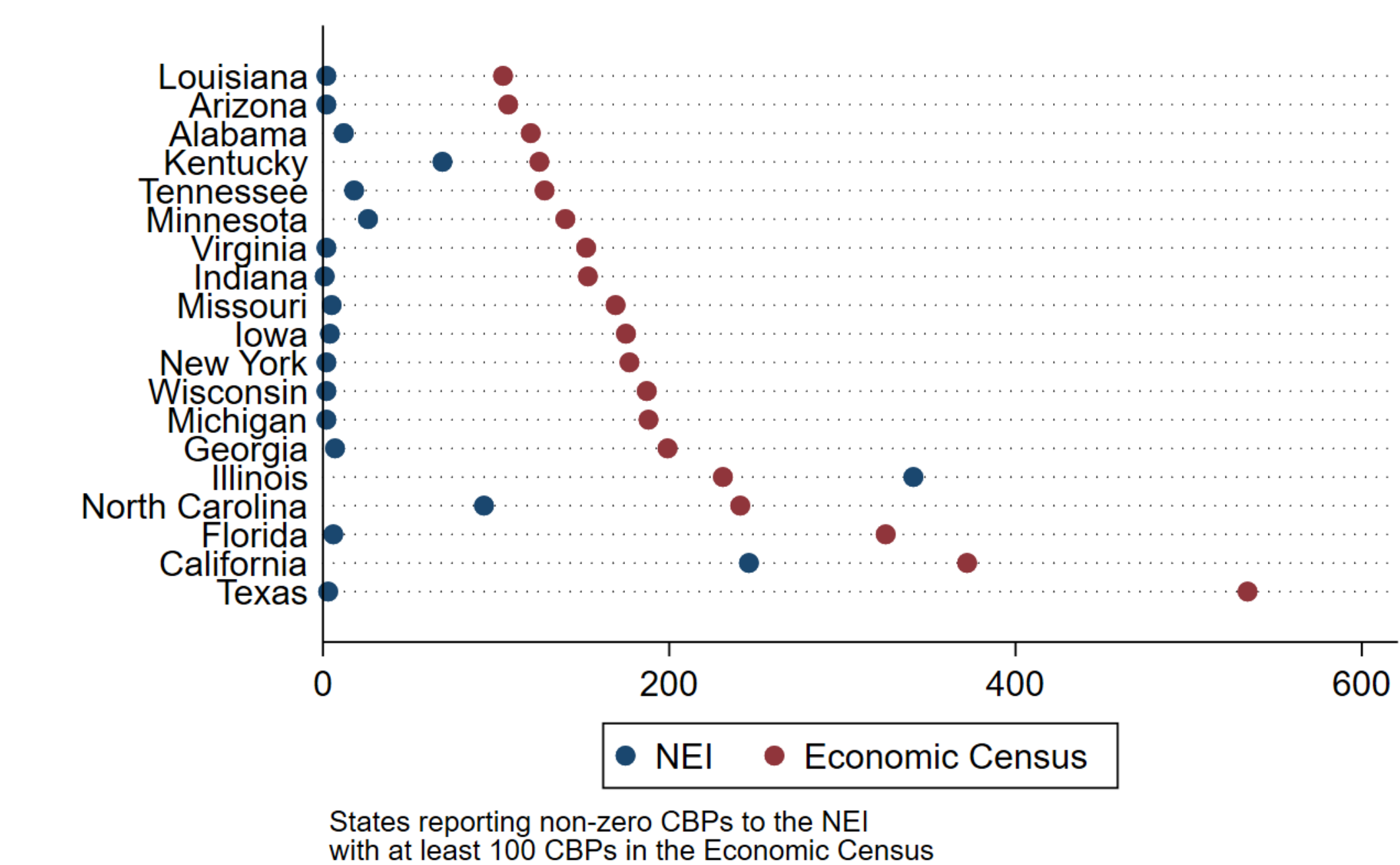


Figure 2: CBPs in Harris County collectively emit as much PM₁₀ as 3 refineries

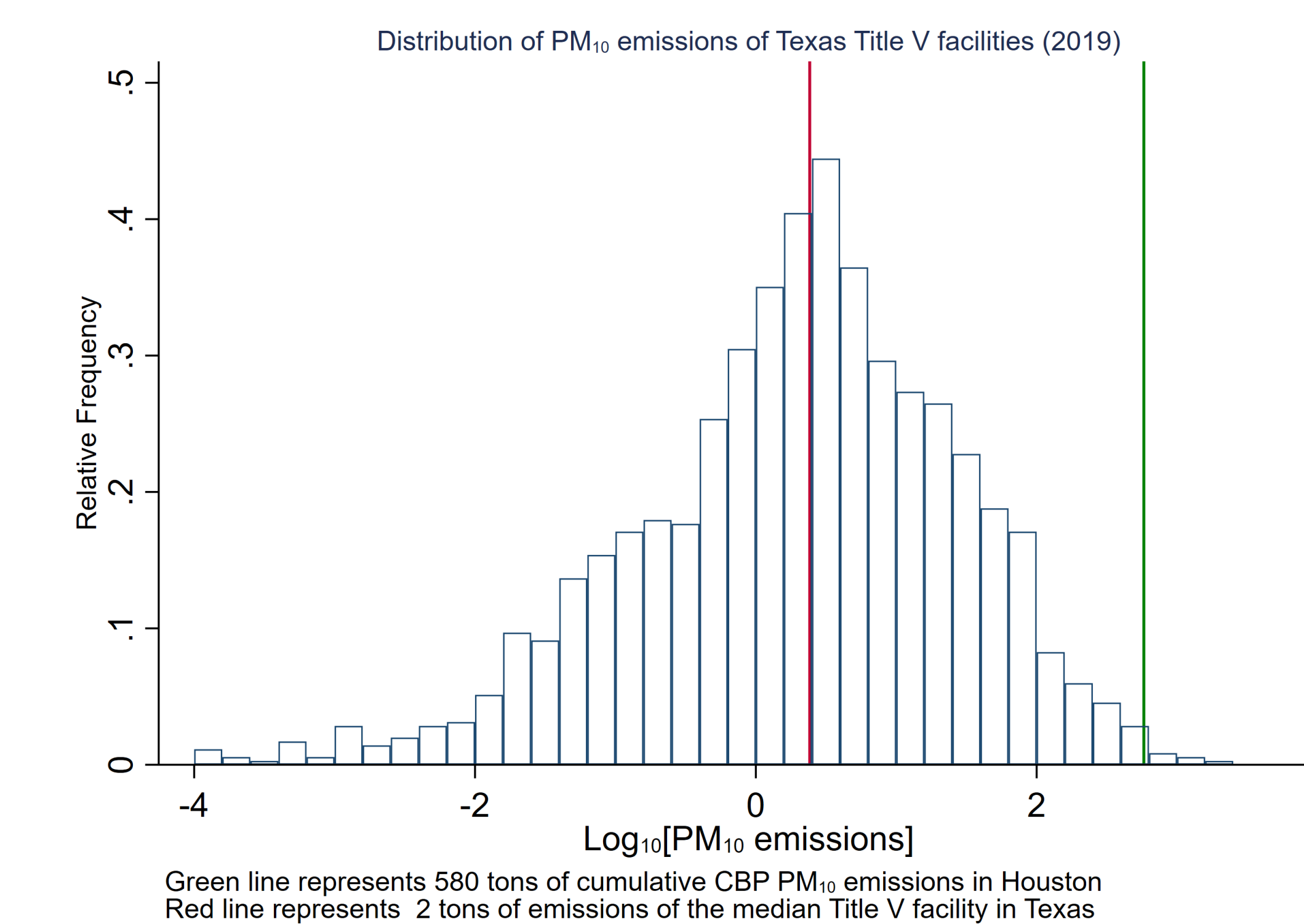


Figure 3: Lower income tracts are closer to Concrete Batch Plants in Harris County

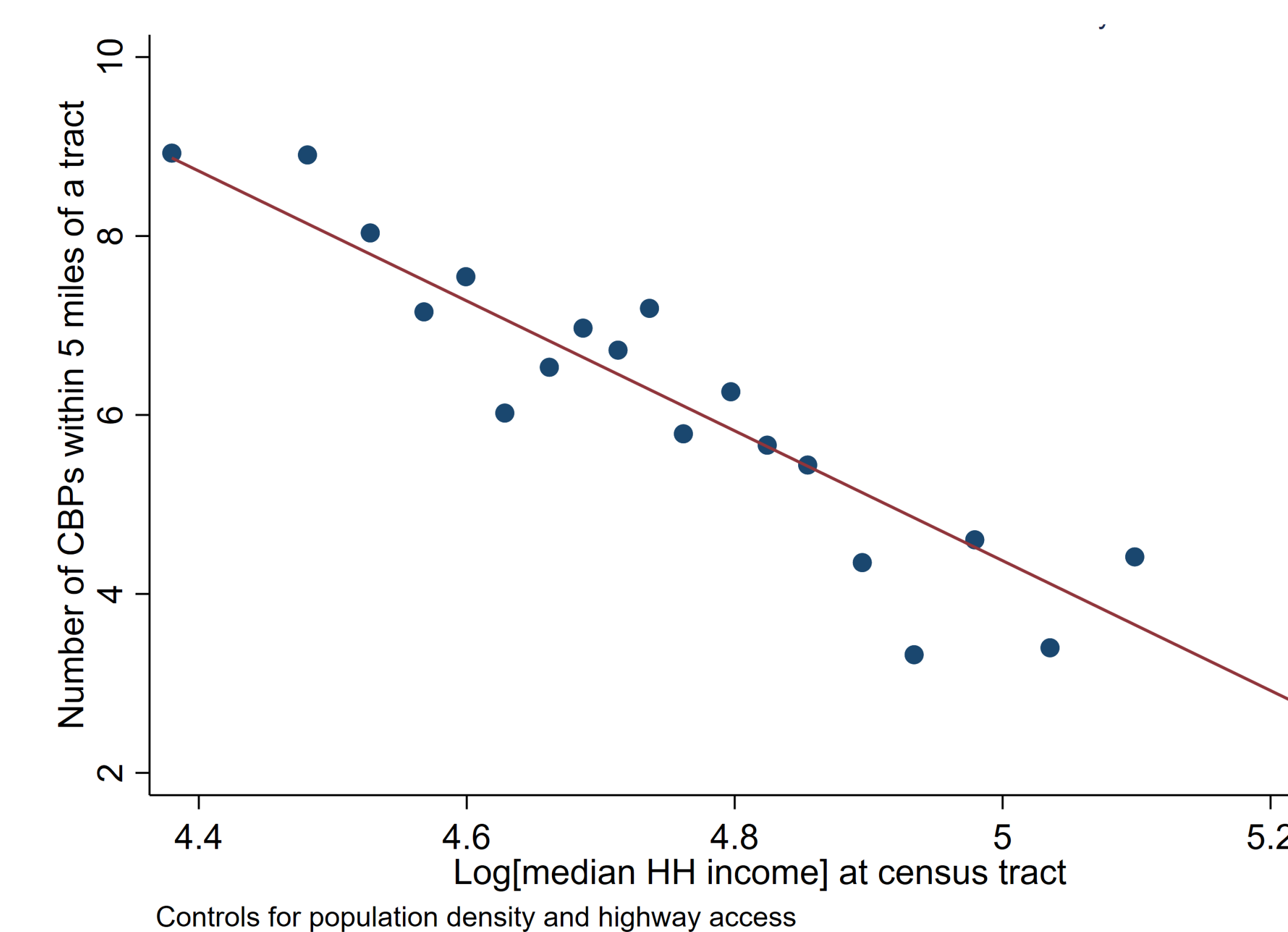


Figure 3: Majority Hispanic tracts are closer to Concrete Batch Plants in Harris County

