

ENVIRONMENTAL CONSCIOUSNESS AND POPULATION DEMOGRAPHICS

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Introduction:

Over the last few decades, people have been growing increasingly concerned about the environment and “going green,” as many would like to call it. Much research has been done to create new technologies and techniques to reduce energy use, reduce emissions, and produce cleaner emissions. Many of these, however, assume a large budget and high availability and easy accessibility to all people—perfect conditions, one might say. But what about the economical side?

Economically speaking, environmental care and quality is generally rather costly. It is not entirely feasible for a large portion of the population to become more “green,” because they simply do not have the resources. It is not convenient and cost-effective in the short term, which is a great concern of many without financial security.

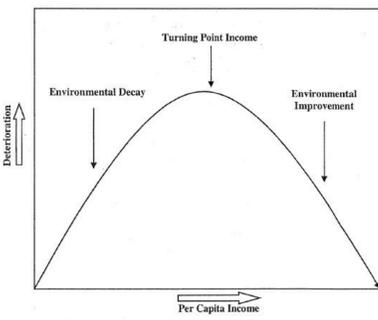


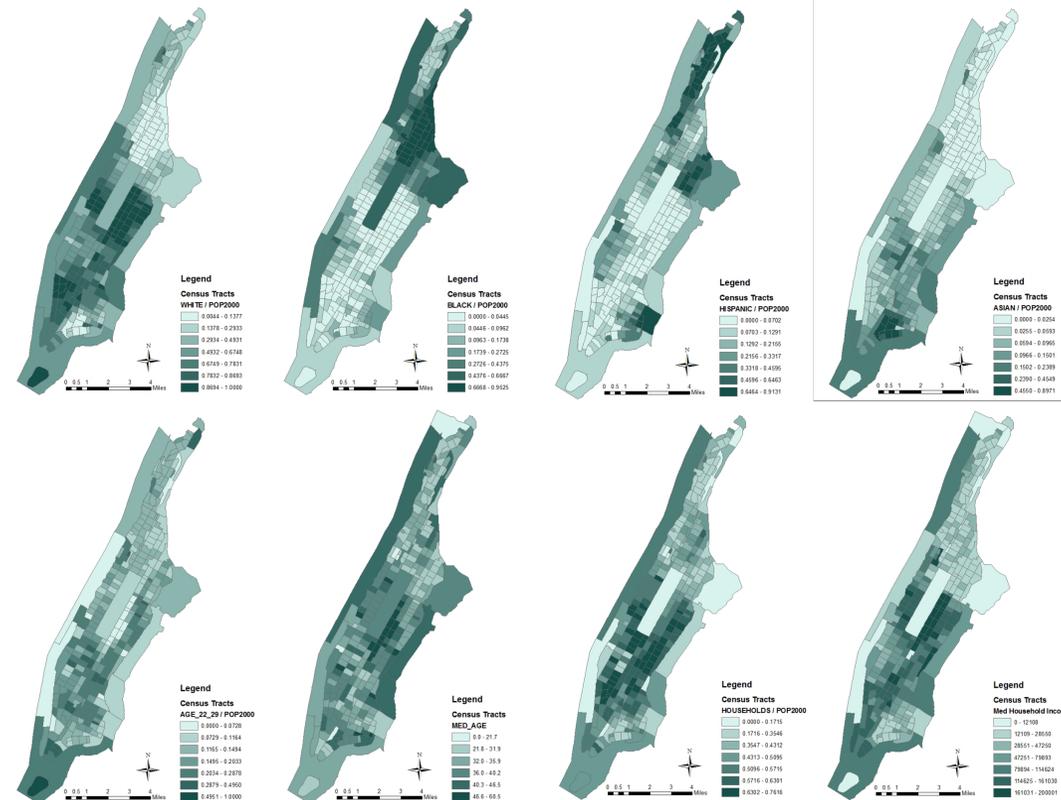
Figure 1: Environmental Kuznets Curve
<http://perc.org/blog/mexico-and-environmental-kuznets-curve>

The most prevalent theory regarding the relationship between income and environmental quality is the Environmental Kuznets Curve, as shown in Figure 1. The curve depicts the following story: when income is low and increasing, emissions or environmental deterioration will increase, but at a marginally decreasing rate. After reaching a certain point of growth, the curve will hit a peak, after which emissions and environmental quality will improve due to excess income and resources being spent on environmental preservation and cleaner technologies. This theory is highly controversial, however, and there has been much literature both for and against it.

The purpose of this project, therefore, is to examine this potential relationship in Manhattan and also to examine any possible correlation between population demographics and environmental quality and consciousness. Because Manhattan has a wide range of characteristics:— income, race, occupation, etc.—any sort of comparison will likely yield interesting results.

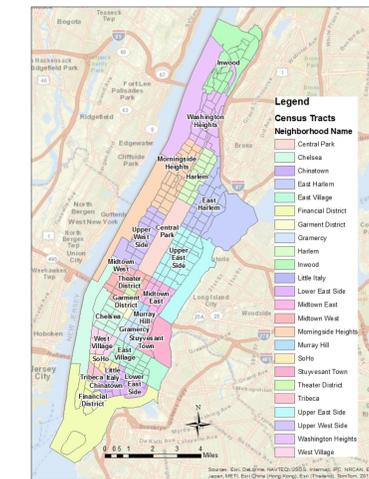
We hypothesize that there will be more green initiatives in places of higher income, higher education, and younger median age. Those with higher income are likely to have more disposable income to spend in environmentally friendly ways, while better educated populations—and younger populations—are likely to be more aware of environmental issues.

Population Demographics:



Methodology:

For this project, census data was plotted to analyze different population demographics. The maps in the first row depict racial demographics: percent of population that is white, black, Hispanic, and Asian. The maps in the second row depict socioeconomic factors: percentage of population between ages 22 and 29, median age, households/person, and median household income.



Data on locations that exhibited green initiatives was obtained from GreenMap Org. It is evident from this data that there is a higher density of “green” locations in downtown Manhattan. There are also higher emissions, as exhibited in the map on the bottom right that depicts the emissions from “large facilities”, as defined by the Environmental Protection Agency (EPA).

Results:

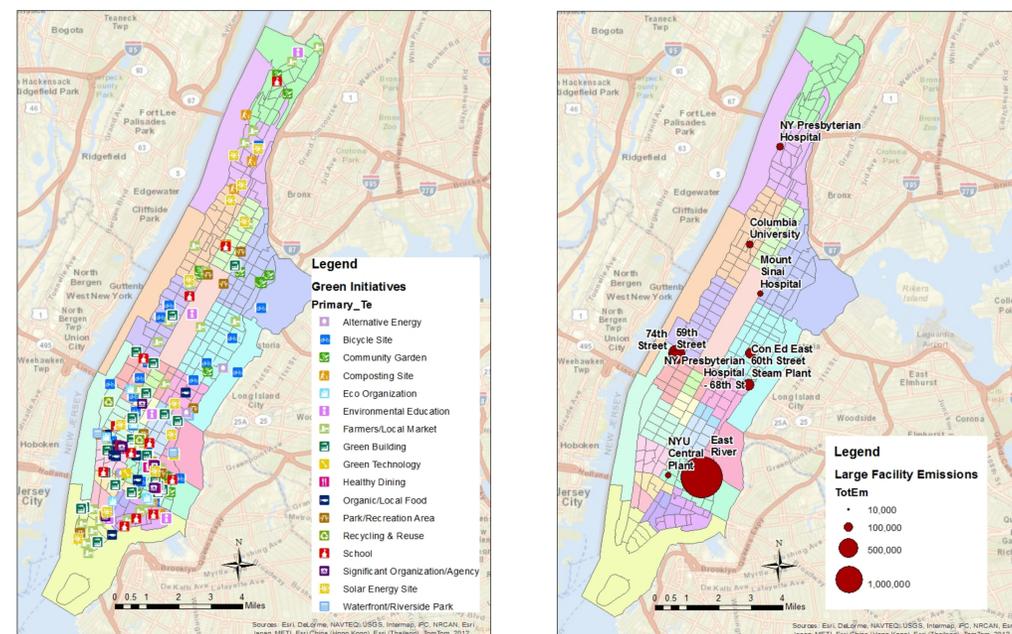
Our results exhibit a picture much different from our hypothesis. The income-environmental relationship seems to be the opposite of our projected relationship: areas with higher income, e.g. the Upper East Side, actually seem to be less environmentally friendly or aware when comparing the Median Household Income map with the Green Initiatives map.

We cannot make the conclusion, however, that lower income areas are more environmentally friendly. While Downtown Manhattan has a much higher density of green initiatives and is of lower median household income than Uptown, Upper Manhattan (Harlem, East Harlem, Morningside Heights, Inwood) has significantly lower median household income than both Downtown and Uptown, but also has lower density of green initiatives. This exhibits some of the uncertainty involved with the Environmental Kuznets Curve: the relationship between income and environmental quality is rather hazy, and could change with the given data set.

Comparing the median ages of these regions, however, there seems to be some correlation. As predicted, younger populations in Midtown and Downtown Manhattan are more environmentally friendly than older populations Uptown.

Ironically, comparing the bottom two maps, the areas with higher green initiative density also tend to be those with higher emissions. This could mean one of two things: (a) the green initiatives are not effective, so emissions remain high, or (b) there is more incentive for green initiatives in these areas because emissions are high.

Environmental Consciousness and Quality:



Limitations:

Discrepancies between projected and actual results can be attributed to limitations in data. The sample of green initiative is rather small (n = 191), and may be biased due to the location of GreenMap Org. in East Village, i.e. there is a high density of locations in near it in Downtown Manhattan. Furthermore, emissions data was very limited; there is little readily available data from the EPA on emissions in smaller regions. More research will have to be conducted in the future to further this study.