

LEHD WAC Data Exercise

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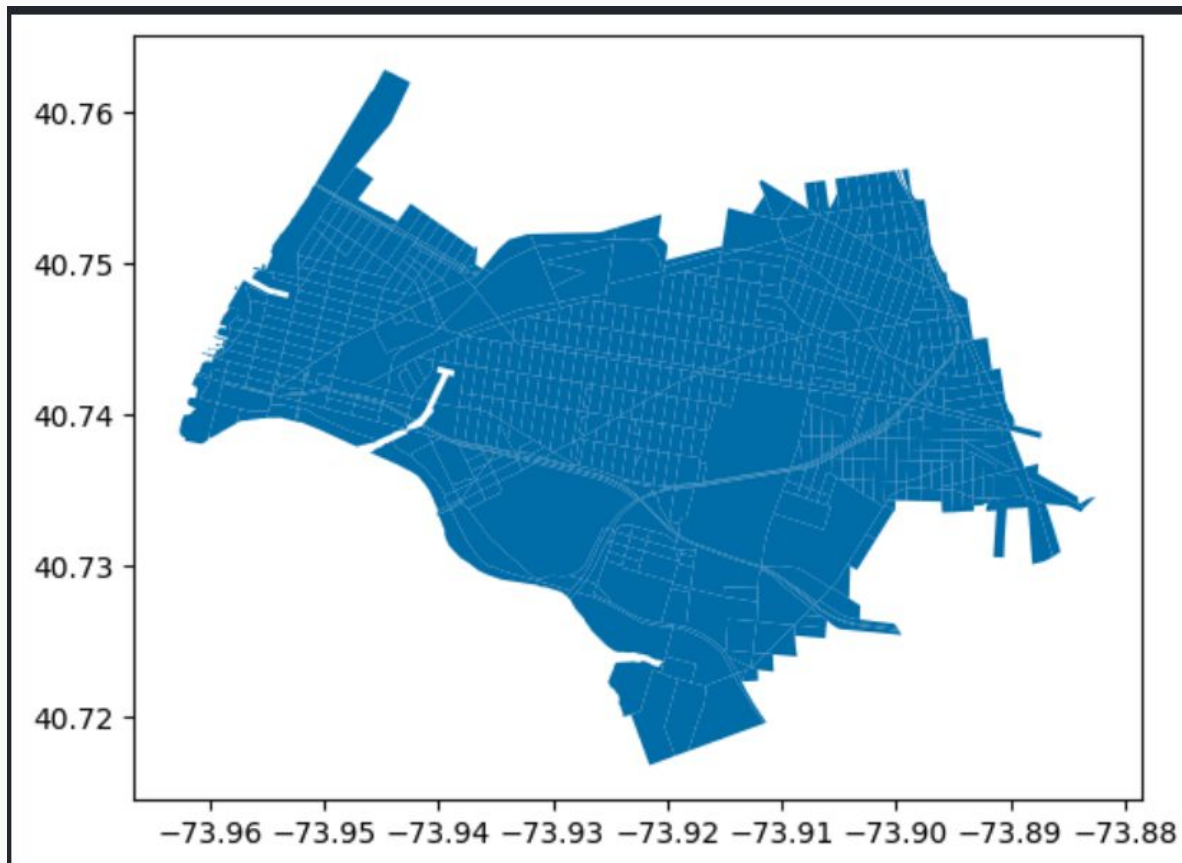
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- III. Data Aggregation
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Contextual Information

Queens Community District 2

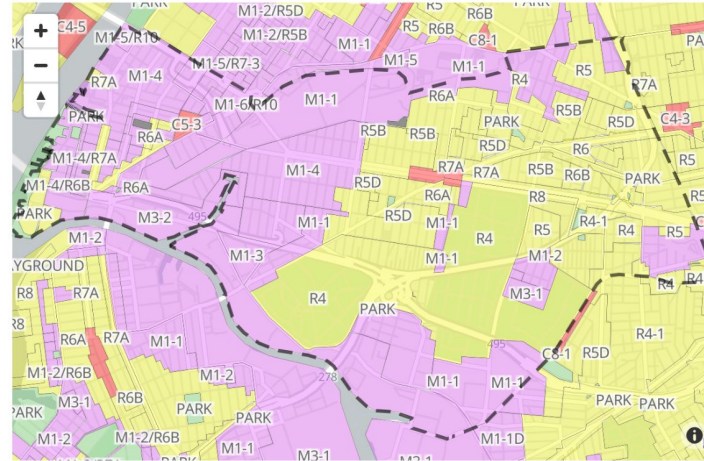
- Created by spatially joining community district and census blocks shapefiles
- More generous approach to the join that include any census blocks intersects at the boundary of community districts
- 877 census blocks included



Land Use Context

- Almost perfect 50/50 split between the manufacturing and residential in terms of land use
- Also very distinctive spatial divide in the middle between manufacturing or industrial land use area vs. the more residential neighborhood to the east of the community district

Zoning ¹



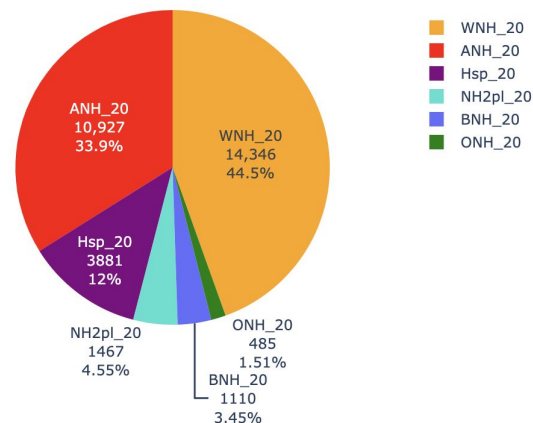
Learn more about zoning and land use in [ZoLa](#)

Figure. Screenshot from community district profiles page

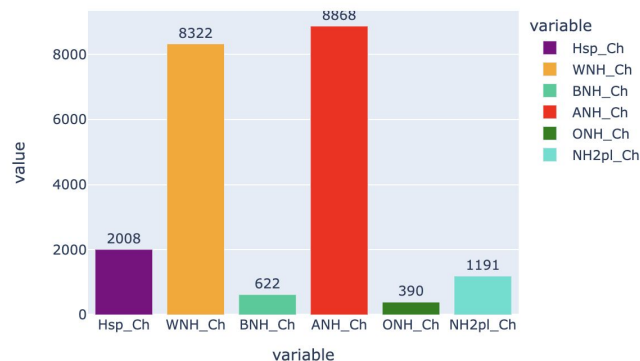
Population Context (Long Island City - Hunters Point NTA)

- All population group increases significantly over the last decade but Asian population (430%), other non-hispanic(410%), Non-Hispanic of two or more races (431%) each increase more than 4 fold.
- If looking at Asian population added 8,868 while the white non-hispanic group added 8,322

Racial Composition for NTA Long Island City-Hunters Point



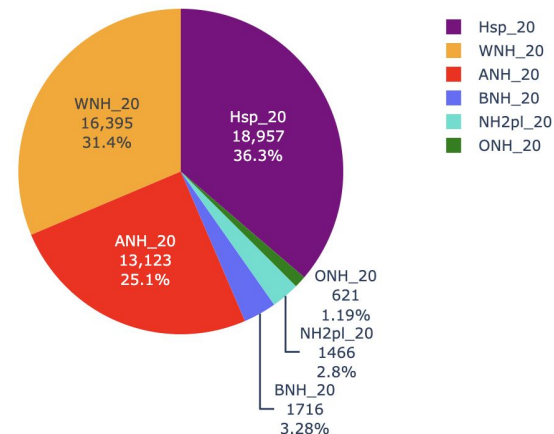
Population Change by Racial Group for NTA Long Island City-Hunt



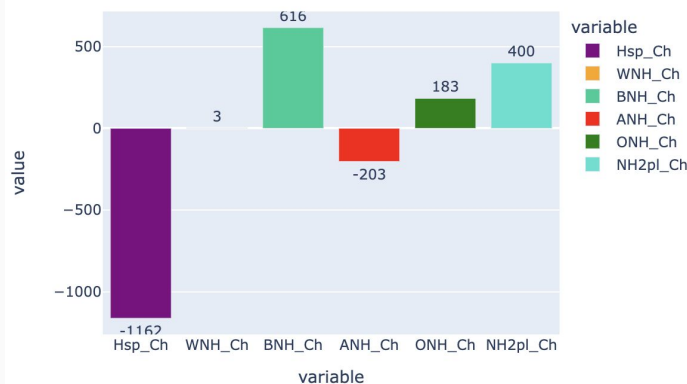
Population Context (Sunny Side NTA)

- Significant loss for Hispanic population but still the most represented group

Racial Composition for NTA Sunnyside



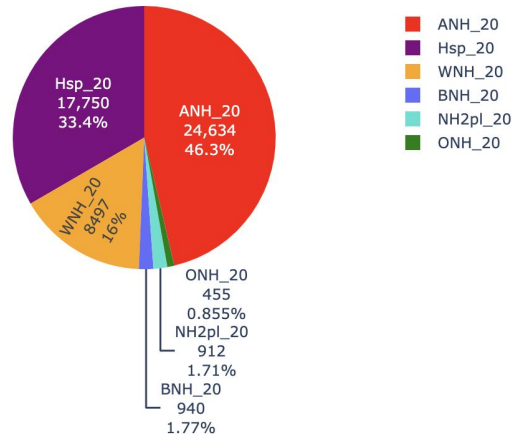
Population Change by Racial Group for NTA Sunnyside



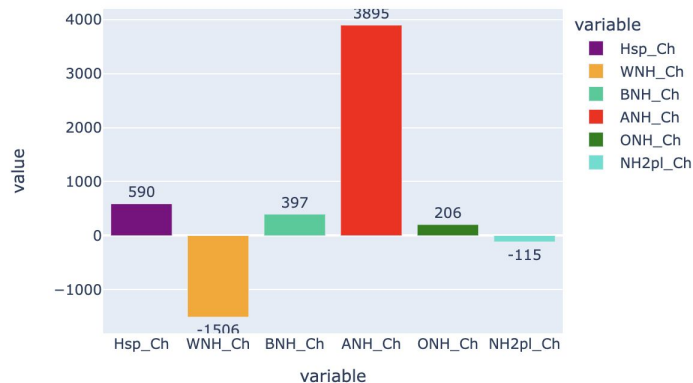
Population Context (Woodside NTA)

- Asian population continues to increase now by far the largest group and white population shrinks by 15 percent and population loss of 1,506
- Hispanic and black group also increases moderately over the last decade but

Racial Composition for NTA Woodside

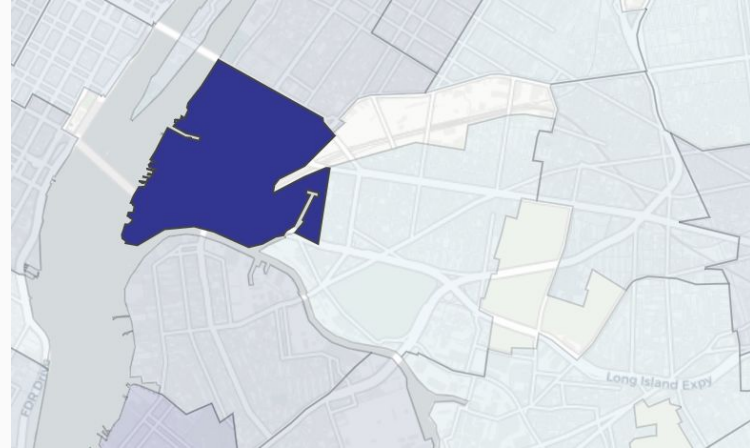
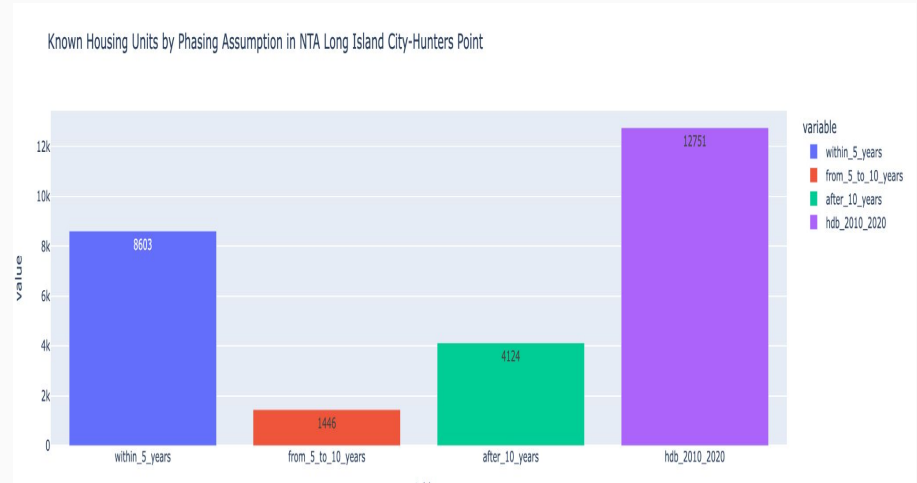


Population Change by Racial Group for NTA Woodside



Housing (Long Island City - Hunters Point NTA)

- Added 12,751 units in the last decade
- Projected to add another almost 10,000 units in the next decade
- Using [population factfinder](#) the total housing units in the CDTA (approximate CD 402) changed from 47,454 units to 60,696. It is a 27.9% increase over the last decade.



Geography area
for Long Island
City - Hunters
Point NTA

LEHD Data Exploration

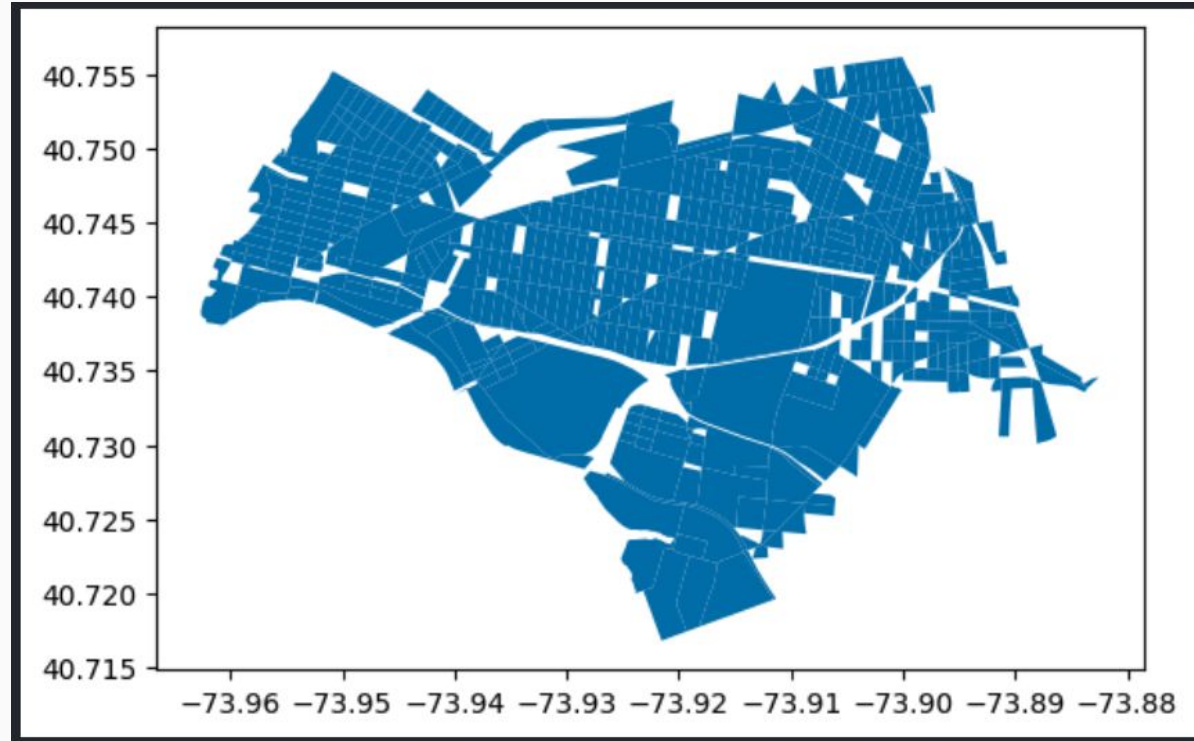
LEHD Data

- 104,520 rows of data each represents a census blocks in NYS (37.6K census blocks in New York City)
- C000 column represents the total number of jobs in each census block. It is noted the total number of jobs is at least 1. Meaning census blocks with no jobs at all is not included in the dataset.

	w_geocode	C000
count	1.045200e+05	104520.000000
mean	3.606615e+14	83.013863
std	3.273989e+11	474.875480
min	3.600100e+14	1.000000
25%	3.604702e+14	3.000000
50%	3.606502e+14	10.000000
75%	3.609106e+14	41.000000
max	3.612315e+14	44091.000000

Omitted Data LEHD

- Census tracts with no jobs reported are not included.
- 624 census tracts are included in the LEHD data



Sector Employment Summary Statistics

	CNS01	CNS02	CNS03	CNS04	CNS05	CNS06	CNS07	CNS08	CNS09	CNS10
count	624.000000	624.0	624.000000	624.000000	624.000000	624.000000	624.000000	624.000000	624.000000	624.000000
mean	0.011218	0.0	0.020833	24.964744	9.060897	10.807692	15.116987	23.887821	2.591346	4.754808
std	0.243442	0.0	0.406072	87.860180	40.338569	43.491755	97.892368	334.101873	23.034164	56.079162
min	0.000000	0.0	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25%	0.000000	0.0	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
50%	0.000000	0.0	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
75%	0.000000	0.0	0.000000	8.250000	1.000000	3.250000	4.000000	0.000000	0.000000	0.000000
max	6.000000	0.0	10.000000	1058.000000	548.000000	649.000000	1907.000000	7874.000000	467.000000	1244.000000

CNS11	CNS12	CNS13	CNS14	CNS15	CNS16	CNS17	CNS18	CNS19	CNS20
624.000000	624.000000	624.000000	624.000000	624.000000	624.000000	624.000000	624.000000	624.000000	624.000000
3.341346	5.570513	1.437500	26.189103	6.919872	12.418269	0.756410	5.985577	3.681090	23.620192
14.216413	23.082895	24.611184	356.381011	37.533463	80.948310	5.396476	14.444384	9.479008	196.226934
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1.000000	2.000000	0.000000	0.000000	0.000000	1.000000	0.000000	5.000000	3.000000	0.000000
216.000000	266.000000	600.000000	8083.000000	369.000000	1146.000000	79.000000	159.000000	96.000000	3648.000000

Census Block Level Summary Statistics

- For most of the census blocks and most sectors the number of employment numbers are zero (meaning the employment are highly concentrated)

	CNS01	CNS02	CNS03	CNS04	CNS05	CNS06	CNS07	CNS08	CNS09	CNS10
count	624.000000	624.0	624.000000	624.000000	624.000000	624.000000	624.000000	624.000000	624.000000	624.000000
mean	0.011218	0.0	0.020833	24.964744	9.060897	10.807692	15.116987	23.887821	2.591346	4.754808
std	0.243442	0.0	0.406072	87.860180	40.338569	43.491755	97.892368	334.101873	23.034164	56.079162
min	0.000000	0.0	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25%	0.000000	0.0	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
50%	0.000000	0.0	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
75%	0.000000	0.0	0.000000	8.250000	1.000000	3.250000	4.000000	0.000000	0.000000	0.000000
max	6.000000	0.0	10.000000	1058.000000	548.000000	649.000000	1907.000000	7874.000000	467.000000	1244.000000

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3.341346	5.570513	1.437500	26.189103	6.919872	12.418269	0.756410	5.985577	3.681090	23.620192	
14.216413	23.082895	24.611184	356.381011	37.533463	80.948310	5.396476	14.444384	9.479008	196.226934	
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
1.000000	2.000000	0.000000	0.000000	0.000000	1.000000	0.000000	5.000000	3.000000	0.000000	
216.000000	266.000000	600.000000	8083.000000	369.000000	1146.000000	79.000000	159.000000	96.000000	3648.000000	

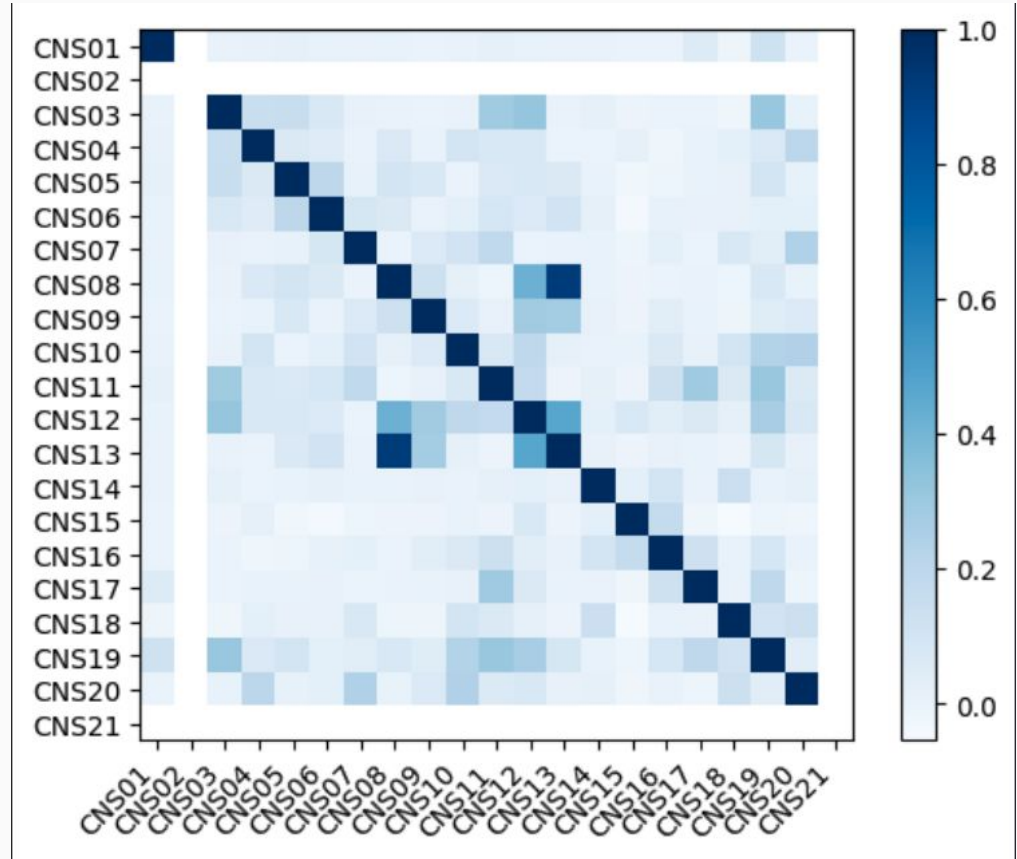
Top Three Sectors Census Block Level

- Like earlier inspection revealed, the distribution in the area is extremely sparse and uneven that is a few employment concentrated census blocks would hold most of the employment for each sector.
- CNS04 Construction is more spread out across compared to most other sector



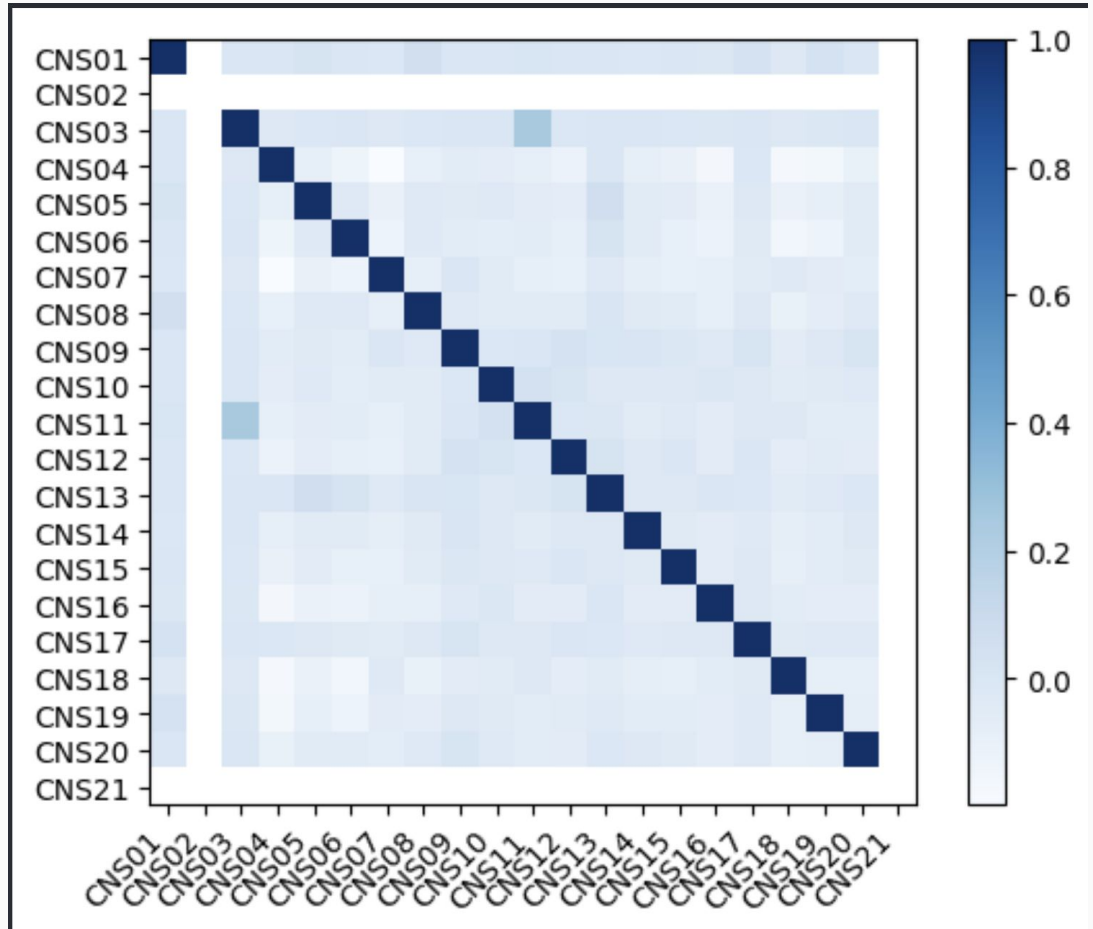
Census Block Level Sector Correlation Matrix

- If one sector employment number would have correlated with the other sector
- CNS08(Transportation and Warehousing) and CNS13(Management of Companies and Enterprises).



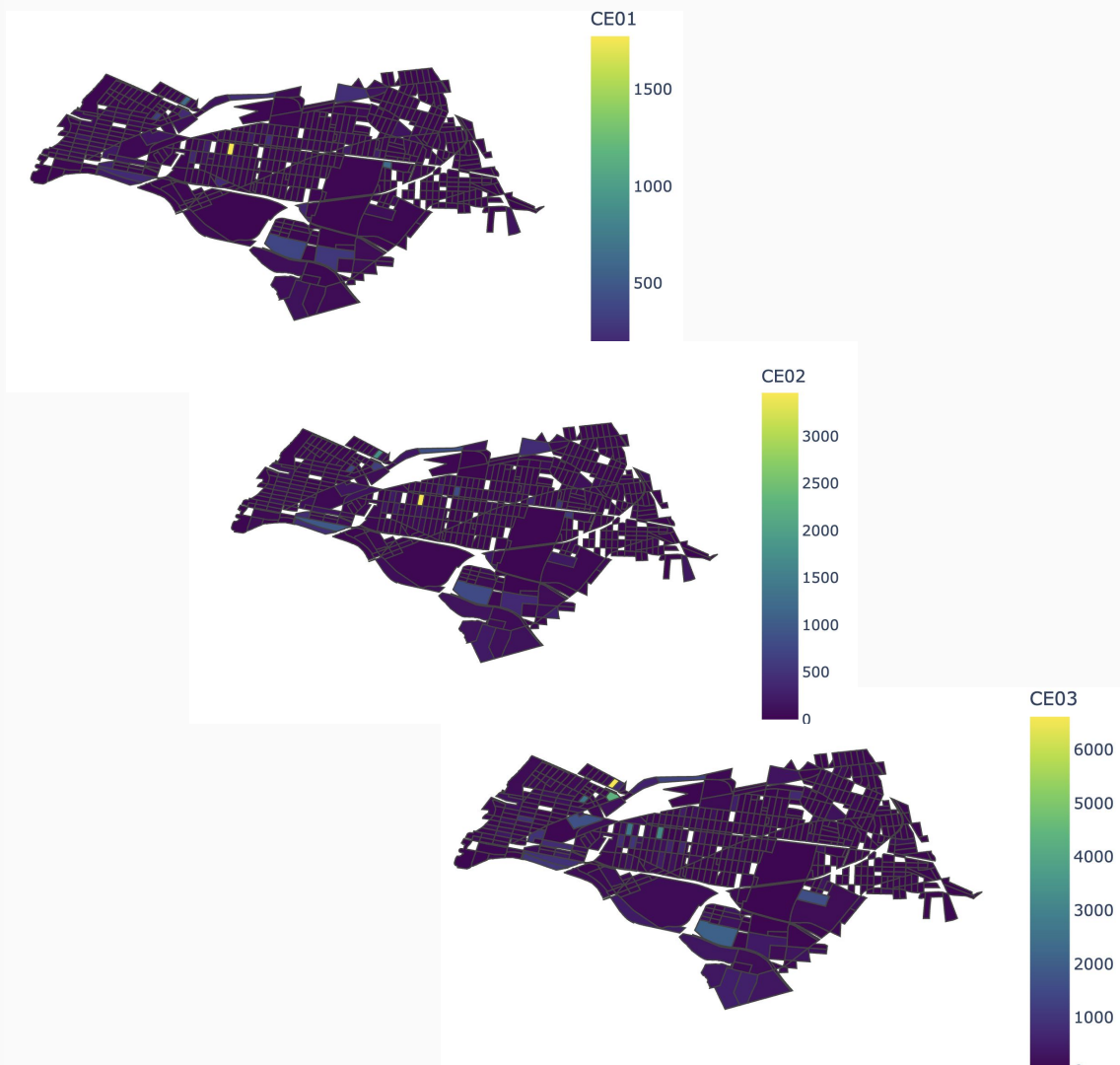
Census Block Level Sector Normalized Correlation Matrix

- All correlations seem to be gone!
- Meaning the concentration of any sectors do not seems to associate with the concentration of another sector



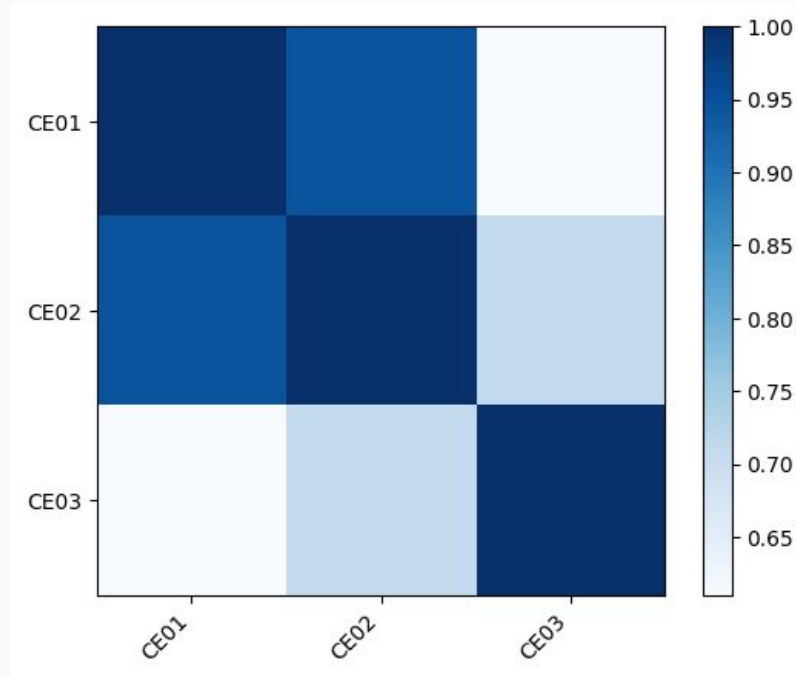
Earning levels distributions

- Same census tracts have the highest number for the < 1250 first and between 1251 and 3333 income bracket.
- Highest income bracket >3333 is more evenly distributed



Census Block Level Earning Level Number Correlation Matrix

- The lower two levels are highly correlated with .94
- Then the second and third level is still .7 correlated
- The highest level >3333 and <1250 is correlated with .6



LEHD Data Aggregation

Queens Community District 2 Sector Employment Total

NAICS Sector Code		NAICS Sector Title	Macro Sector	2021 Employment
CNS01	11	Agriculture, Forestry, Fishing and Hunting	Industrial	7
CNS02	21	Mining, Quarrying, and Oil and Gas Extraction	Industrial	0
CNS03	22	Utilities	Industrial	13
CNS04	23	Construction	Industrial	15578
CNS05	31-33	Manufacturing	Industrial	5654
CNS06	42	Wholesale Trade	Industrial	6744
CNS07	44-45	Retail Trade	Local Services	9433
CNS08	48-49	Transportation and Warehousing	Industrial	14906
CNS09	51	Information	Office	1617
CNS10	52	Finance and Insurance	Office	2967
CNS11	53	Real Estate and Rental and Leasing	Office	2085
CNS12	54	Professional, Scientific, and Technical Services	Office	3476
CNS13	55	Management of Companies and Enterprises	Office	897
CNS14	56	Administrative and Support and Waste Managemen...	Office	16342
CNS15	61	Educational Services	Institutional	4318
CNS16	62	Health Care and Social Assistance	Institutional	7749
CNS17	71	Arts, Entertainment, and Recreation	Local Services	472
CNS18	72	Accommodation and Food Services	Local Services	3735
CNS19	81	Other Services (except Public Administration)	Local Services	2297
CNS20	92	Public Administration	Public Administration	14739
CNS21	99	Unclassified	Local Services	0

Queens Community District 2 Sector Employment Total

- Industrial macro sector dominating with 4 out of top ten NAICS sector category. (#2, #3, #7, #8)
- The #1 category NAICS 56 is also a broad category that includes waste collection and other support category

NAICS Sector Code	Sector	Macro Sector	2021 Employment
CNS14 56	Administrative and Support and Waste Managemen...	Office	16342
CNS04 23	Construction	Industrial	15578
CNS08 48-49	Transportation and Warehousing	Industrial	14906
CNS20 92	Public Administration	Public Administration	14739
CNS07 44-45	Retail Trade	Local Services	9433
CNS16 62	Health Care and Social Assistance	Institutional	7749
CNS06 42	Wholesale Trade	Industrial	6744
CNS05 31-33	Manufacturing	Industrial	5654
CNS15 61	Educational Services	Institutional	4318
CNS18 72	Accommodation and Food Services	Local Services	3735
CNS12 54	Professional, Scientific, and Technical Services	Office	3476
CNS10 52	Finance and Insurance	Office	2967
CNS19 81	Other Services (except Public Administration)	Local Services	2297
CNS11 53	Real Estate and Rental and Leasing	Office	2085
CNS09 51	Information	Office	1617
CNS13 55	Management of Companies and Enterprises	Office	897
CNS17 71	Arts, Entertainment, and Recreation	Local Services	472
CNS03 22	Utilities	Industrial	13
CNS01 11	Agriculture, Forestry, Fishing and Hunting	Industrial	7
CNS02 21	Mining, Quarrying, and Oil and Gas Extraction	Industrial	0
CNS21 99	Unclassified	Local Services	0

Queens Community District 2 Macro Sector Total

Sector	2021 Employment
Industrial	42902
Institutional	12067
Local Services	15937
Office	27384
Public Administration	14739
Total	113029

Next Steps?

Income

- Spending patterns and employment patterns are they correlated? People earn more spends more in their working area? (using MasterCard or other transaction data to figure out)
- How earner distribution have other effects on the economic development in the area? Higher rent?
- What is the degree and factor of these impacts (regression analysis)

Demographics

- What other demographic changes other than race group are interesting to be looked at e.g. household size.