

Final Presentation

Track E Team 9

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What is the goal of the project?

Overarching Research Question: Do neighborhood features such as population health and social interaction patterns have an impact on COVID-19 outcomes in NYC?

1. Is there a correlation between general community health patterns and COVID-19 outcomes?
2. Is there a correlation between geographic mobility pattern and COVID-19 outcomes?

We would like to look into COVID-19 outcome from two perspectives:

- Population Health
- Social Interaction

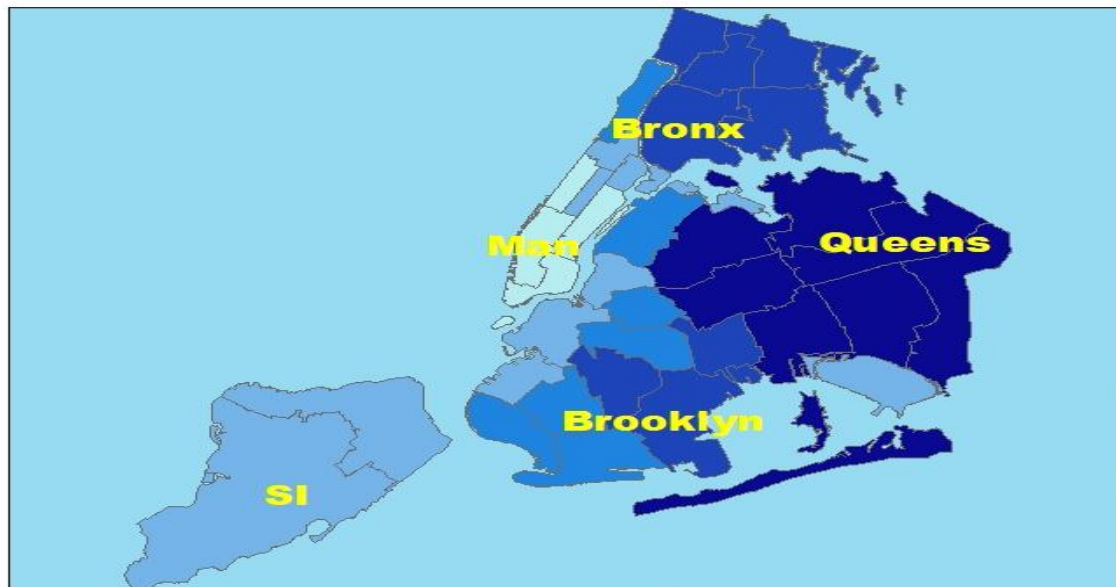
Datasets Used and Limitations

- NYC DOHMH Coronavirus (COVID-19) data
- **Pros:** Has #Positives, #Deaths, and geography resources
- **Limits:** Uses ModZCTA, and only in #tested



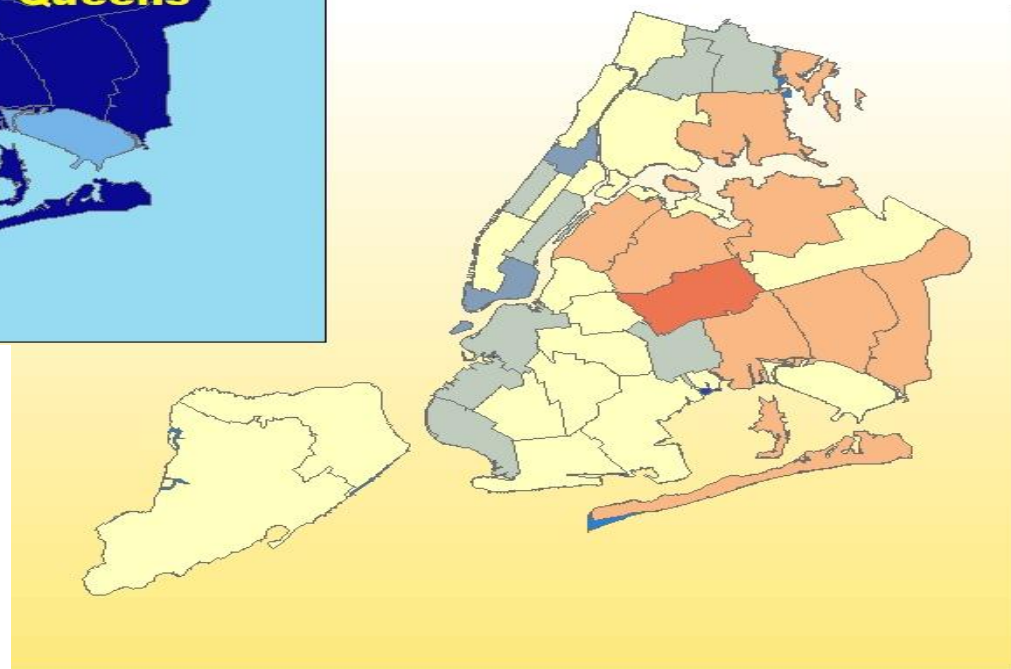
- NYC Community Health Survey Data
- **Pros:** Comprehensive data on resident's health
- **Limits:** Neighborhood data requires email, data requires cleaning, and geo-analysis ready data sets are old.

Community Health Patterns vs. COVID-19 Result



Summary of OLS Results - Model Variables

Variable	Coefficient [a]	StdError	t-Statistic	Probability [b]	Robust_SE	Robust_t	Robust_Pr [b]	VIF [c]
Intercept	0.380065	0.032345	11.750254	0.000000*	0.016653	22.822434	0.000000*	-----
ASTHEV2	0.003642	0.002052	1.774825	0.087635	0.001687	2.159133	0.040246*	2.585748
BPHIGH2	0.003173	0.001468	2.160791	0.040105*	0.001732	1.832143	0.078407	3.496815
DIABET2	-0.000524	0.002641	-0.198509	0.844192	0.002733	-0.191835	0.849363	2.726674
EXERCS2	-0.000493	0.000577	-0.852961	0.401472	0.000548	-0.898794	0.377013	1.962191
HIVTES3	-0.000745	0.000753	-0.988851	0.331851	0.000368	-2.020396	0.053755	3.003863
INSURE5	0.001349	0.001370	0.984471	0.333959	0.001137	1.186206	0.246269	2.183935
RDRINK2	-0.004073	0.001405	-2.899880	0.007496*	0.000863	-4.718869	0.000070*	1.858673
RSMOKE3	-0.001768	0.001473	-1.200244	0.240867	0.001405	-1.258576	0.219368	1.565848



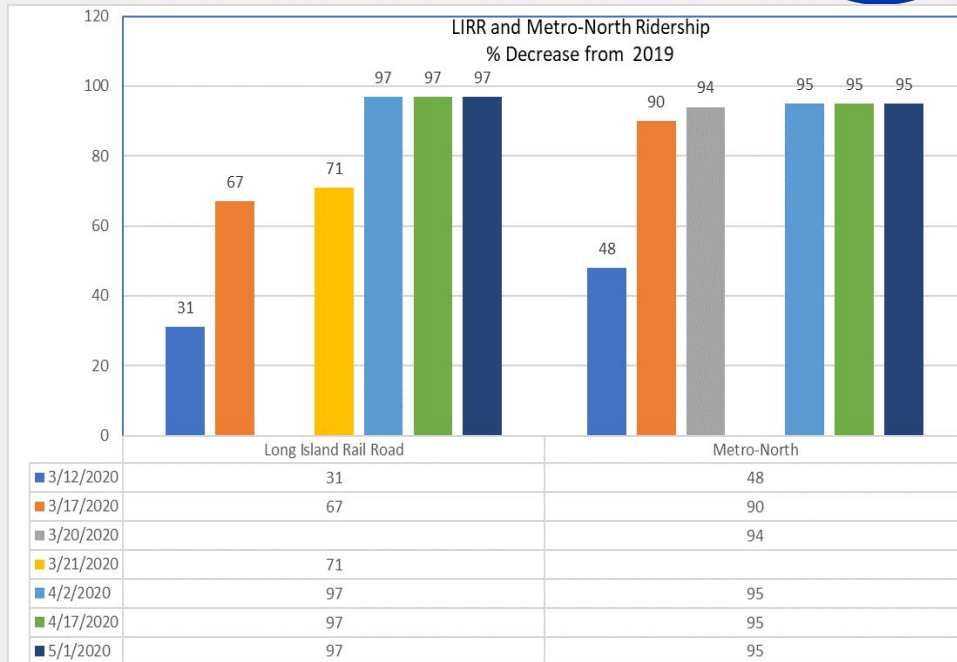
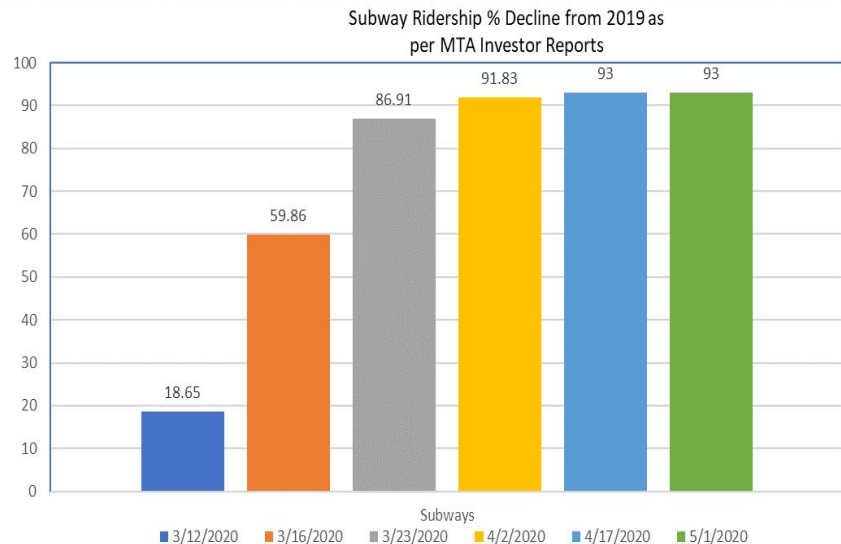
Datasets Used and Limitations

- MTA Investor Information
- **Pros:** Contains information on MTA ridership decline
- **Limits:** Data in PDF, inconsistent reporting
- MTA Turnstiles Data
- **Pros:** Shows traffic by location at regular intervals
- **Limits:** Requires cleaning before use
- NYC DOHMH Coronavirus (COVID-19) data
- **Pros:** Has #Positives, #Deaths, and geography resources
- **Limits:** Uses ModZCTA





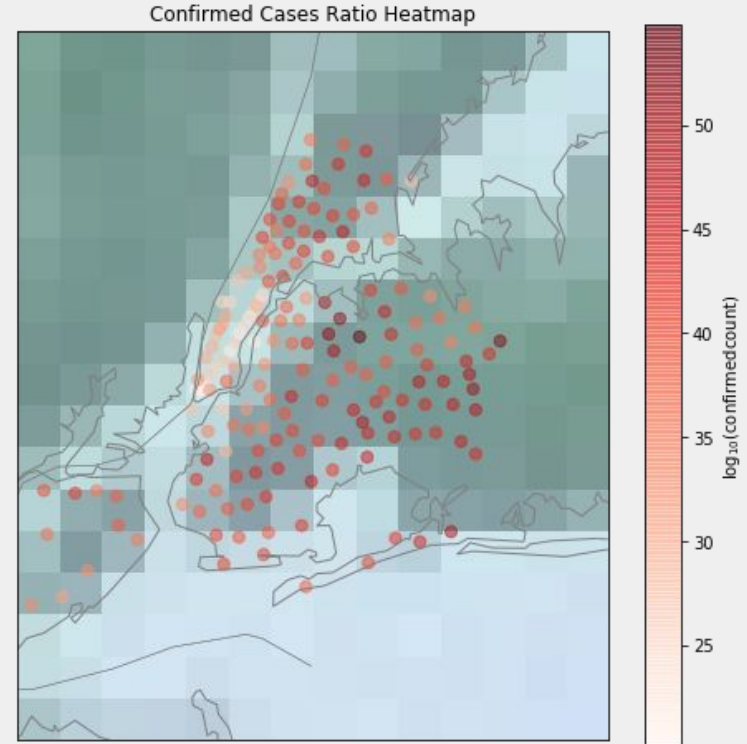
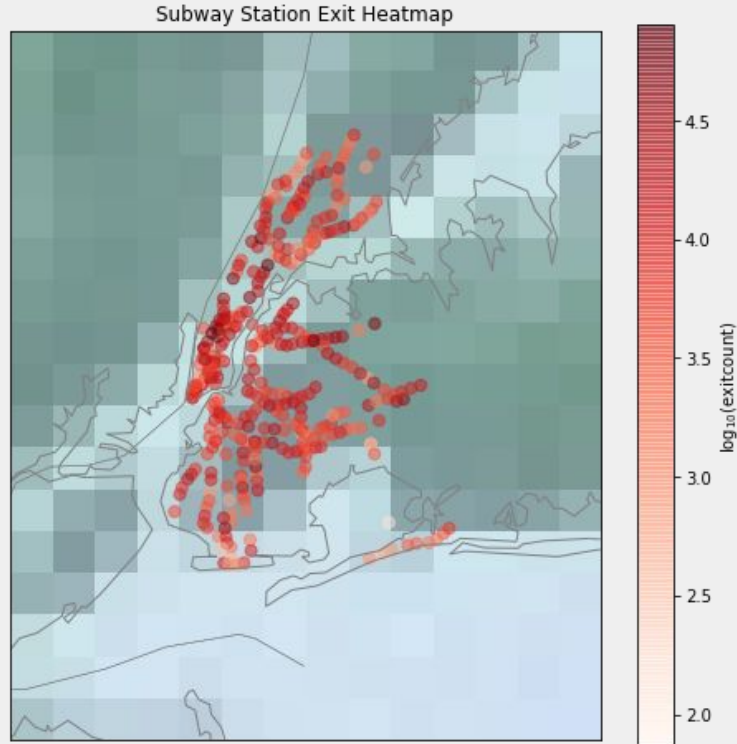
Covid Subway and Rail Ridership Impact



*From MTA Investor Information website

http://web.mta.info/mta/investor/index_new.html

Subway Turnstile Entries vs. COVID-19 Visualization



Subway Turnstile Entries vs. COVID-19 Regression

Dependent Variable:	Positive cases in Zip code area		
	(1)	(2)	(3)
	Pooled OLS	SEM w/ FE	SEM w/ RE
#turnstile in Zip	-0.0002	-0.002***	-0.0003
#totalcase in NYC	0.003***	0.001***	0.001***
#turnstile * #totalcase	-9x10 ⁻⁸	2.31x10 ⁻⁸	6x10 ⁻⁸ **
Intercept	-11.642***	1.296	-6.78**
Lambda		0.76***	0.76***
N	4,104	4,104	4,104
R-sq	0.1318	0.0576	0.1279
* p<0.10, ** p<0.05, *** p<0.01			

General Timeline

