IC^{2}S^2 2018 Submission: Insert Title Here

4^{th} International Conference on Computational Social Science IC^{2}S^2
July 12-15, 2018
Northwestern University's Kellogg School of Management
Evanston, IL. USA

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keywords: please provide 5 keywords that describe your work

1 Extended Abstract

Ride-hailing services, such as Uber and Lyft, are disrupting the transportation system worldwide having a pronounced impact on people's usage patterns. In 2016, Subway ridership in New York declined for the first time in years and ride-hailing services became the leading source of growth in non-auto travel [5]. However, there are mixed results about the relationship between ride-hailing services and public transportation. For example, a Pew study suggests that ride-hailing is complementary to public transit and walking , while current evidence suggests that ride-hailing is pulling more people away from public transit in cities [2]. One thing is clear, ride-hailing is changing the way we move in cities.

In this paper, we study the effects of ride-hailing on health related issues, particularly, flu-related Illness. There is evidence suggesting that public transportation is important in the propagation of influenza-like illness in winter [7, 3]. Based on these results, we hypothesize that a change on how people commute, as a consequence of ride-hailing services, can have an effect on the contagious levels of influenza in the population. Here, we present one of the first quantitative explorations of the relationship between ride-hailing services and health. We exploit the fact that UberX, the first and most popular ride-hailing platform, was introduced all over the US spread over time and space (see Figure 1). Thus, providing us with an excellent natural experiment setting to identify its impact.

Unfortunately, weekly US Influenza Surveillance reports are aggregated at a state level and to our knowledge there is no other source that provides finer granularity levels. However, we can rely on Google Flu Trends as a proxy to measure flu-related Illness at a city level. Google Flu Trends utilizes internet search queries to detect the presence of influenza like illness and has been use effectively for Influenza forecasting [8, 4].

Similar to Berger et al's. paper [1], where Uber's impact on unemployment was studied, we use a difference-in-differences approach to compare changes in the influenza levels in U.S. cities before and after UberX and UberPool introduction. Our baseline regression model is

$$y_{it} = city_i + year_t + month_t + \alpha Uber_{it} + \beta Pool_{it} + \gamma X_{it} + \varepsilon_{it},$$

where y_{it} is flu estimate for city i and month t; fixed effects variables $city_i$, $year_t$ and $month_t$ account, respectively, for time-invariant differences in city baseline levels, city-invariant US

yearly pandemic levels, and the seasonality nature of flu. $Uber_{it}$ and $Pool_{it}$ take the form of a dummy variable representing if UberX and UberPool services are present in city i and month t; X_{it} are time varying and city characteristics to control for weather data such as monthly min and max temperatures and monthly precipitation.

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2 Figure(s)

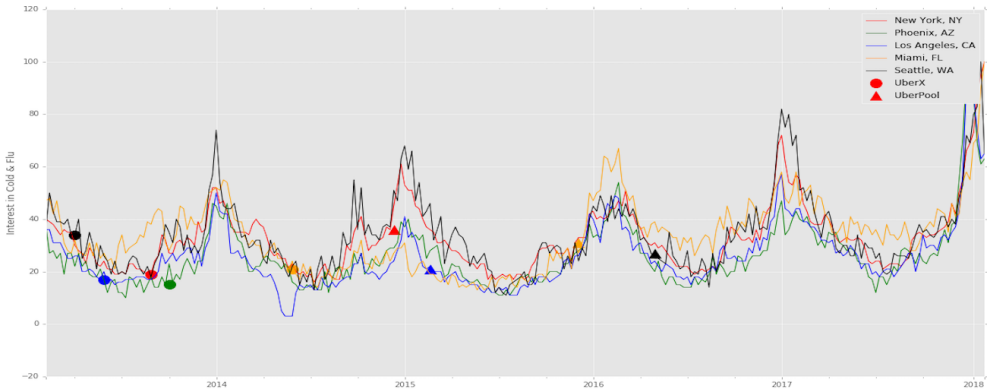

Figure 1: Google monthly Flu trends over time for various cities. Circle and triangle marks identify the time when UberX and UberPool were introduced for each city, respectively.