

# ARE UBER PASSENGERS CHANGING TO BIKE?

## EVIDENCE FROM A NATURAL EXPERIMENT

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### Research goals

1. Understanding how people are combining new and emerging travel options
2. Getting a broader and deeper picture about intermodal transportation in cities

### Research gap identification

#### DETERMINANTS OF BICYCLE SHARING (BSS) USAGE

- Weather (Gebhart and Noland, 2014)
- Built environment (Wang et al., 2016)
- Bicycle infrastructure (Mateo-Babiano et al., 2016)
- Socio-economic variables (Ricci, 2015)
- Convenience (Fernandez-Heredia et al., 2016)
- Flexibility (Fernandez-Heredia et al., 2016)
- Price (Goodman and Cheshire, 2014; Lin et al., 2017)

#### CROSS IMPACTS OF BSS

- Public bus and BSS (Campbell and Brakewood, 2017): substitution in New York
- Lack of studies analyzing the cross impacts of other transportation modes

#### IMPACTS OF UBER

- Decline in cab usage (protests)
- Positive impact on public transport ridership (Hall et al., 2017)
- Lack of studies analyzing the impact of Uber on BSS

Uber and bicycle sharing services are complements or substitutes?

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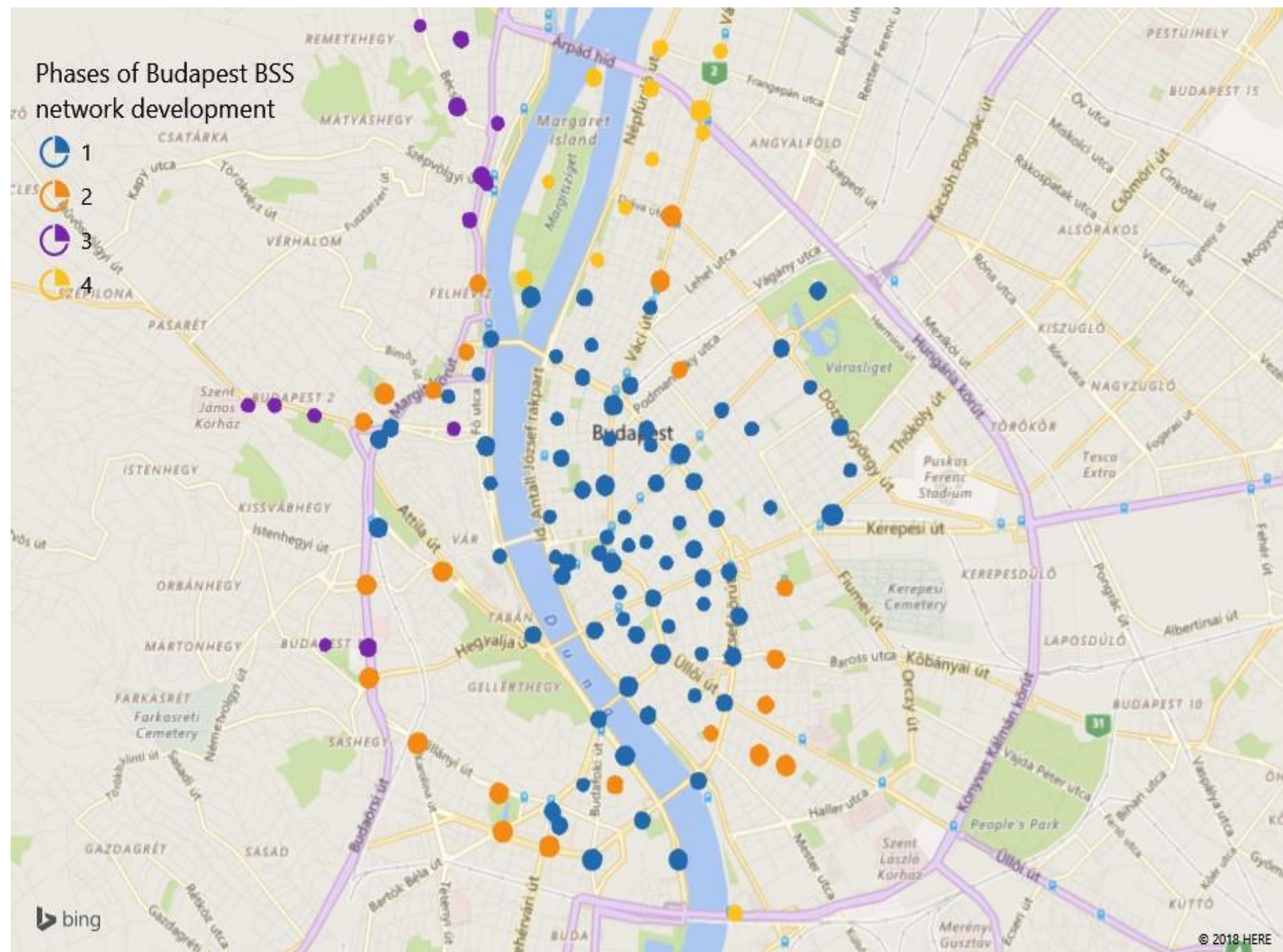


- Start-up company providing taxi-like transportation services worldwide
- Entered to the Budapest market in November 12, 2014
- Quit the market in July 24, 2016

- The Budapest bicycle sharing system was launched in 2014
- The system expanded continuously and reached 124 stations in August 2017

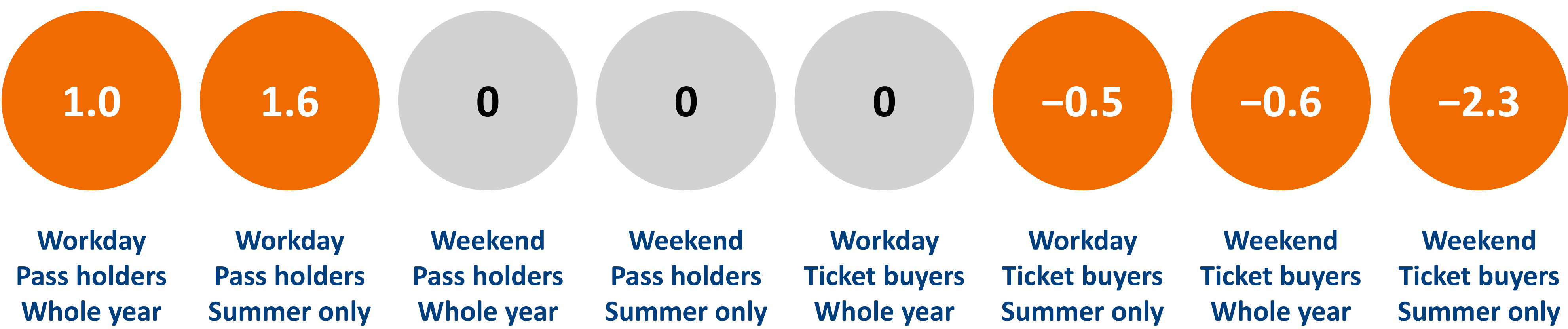
#### METHODOLOGY

- BSS trip data were aggregated for daily frequency
- Uber dummy variable
- Controls: temperature, wind speed, precipitation, network size
- Fixed effect panel model on the differences of 2015 and 2016
- Subsamples:
  - Ticket type: ticket or pass
  - Day type: workday or weekend
  - Time horizon: whole year or summer only



### Results and implications

The presence of Uber increased BSS usage per station per day



The elimination of Uber caused around 10% decrease in BSS usage during workdays

The elimination of Uber increased ad hoc usage of BSS significantly during weekends

In general, Uber positively impacted BSS usage (preference for intermodal transportation)

The presence of Uber can positively impact the environment and city pollution

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