

# Learning from the economists: Using an elasticity analysis to assess changes in screen-time in response to a temporary “pop-up” park in California

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# Acknowledgements

## Investigators

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## Interns

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## Participants and Partners

- Participants (State St. Green visitors & downtown Los Altos businesses)
  - Marcia Somers, Los Altos, CA City Manager
  - Brook Ray Smith, Passerelle Investments

# Outline

1. Background & gaps in the literature
2. City of Los Altos: the transformation of State Street
3. Study aims
4. Methods
5. Results
6. Impact of our study
7. Conclusions



# Background

- Park availability is associated with:
  - *Leisure-time physical activity*
  - *Quality of life*
  - *Community engagement*
  - *Social interaction*
  
- Competing land-use interests
  
- Natural experiments → research priority to establish causal relationship

# Gaps in the Literature

1. Pop-up parks have not been studied
2. Does the creation of parks in urban spaces (e.g. streets) affect businesses?
3. Do residents and businesses support the creation of parks in urban spaces?
4. Does park availability change time-allocation patterns?

# Los Altos, CA

- Small-sized city on the San Francisco Peninsula
  - Population: 28,976



Growth



Construction



Street  
Closures



# State Street

- During the summer of 2013, a block of State Street was closed due to construction





# State Street

- A local investment group partnered with the city of Los Altos to create a pop-up park in the street-block closed due to construction





# Structured activities, equipment and infrastructure



**Equipped with:** astro-turf; lawn chairs, tables and umbrellas; large lamps; chalkboards; play equipment; skate-park; supervised activities; structured events (park area=4930 m<sup>2</sup> )

# Study aims

- 1) Quantify **park use** for State Street Green pop-up park
- 2) Obtain information on **user's perception** about the park
  - Why do people use the park?
- 3) Investigate if park presence affects (positively or negatively) **local businesses**
- 4) Evaluate if park-presence led to **changes in time-allocation patterns** among users

# Aim 1: Quantify park use for State Street Green pop-up park

- **Method:** Direct Observation
- **System for Observing Play and Recreation in Communities (SOPARC)**
  - 14 times per day (hourly from 7AM to 8PM)
  - 4 randomly selected days (2 weekdays, 1 Saturday, 1 Sunday)
- **Park segments observed:**
  - Green space
  - Skate park



# Aim 1: Results

Park Segment	Age group	%
<b>Green Space</b> (n=1,716)	Children	40
	Teens	4
	Adults	49
	Older Adults	7
<b>Skate Park</b> (n=54)	Children	54
	Teens	35
	Adults	11



- 21% of green space users engaged in MVPA
- 36% of skate-park users engaged in MVPA



## **Aim 2: Obtain information on user's perception about the park**

- **Method:** User surveys (n=147)
  - Response rate=98.5%
  
- Surveys administered
  - 7 AM to 8 PM on 2 weekdays & 2 weekends
  
- **Information obtained included:**
  - Demographics
  - Time of day
  - Reason & duration of park-use
  - Park support
  - Alternate activities

# Aim 2: Results

Reason for park use	% (n=147)
Eat/drink at local business	33
Socialize	17
Active leisure (e.g. play)	15
Sedentary leisure (e.g. read)	14
Spend time outside	6
Attend organized events	5
Curiosity	3
Work	2

Reasons are not mutually exclusive.



## **Aim 3: Investigate if park presence affects local businesses**

### **Methods:**

- Business **surveys** (n=95); Response Rate=100%
  - Changes on sales
  - Changes on foot traffic
- Walking distance to park (**GIS**: pedestrian-enhanced street network)
- **Regression models** → association between distance to park and change in sales & foot traffic

# Aim 3: Results

CHANGES IN SALES	% (n=147)
↓	26
↑	10
=	61
No response	4

- No significant association between distance from business to the pop-up park and sales or foot-traffic ( $p > 0.25$ )

## **Aim 4: Evaluate if park-presence led to changes in time-allocation patterns among users**

### ➤ **Method:** Cross-elasticity analysis

- **Cross-elasticity:** Change in demand of an item given an increase in price of another item



Can be used to understand changes in time-allocation patterns in relation to built environmental changes

# Aim 4: Evaluate if park-presence has led to changes in time-allocation patterns among users

- User survey data
- Alternate activities (binary):
  - Screen-time vs. non screen-time
  - Park-time vs. time elsewhere
  - Downtown-time vs. time elsewhere
  - Outdoor-time vs. time indoors
- Obtained cross-elasticity estimates using multivariate linear regression models
  - Adjusted for sex and age

# Aim 4: Results

If pop-up park weren't there, at time of survey...

- **65%** would **not be spending time outdoors**
- **34%** would be **in front of a screen**
- **59%** would **not be in downtown Los Altos**
- **Only 16%** would be **at another park**

# Aim 4: Results

<b>Alternate Activities</b>	<b>Cross-Elasticity Estimates</b>	<b>95 % C.I.</b>
<i>Activities in which pop-up park users would be engaged in if park was not present</i>	<i>Minutes gained or lost due to park presence</i>	
<b>Being Outdoors</b> <i>(ref: indoor time)</i>	<b>+ 76</b>	<b>(58, 94)</b>
<b>Being in downtown Los Altos</b> <i>(ref: time spent elsewhere)</i>	<b>+ 89</b>	<b>(72, 105)</b>
<b>At a park</b> <i>(ref: time spent elsewhere)</i>	<b>+ 72</b>	<b>(47, 97)</b>
<b>In front of a screen</b> <i>(ref: time spent elsewhere)</i>	<b>- 77</b>	<b>(-104, - 51)</b>



# Impact

- Our evaluation of the pop-up park of downtown Los Altos has generated interest from the **City of Los Altos management**, as well as **private investment** groups
- **January 2014**: Meeting with Los Altos City Manager and staff
- **January 2014**: Meeting with Community Development Director of Passarelle Investments
- **March 25, 2014**: Presentation of our results at the next Los Altos City Council Meeting

# Conclusions

- Our study provides valuable evidence supporting the **creation of parks and open spaces** in urban areas
- This pop-up park can serve as a **model for communities facing similar circumstances** related to road-closures due to construction
- The presence of public recreation spaces in urban areas may have benefits beyond health behaviors → **revitalization of downtown shopping districts**
- These potential benefits should be further explored, as they are **more likely to influence the decisions of stakeholders** for the creation of parks than health-related benefits

# Thank you!

“Love this! A whole block in downtown Los Altos closed off to traffic for the summer, and covered over with fake grass and super cool furniture. There are frequent family-friendly events and it's the perfect way to enjoy the warm weather.”

***Yelp review***

