Airbnb

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J. Beltran, C. Chun, J. Deely, J. Teng

Literature

- Geron, T. (2012). Airbnb had \$56 million impact on San Francisco: Study. Forbes.
 http://www.forbes.com/sites/tomiogeron/2012/11/09/study-airbnb-had-56-million-impact-on- san-francisco/
- 2. Tussyadiah, Iis P. "An exploratory study on drivers and deterrents of collaborative consumption in travel." *Information and Communication Technologies in Tourism 2015*. Springer International Publishing, 2015. 817-830.
- Zervas, Georgios and Proserpio, Davide and Byers, John, The Rise of the Sharing Economy: Estimating the Impact of Airbnb on the Hotel Industry (June 9, 2016). Boston U. School of Management Research Paper No. 2013-16.
 Available at SSRN: http://ssrn.com/abstract=2366898 or http://ssrn.com/abstract=2366898 or http://dx.doi.org/10.2139/ssrn.2366898
- 4. (1)http://www.nytimes.com/2014/03/12/realestate/commercial/not-quite-hotel-units-where-late-checkouts-are-encoura ged.html

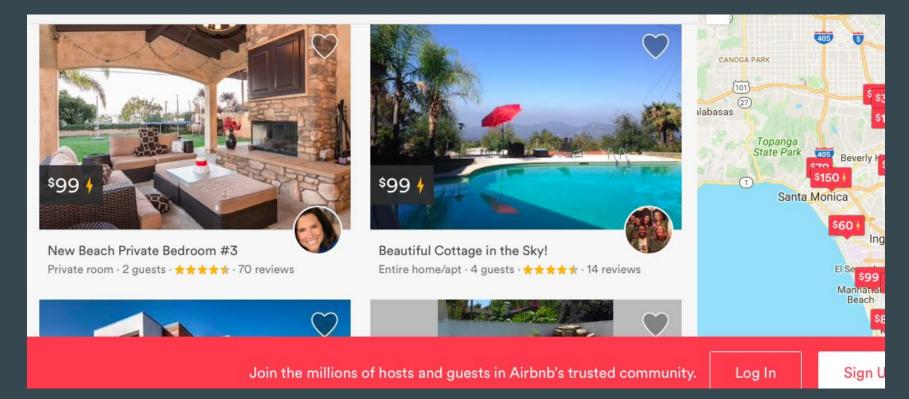
Literature: Key Points

- Airbnb supply affects hotel revenue
 - a) Lower price hotels see most competition
 - b) Even small losses could prove significant for hotels
- Attitudes matter...
 - a) Economic benefits
 - b) Consumption practices
 - c) Facilitation of community networks
- 3) Supplemental income

Questions

- 1. What role does Airbnb assume within the marketplace?
 - a. Complementary?
 - b. Competitive?
- 2. Do trends persist across location

Scraping Cities Data



Scraping Cities Data



Laurie

New Beach Private Bedroom #3

Manhattan Beach, CA, United States ⋅★★★★★ ▼ 70 reviews



Private room



2 Guests



1 Be

About this listing

Beautiful PSU Bedroom/Huge Shared Bath in 3.2 Million Safe Neighborhood Home! Live like a millionaire! Xmas Fireworks Dec 14! "Chill" till Dec 20! Only 12 blocks to sand/beach, bars & restaurants. FREE: Wifi, Parking & Continental Breakfast!

Contact Host

The Space

Accommodates: 2

Bathrooms: 1
Bed type: Real Bed

Bedrooms: 1 Beds: 1

House Rules

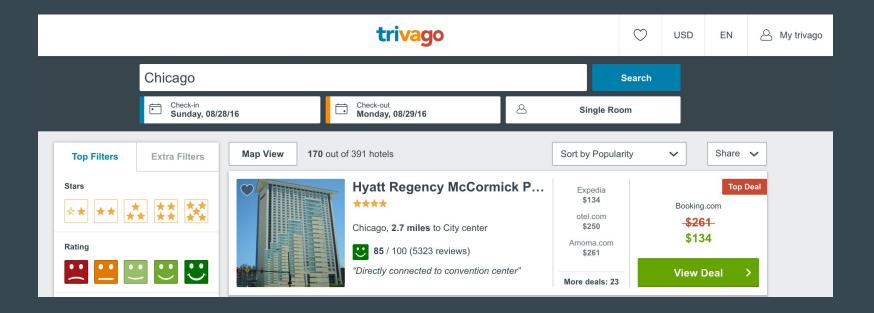
Check In: Anytime after 4PM

Check Out: 11AM

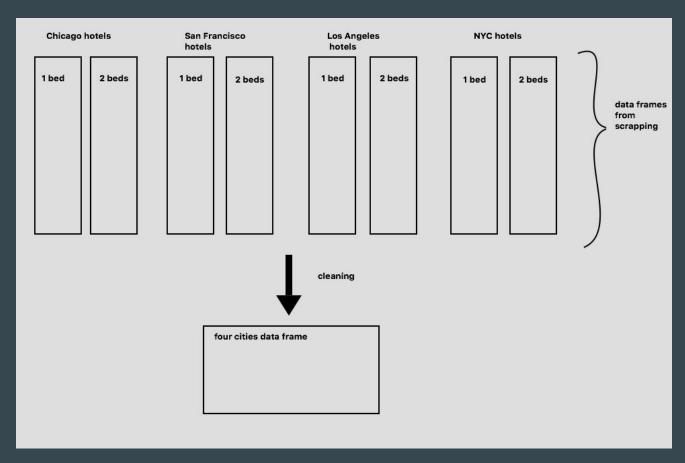
Pet Owner: Dog(s) and Cat(s)

Property type: House
Room type: Private room

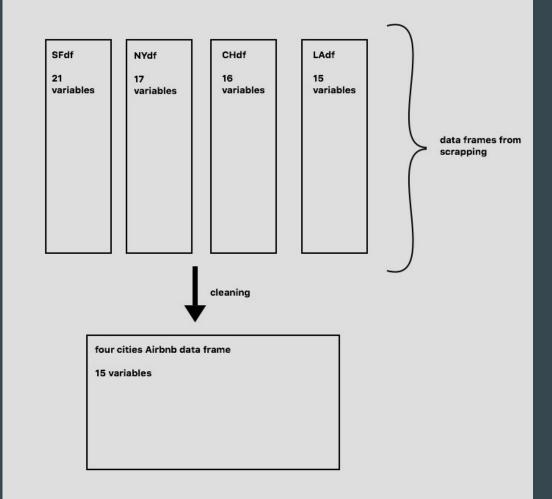
Scraping Hotel Data



Cleaning: hotels



Cleaning: cities



Cleaning: the data frames

cities_df ×	extract the "(midnight)" part						
00 2	▽ Filter						
Bathrooms [‡]	Bedrooms ‡	Beds ‡	Check.In	Check.Out ‡	Property.type [‡]	Room.type *	
1 (Shared)	1	1	Flexible	11AM	House	Private room	
1	1	1	3PM - 12AM (midnight)	11AM	Apartment	Entire home/apt	
1 (Shared)	1	4	NA	NA	Tent	Private room	
1 (Private)	1	2	Anytime after 2PM	10AM	Apartment	Entire home/apt	
1	3	5	Anytime after 2PM	12PM (noon)	House	Entire home/apt	
1 (Private)	1	1	Anytime after 3PM	10AM	House	Private room	
0	1	1	NA	NA	House	Private room	
1	1	1	Anytime after 3PM	12PM (noon)	Apartment	Entire home/apt	
1 roplace h	NA's with	1	Anytime after 3PM	12PM (noon)	House	Private room	
1 "unspeci		1	Anytime after 6PM	9AM	House	Private room	
1	A	1	Anytime after 3PM	11AM	Apartment	Entire home/apt	
1	1	\ ₃	Anytime after 3PM	10AM	House	Entire home/apt	
1	1	1	NA	NA	Apartment	Private room	
0	1	1	Anytime after 3PM	11AM	Apartment	Private room	
1 (Private)	0	1	Anytime after 2PM	12PM (noon)	Apartment	Entire home/apt	
1 (Private)	1	1	Anytime after 2PM	11AM	Apartment	Private room	
1 (Private)	0	1	4PM - 10PM	12PM (noon)	Apartment	Entire home/apt	
1	1	1	Anytime after 4PM	1PM	Apartme@reate	eduby nBainstot	

Cleaning: check in / check out times

Conversion of times saved as character strings into numeric scale of 0-24 hours:

Check.In	Check.Out	Che	ck.In ‡	Check.Out ‡
ЗРМ	12PM		15	12
ЗРМ	11AM		15	11
ЗРМ	11AM		15	11
2PM	10AM		14	10
2PM	12PM		14	12
ЗРМ	10AM		15	10
ЗРМ	12PM		15	12
3РМ	12PM		15	12

Figure 1

- Relative SDs (Airbnb/ Hotels)...
 - o Chicago: 0.4736/ 0.5784
 - o Los Angeles: 1.1712/ 0.4705
 - o New York: 0.7235/ 0.5184
 - o San Francisco: 0.4258/ 0.7038
- Total Relative SD...
 - o Airbnb: 0.7762
 - Hotels: 0.6098

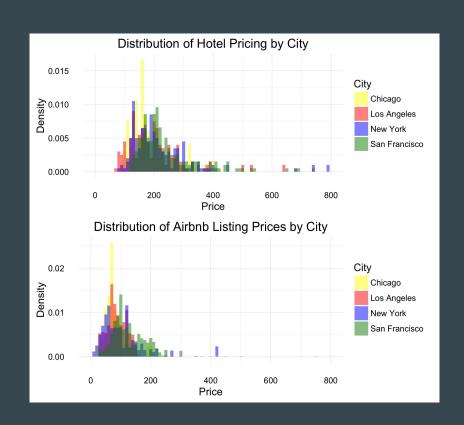


Figure 2

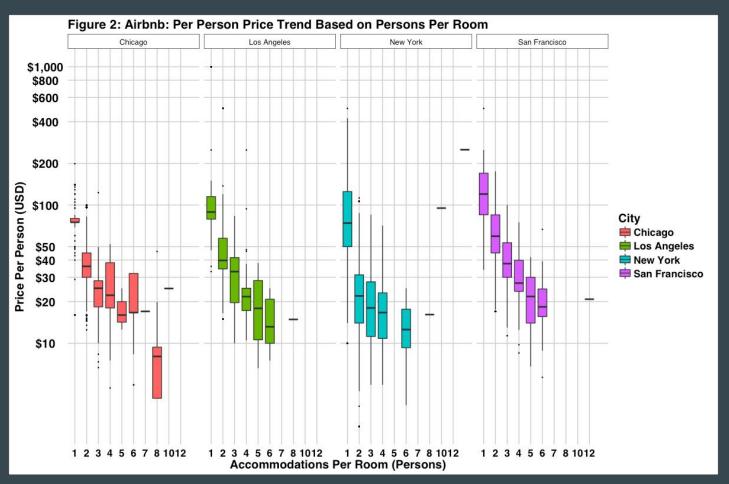


Figure 3: motivation

Hotel industry

- a) Residential hotels
- b) Discounted rate
- c) What about Airbnb?
 - i) Do discounts exist?
 - ii) Degree of discount?
 - iii) Comparison across LA, SF, NYC, Chicago

Figure 3: results

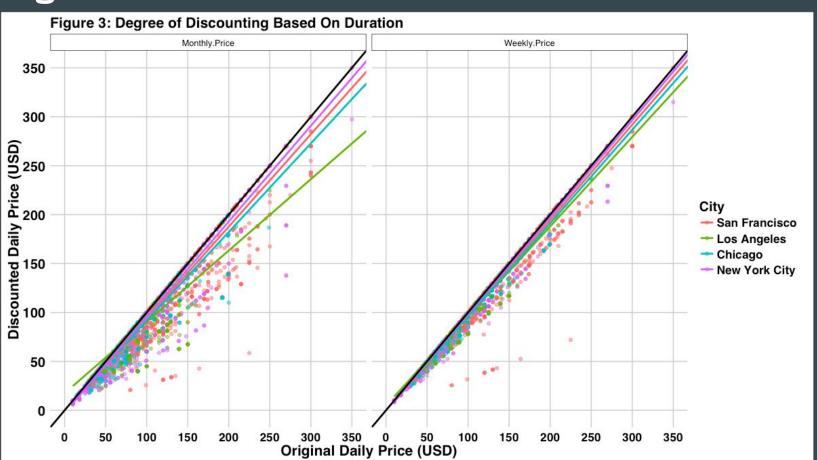
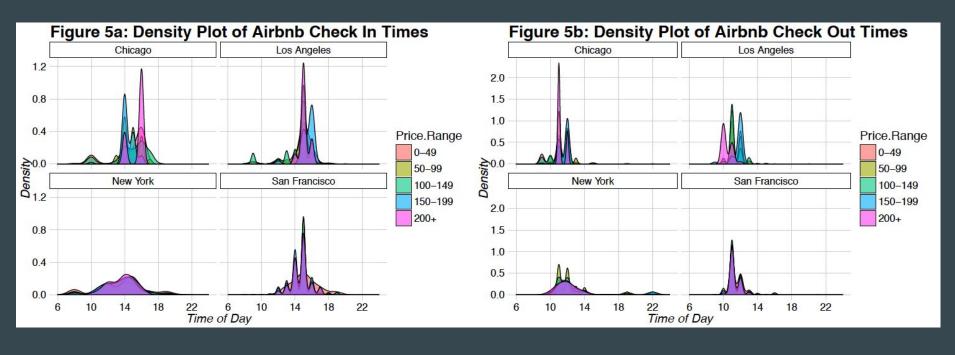


Figure 4



Figure 5a, 5b



Conclusion

	Avg hotel price	Avg Airbnb price	Median income (per capita)
Chicago	\$184.00	\$81.28	\$47,831
Los Angeles	\$201.06	\$105.13	\$53,482
New York City	\$217.41	\$104.63	\$52,737
San Francisco	\$258.72	\$129.25	\$78,378

1) Airbnb: potential threat to hotel market

- a) Comparatively lower price = more economical
- b) More flexible with party size
- c) Variety of travel lodging options at diverse price range

2) Potential research topic:

- a) Influence of housing market on Airbnb listings
 - i) Variability of pricing, listing, check in/ check out differs across cities
 - ii) Income as an indicator for pricing
 - iii) What about housing trends?

(additional slide)

- Mean hotel price
 - o Chicago: \$184.00
 - o Los Angeles: \$201.06
 - New York: \$217.41
 - San Francisco: \$258.72
- Mean Airbnb price
 - Chicago: \$81.28
 - O Los Angeles: \$105.13
 - New York: \$104.63
 - O San Francisco: \$129.25

(additional slide)

- City median income (census)
 - Chicago: \$47, 831
 - Los Angeles: \$53,482
 - New York: \$52,737
 - San Francisco: \$78,378