The temporalities of Automated Parcel Locker pickups in Australia's South East Queensland:

Evolution and variations across time and space

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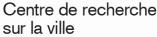
University of Quebec in Montreal

International Association for Time Use Research Budapest, Hungary | 24-26 October 2018









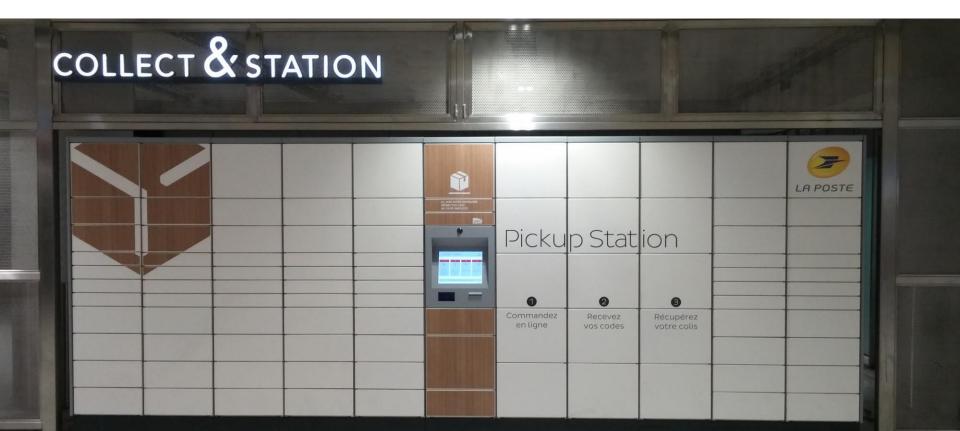












Outline

- Rise of online consumption
- Research project: The geography of parcel lockers

Lachapelle, U. Burke, M., Brotherton, A. and Leung, A. (2018). Parcel locker systems in a car dominant city: Location, characterisation and potential impacts on city planning and consumer travel access. *Journal of Transport Geography*, 71, 1–14.

- Theoretical proposition
- Using time stamped data to assess
 - Trends in use
 - Improve service
 - Impact of new technologies on life and lifestyles
 - Opportunities for research

Online consumption Rise of online purchases





- Less mail, more parcels
- High cost of deliveries
 - Financial, time and environmental
- Rationale is to
 - Reduce doorstep deliveries / missed deliveries
 - Enabling people to make collections outside of business hours (24/7)
 - Provide more options to consumers
- Australia Post runs its own system



Theoretical proposition on new technologies

Beyond convenience and cost reduction...

When introducing new technologies, we should ensure that they:

- Move us toward sustainability
- Reduce auto travel and increase transit and non-motorized travel viability
- Reduce energy consumption and environmental impacts
- Improve access for all demographics
- Improve quality of life of residents
- Improve urban integration and city functions



Online consumption Parcel lockers







Project to study the geography of parcel locker systems in Brisbane and South East Queensland (SEQ), Australia

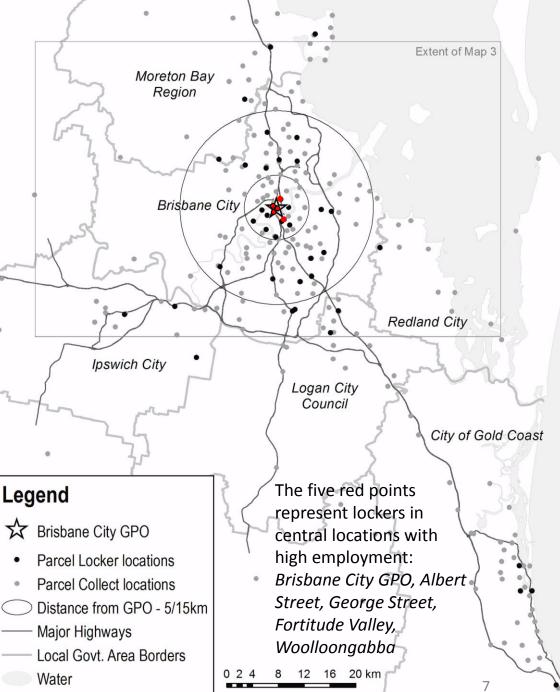






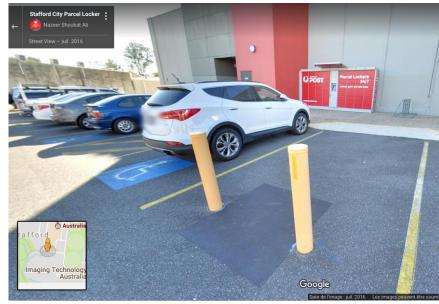
Online consumption
Parcel locker and
alternative contact
points "Collect"

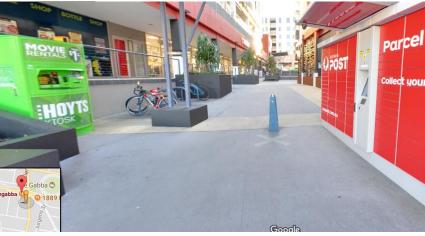




Results of first analysis

- Auto-oriented
- Not in or near transit stations
- Not bringing collection points closer to people
- Equally distributed across area level income
- Well targeted demographic groups of potential users
- Australia Post interested, provided transaction data





Approach

How can we improve Parcel Locker efficiency and benefits?

What patterns can they reveal about daily activities?

How do Lockers influence use of time, space and travel?

How might they shape future environments?

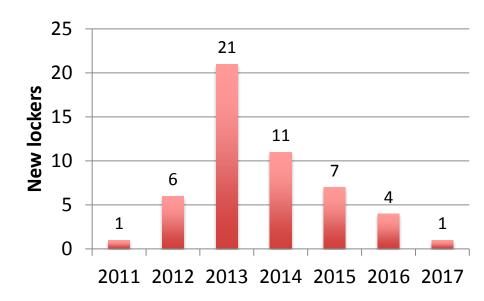
Methods

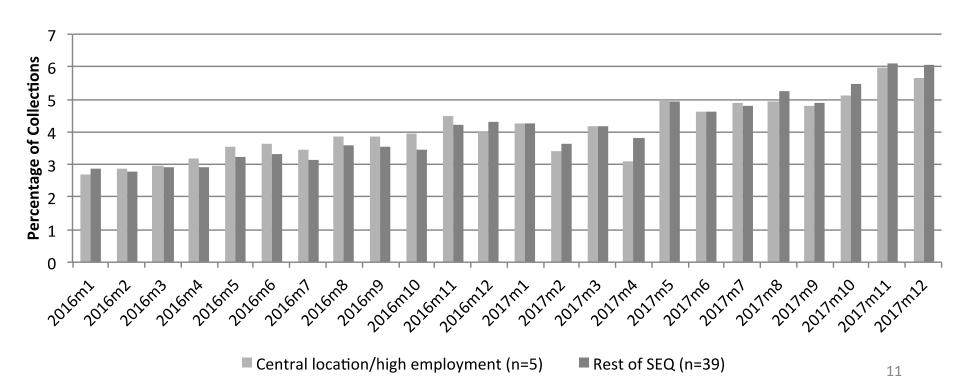
Using automatic collection of transaction data

- Assess the temporalities of parcel collections (2013-2017)
- Datasets for 51 Parcel Lockers of the South East Queensland, (Australia total: 265 lockers)
- Time stamped
 - Locker addition
 - Registration of users
 - Transactions 867,914 transaction records
 - Notification to pickup time
- Assess the daily, weekly and monthly distribution of parcel collections
- Explore time between notifications and collection

Online consumption

 Constant growth in parcel collections (2016-2017)





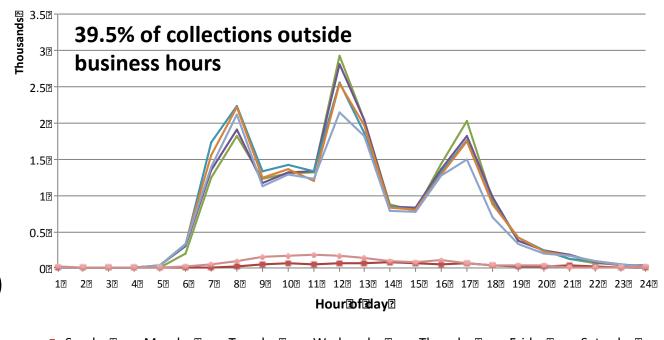
Online consumption Temporalities of

parcel collection

Number®f€ollection

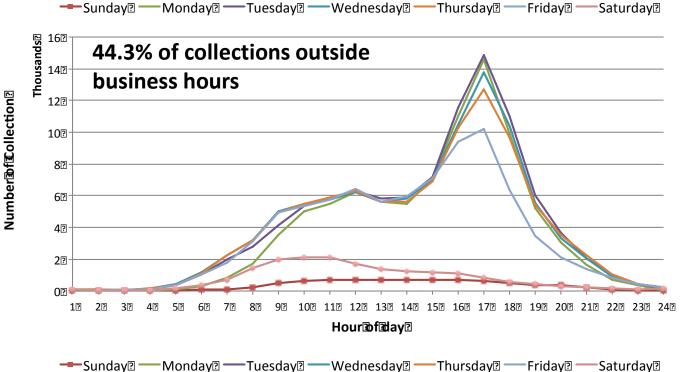
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Central location/ high employment (n=5)



#

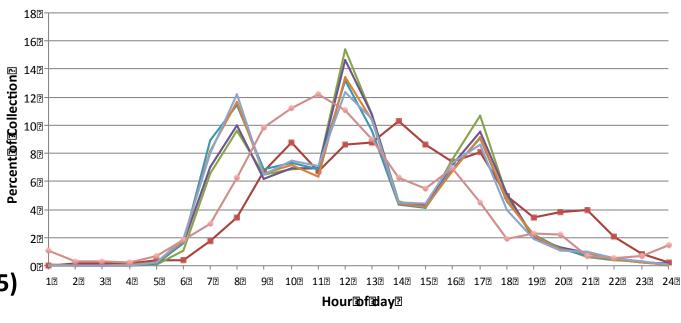
Rest of SEQ (n=39)

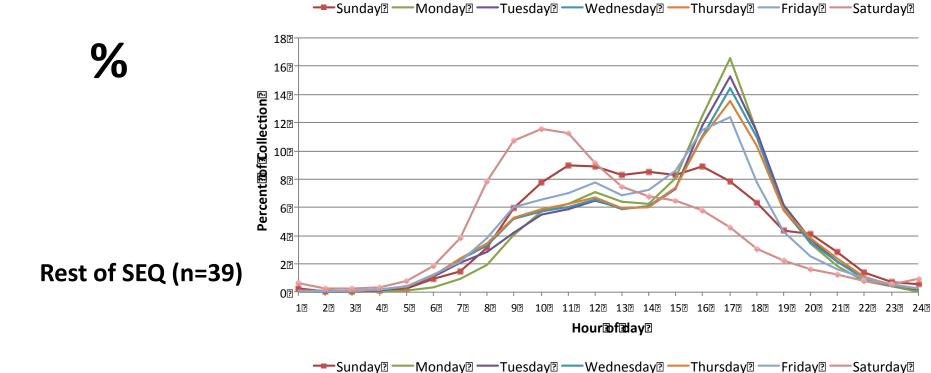




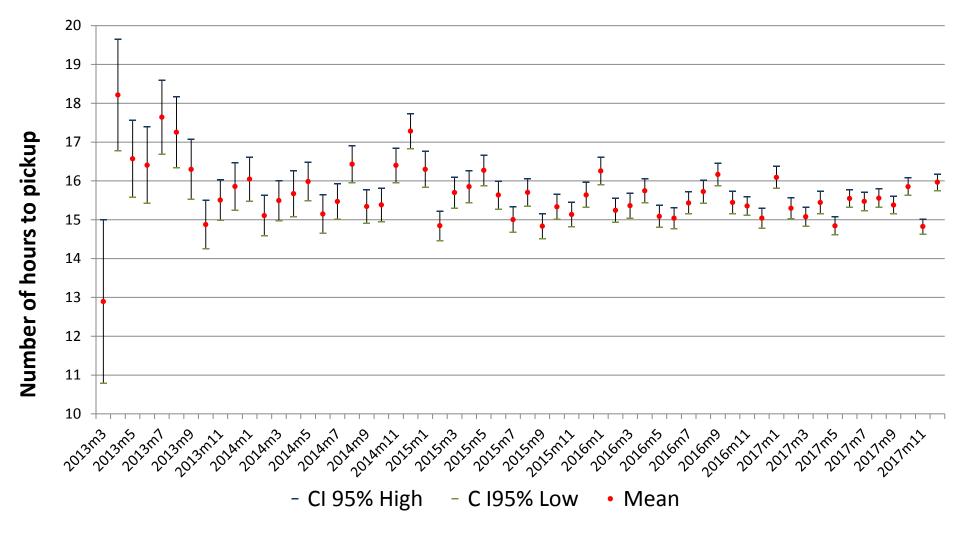
Temporalities of parcel collection

Central location/ high employment (n=5)

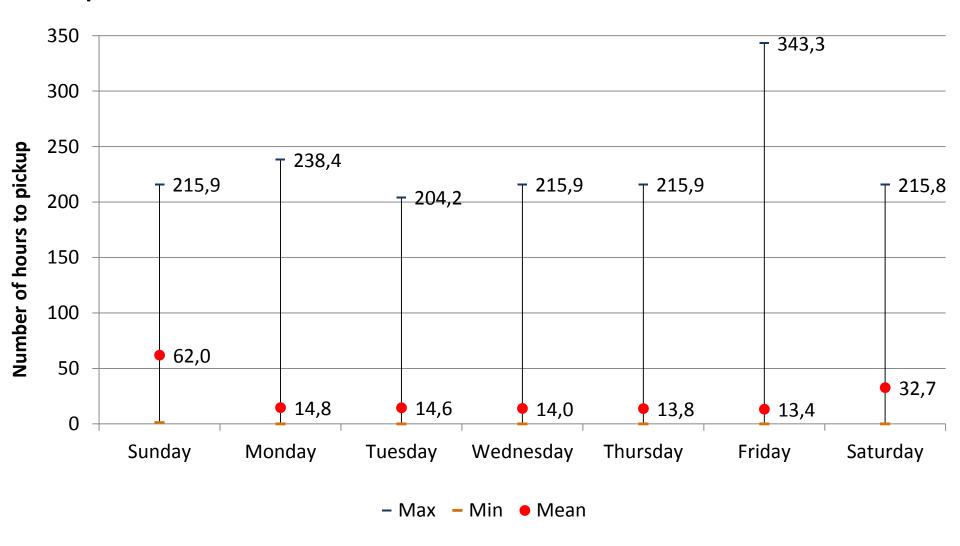




Average dwell time (time to pick up): decreasing then stable (15-16 hours)



Longer dwell time on the weekend Operations or behavior?



Potential future research:

Transport

 How does it fit into people's journey? (across modes of travel)

 Only reduces emissions if added to existing trips

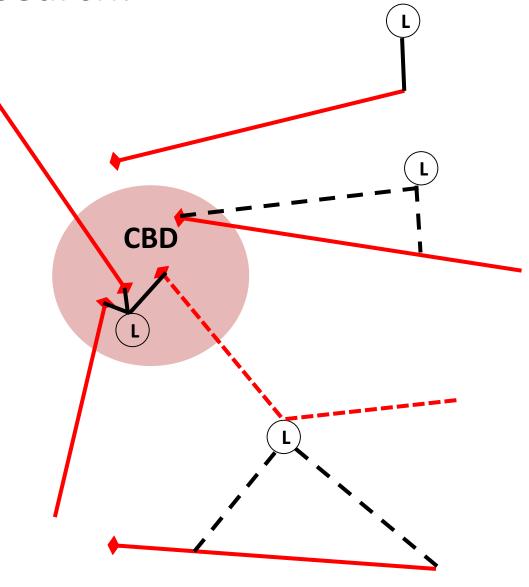
(L) Locker

→ Home to work trip

Unique trip

Detour

Transit trip



Conclusion

Parcel Lockers

- Objective of enhancing options
 - Variety
 - Temporally and/or spatially
- Potential to reduce emissions and travel
- But may have negative impact on city
 - Vitality
 - Healthy local businesses
- Need to explore policy and planning options
 - Tool to increase footfall, activate space and complement local businesses
 - Opportunities for public sites? Libraries, health care, museums
 - Enhance the benefits of using public transit if added near stations

What will happen to local businesses?

Conclusion

Parcel Lockers may change

- The way we interact with purchasing
- The temporalities of consumption of goods
- Requirements for travel

New forms of data collection enabled by ecommerce and app-based technologies

- Enable the development of new
- Time use research methodologies
- Research perspectives on human consumption patterns.

Context

Information technologies are changing places, people and their activities

- Transportation research studies the interface between people and places
- To achieve mode shift and travel reductions
- Time use research in transportation
 - Internet use and travel, Telecommuting and travel
- Substitution, complementarity, displacement?

