



Melbourne School
of Engineering

Optimising the Capacity of Parcel Lockers

Russell G. Thompson
Cheng Cheng
Kun An



Optimisation Model

Objective Function

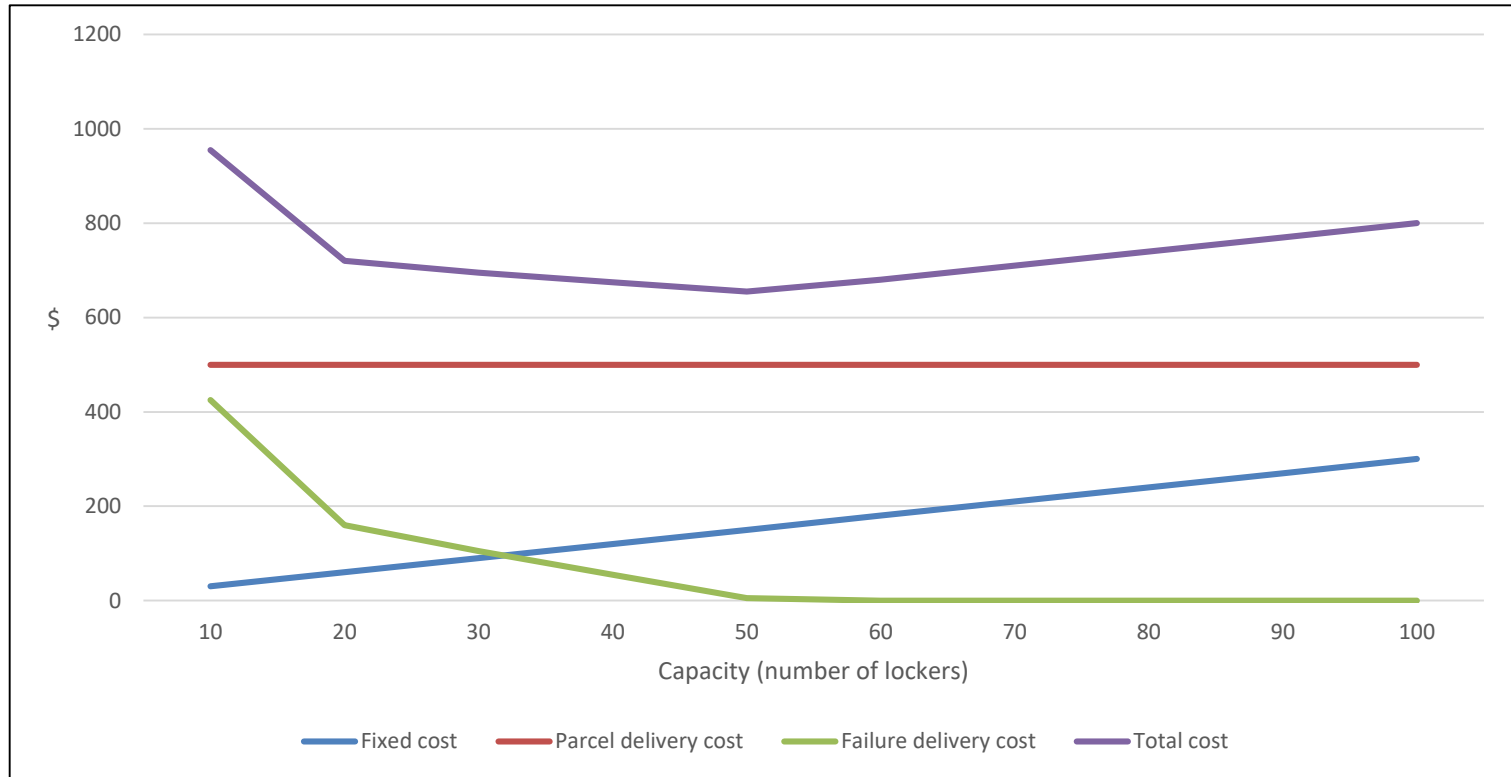
Minimize capital & operating costs (incl. delivery failure)

Constraints

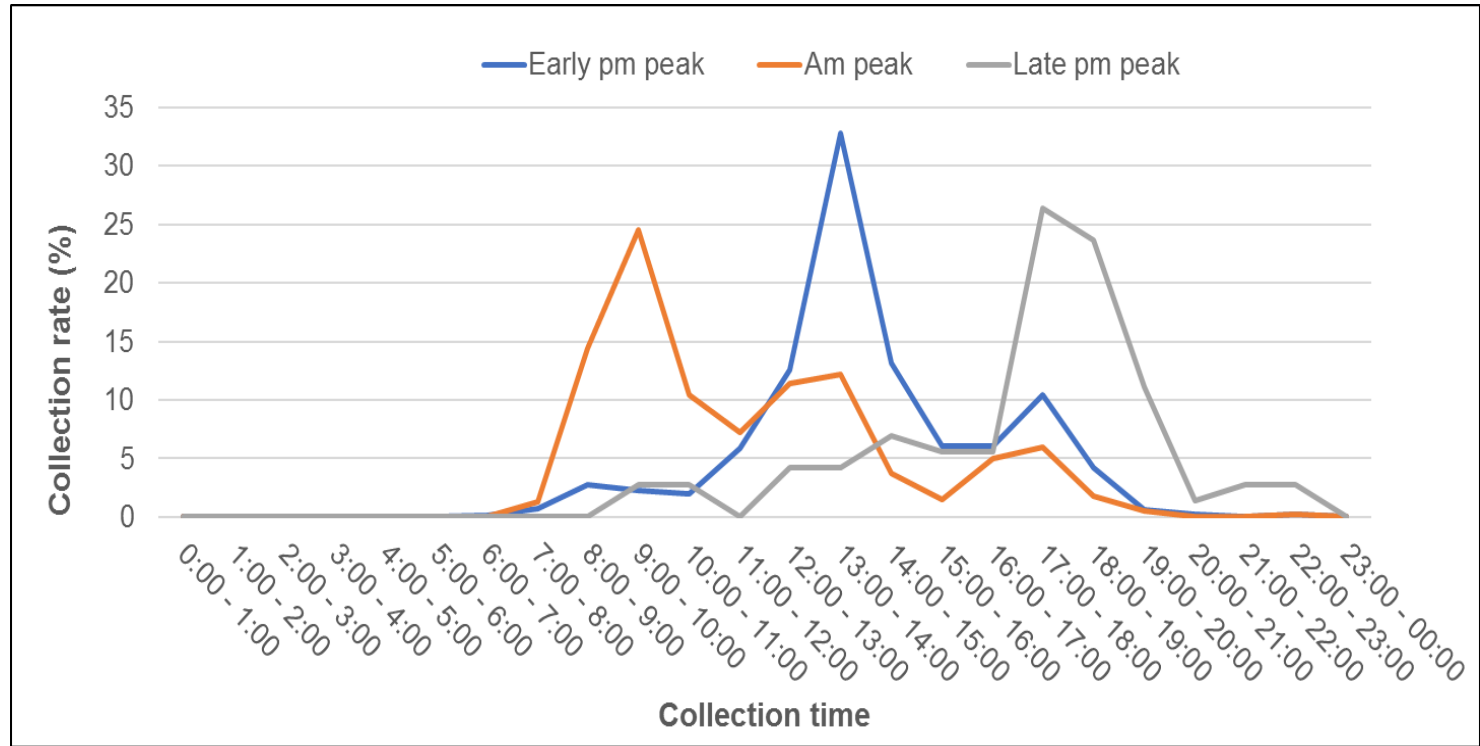
Levels of service & maximum duration for pickups

Decision Variables

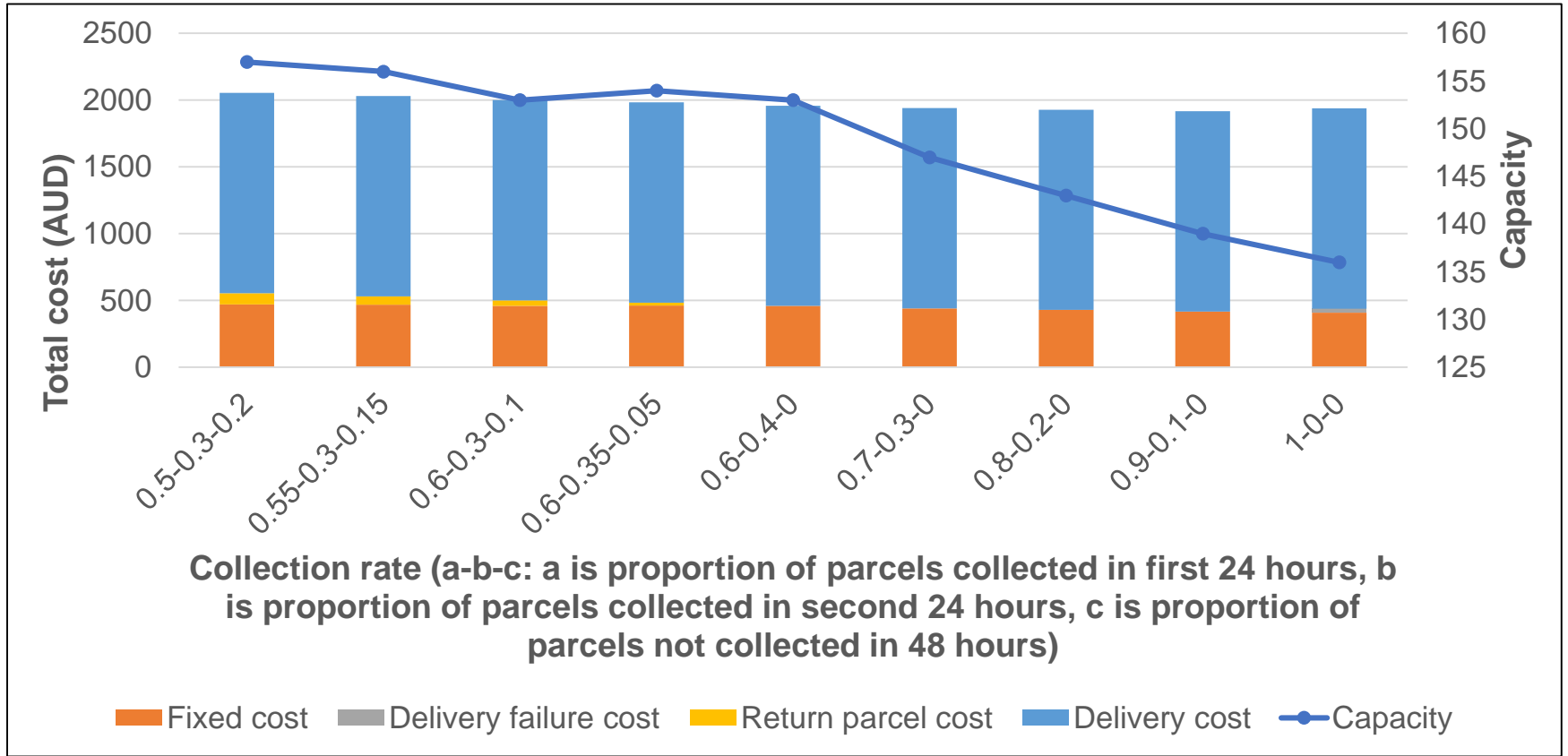
Capacity (# lockers) & number of deliveries per day



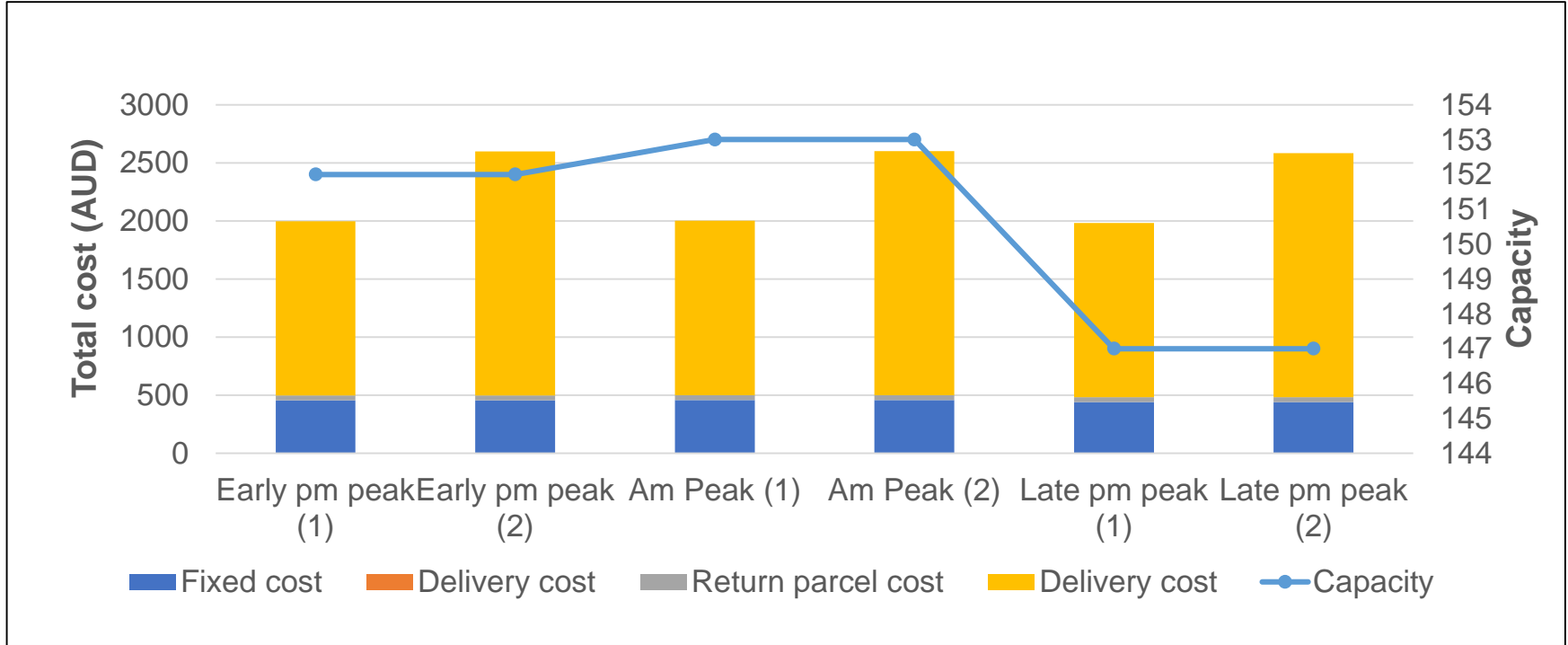
The effect of capacity on logistics costs



Parcel collection patterns



Sensitivity analysis on different parcel pick up days



Cost and capacity comparison on different collection patterns & number of deliveries

Future Work

Stochastic demand levels & pickup times

Network of locker stations

Shared use of lockers by multiple logistics organisations

Multiple size lockers for handling different sized goods



THE UNIVERSITY OF

MELBOURNE

For more information:

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rgthom@unimelb.edu.au