

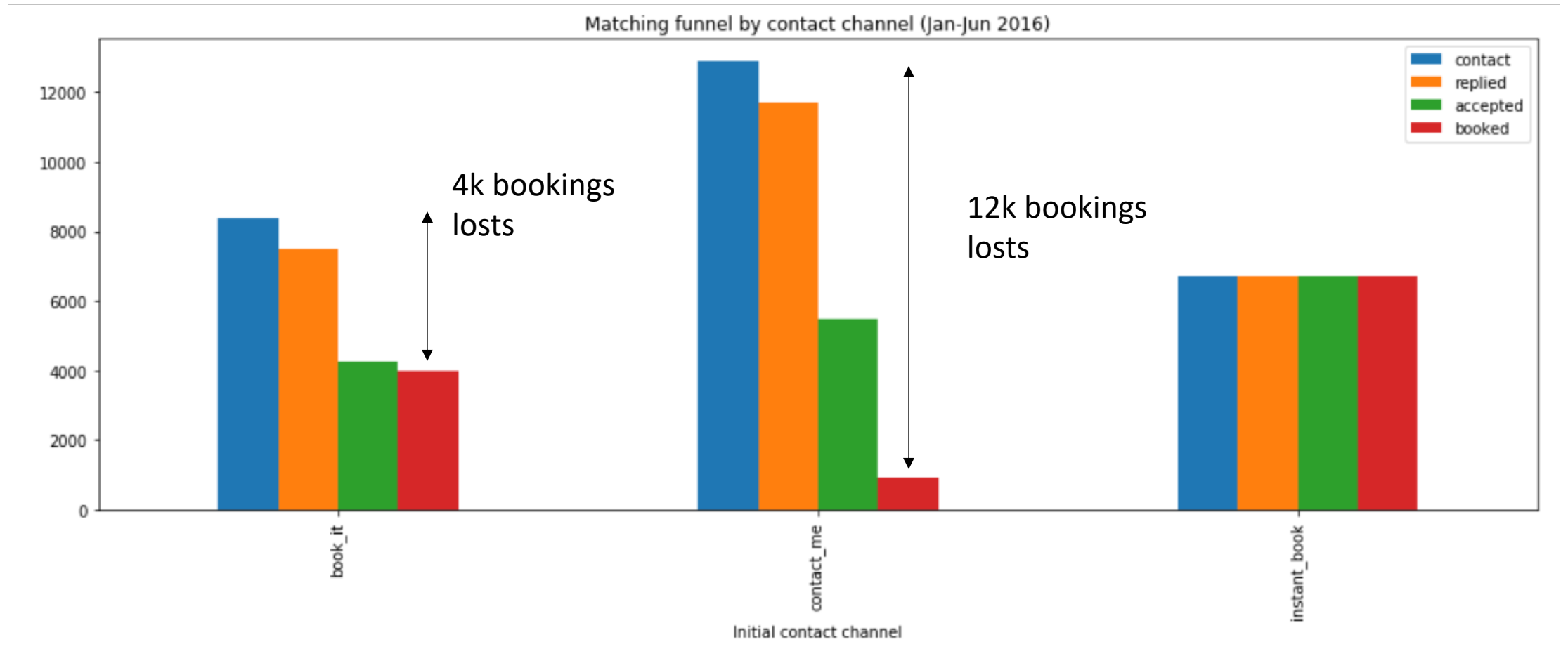
Improving matching performance

KPIs and initiatives

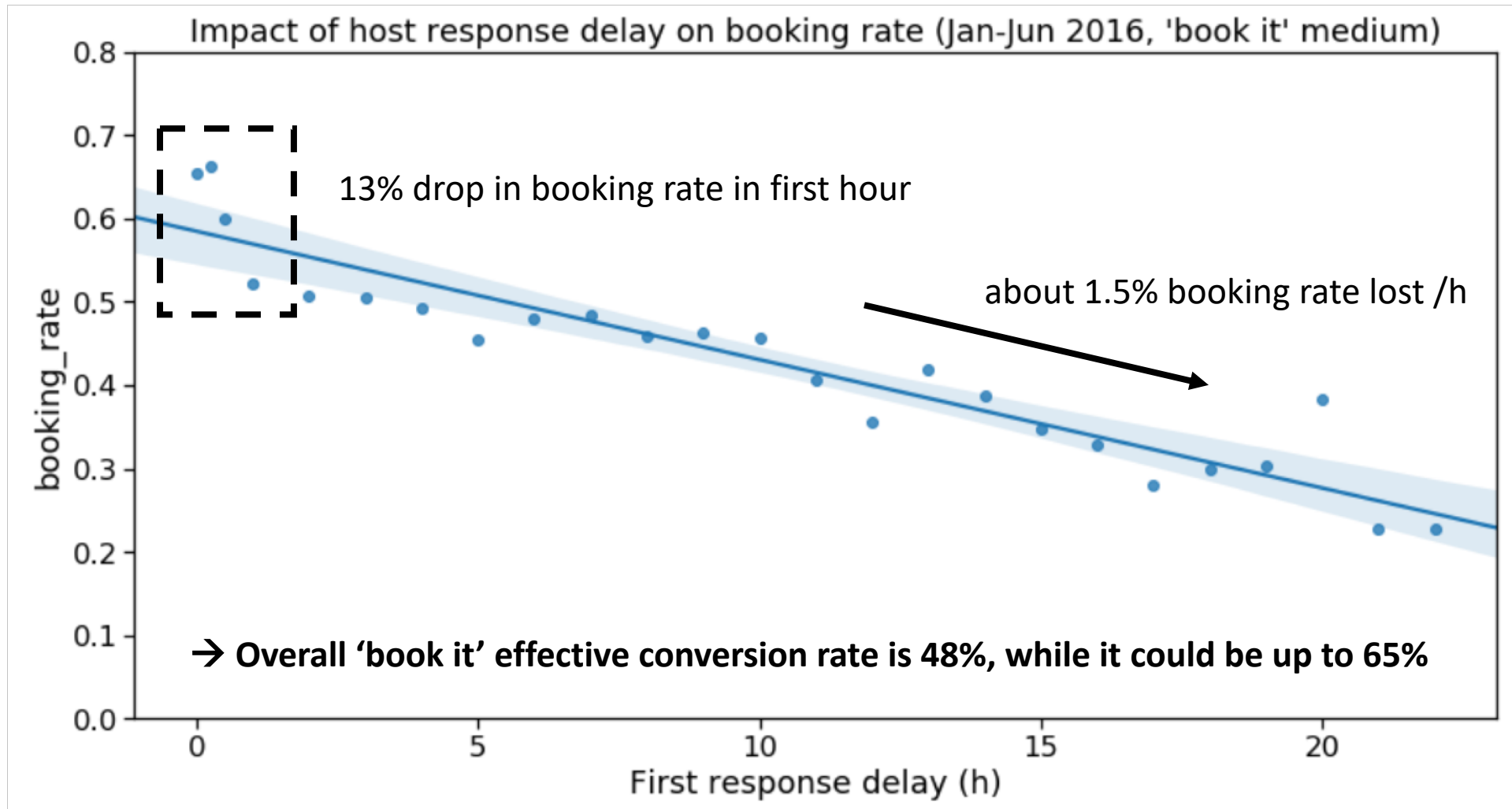
EXECUTIVE SUMMARY - improving matching

- 1. Contact medium:** Nudge towards 'instant book', and away from 'contact me'
 - Est. impact: 14x from 'contact me' to 'instant book', 2x from 'book it' to 'instant'. 16k bookings lost in past 6 months. Potential self-selection bias to be tested early.
 - Levers: on host side make opt out, inform with clear conversion statistics, on guest side favor in recommendation engine (particularly for short notice bookings), button size & layout. Smooth cancellation policy (e.g. 48h).
- 2. Response time:** Nudge towards faster responses & manage expectations
 - Est. impact: 13% drop in booking rate in first 1h, and about 1.5% per hour subsequently. For the 'book it' medium, reduced response time could increase conversion rates by 35% .
 - Levers: on host side use CRM (app push, texts, email) & inform persuasively; on guest side communicate typical response time of this host, and obvious hurdles e.g. night time / working hours, all this before they send a booking request.
- 3. Select and adapt to different people:** variations in booking behaviors based on demographics
 - Est. impact: only based on guest country & listing neighborhood, a better match could boost the booking rate of the worse 25% by 50%. Needs further assessment, as risk of selection bias.
 - Levers: Recommendation engine (taste matching and churn management), and targeted guest and host acquisition

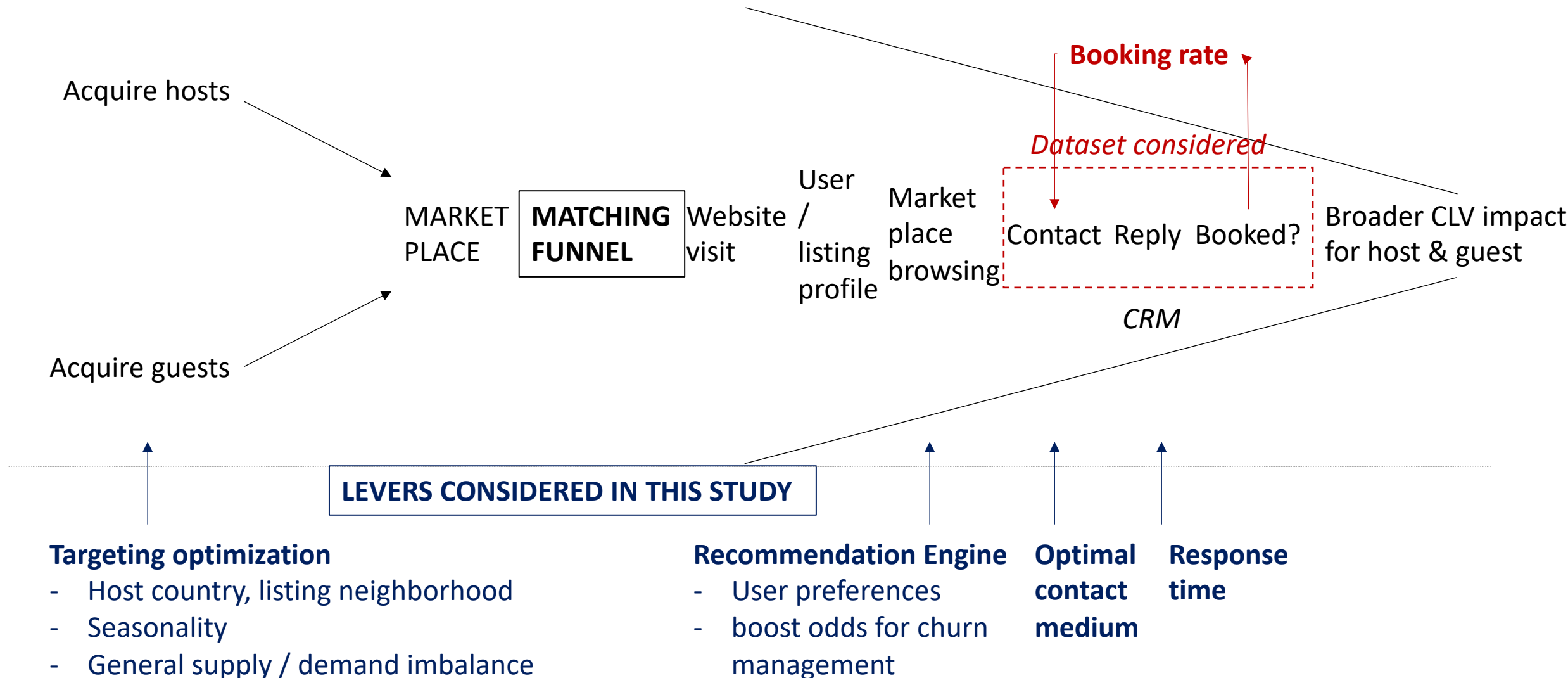
IMPROVING MATCHING – contact medium



IMPROVING MATCHING – response time



CONVERSION FUNNEL & LEVERS OVERVIEW



MATCHING EFFICIENCY KPIs

Long term monitoring

- guest & host lifetime value (CLV: sum of future revenue, discounted)
 - Conversion rate (bookings / contacts)
 - Retention of customer & host (e.g. quarterly retention and # of future bookings)
 - Airbnb pricing & Customer Acquisition Cost (at least monitored as counterfactuals)
- customer satisfaction e.g. ratings
- absolute number of successful bookings and revenue

Early signals for funnel optimization

- may come from new users: less inertia
- conversion rate and ratings will give quick feedback, and CLV should be estimated (e.g. ML model from booking history, and demographics / psychographics)

FUTURE WORK, BEYOND DATASET

- Supply vs demand mismatch, temporally and geographically
 - From early funnel statistics, e.g. searches for guests and IP from hosts, and reliable listing neighborhood
 - To focus guest & host acquisition, and nudge bookings through recommendation engine and CRM
- Optimize customer satisfaction (e.g. ratings) and CLV, not just booking rates
- Split test experiment with recommendation engine
 - Aim is to identify how much of potential lift is causal and can be leveraged
- Focus groups with hosts and guests, to complement quantitative tests
 - Identify pain points and thinking processes
 - Monitor reaction to different solution paradigms

APPENDIX

APPROACH

- Create features
 - Either important confounding variables
 - Likely actionable levers
- Get a first intuition of what features matter
 - User a random forest classifier with many trees, and look at feature importance
- Visualization of key features, and how to transform them so they provide a linear response
- Logistic regression to attribute impact of significant variables, controlling for confounding factors
 - Focused on the 'book it' medium here, as I have recommended to steer away from the 'contact me' medium

Assumptions

- Dataset
 - Assumed that dataset is a random unbiased sample of actual market
 - No multi-user analysis was made on that basis. If this is the entire dataset, the high number of hosts with only one booking in the 6 month period may require more attention. Given setup cost considerations, better targeting and active retention is needed (better matching is only part of it).
- dede