

Designing & Sequencing

Incentives for

Gig Economy Workers



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UC Berkeley Haas



Behavioral Operations Conference 2026





Platform side

Service quality depends on enough workers active at the right time and willing to accept orders.

Customer side

Demand spikes by time, weather, events, promotions, and local competition.



Platforms cannot always schedule the labor it needs

Worker side

Workers decide whether to log on, where to work, how long to stay, and which assignments to accept.



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Availability / hours

“Be online and available”

DoorDash active-time pay



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Throughput / orders

“Complete enough tasks”

Uber Quest-style targets



Drive 20 trips, make \$50 extra

These trips can be completed anytime between Mon 4:00 AM through Fri 4:00 AM and anywhere in the San Francisco Bay Area. If you want to aim higher, you can drive 80 trips and make \$200 extra. Track your progress in the [Uber](#) app.

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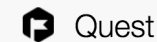
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Streak / progress

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Lyft/Uber consecutive-trip incentives

Lyft here! Earn an extra \$6 for 3 rides in a row. Head to your Streak Zone and accept your first ride from 5PM - 6PM. See where to go: <http://lyft.com/streaks>

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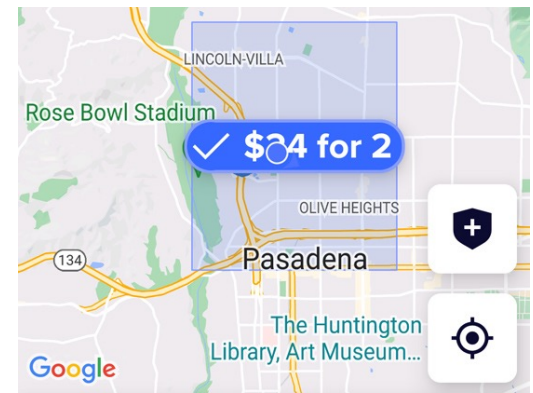
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Peak / zone

“Be in the right place at the right time”

Boost / surge / zone bonuses



Stay in this Streak Zone

Accept a ride here, drive anywhere after

**Workers do not experience
incentives in isolation**

Workers do not experience incentives in isolation

Day 1

Active-time guarantee

Earn by time
Availability instrument

Day 2

Order / ride target

Complete X trips
Throughput instrument

Day 3

Peak-time bonus

High-demand periods
Market-time instrument

Day 4

Streak / sequence

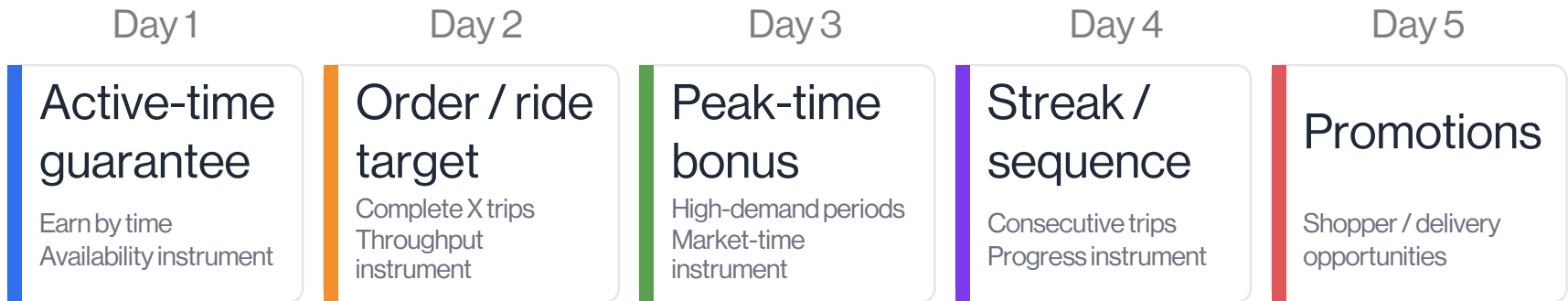
Consecutive trips
Progress instrument

Day 5

Promotions

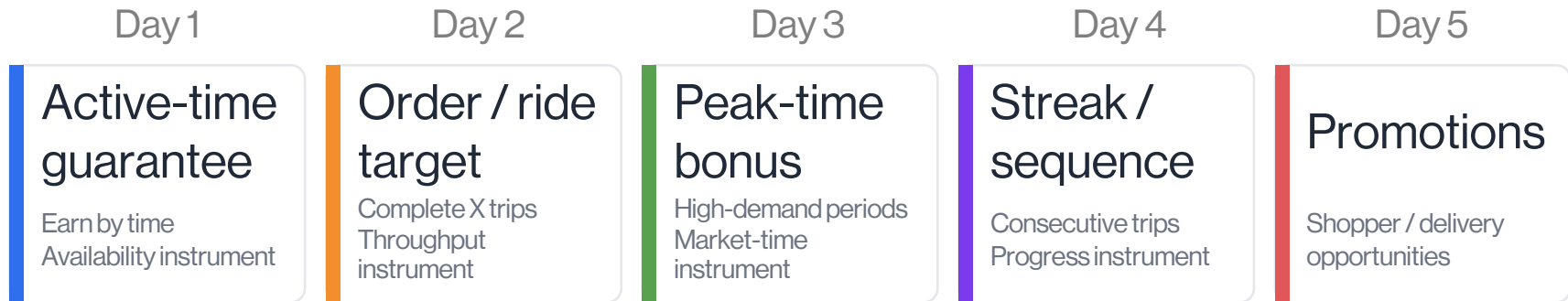
Shopper / delivery opportunities

Workers do not experience incentives in isolation



Workers see a rotating menu, not one fixed contract.

Workers do not experience incentives in isolation



Workers see a rotating menu, not one fixed contract.

Key: Incentives are not only payoff instruments;
they are state-transition instruments → Estimate paths!

What we know...

Flexible workers respond to compensation and value schedule flexibility, but much of this evidence evaluates current incentives or pay conditions rather than incentive paths.

(Cachon, Daniels, and Lobel 2017; Hall and Krueger 2018; Chen, Hu, and Lariviere 2019)

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Goals, reference points, and streaks can shape effort and persistence, but less is known about how those behavioral states affect the next contract workers face.

(Kivetz, Urminsky, and Zheng 2006; Köszegi and Rabin 2006; Mehr et al. 2025)

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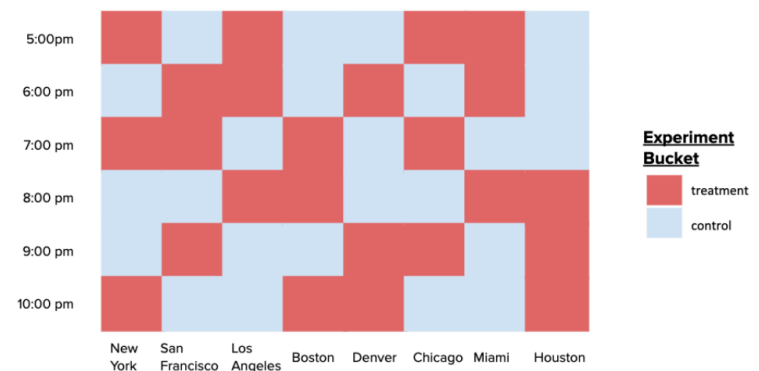
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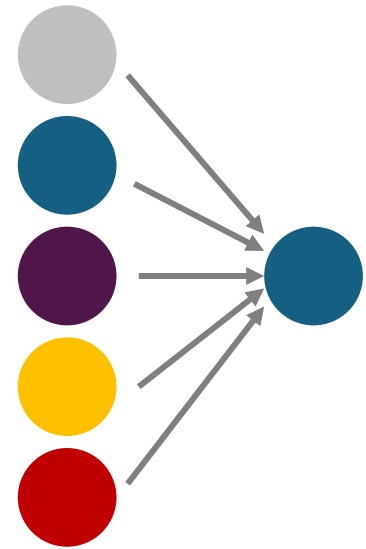
Switchback experiments are useful in marketplaces with interference, but current-treatment summaries can be incomplete when the platform's decision is sequence-specific.

(Bojinov, Simchi-Levi, and Zhao 2023)



Research Questions

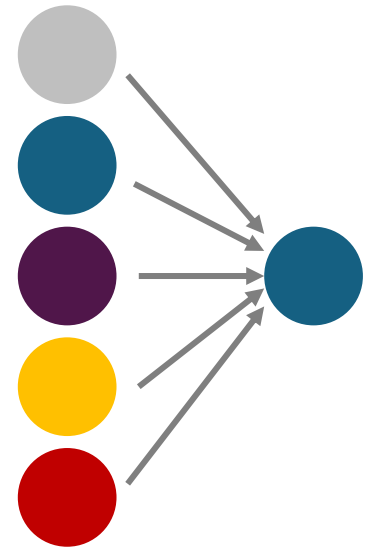
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Research Questions

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RQ2: Which mechanisms make some incentive paths more effective than others?

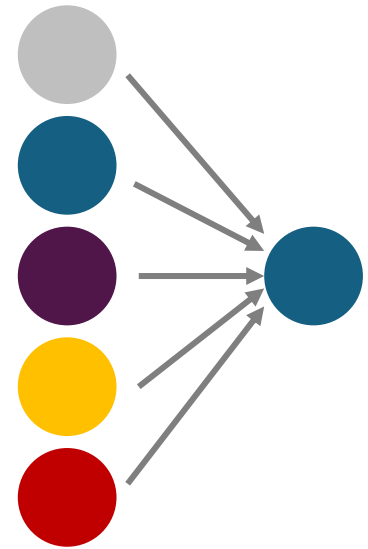


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RQ3: What should a marketplace experiment estimate when history is part of the treatment exposure?



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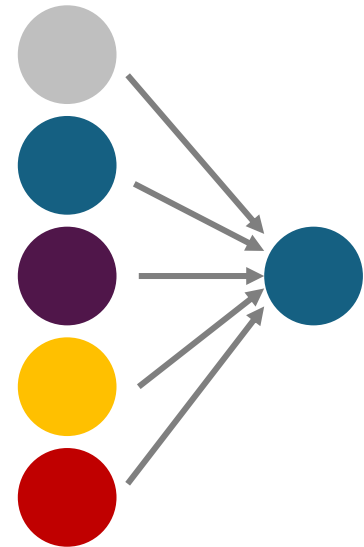
Three worker margins
Two inherited states:
• participation friction K
• earnings benchmark r

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History-aware switchback
predecessor \rightarrow current
Same current incentive after
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History-aware switchback
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Field Evidence

2-month field experiment.
Incentive response depends
sharply on predecessor.
Incentive horizon influences
stopping at goal crossing.

Model

Overview

Model

Overview



Participate?

Log on at all

Participation margin

Model

Overview



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Participation margin

How long?

Online hours

Availability margin

Model

Overview



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“work X hours
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Activation

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Conversion

Does the active worker accept?

Continuation

Does the worker keep going after a goal?

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r_t earnings reference point

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Current z_2

Hours vs orders
Reset vs streak

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Outcome

Hours
Orders
Acceptance

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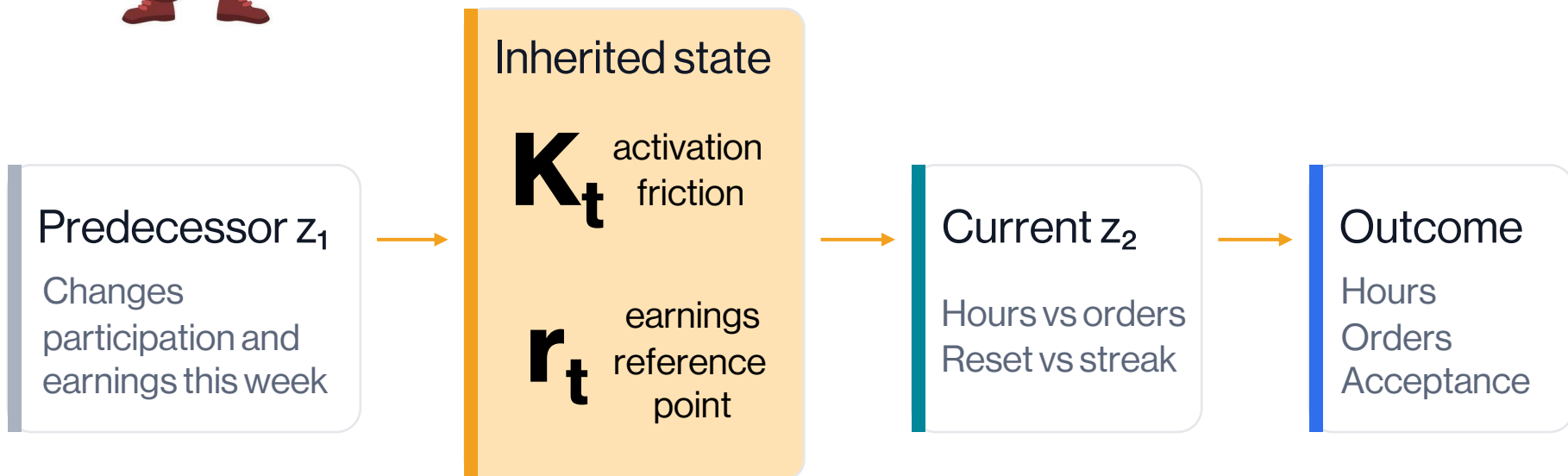
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Predecessor-created states meet current incentives



#1 Activation is entry decision

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net activity value activity value K: inherited activation ε_i : worker-specific
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Intuition: a participation-building (hours-based) predecessor lowers the barrier (K) the successor must overcome.

Creating inherited states

Routine / activation state

$$K_{t+1} = K_t - \overset{\text{routine effect}}{\rho} X_t, \quad \rho > 0$$

Participation today can lower the friction of returning tomorrow.

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A predecessor can help by activating workers, but hurt by raising expectations.

Model

$$\underbrace{Q_2(z', z)}_{\text{successor output after path } z' \rightarrow z} = \underbrace{\theta_2}_{\text{market opportunity}} \cdot \underbrace{a_z^*(\theta_2)}_{\text{conversion intensity under current contract } z} \cdot \underbrace{P_z(K_2(z'), \theta_2)}_{\text{active share inherited from predecessor } z'}$$

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Activation

$P_z(K_2, \theta_2)$: share of riders who show up under inherited state K_2 .

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Conversion

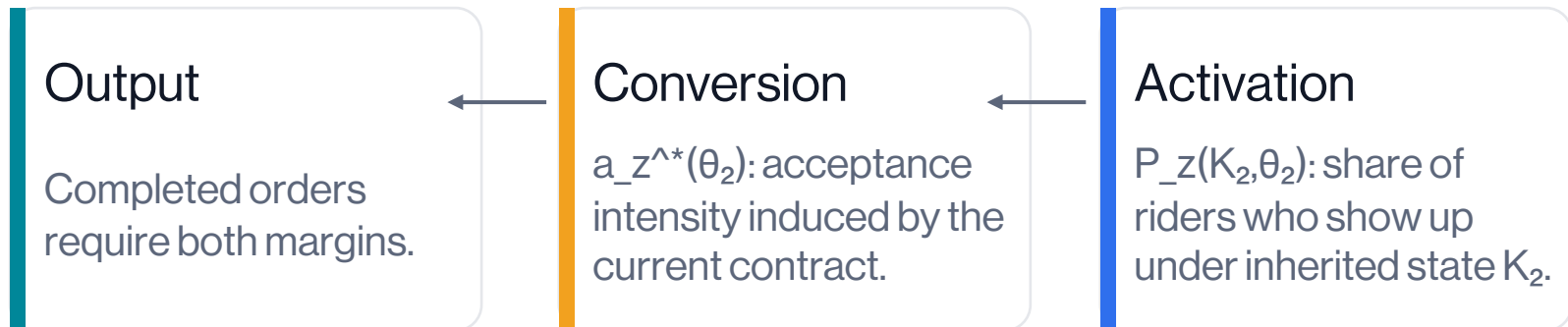
$a_z^*(\theta_2)$: acceptance intensity induced by the current contract.

Activation

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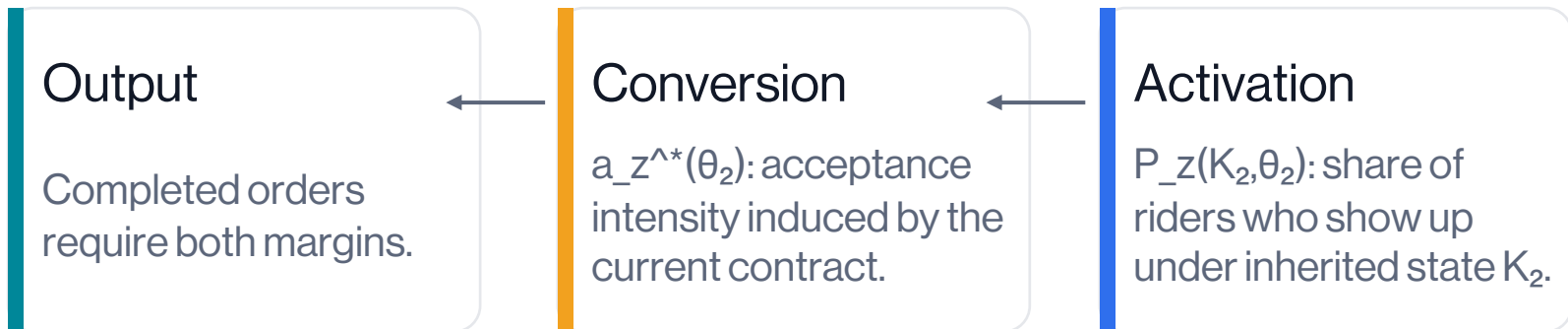
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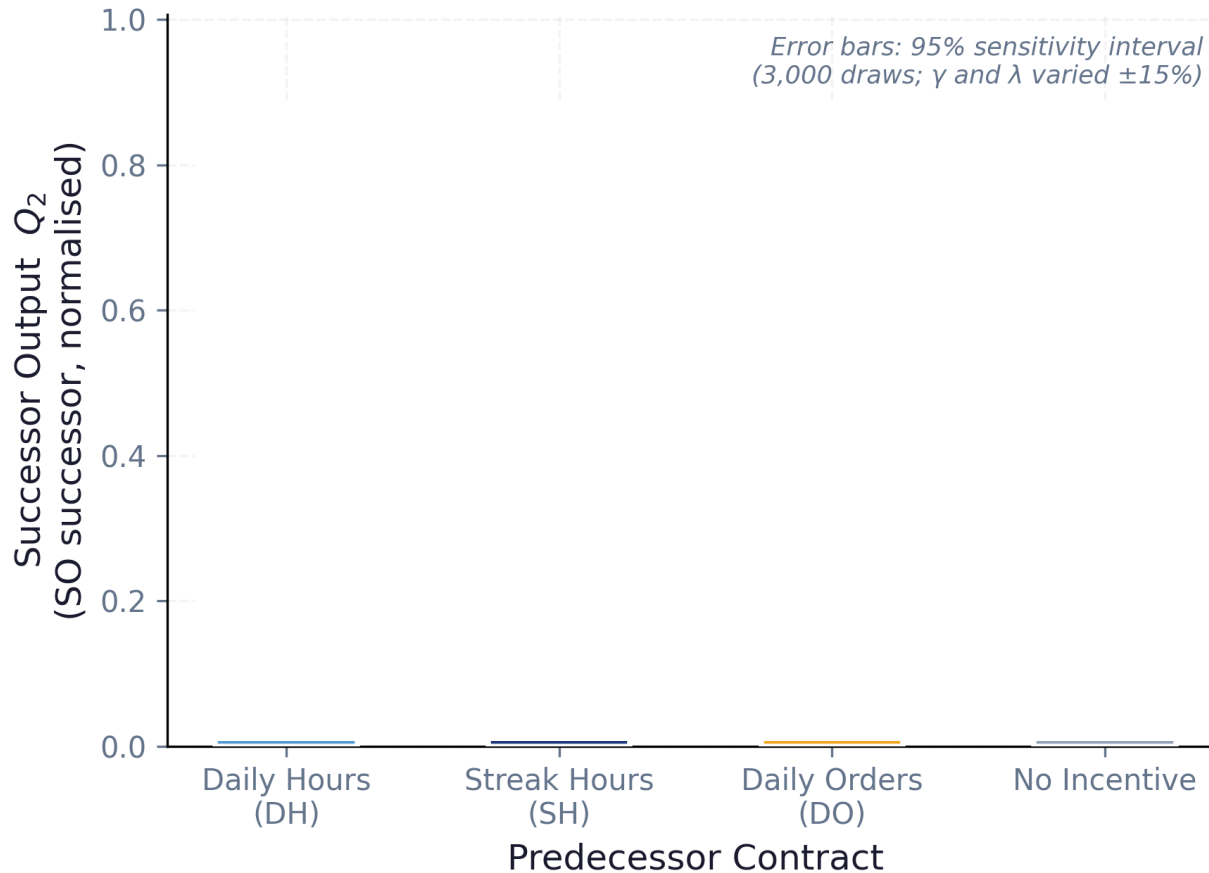
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Activation is especially valuable before a successor that can convert active workers into completed orders.

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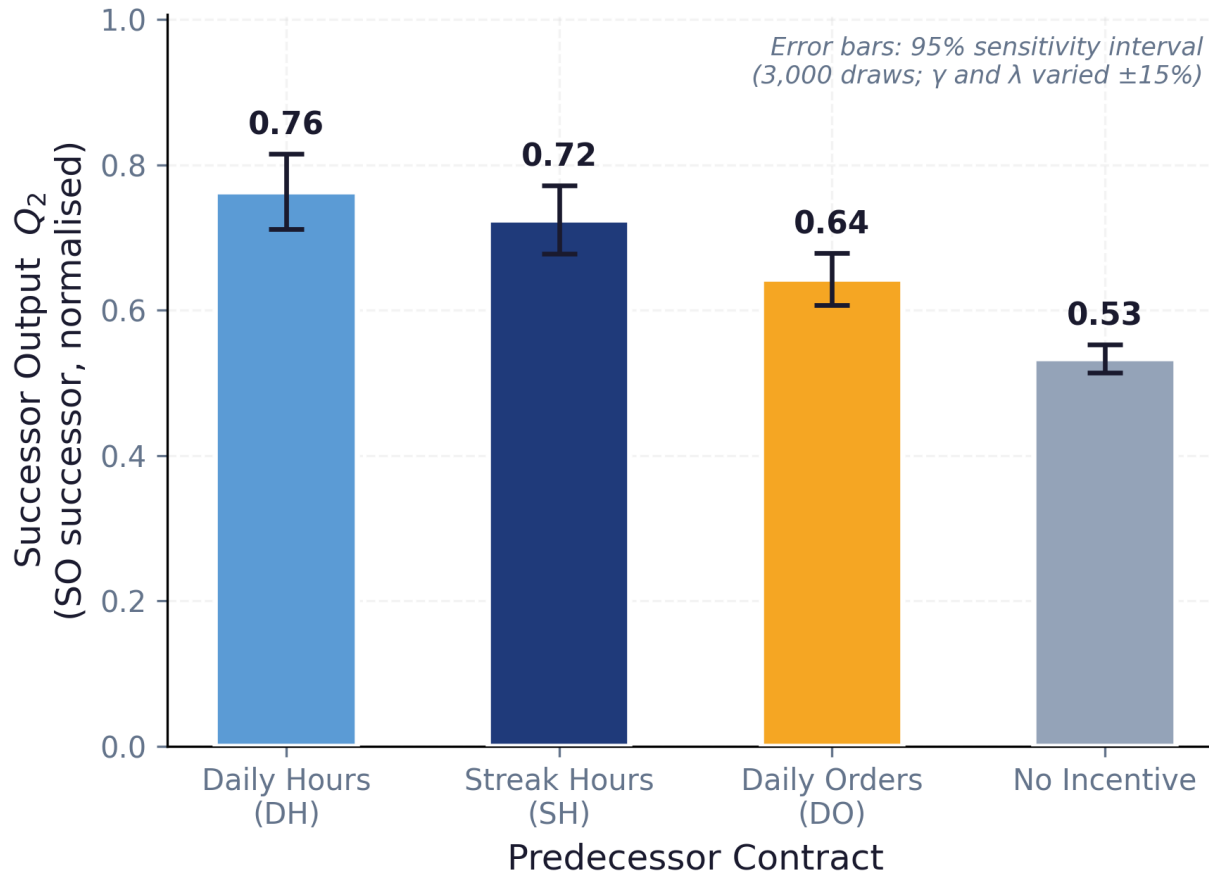
Impact of Predecessors



Holding the current contract fixed at Streak Orders,

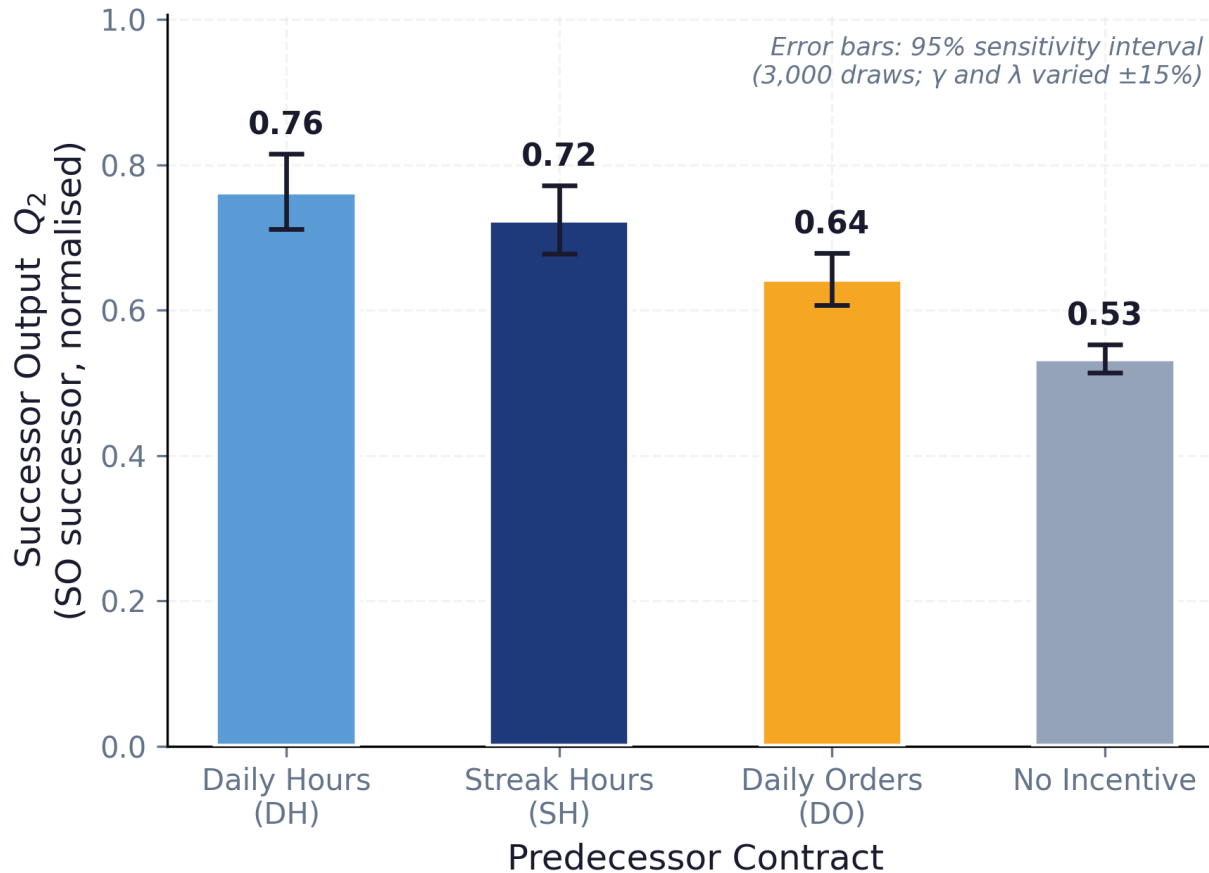
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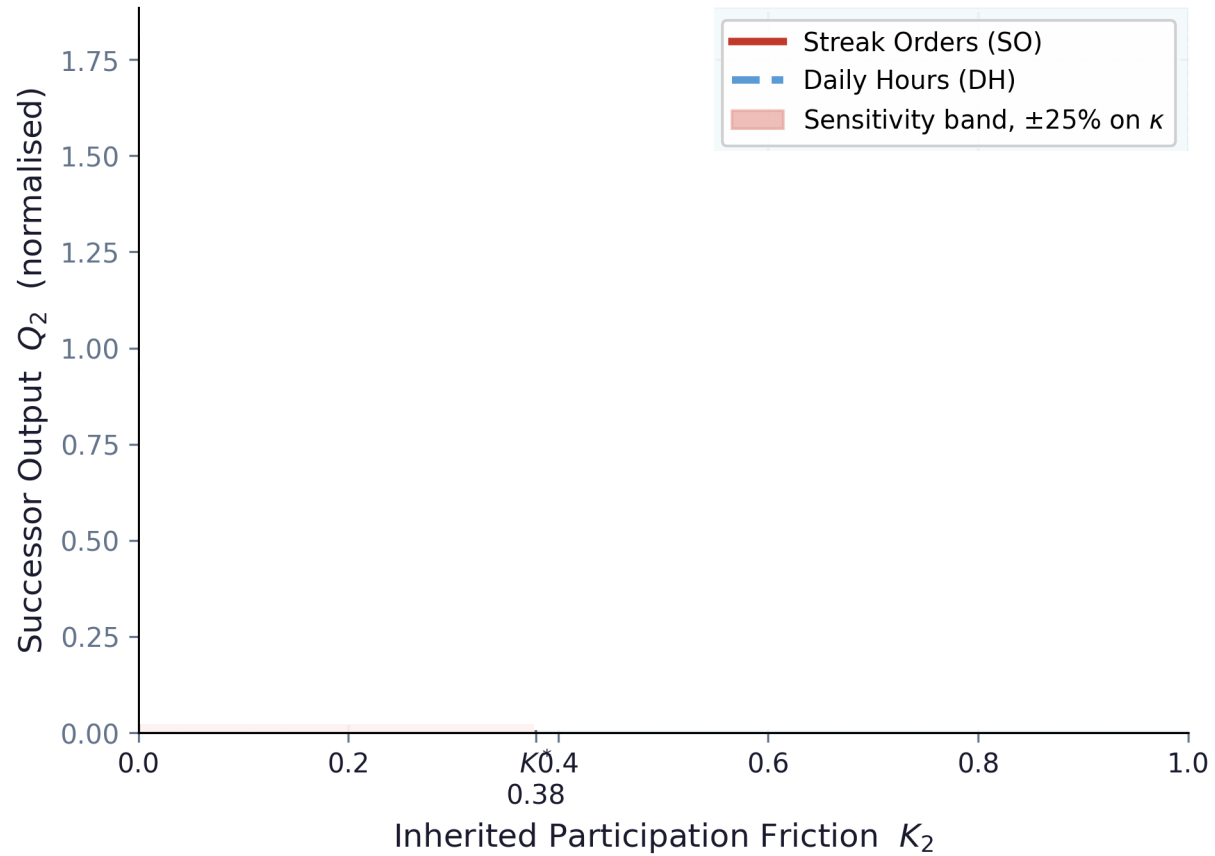
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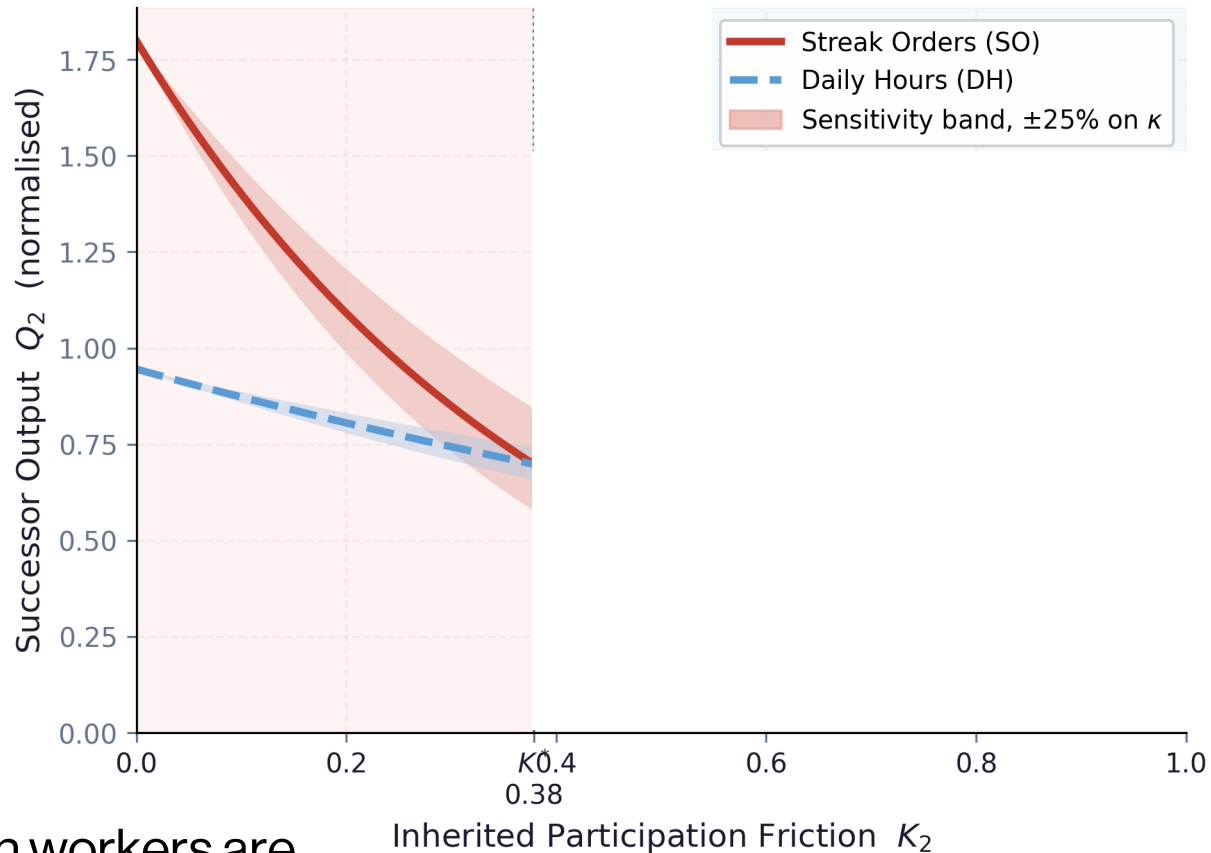


Holding the current contract fixed at Streak Orders, successor output differs across predecessor-created states in an illustrative calibration.

Model

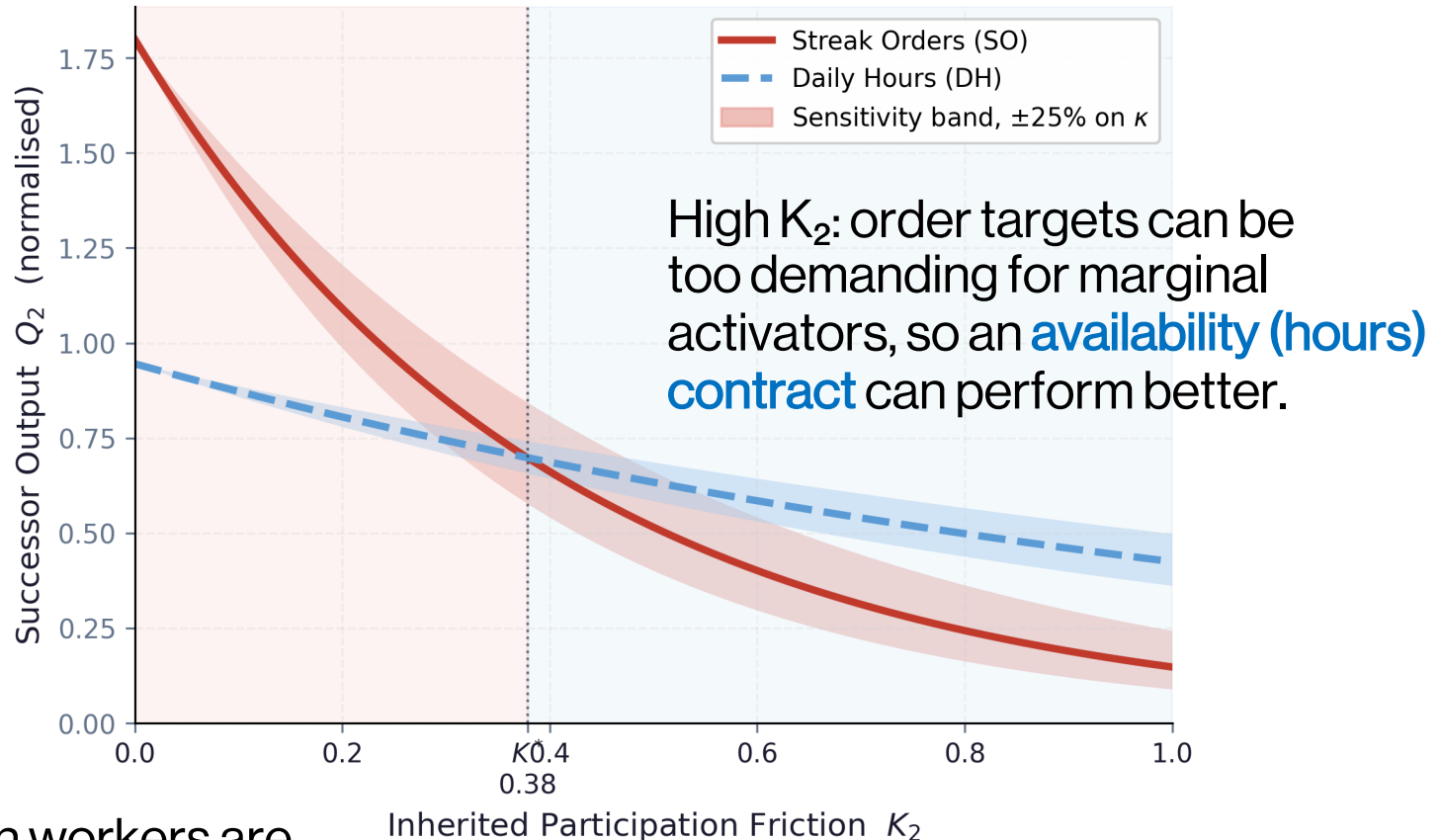


Rankings depend on K



Low K_2 : enough workers are active, so a **throughput-intensive (orders)** successor can perform well.

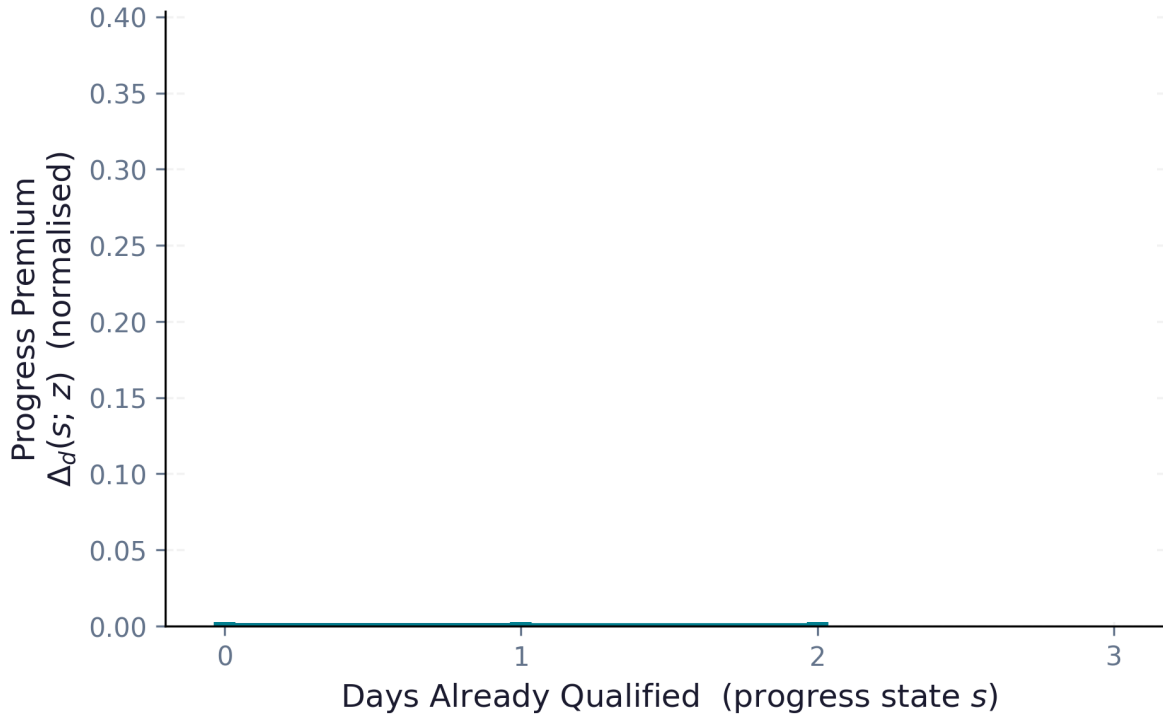
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#3: Streaks create progress value

$$\underbrace{\Delta_d(s; z)}_{\text{progress premium from qualifying today}} = \underbrace{B}_{\text{streak bonus}} \cdot \underbrace{\Pr(\text{today's qualification is pivotal})}_{\text{probability today changes eventual bonus attainment}}$$

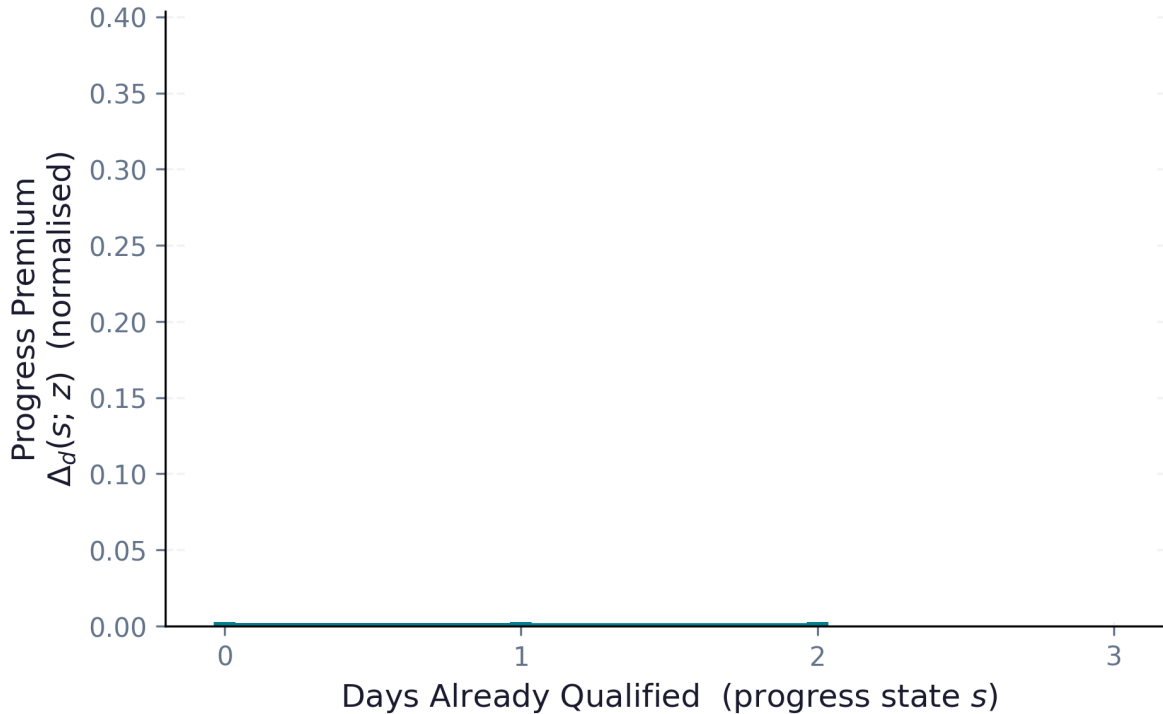


Daily/Reset: after today's goal is reached, bonus continuation value = 0

- Streak target = 5 qualifying days
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- Streak target = 7 qualifying days

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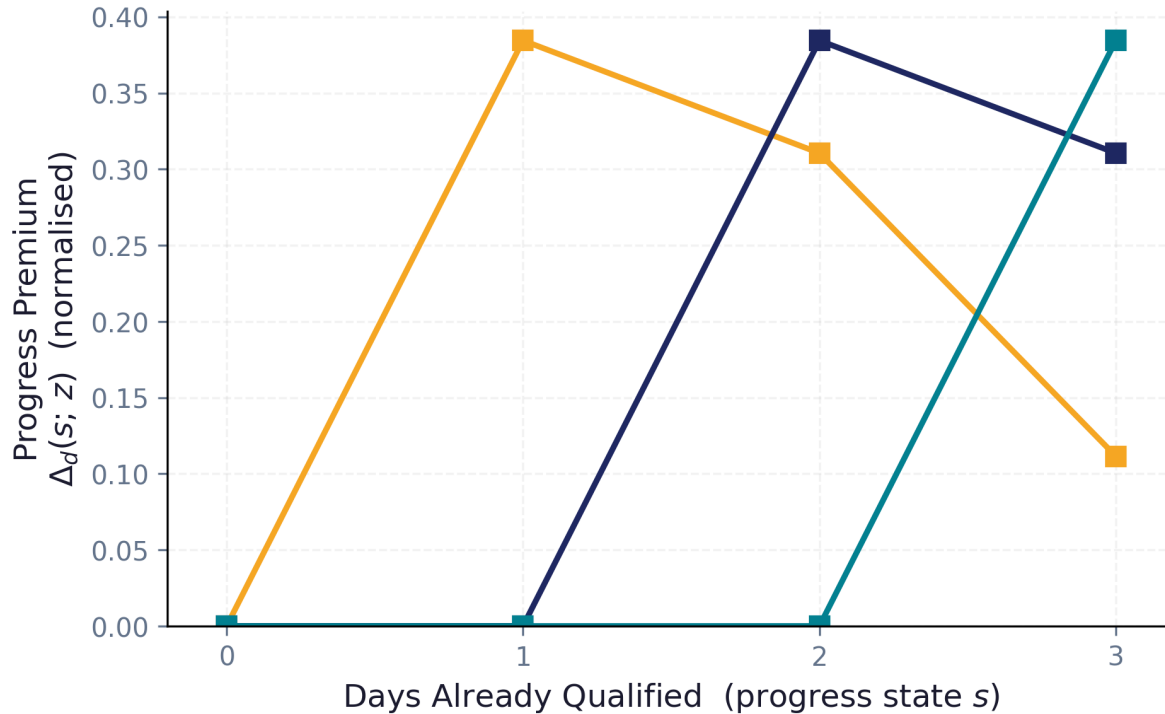
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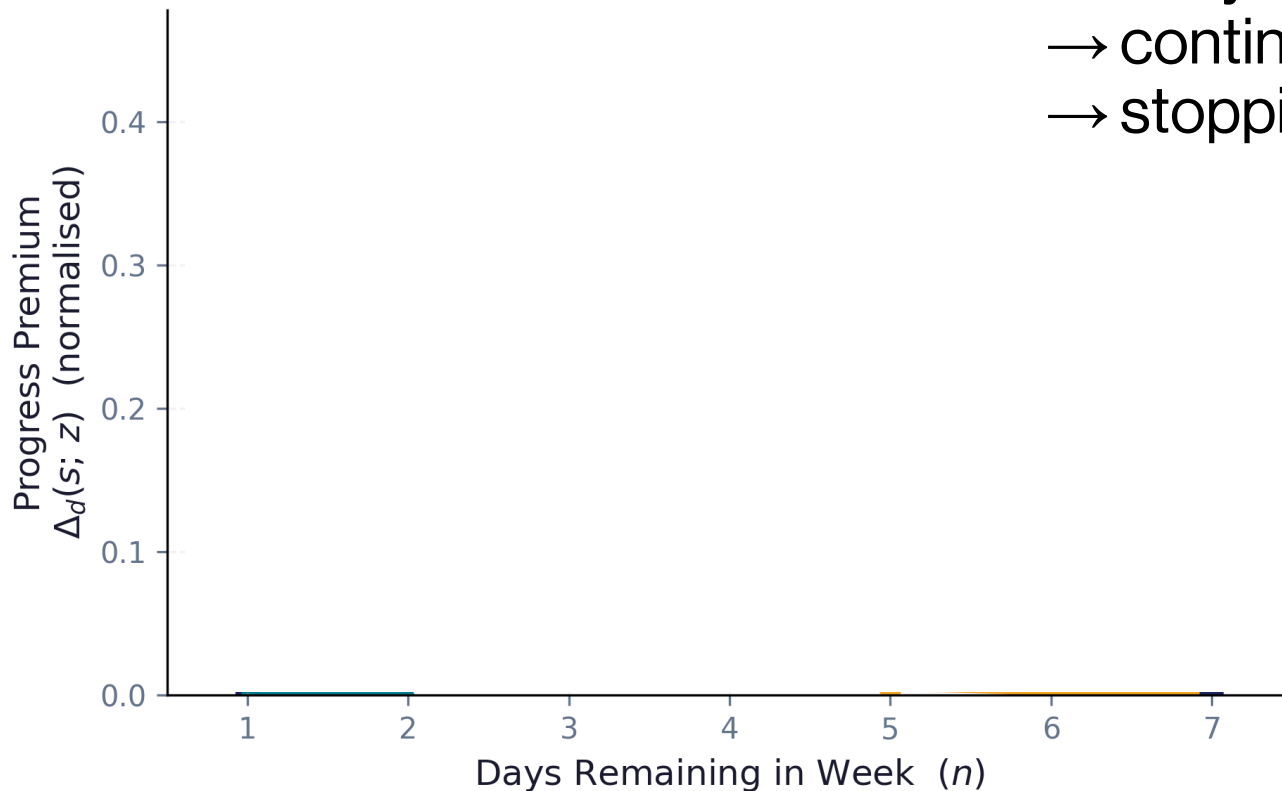
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Reset vs. streak: at the goal

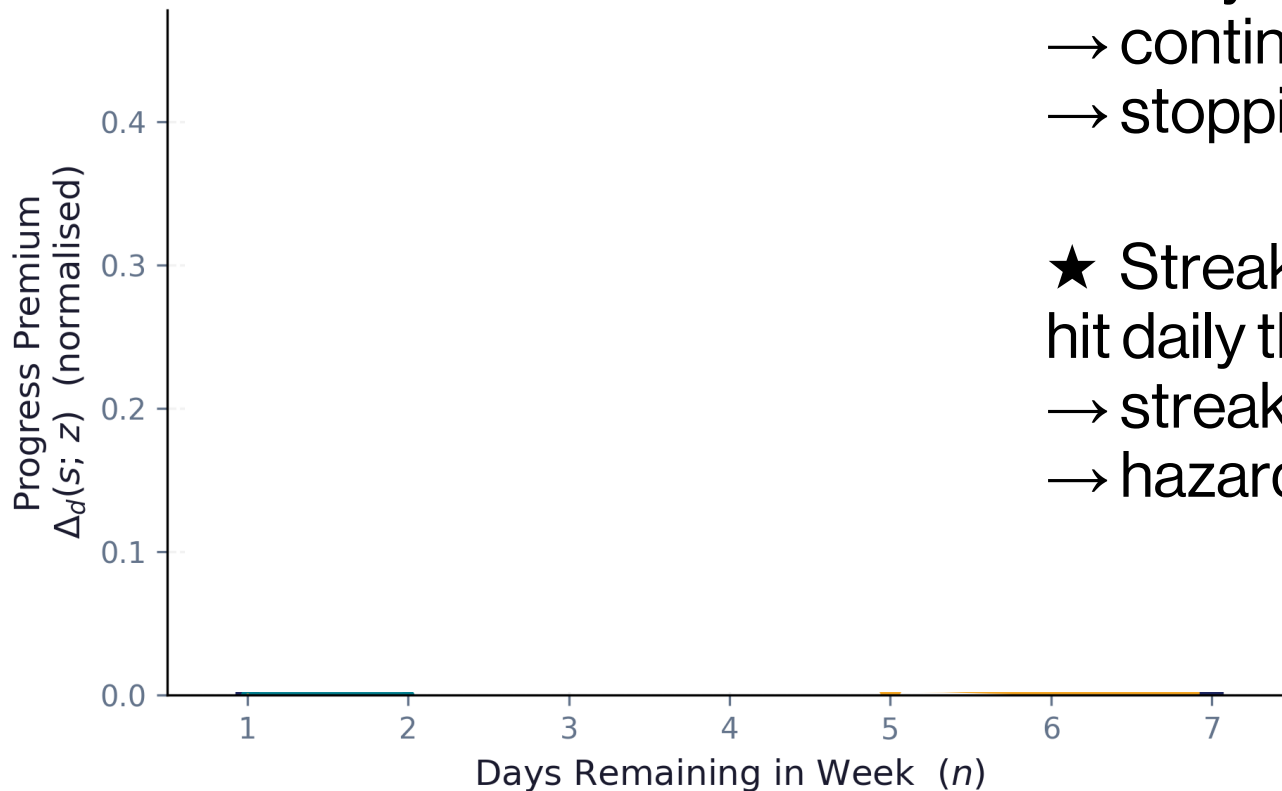
- ★ Daily Orders: hit target
- continuation value = 0
- stopping hazard spikes



- $j = 1$: one more qualifying day needed
- $j = 2$: two more qualifying days needed
- ▲ $j = 3$: three more qualifying days needed

Key qualification: the comparison is conditional on reaching the same order goal and on the streak target not already being secured.

Reset vs. streak: at the goal



★ Daily Orders: hit target
 → continuation value = 0
 → stopping hazard spikes

★ Streak Orders:
 hit daily threshold
 → streak progress preserved
 → hazard is flatter

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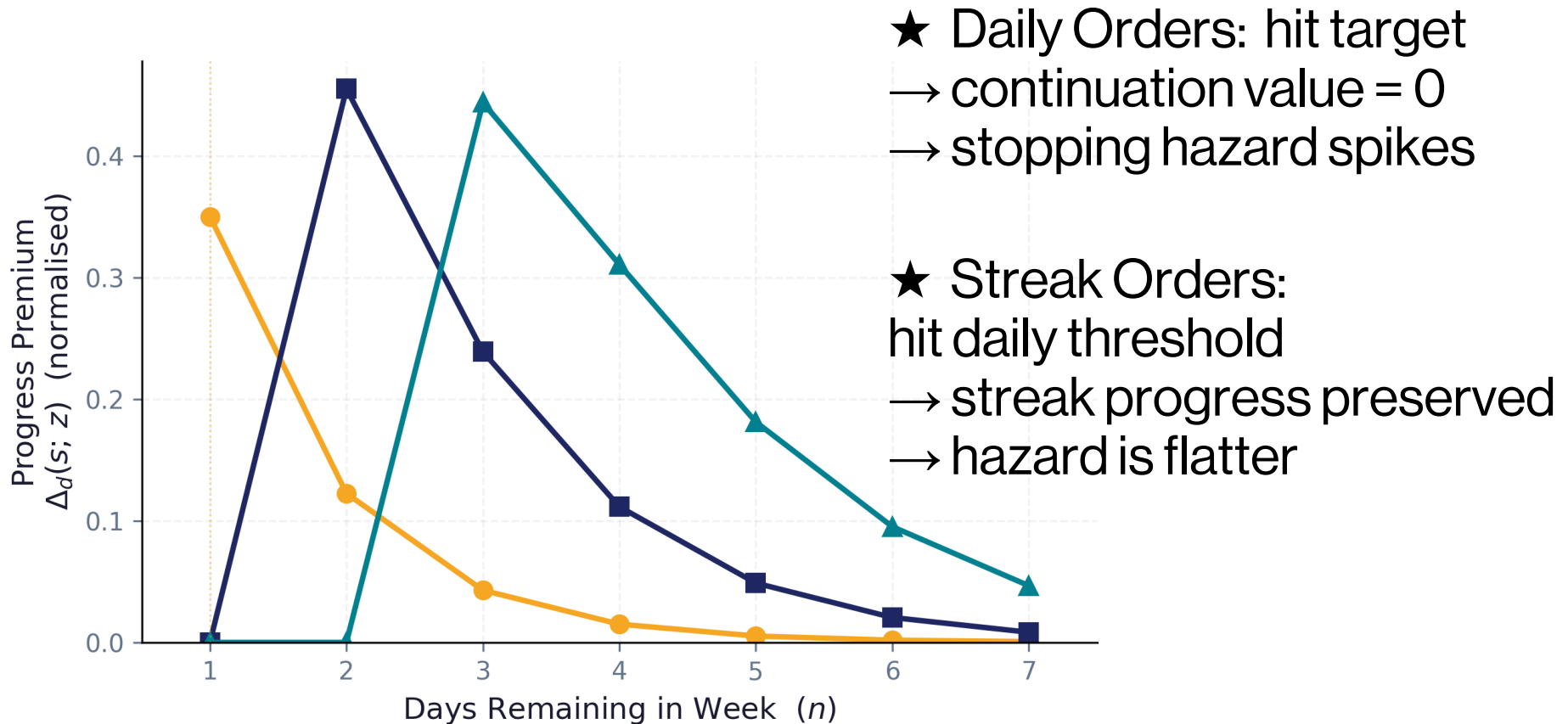
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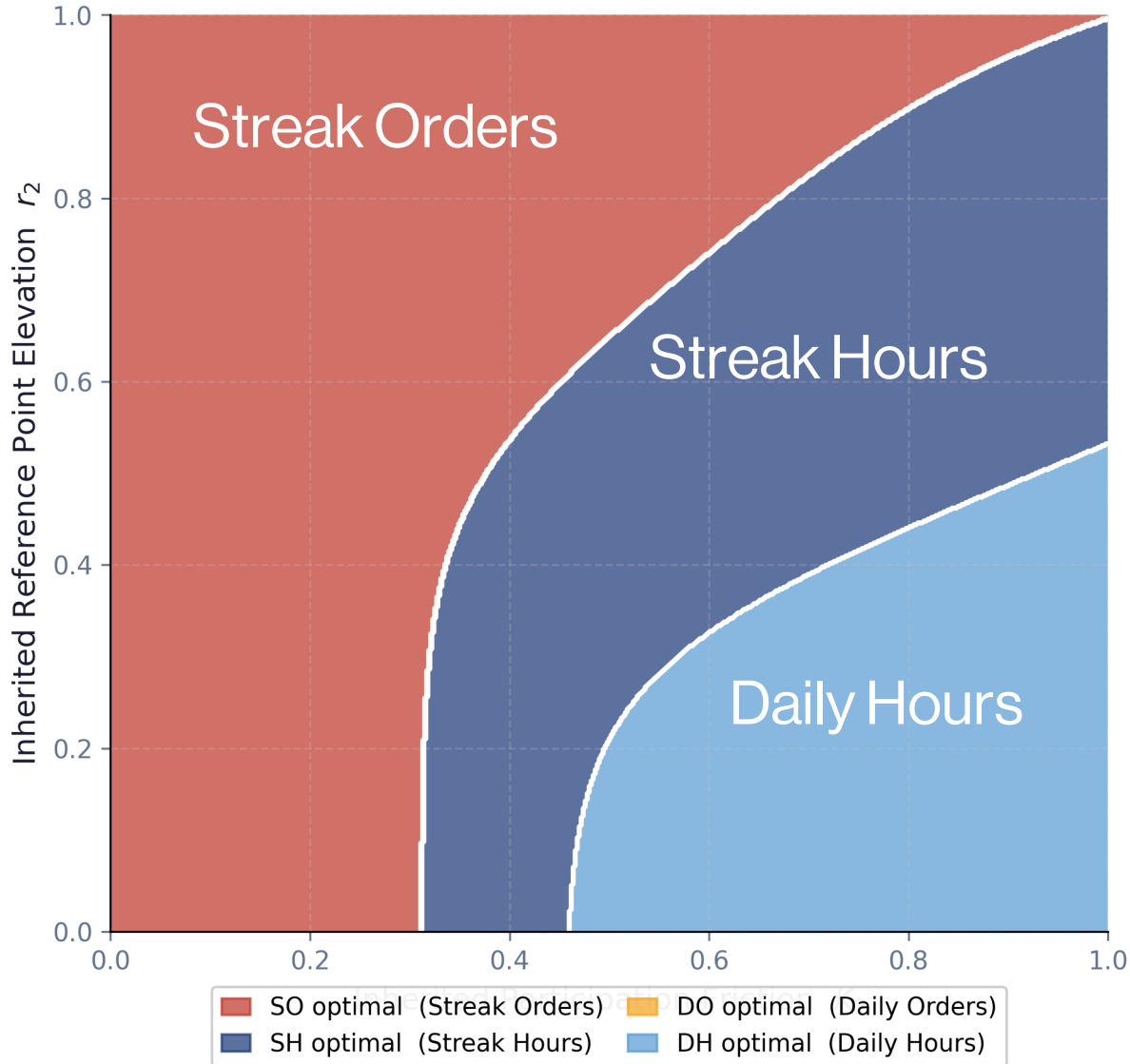


Prediction: conditional on reaching the same goal, stopping should be sharper under Daily Orders than under Streak Orders

Model

Platform's Decision

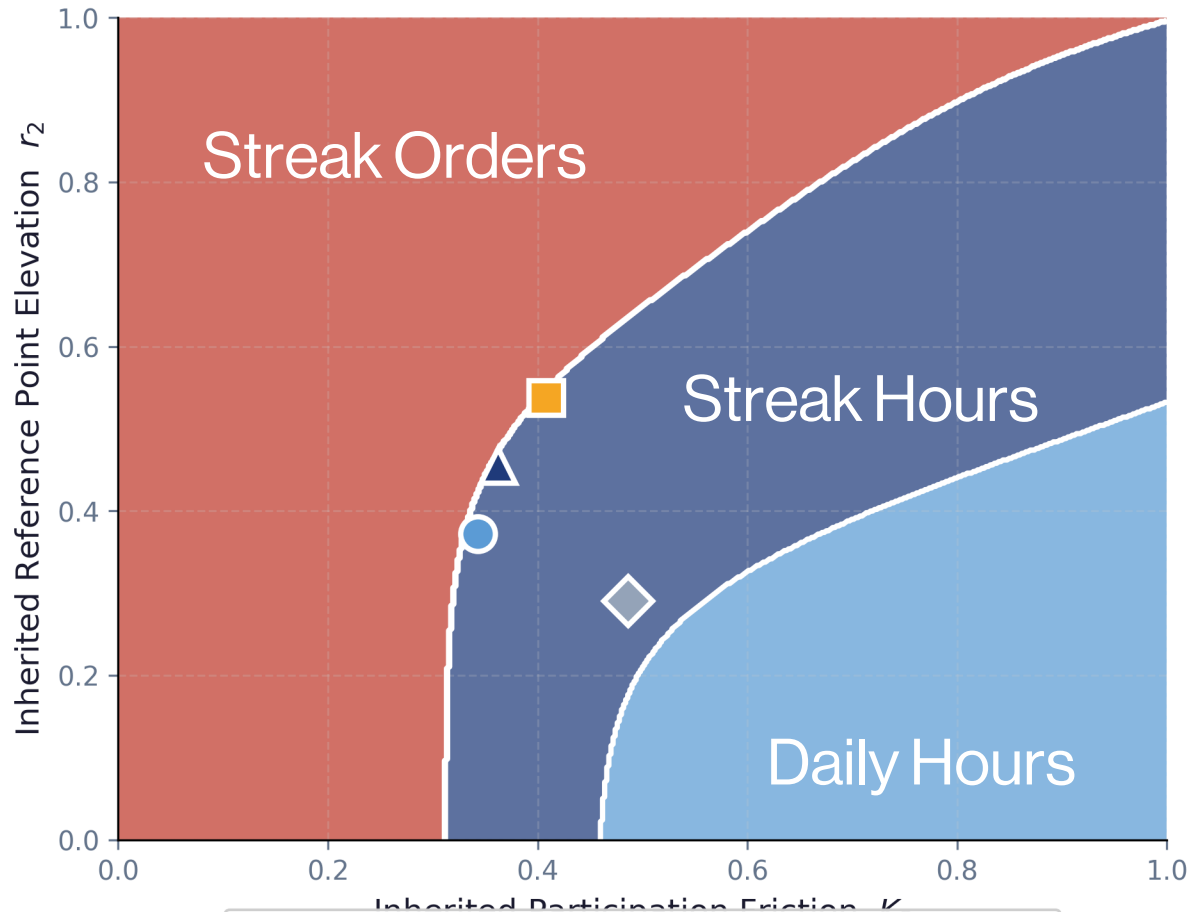
r :
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Model

Platform's Decision

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- Daily Hours (DH) pred.
- ▲ Streak Hours (SH) pred.
- Daily Orders (DO) pred.
- ◆ No Incentive pred.

K :
inherited
activation
friction

Summary + Implications

1. Build participation first

Hours-style predecessors make it easier for the next contract to get workers online.

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Orders-style successors are most useful when there is already an active base to convert.

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Orders-style successors are most useful when there is already an active base to convert.

3. Streaks change stopping

Progress can carry continuation value, so streak contracts should create less stopping at the goal.

Summary + Implications

1. Build participation first

Hours-style predecessors make it easier for the next contract to get workers online.

2. Then ask for conversion

Orders-style successors are most useful when there is already an active base to convert.

3. Streaks change stopping

Progress can carry continuation value, so streak contracts should create less stopping at the goal.

Design Implications: Three requirements:
Vary contract primitives: metric (hours/orders)
+ horizon (reset / streak)
Assign at market-time level
Generate predecessor-successor support



Experiment

History-aware Switchback

Experiment

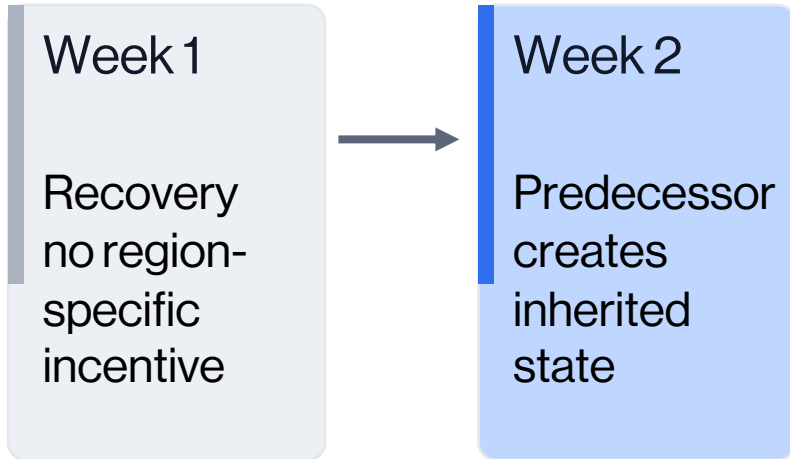
History-aware Switchback

Week 1

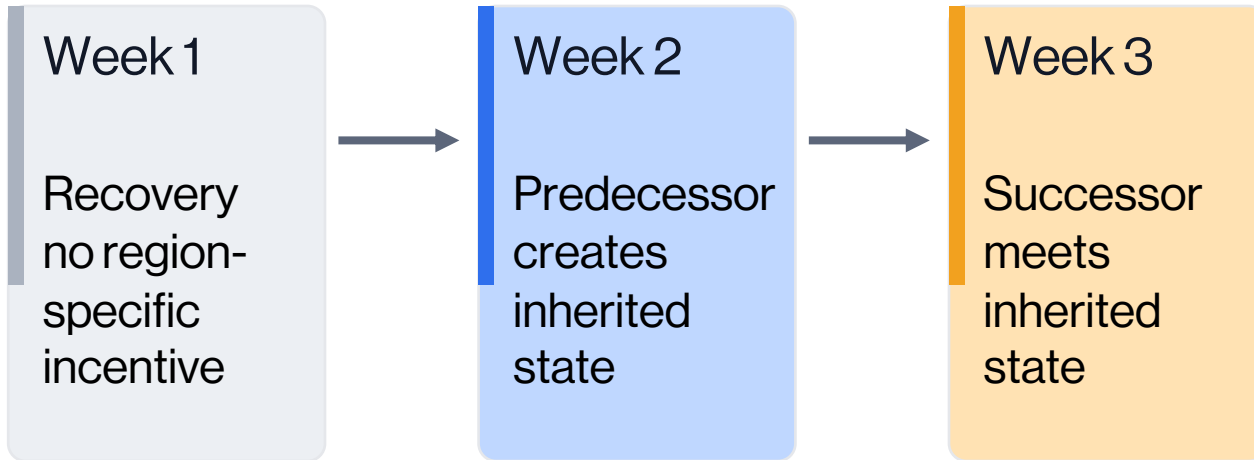
Recovery
no region-
specific
incentive

Experiment

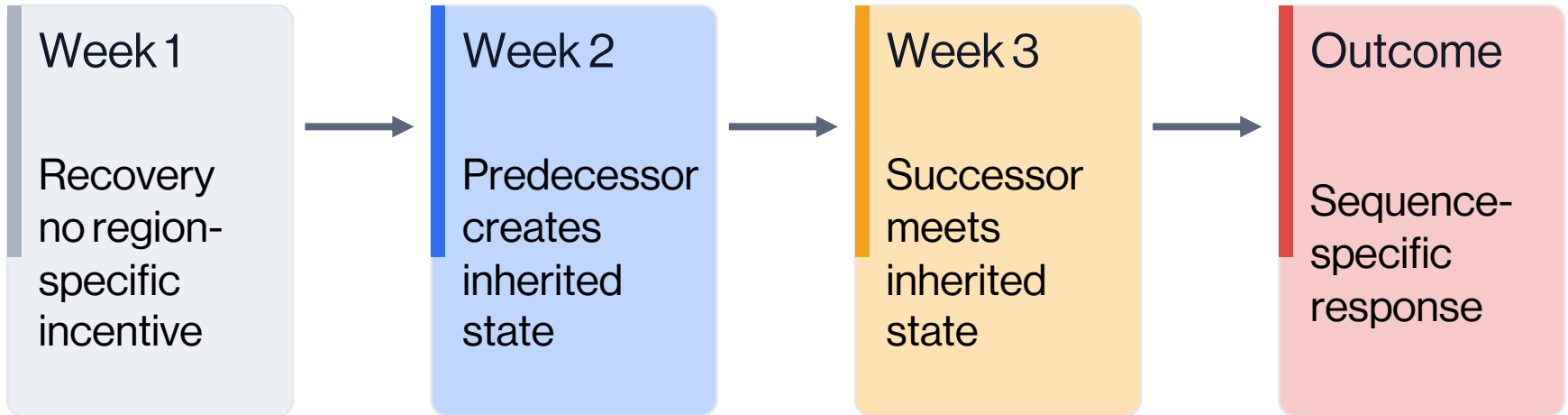
History-aware Switchback



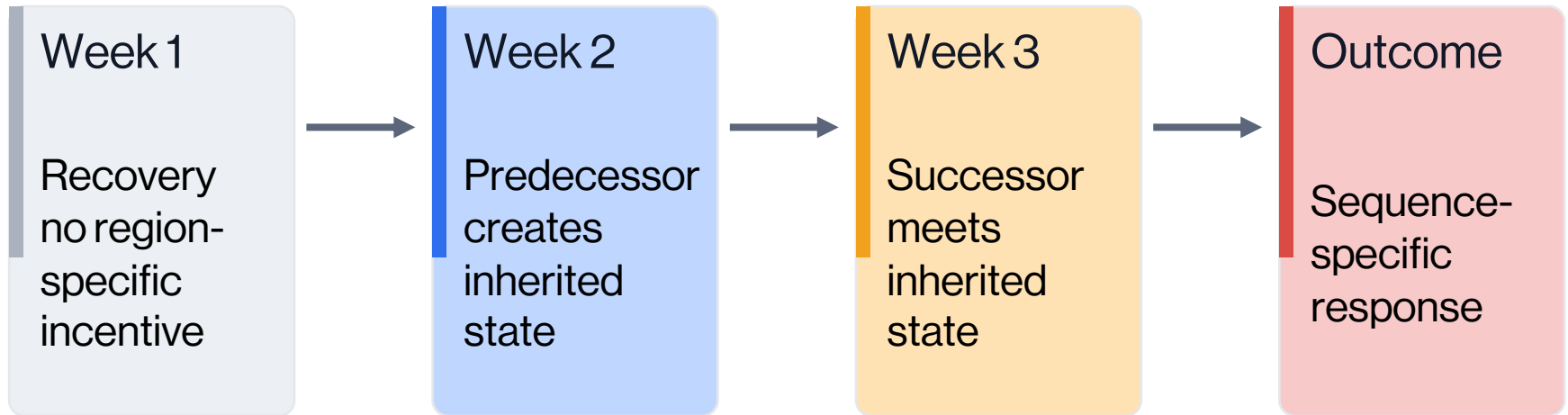
History-aware Switchback



History-aware Switchback



History-aware Switchback



Assignment unit

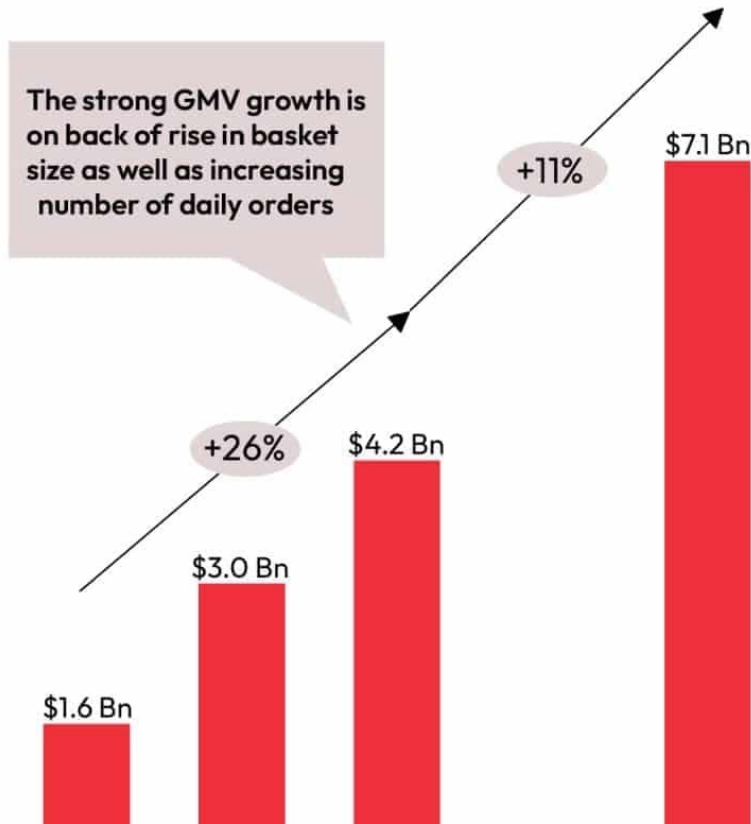
region × week

Key comparison

same current
incentive, different
predecessor

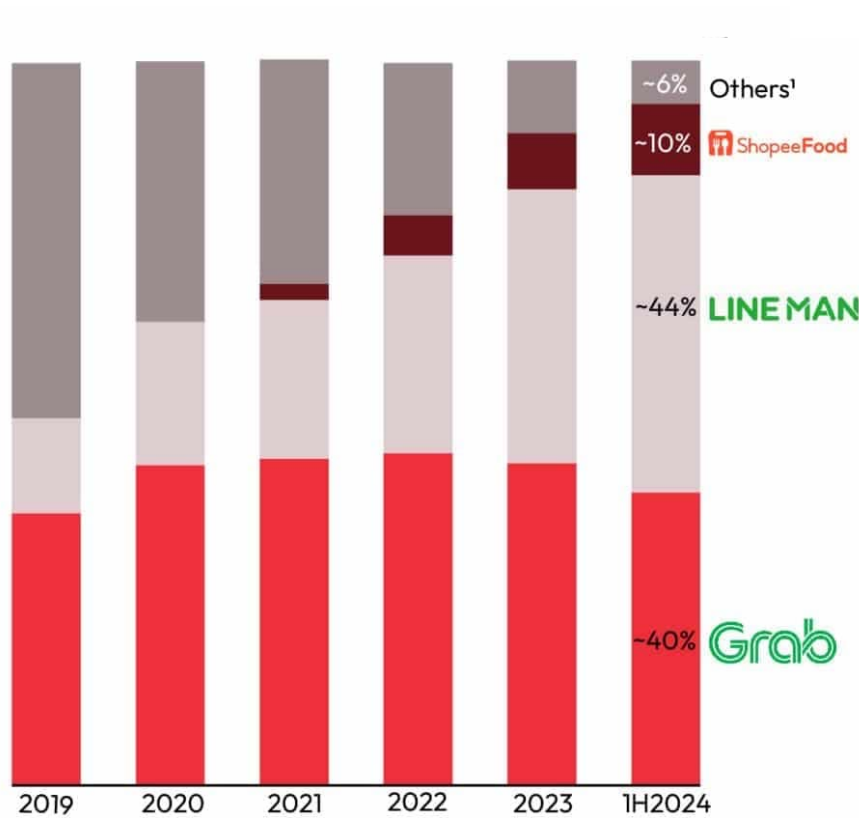
Experiment

Food Delivery in Thailand



Experiment

Food Delivery in Thailand

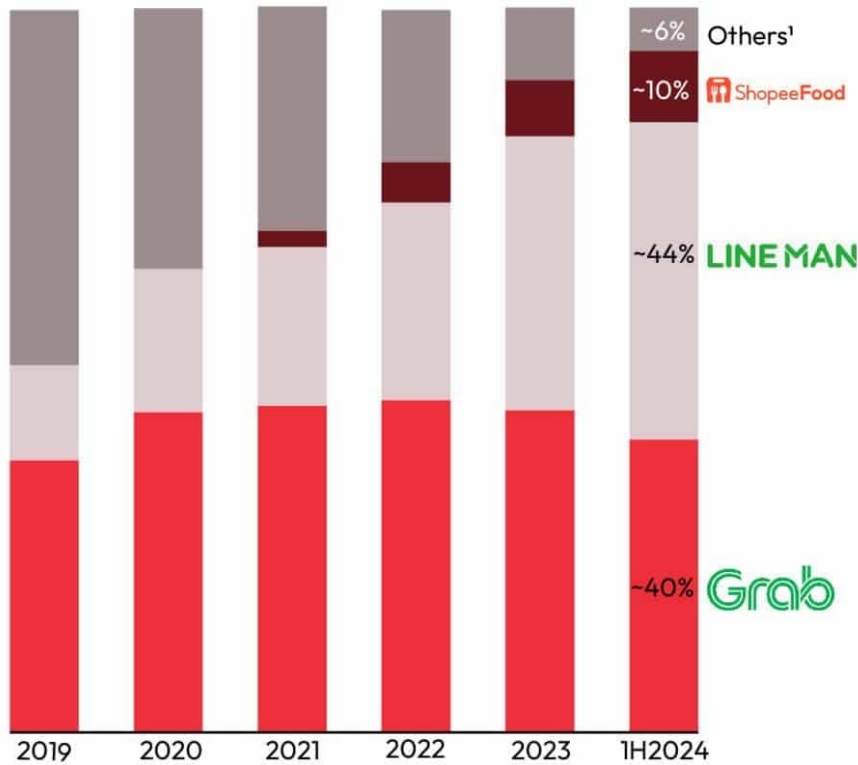


Market share



Experiment

Food Delivery in Thailand



Market share



A screenshot of a food delivery app interface. At the top, it says 'Expected earnings for this job'. Below this, there are two boxes: 'จ่ายร้าน 2,500' (Pay restaurant 2,500) and 'ได้รับ 1,000' (Receive 1,000). The main content shows a job listing for 'After you Central World' (Restaurant) at '999/9 Central World Plaza ชั้น 7 ถนนพระรามที่ ๑ เขตปทุมวัน กรุงเทพฯ 10330'. The estimated travel time is '10 นาที' (10 mins). The destination is 'IDEO Q ราชเทวี' (Destination) at '515 คอนโด Ideo Q ถ.ราชเทวี แขวงพญาไท เขตราชเทวี กรุงเทพฯ 10200'. At the bottom, there are two buttons: 'ข้าม' (Pass) and 'รับงาน' (Accept the job).

Pass

Accept the job

Experiment

Food Delivery in Thailand



Workers need to wear the uniform + use the specialized box to work.

Experiment

Food Delivery in Thailand



Workers need to wear the uniform + use the specialized box to work.

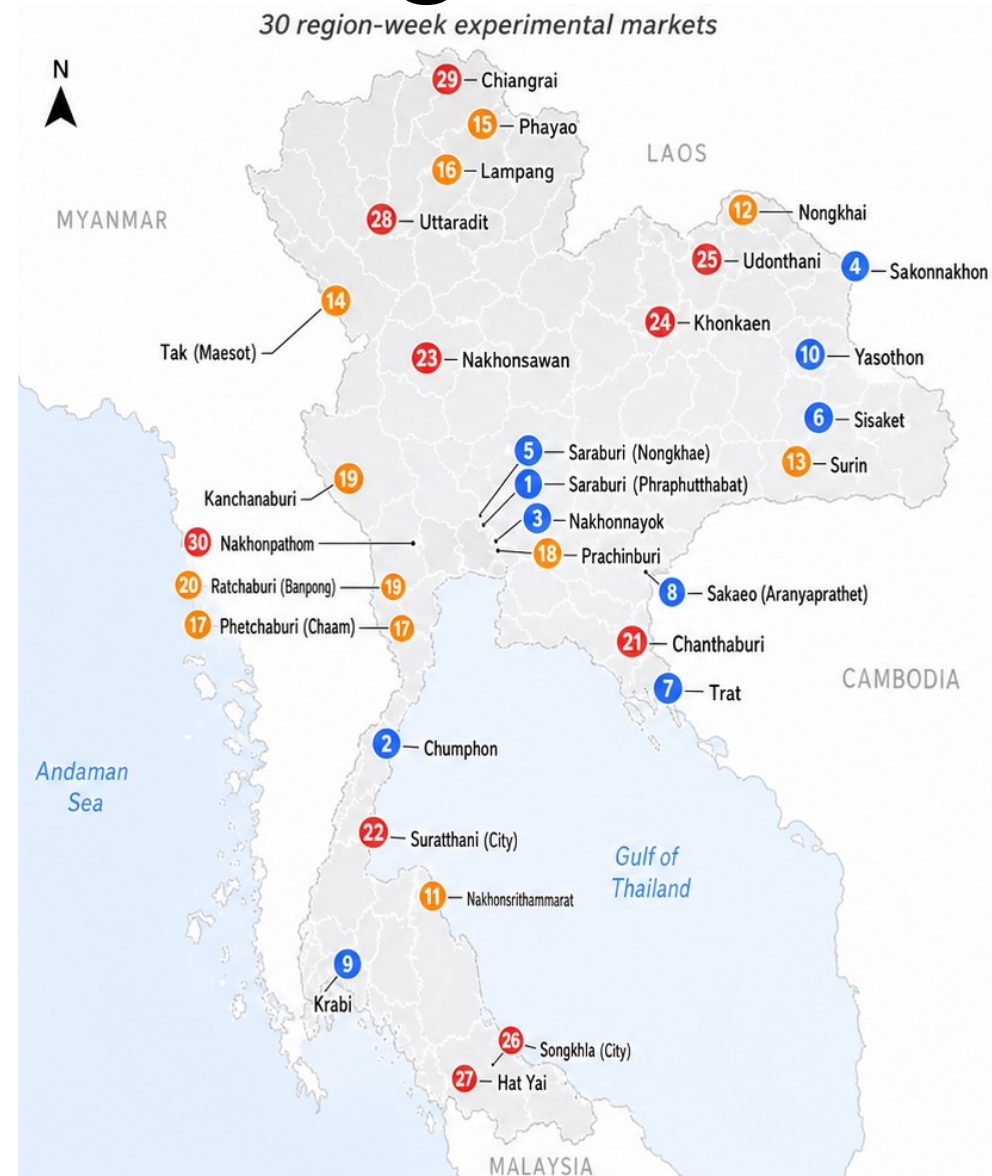
They also run POS systems at restaurants so we can control for demand for different channels.



Experiment

Field Experiment Design

30 cities outside of Bangkok,
10 for each market type.

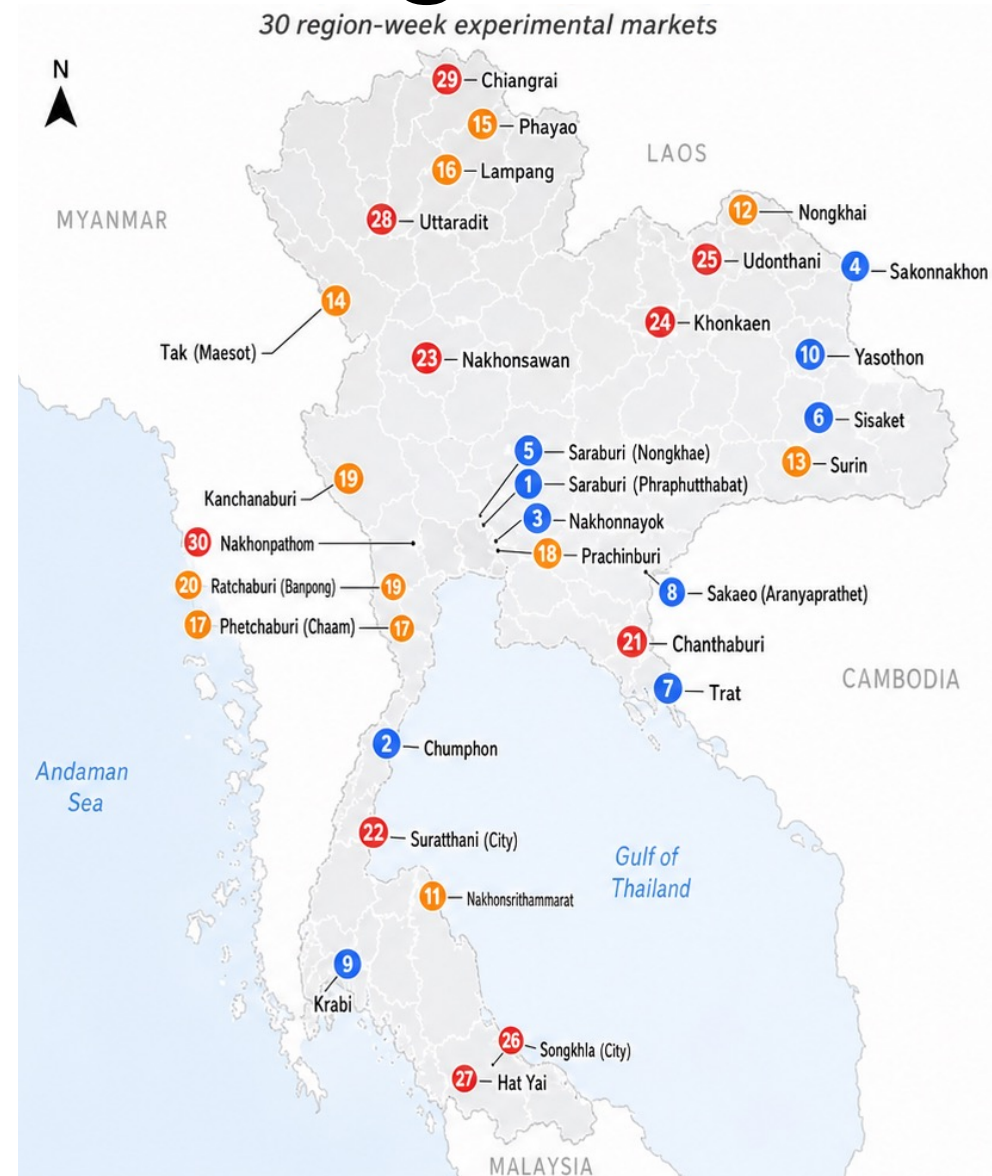


Experiment

Field Experiment Design

30 cities outside of Bangkok,
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- Win: 5.54 hours / 27.58 orders
- Swing: 5.15 hours / 25.06 orders
- Lose: 4.55 hours / 20.73 orders



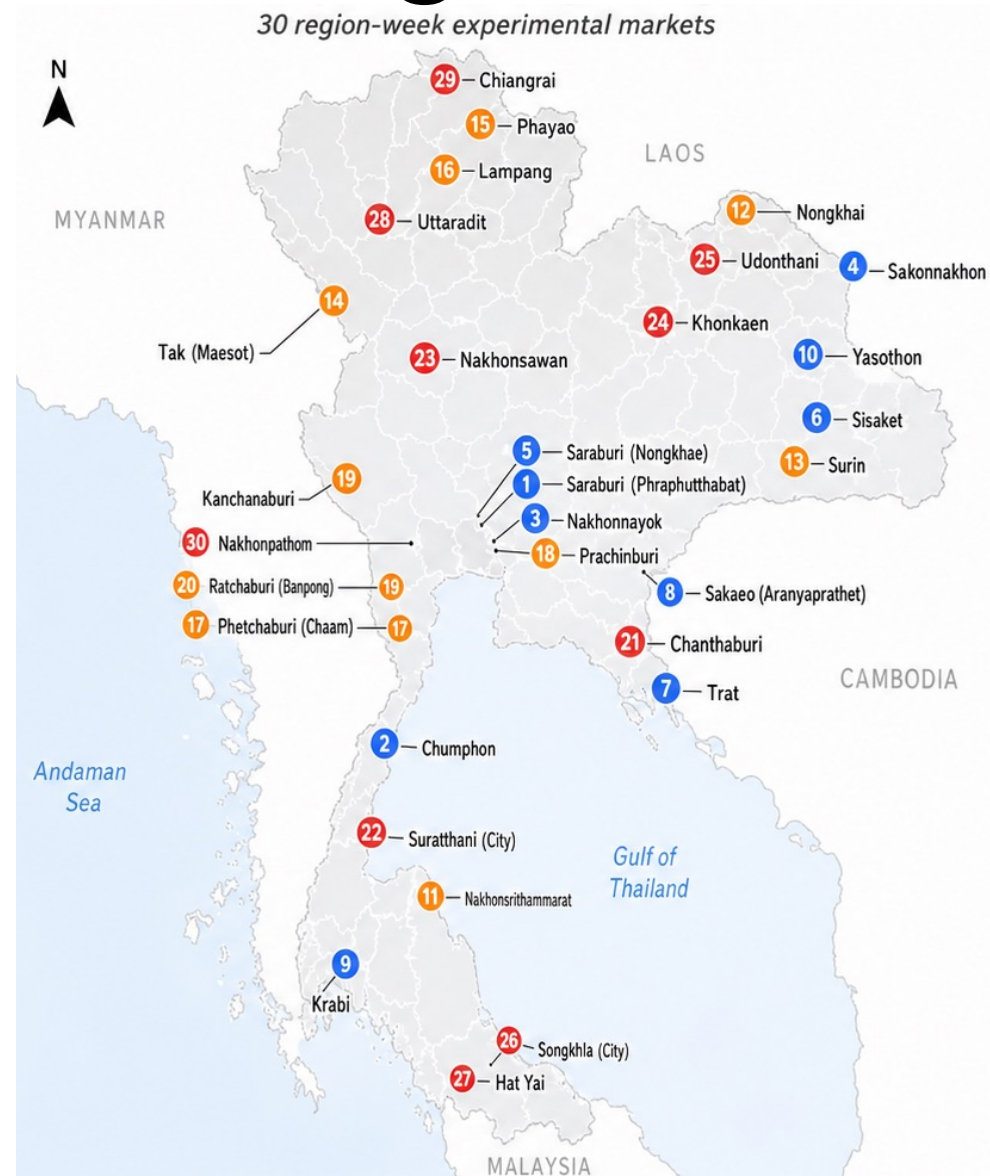
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5 incentive conditions



Experiment

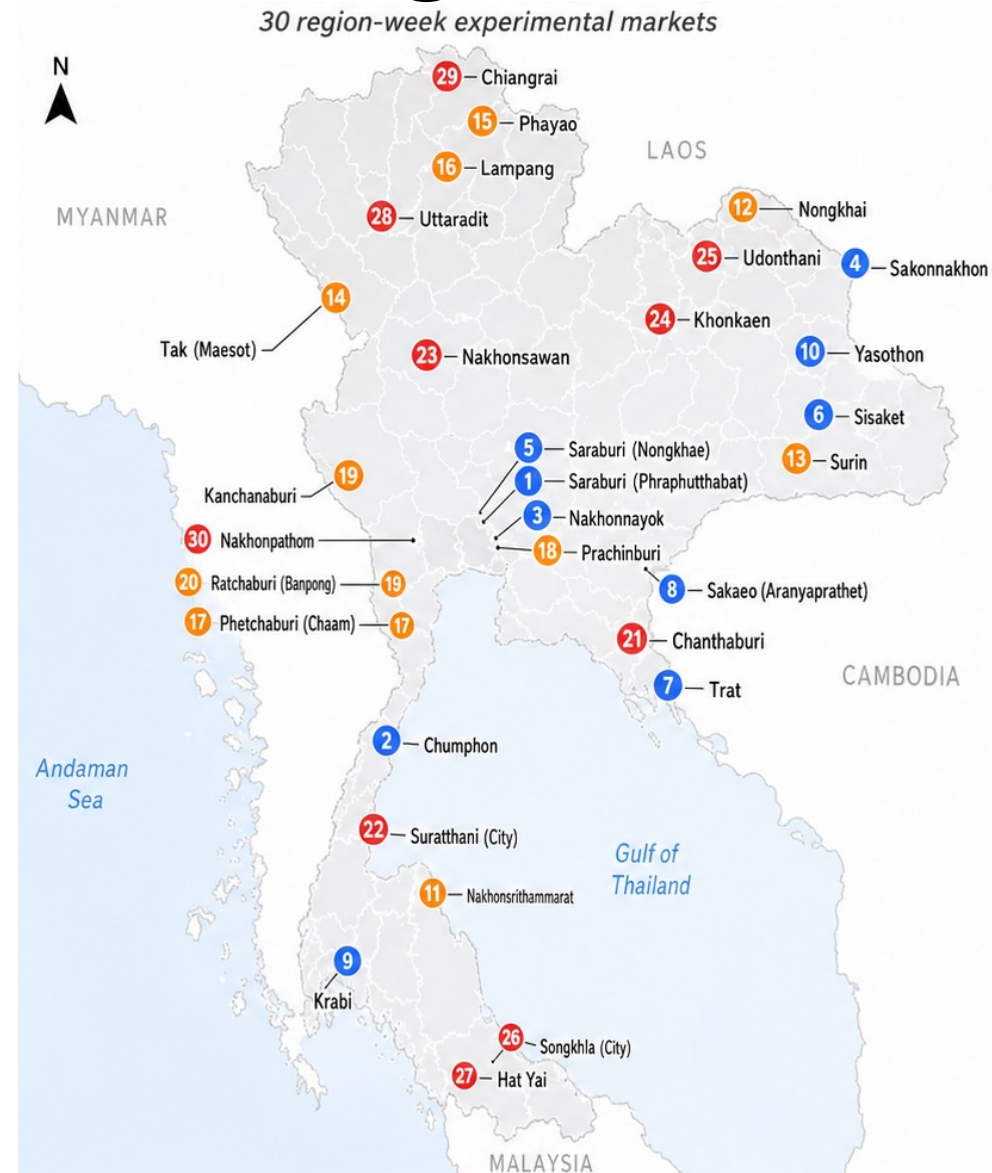
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- Control: per-trip base



Experiment

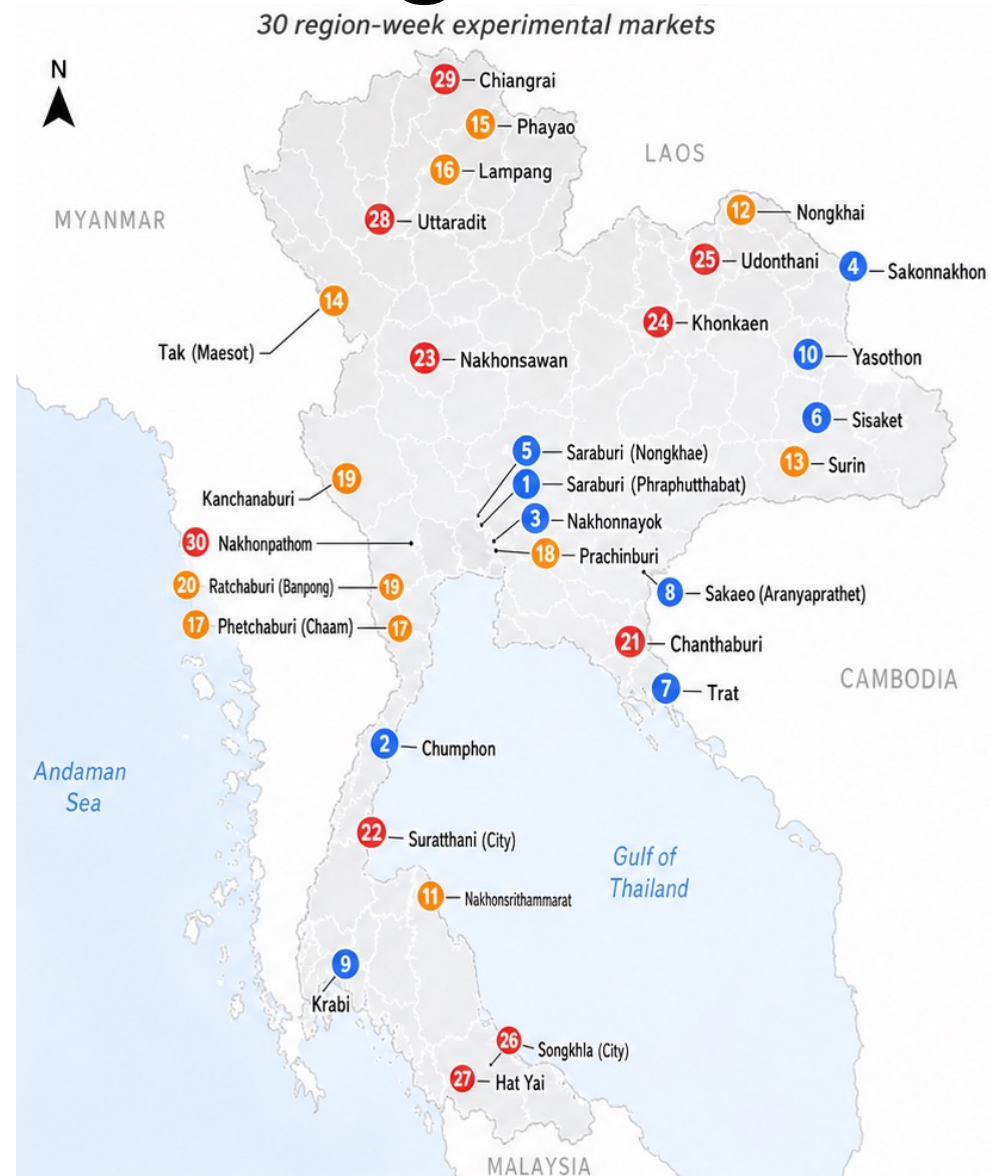
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Experiment

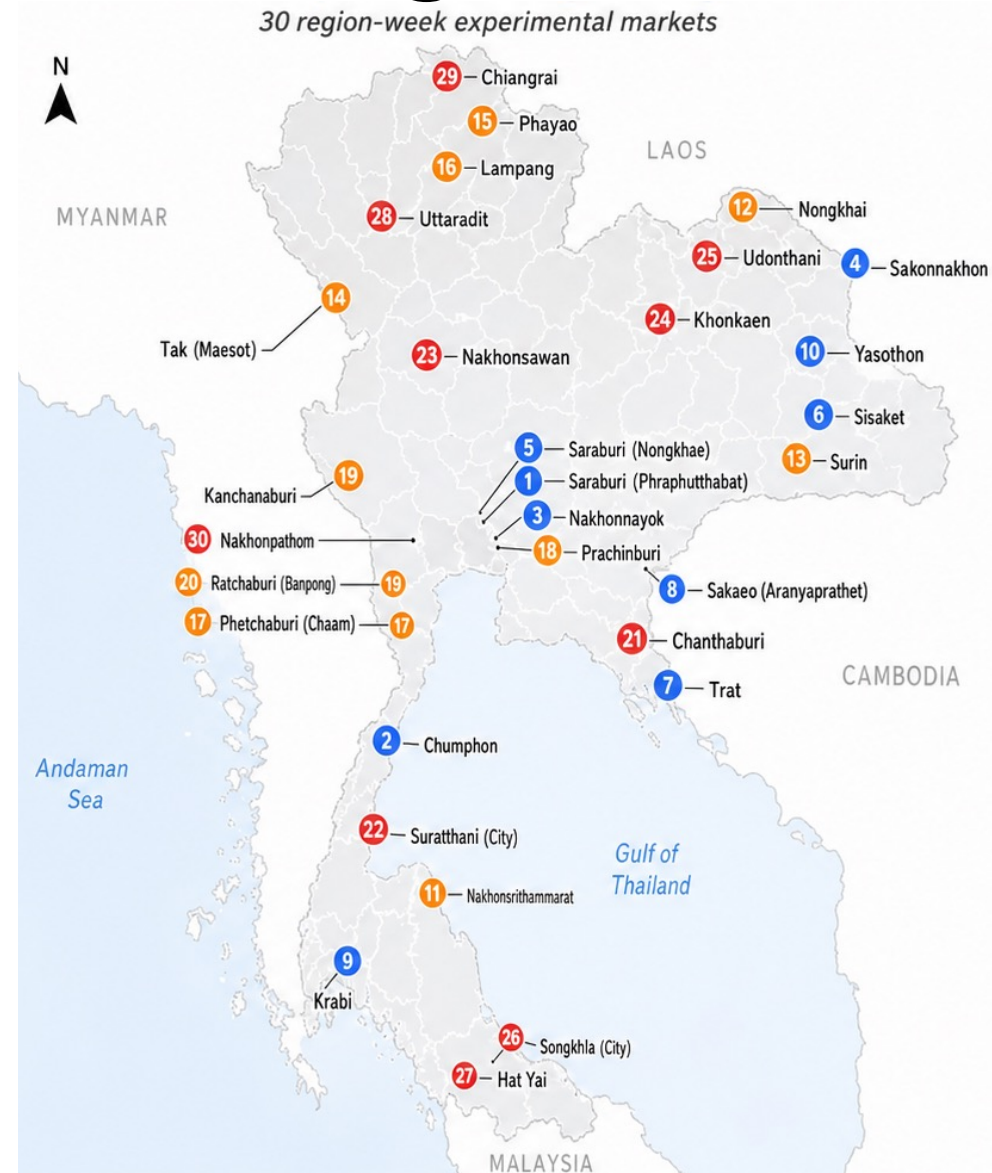
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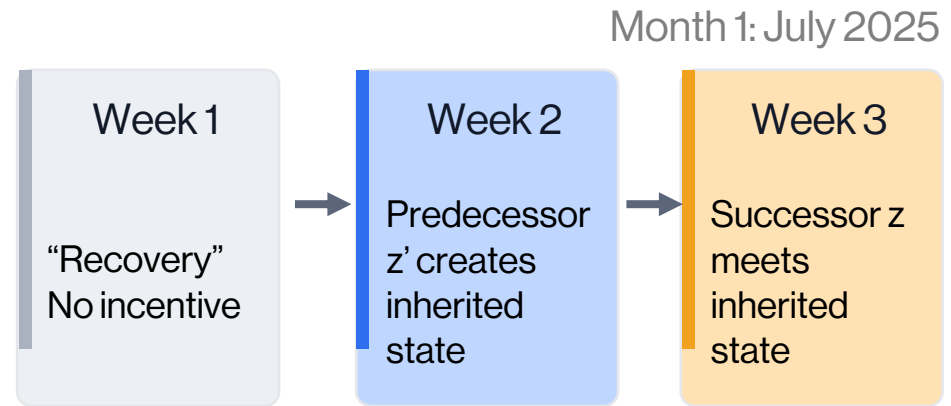


Experiment

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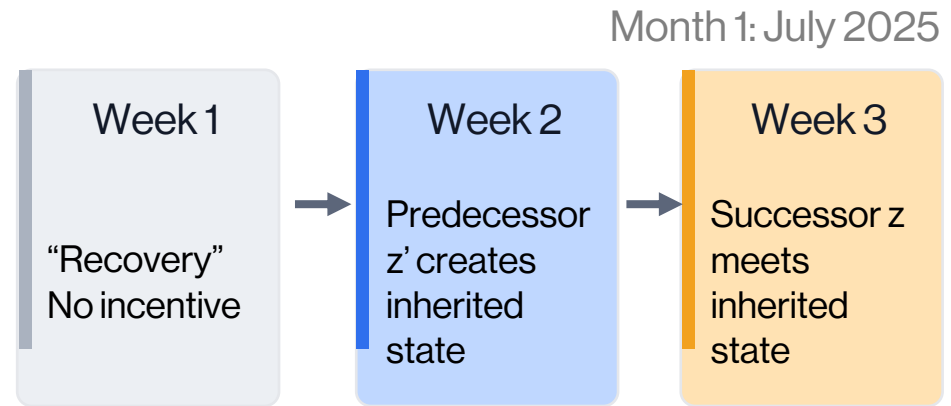
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Switchback design: All possible orders (without repeats), by market type + workers' tiers + week

Experiment

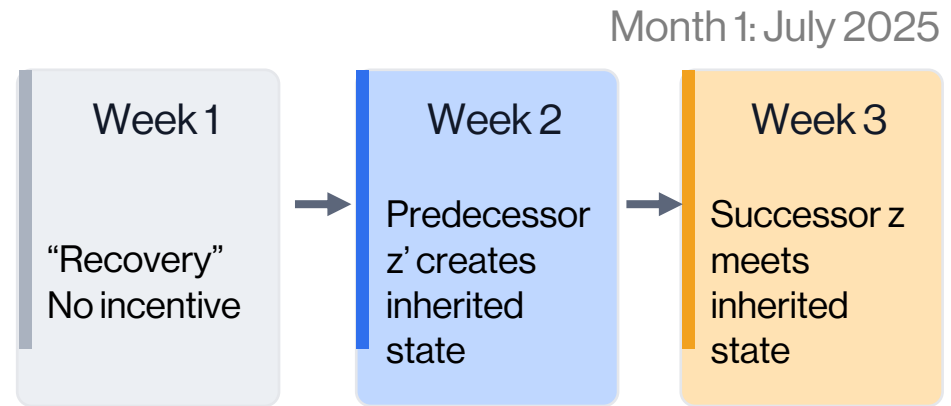
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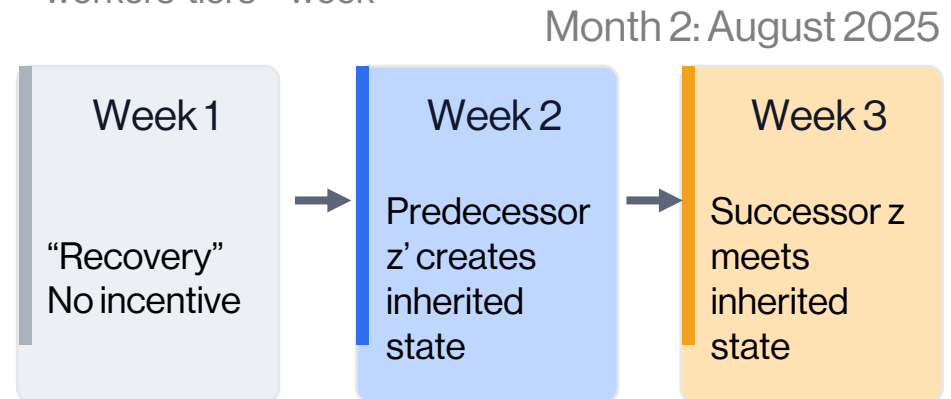
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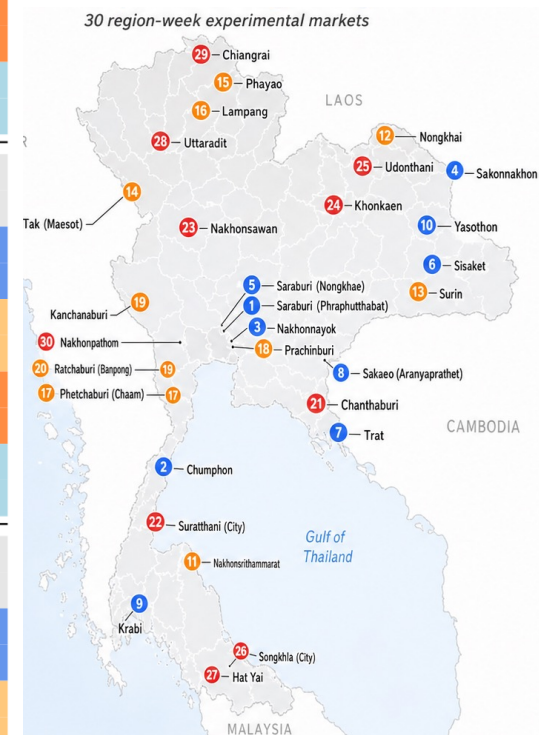
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- Streak hours (X hours a day for Y days)



Switchback design: All possible orders (without repeats), by market type + workers' tiers + week



Region	Cluster	July 2025		August 2025	
		W2 scheme	W3 scheme	W2 scheme	W3 scheme
Saraburi (Phraphutthabat)	Win	○ Daily Hours	■ Streak Orders	● Streak Hours	— No Incentive
Chumphon	Win	○ Daily Hours	● Streak Hours	○ Daily Hours	— No Incentive
Nakhonnayok	Win	■ Streak Orders	□ Daily Orders	□ Daily Orders	● Streak Hours
Sakonkakhon	Win	■ Streak Orders	— No Incentive	■ Streak Orders	● Streak Hours
Saraburi (Nongkhae)	Win	□ Daily Orders	○ Daily Hours	— No Incentive	□ Daily Orders
Sisaket	Win	□ Daily Orders	— No Incentive	○ Daily Hours	□ Daily Orders
Trat	Win	● Streak Hours	■ Streak Orders	— No Incentive	■ Streak Orders
Sakao (Aranyaprathet)	Win	● Streak Hours	□ Daily Orders	□ Daily Orders	■ Streak Orders
Krabi	Win	— No Incentive	○ Daily Hours	● Streak Hours	○ Daily Hours
Yasothon	Win	— No Incentive	● Streak Hours	■ Streak Orders	○ Daily Hours
Nakhonsrithammarat	Swing	○ Daily Hours	■ Streak Orders	● Streak Hours	— No Incentive
Nongkhai	Swing	○ Daily Hours	● Streak Hours	○ Daily Hours	— No Incentive
Surin	Swing	■ Streak Orders	□ Daily Orders	□ Daily Orders	● Streak Hours
Tak (Maesot)	Swing	■ Streak Orders	— No Incentive	■ Streak Orders	● Streak Hours
Phayao	Swing	□ Daily Orders	○ Daily Hours	— No Incentive	□ Daily Orders
Lampang	Swing	□ Daily Orders	— No Incentive	○ Daily Hours	□ Daily Orders
Phetchaburi (Chaam)	Swing	● Streak Hours	■ Streak Orders	— No Incentive	■ Streak Orders
Prachinburi	Swing	● Streak Hours	□ Daily Orders	□ Daily Orders	■ Streak Orders
Kanchanaburi	Swing	— No Incentive	○ Daily Hours	● Streak Hours	○ Daily Hours
Ratchaburi (Banpong)	Swing	— No Incentive	● Streak Hours	■ Streak Orders	○ Daily Hours
Chanthaburi	Lose	○ Daily Hours	■ Streak Orders	● Streak Hours	— No Incentive
Suratthani (City)	Lose	○ Daily Hours	● Streak Hours	○ Daily Hours	— No Incentive
Nakhonsawan	Lose	■ Streak Orders	□ Daily Orders	□ Daily Orders	● Streak Hours
Khonkaen	Lose	■ Streak Orders	— No Incentive	■ Streak Orders	● Streak Hours
Udonthani	Lose	□ Daily Orders	○ Daily Hours	— No Incentive	□ Daily Orders
Songkhla (City)	Lose	□ Daily Orders	— No Incentive	○ Daily Hours	□ Daily Orders
Hat Yai	Lose	● Streak Hours	■ Streak Orders	— No Incentive	■ Streak Orders
Uttaradit	Lose	● Streak Hours	□ Daily Orders	□ Daily Orders	■ Streak Orders
Chiangrai	Lose	— No Incentive	○ Daily Hours	● Streak Hours	○ Daily Hours
Nakhonpathom	Lose	— No Incentive	● Streak Hours	■ Streak Orders	○ Daily Hours



Legend:

○ Daily Hours (single-day, hours-based)	● Streak Hours (multi-day, hours-based)
□ Daily Orders (single-day, orders-based)	■ Streak Orders (multi-day, orders-based)
— No Incentive (control period)	

Results

Static Benchmark

Averaging over
predecessor histories...

Daily Hours

Daily Orders

Streak Hours

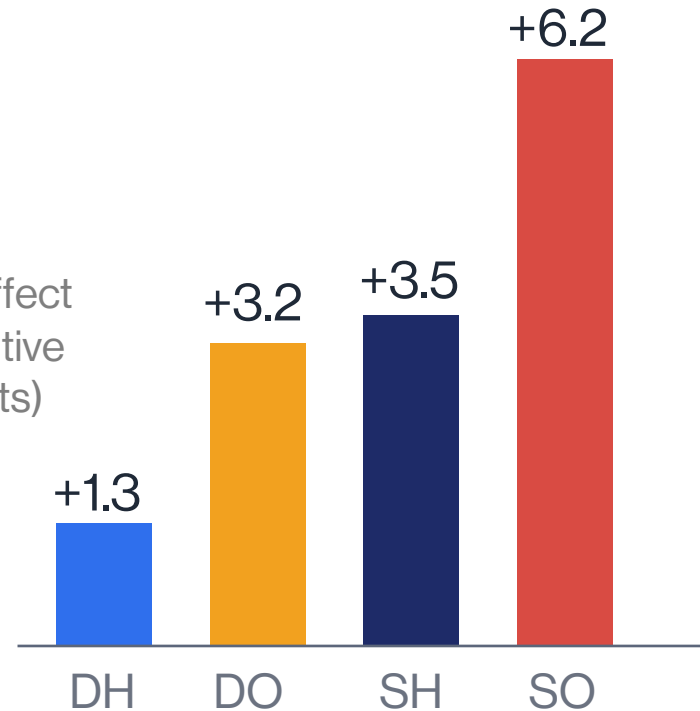
Streak Orders

Results

Static Benchmark

Averaging over predecessor histories...

Acceptance rate effect relative to no incentive (percentage points)



Daily Hours
Daily Orders
Streak Hours
Streak Orders

Acceptance

+1.3 pp

+3.2 pp

+3.5 pp

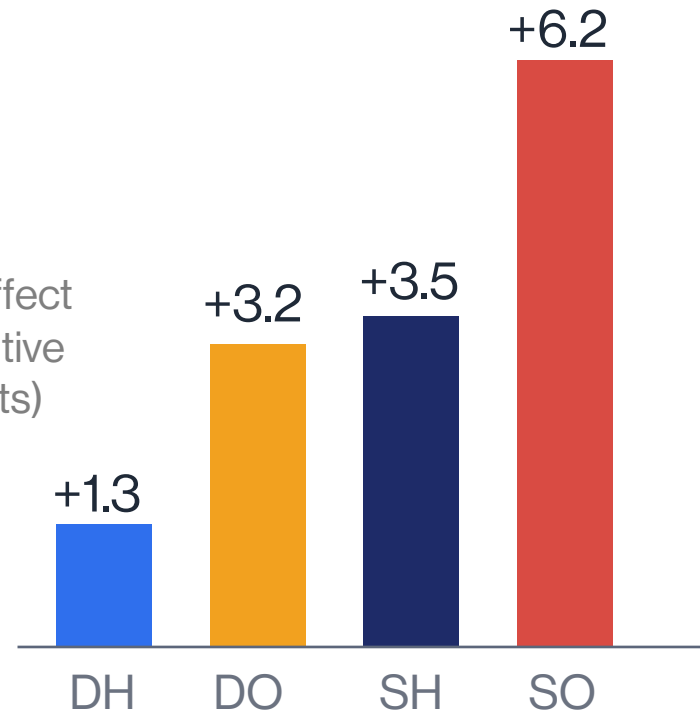
+6.2 pp

Results

Static Benchmark

Averaging over predecessor histories... order-based and streak-based contracts move the conversion margin.

Acceptance rate effect relative to no incentive (percentage points)



Daily Hours
Daily Orders
Streak Hours
Streak Orders

Acceptance

+1.3 pp

+3.2 pp

+3.5 pp

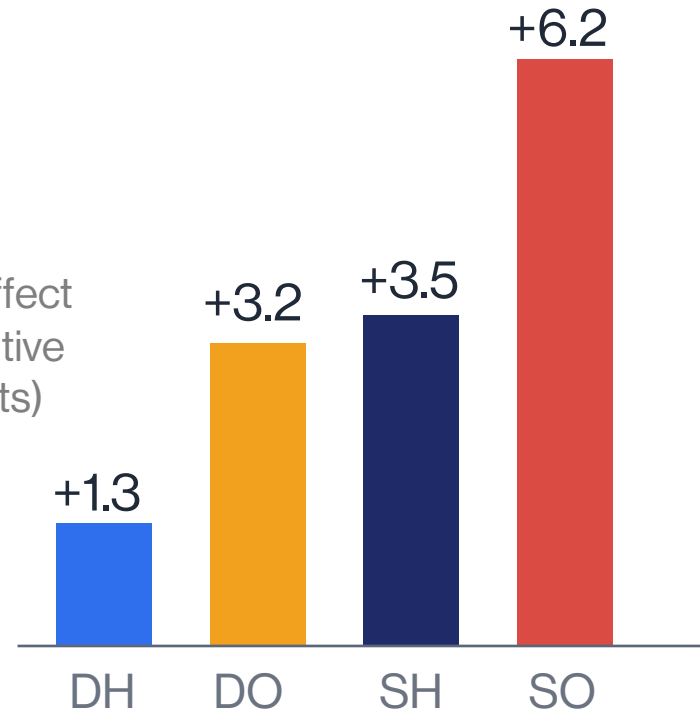
+6.2 pp

Results

Static Benchmark

Averaging over predecessor histories... order-based and streak-based contracts move the conversion margin.

Acceptance rate effect relative to no incentive (percentage points)



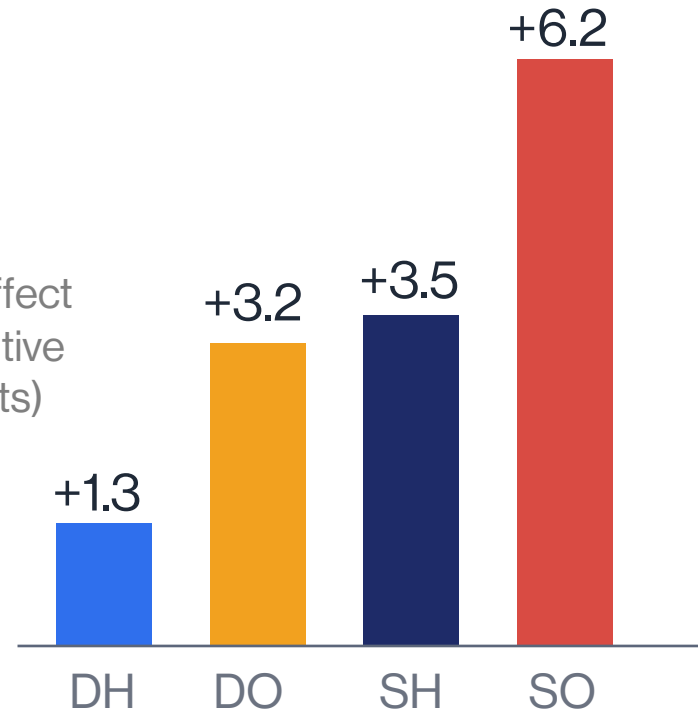
	Online hours	Orders	Acceptance
Daily Hours	+0.005	+0.012	+1.3 pp
Daily Orders	+0.002	+0.012	+3.2 pp
Streak Hours	+0.002	+0.015	+3.5 pp
Streak Orders	+0.000	+0.031	+6.2 pp

Results

Static Benchmark

Averaging over predecessor histories... order-based and streak-based contracts move the conversion margin.

Acceptance rate effect relative to no incentive (percentage points)



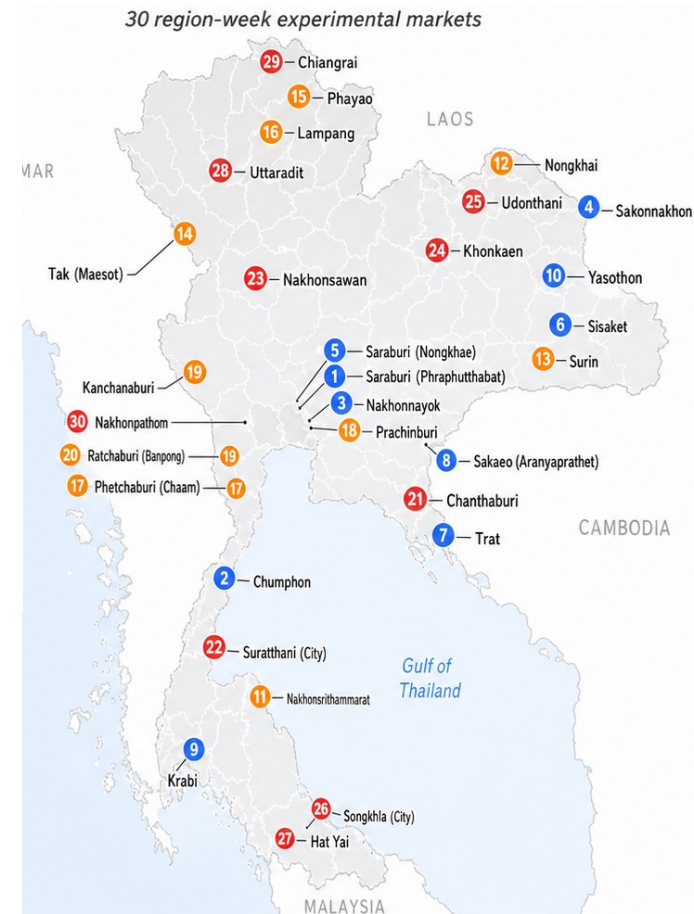
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Daily Hours	+0.005	+0.012	+1.3 pp
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Streak Hours	+0.002	+0.015	+3.5 pp
Streak Orders	+0.000	+0.031	+6.2 pp

Static view: Modest volume effects, stronger acceptance effects.

Results

Where does sequence matter?

Market Online hours Orders Acceptance



Results

Where does sequence matter?

Market	Online hours	Orders	Acceptance
All 30	borderline	no	no



Results

Where does sequence matter?

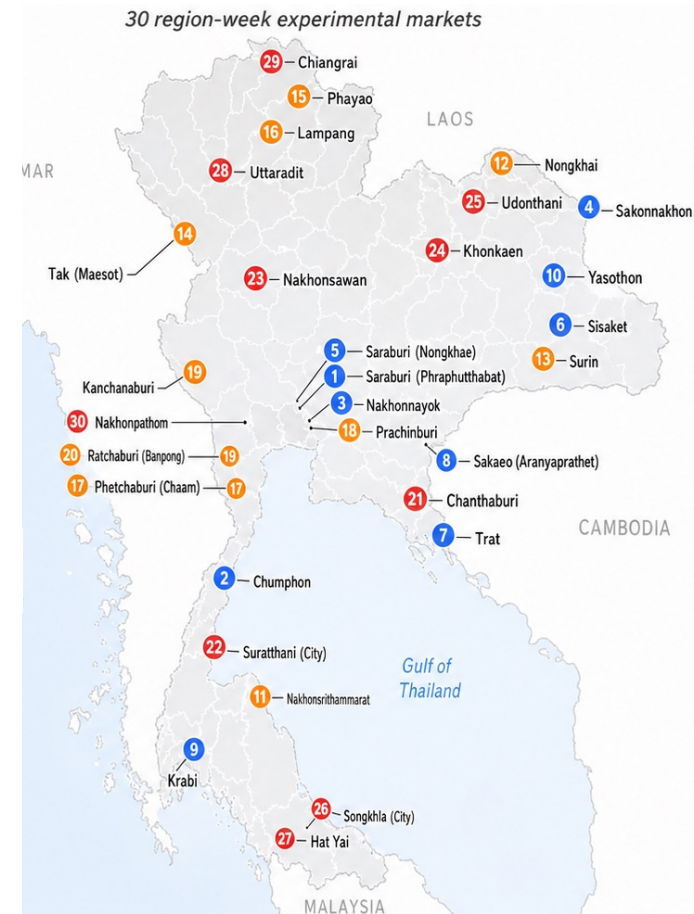
Market	Online hours	Orders	Acceptance
All 30	borderline	no	no
Win	yes	no	no



Results

Where does sequence matter?

Market	Online hours	Orders	Acceptance
All 30	borderline	no	no
Win	yes	no	no
Swing	yes	yes	yes



Results

Where does sequence matter?

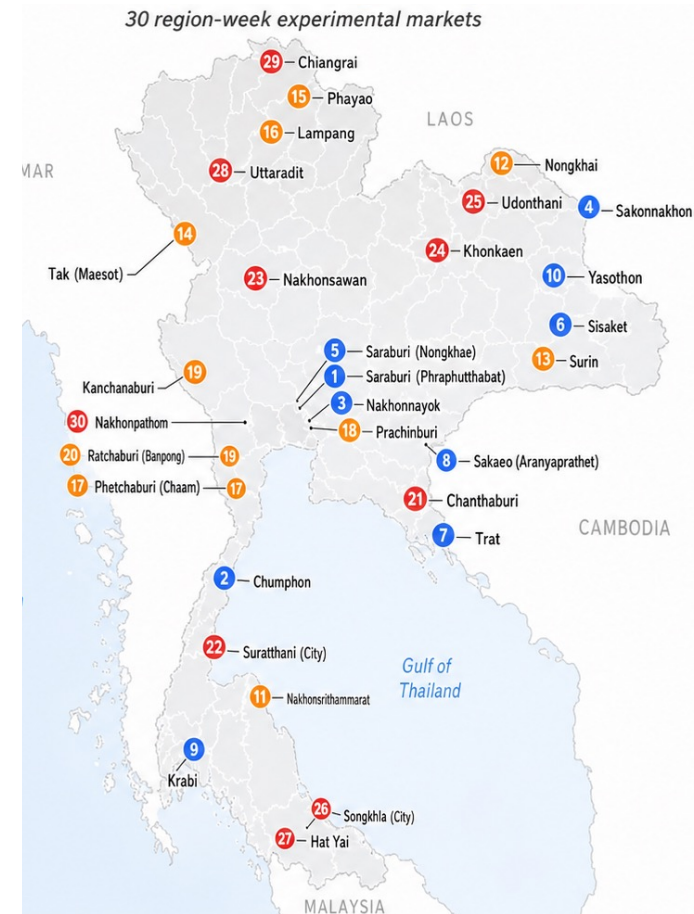
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All 30	borderline	no	no
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Results

Where does sequence matter?

Market	Online hours	Orders	Acceptance
All 30	borderline	no	no
Win	yes	no	no
Swing	yes	yes	yes
Lose	borderline	yes	no



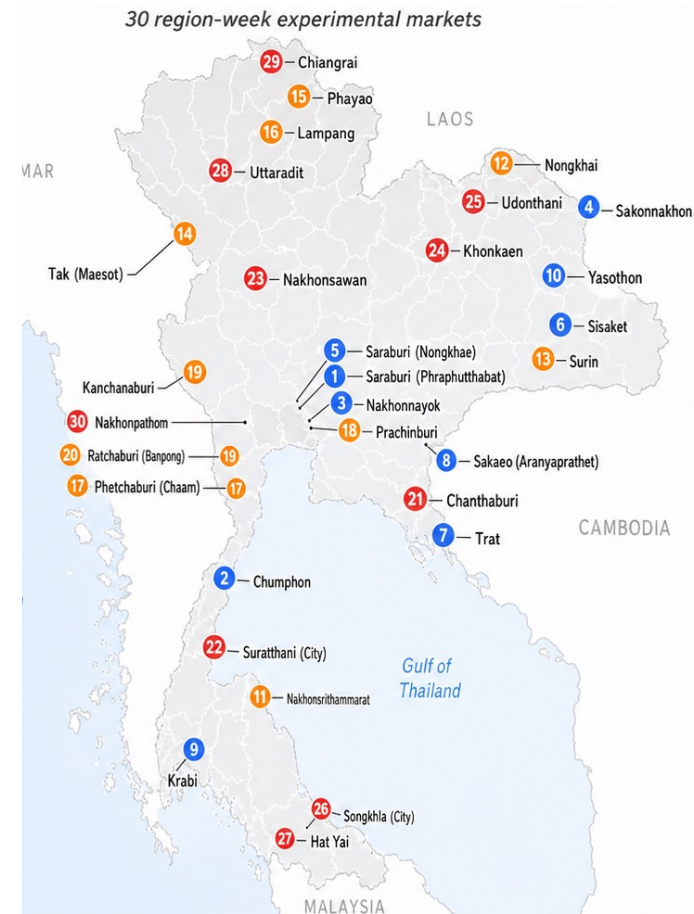
Swing markets are where predecessor-induced states matter most.

Results

Where does sequence matter?

Market	Online hours	Orders	Acceptance
All 30	borderline	no	no
Win	yes	no	no
Swing	yes	yes	yes
Lose	borderline	yes	no

Sequence effects are largest when the market is movable, not simply weakest.



Swing markets are where predecessor-induced states matter most.

Results

Activation before conversion

Swing markets

Current incentive = Streak Orders

Outcome: Acceptance rate

Daily Hours → SO

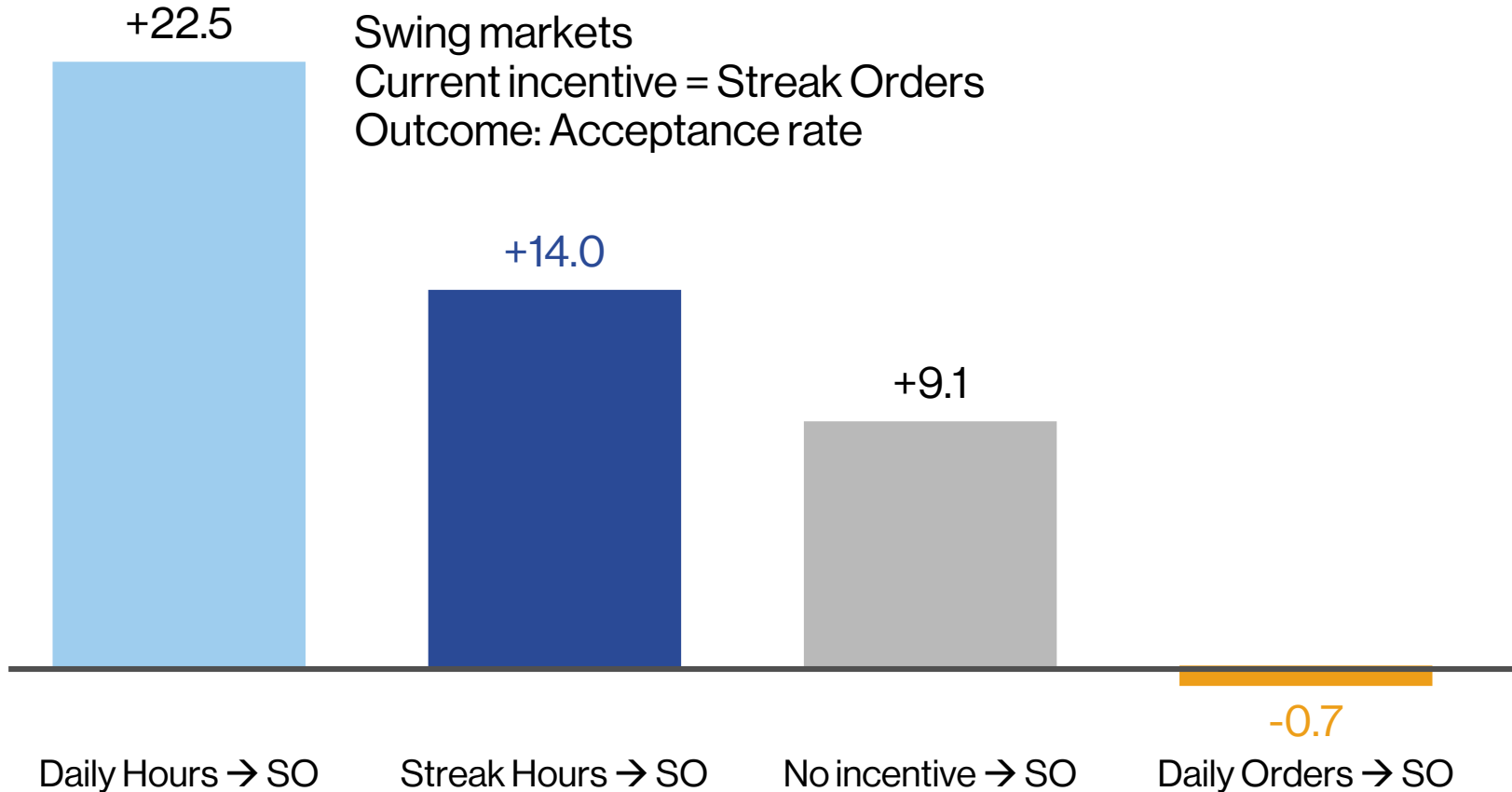
Streak Hours → SO

No incentive → SO

Daily Orders → SO

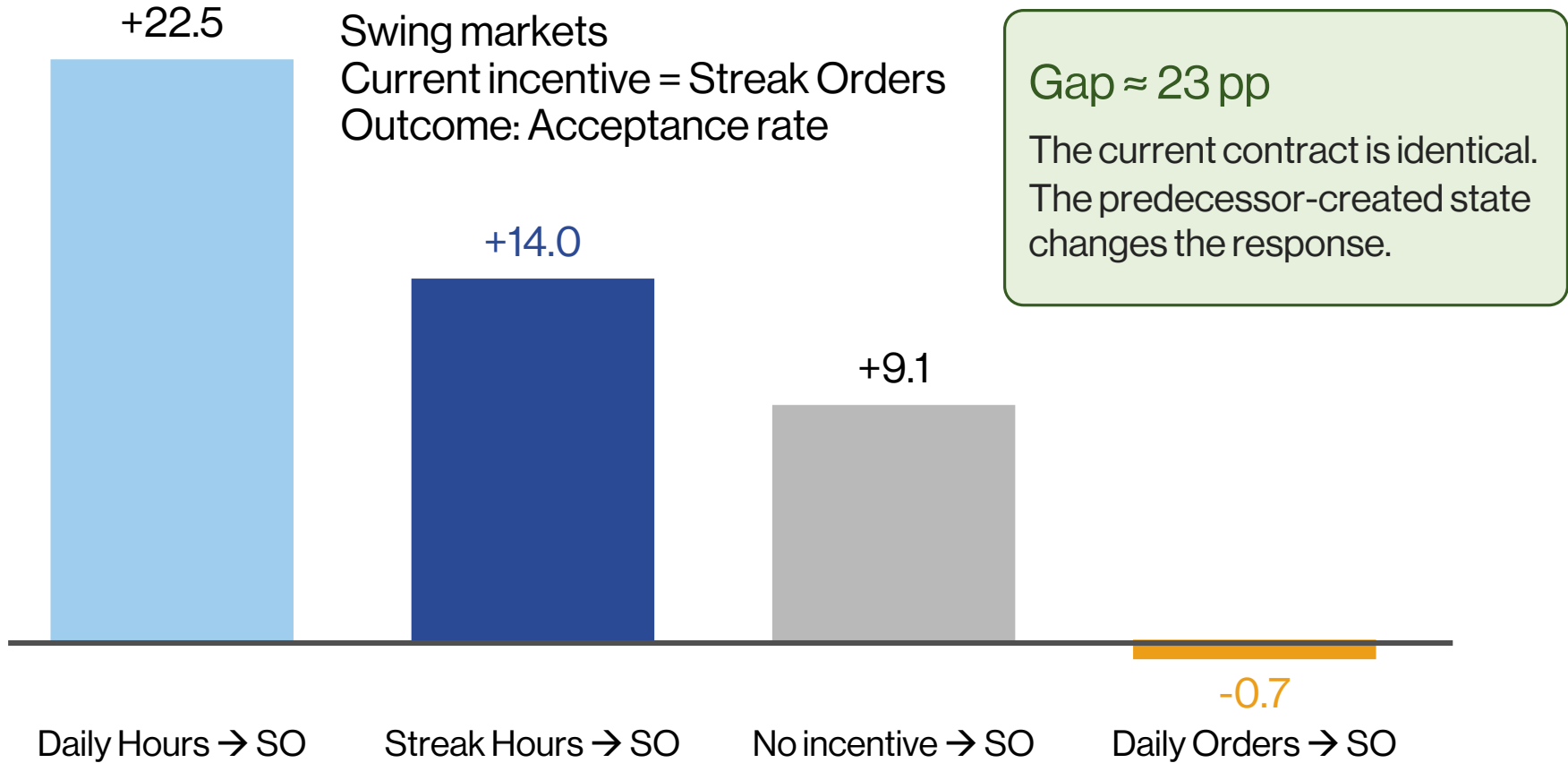
Results

Activation before conversion



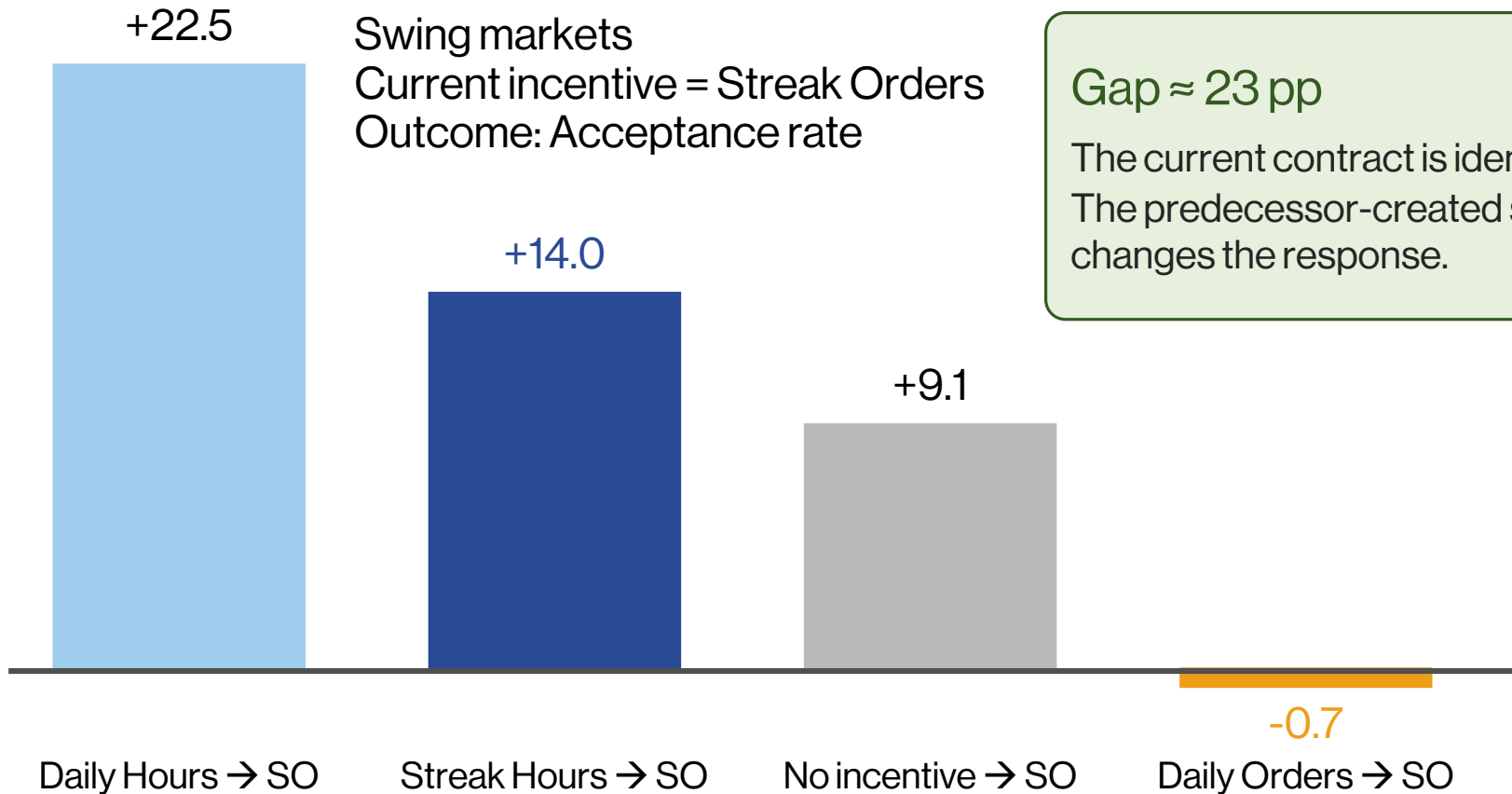
Results

Activation before conversion



Results

Activation before conversion



Daily Hours \rightarrow Streak Orders supports the activation-before-conversion mechanism.

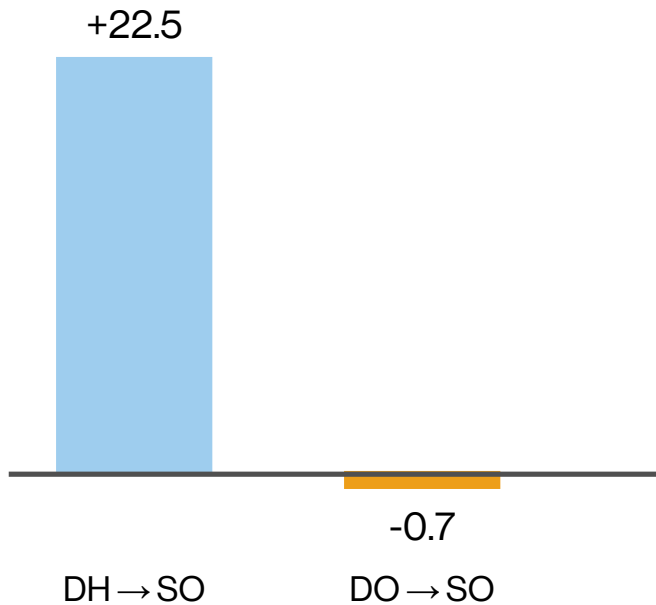
Results

Effect appears in output

Swing markets
Current incentive = Streak Orders

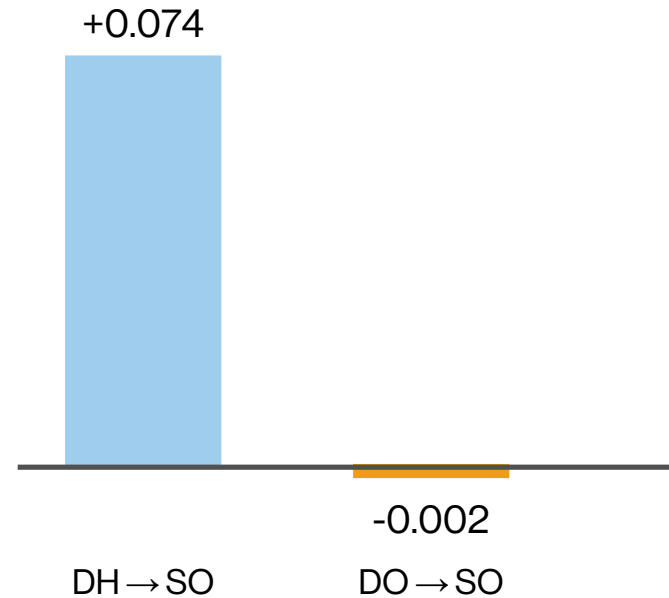
Acceptance rate

Streak Orders after Daily Hours: +22.5 pp
Streak Orders after Daily Orders: -0.7 pp



Completed orders

Streak Orders after Daily Hours: +0.074
Streak Orders after Daily Orders: -0.002



Results

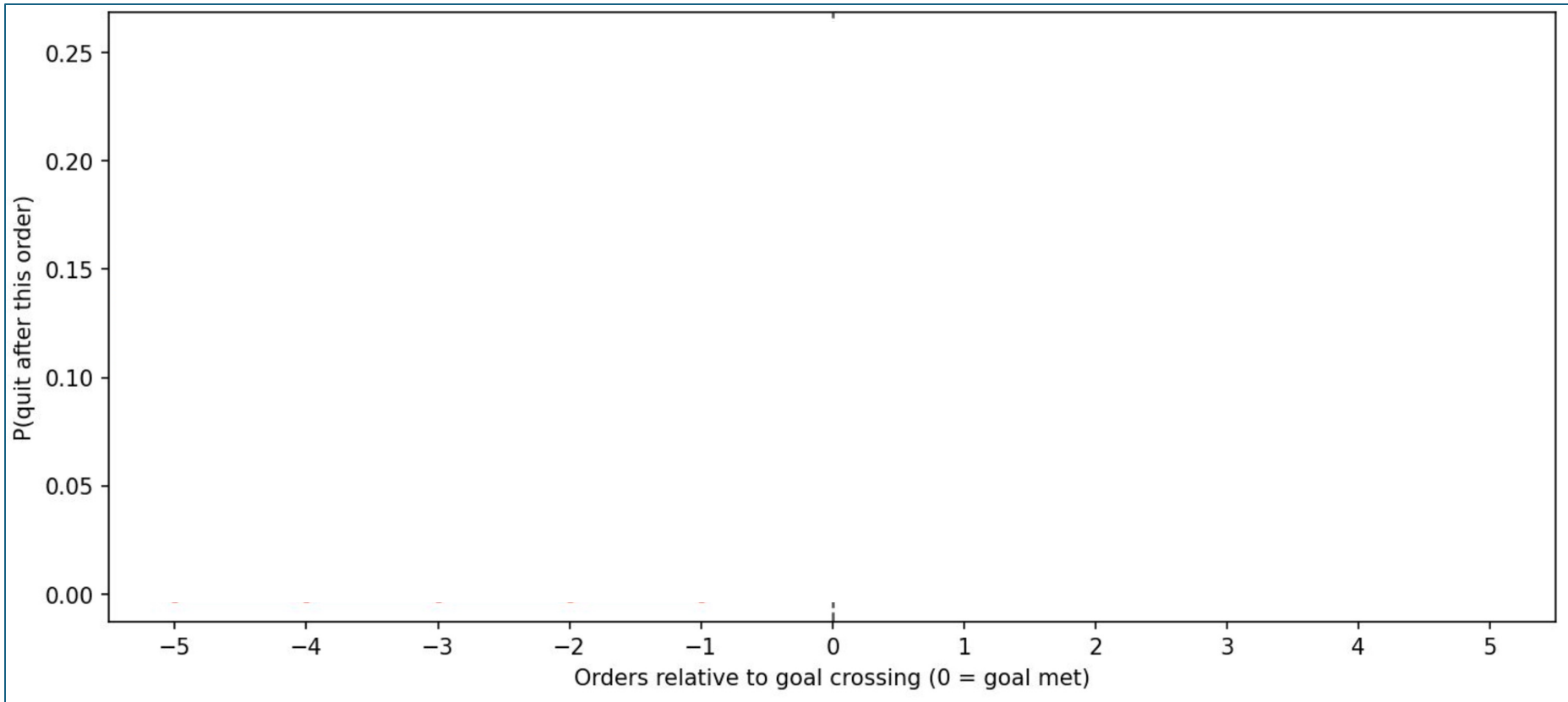
Sequence Matrix (Acceptance)

Column variation = predecessor sensitivity.

Last week \ This week	DH	DO	SH	SO
No Incentive	+4.5	+2.9	+5.5	+9.1
Daily Hours	-	+2.2	+6.1	+22.5
Daily Orders	+4.4	-	+5.3	-0.7
Streak Hours	+0.6	+14.0	-	+14.0
Streak Orders	+6.6	+12.8	+7.6	-

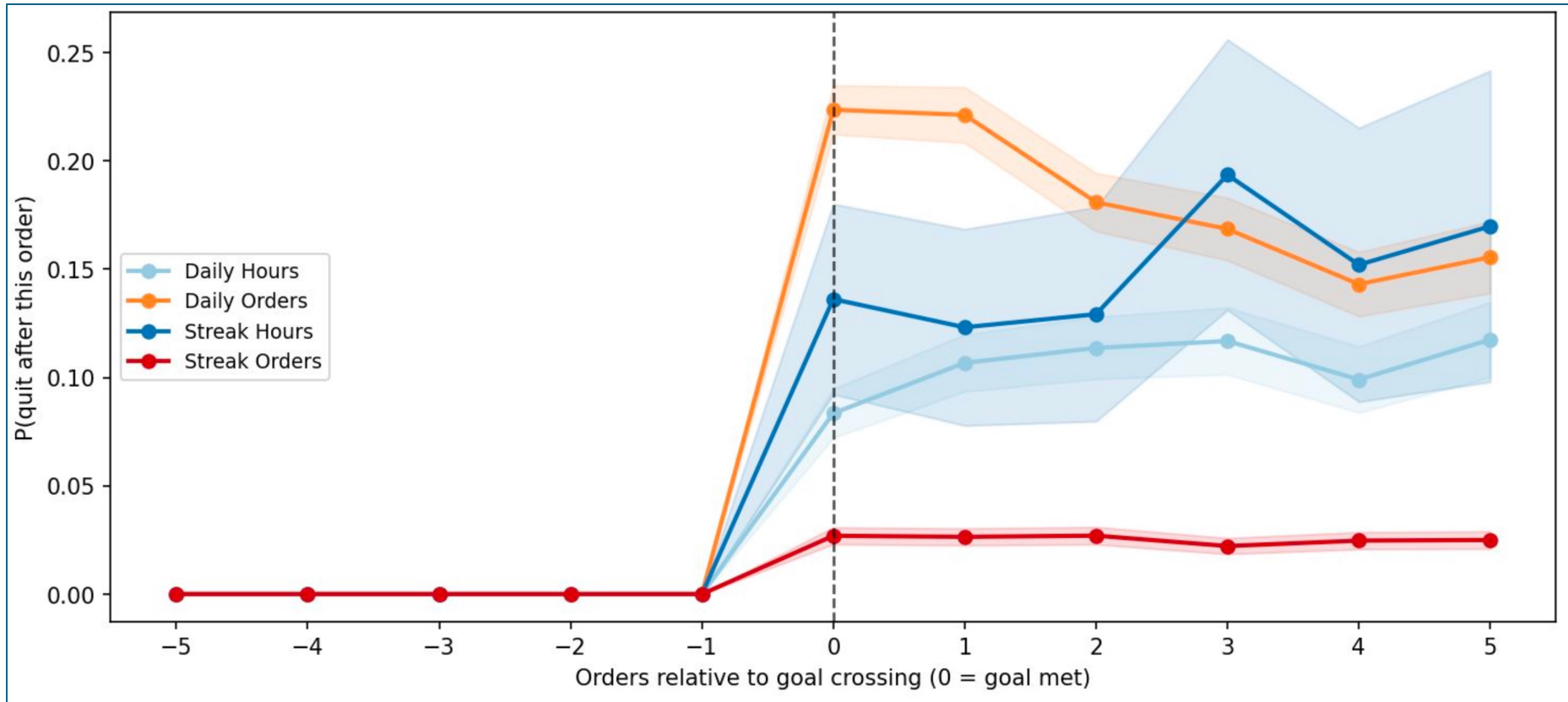
Results

Quits around goal crossing



Results

Quits around goal crossing



Results

Quits around goal crossing



Results

Quits around goal crossing



Results

Quits around goal crossing



Daily goals create stopping points;
streak goals preserve continuation value.

Results

Implications for Platforms

Results

Implications for Platforms

Inherited state	Platform problem	Better next instrument
Low participation	Not enough workers active	DH / SH Availability / hours incentive

Results

Implications for Platforms

Inherited state	Platform problem	Better next instrument
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Active but low acceptance	Workers online, but orders not converting	DO / SO Throughput / orders incentive

Results

Implications for Platforms

Inherited state	Platform problem	Better next instrument
Low participation	Not enough workers active	DH / SH Availability / hours incentive
Active but low acceptance	Workers online, but orders not converting	DO / SO Throughput / orders incentive
Near payout-relevant progress	Workers may stop at local goal	SO Streak / progress incentive

Results

Implications for Platforms

Inherited state	Platform problem	Better next instrument
Low participation	Not enough workers active	DH / SH Availability / hours incentive
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High recent earnings	Next contract may feel disappointing	Recovery Taper, recovery, or calibrated successor

Results

Implications for Platforms

Inherited state	Platform problem	Better next instrument
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Near payout-relevant progress	Workers may stop at local goal	SO Streak / progress incentive
High recent earnings	Next contract may feel disappointing	Recovery Taper, recovery, or calibrated successor

Platform operators should diagnose the inherited workforce state, then choose the next incentive instrument.

What's Next?

Designing the incentives for Bangkok to test our insights from 30 cities.



Designing + Sequencing Incentive

for Gig Economy Workers

RQ: How do incentive primitives and predecessor history jointly shape worker activation, conversion, and continuation?



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Approaches: Modeling of incentive sequences + field experiment with a food delivery platform in Thailand



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Incentives move
margins

Activation, availability,
conversion, and
continuation.



Designing + Sequencing Incentive

for Gig Economy Workers

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Incentives move margins

Activation, availability, conversion, and continuation.



Contracts influence worker states

Participation friction K , earnings benchmark r , and progress toward payout.



Designing + Sequencing Incentive

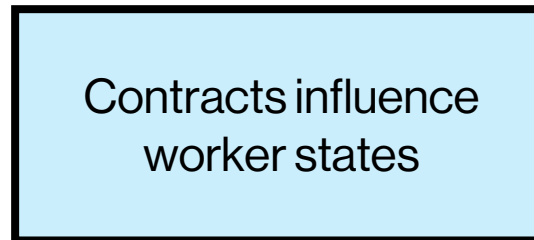
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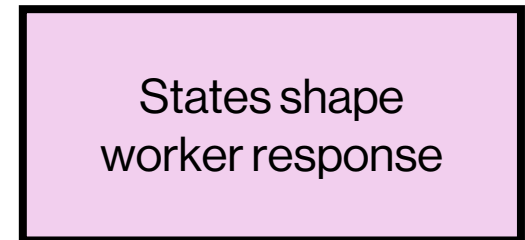
Approaches: Modeling of incentive sequences + field experiment with a food delivery platform in Thailand



Activation, availability, conversion, and continuation.



Participation friction K , earnings benchmark r , and progress toward payout.



The same current contract can be good or bad depending on what came before.



Designing + Sequencing Incentive

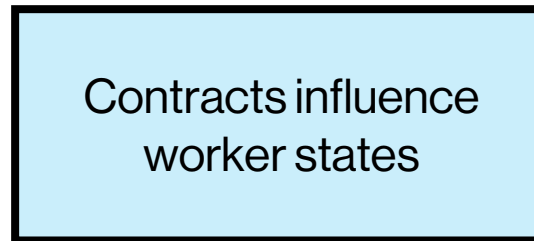
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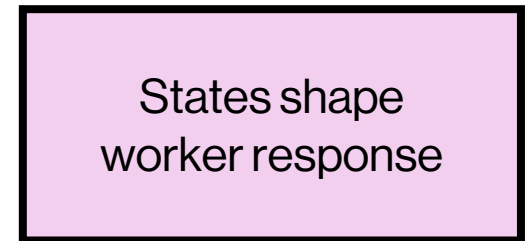
Approaches: Modeling of incentive sequences + field experiment with a food delivery platform in Thailand



Activation, availability, conversion, and continuation.



Participation friction K , earnings benchmark r , and progress toward payout.



The same current contract can be good or bad depending on what came before.

Platforms must estimate paths, not just standalone incentives.



Designing + Sequencing Incentive

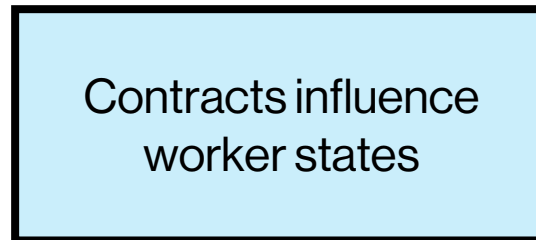
for Gig Economy Workers

RQ: How do incentive primitives and predecessor history jointly shape worker activation, conversion, and continuation?

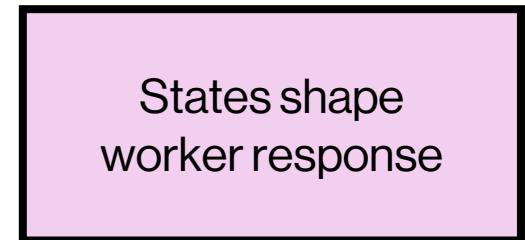
Approaches: Modeling of incentive sequences + field experiment with a food delivery platform in Thailand



Activation, availability, conversion, and continuation.



Participation friction K , earnings benchmark r , and progress toward payout.



The same current contract can be good or bad depending on what came before.

Platforms must estimate paths, not just standalone incentives.

Thank you! Feedback very welcome!

