Building Business Networks to Strengthen Refugee Economic and Social Integration

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4th Research Conference on Forced Displacement - June 5, 2026

Motivation

- More than half of the world's 117M forcibly displaced live in **urban areas**, mostly in low- and middle-income countries (UNHCR and World Bank, 2021)
- **Self-employment/micro-enterprises** as dominant livelihood strategy for urban refugees (and vulnerable hosts)
- Humanitarian actors want **scalable programs** that work in these settings

This intervention

Question. Can structured business networks improve refugee and host entrepreneurs' outcomes in urban informal markets?

Setting. RCT; 8,005 refugees and hosts in two cities (Nairobi and Kampala)

Design. 6 arms: Pure Control / Cash ($435) / Cash+Network. Network arms vary along 2×2: strong vs. weak ties $\times$ same vs. mixed nationality

Partnership. International Rescue Committee (research, implementation), IKEA Foundation (funding), Innovations for Poverty Action (data collection)

IRC & King Center photo consent obtained.

Preview of results

1. **Cash alone:** large, sustained gains in business ownership (+11.7pp), revenue (+$75.49 monthly), life satisfaction, network size and diversity
2. **Cash+Network:** no additional gains, on average, for primary outcomes
3. **Heterogeneity:** substantial heterogeneity with limited transportability across sites *(preliminary analysis)*

Evidence gap on urban refugee livelihoods

- **Cash grants improve outcomes** for hosts and refugees in developing countries (Siu, Sterck and Rodgers, 2023; Aygün et al., 2024; Caria et al., 2024)
- **"Cash plus" programs less effective**
  - Skills, matching, graduation (Blattman and Ralston, 2015; Banerjee, Karlan and Zinman, 2015; Bastagli et al., 2019)
  - Focus on nationals (McKenzie, 2017; Card, Kluve and Weber, 2018); refugees face distinct legal and discriminatory barriers
- **Refugee-specific evidence** (e.g., language training) is largely from high-income contexts (Arendt et al., 2021; Battisti, Giesing and Laurentsyeva, 2019)
- **Gap.** Few studies on *urban, informal, self-employed* refugees in LMICs
  - Loiacono and Silva-Vargas (2022): wage-employment matching in Uganda
  - Baseler et al. (2025): mentorship + cash benefits refugee men but not women

Networks as a solution for refugee integration in urban informal markets

1. **Information circulation**
   - Referrals to suppliers, customers, lenders (Cai and Szeidl, 2018)
   - Knowledge of country-specific regulations, market gaps, trustworthy partners
   - Peer-to-peer information may be more relevant than top-down training; less dependent on success of one match in mentorship (Cantner, Conti and Meder, 2010)
2. **Collaborative behavior**
   - Resource pooling: shared equipment, co-renting, childcare (Bassi et al., 2022)
   - Risk-sharing and co-promotion: referrals, joint marketing (Fafchamps and Minten, 1999)
   - Allows for more stable co-owned businesses, e.g., market stall vs. hawking

theory of change

Which ties? Two open questions

- **Strong vs. weak ties**
  - High-income evidence favors weak ties: bridging, diverse information (Granovetter, 1973; Rajkumar et al., 2022)
  - But informal LMIC markets reward *trust* — strong ties may matter more (Gee et al., 2017; Breza, Kaur and Krishnaswamy, 2019), e.g., 67% Ugandan firms require trustworthiness letter (Loiacono and Silva Vargas, 2019)
- **Same vs. mixed nationality**
  - Mixed-nationality ties: access to host markets, contact-based prejudice reduction (Betts et al., 2023; Mousa, 2020). Most studies focused on refugee-host ties (Baseler et al., 2025)
  - Co-national ties: trust, targeted information, enclave economies (Martén, Hainmueller and Hangartner, 2019; Wilson and Portes, 1980)

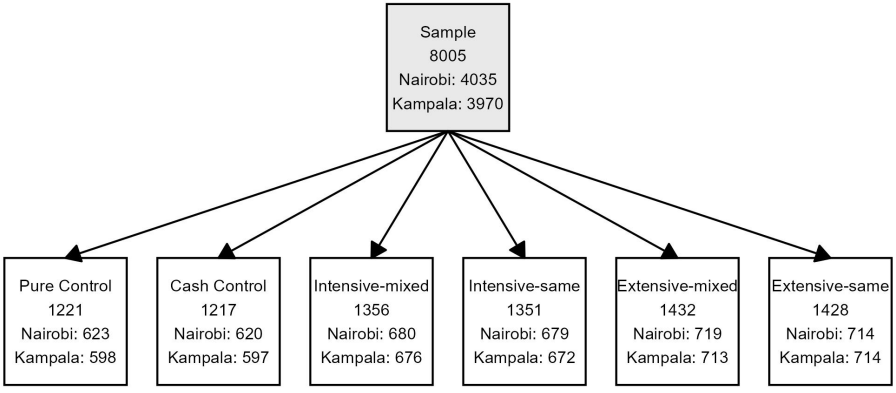
Experimental Design

Sample

- 8,005 refugees and vulnerable hosts: 4,035 Nairobi / 3,970 Kampala
- Ages 18–45; 56% women; 57% refugees
- Half existing business owners, half aspiring starters
- Largest refugee groups: Somali and Congolese (Kampala); Congolese and Ethiopian (Nairobi)
- Top sectors: hawking (20%), clothing/shoes (16%), food vending (13%)

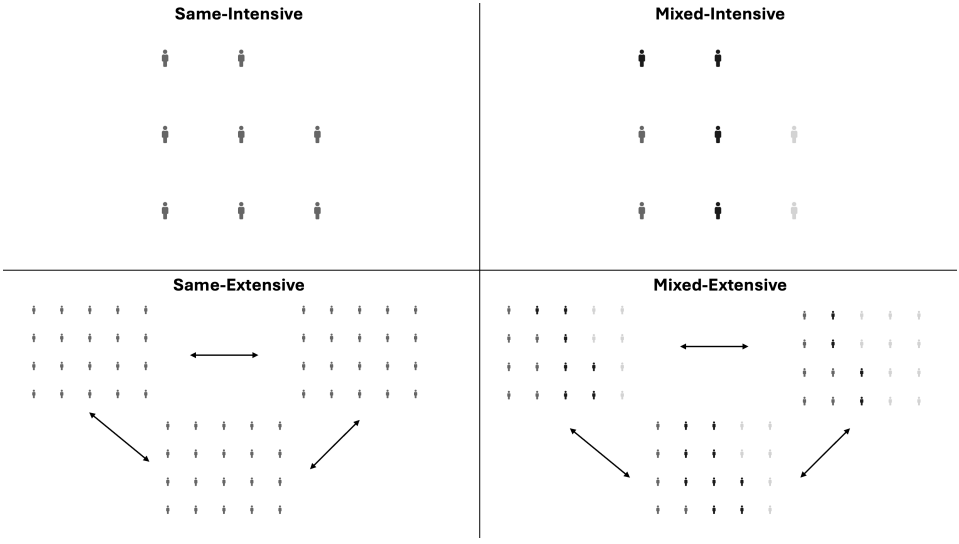
example respondent

Six-arm experiment



randomization balance curriculum attendance

Network groups: 2×2 design



Outcomes

Primary outcomes. Measured at baseline, midline (6m), endline (11m)

- Business ownership, revenue (winsorized)
- Life satisfaction, self-efficacy
- Trust (hosts, refugees)
- Network size

Behavioral lottery. 2 months post-intervention, all participants invited to apply in teams of 3–8 for an additional IRC matched grant. 10 winners (by lottery) per city from 2,120 applications

- Measures: *whether* to apply, *with whom* (gender, nationality, refugee/host mix), *risk taken*, and *idea quality* (rated by IRC committee)

full list

Estimation

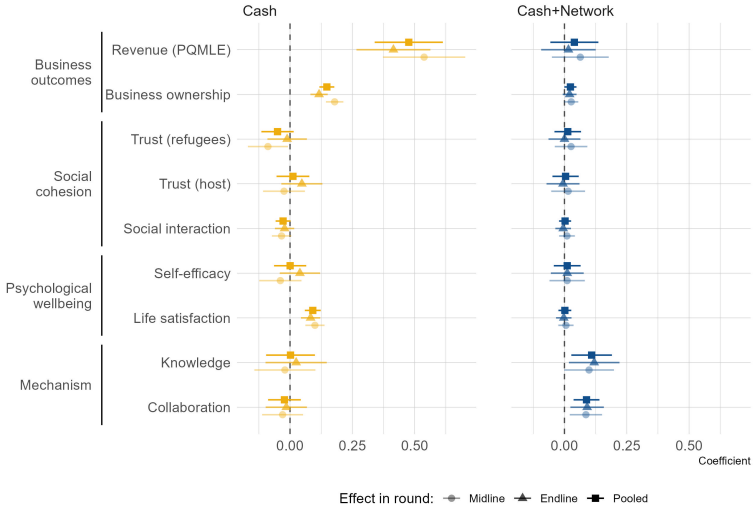
Pre-registered ITT, ANCOVA across midline (6m) and endline (11m):

$$y_{it} = \beta_t D_i + \gamma X_i + \delta(D_i \cdot X_i) + \lambda y_{i0} + \eta_t + \theta_b + \epsilon_{it}$$

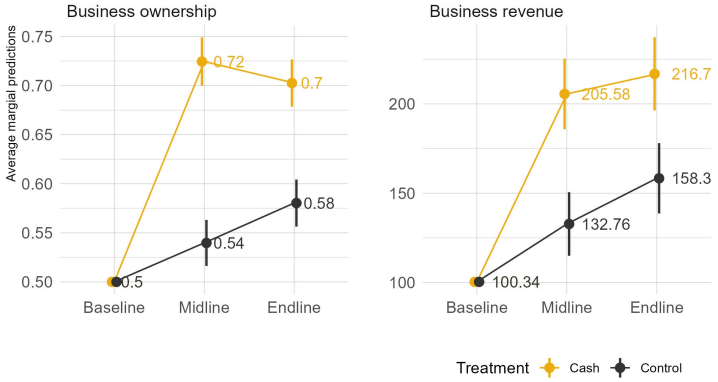
- Double-Lasso baseline controls; entropy-balancing weights
- HC1 SEs clustered at individual; PQMLE for count outcomes
- Endline/pooled effects as linear combinations of round-specific coefficients
- Retention: 92.8% midline / 92.6% endline; no differential attrition

Results

Cash → broad gains. Network add-on → null.



Cash effects are large and sustained



Predicted business ownership and revenue — Cash vs. Control across rounds.

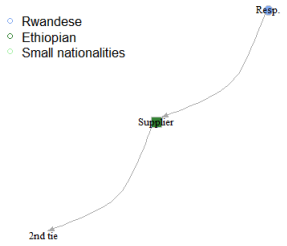
Networks: cash built them, the intervention did not

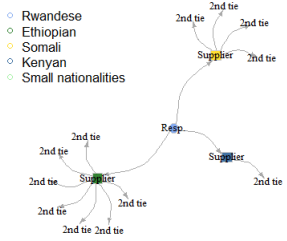
Cash vs. Control (endline):

- Degree +0.62 contacts; diversity +0.03; bridges +1.56 (all $p < 0.05$)
- Cash builds *weak* ties, not strong ones

Cash+Network vs. Cash: null on all four network measures, by arm too.

→ **Cash itself expands business networks** (Mesfin and Cecchi, 2024; Attanasio, Polania-Reyes and Pellerano, 2015)





Does the intervention do anything?

Cash+Network shifts collaborative behavior and information circulation.

- Increases in self-reported collaboration and “good" business practices
- Increased application for additional grant: +4.3pp more likely to submit lottery plot
- Improved performance in knowledge quiz

Cash+Network shifts intensive-margin business activity.

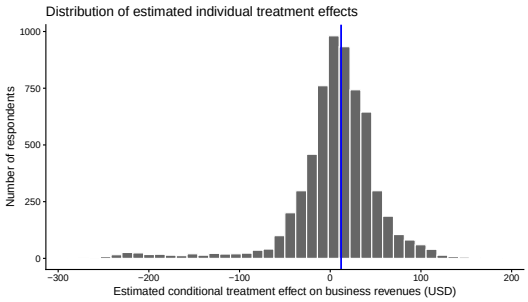
- More customers and hours on business at midline
- More business assets at endline

There is no systematic type of network that outperforms the others.

Maybe Cash+Network is only effective for a subset of the population?

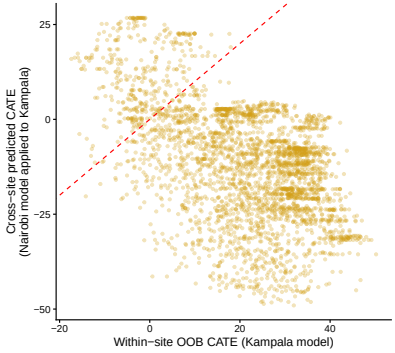
Yes, but not based on pre-registered analyses!

- **Cash** – effects broadly uniform across city, refugee status, gender, baseline ownership and network size
- **Cash+Network** – effects vary across and within populations and sites
- Causal forest (Athey, Tibshirani and Wager, 2019) detects **substantial, statistically significant heterogeneity** in who benefits from the network intervention



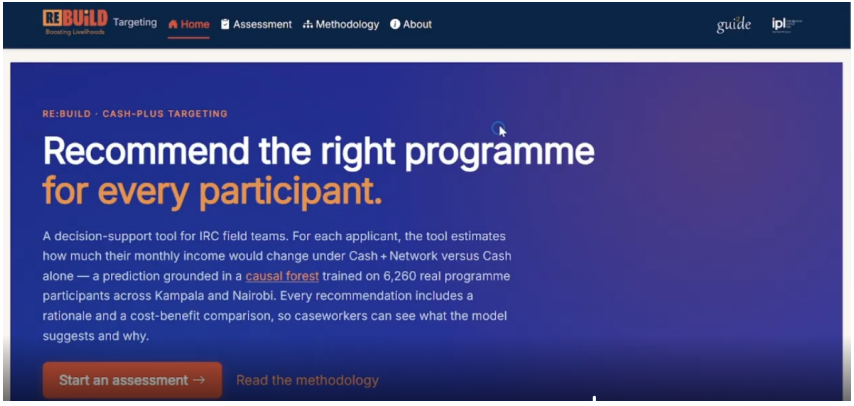
Causal forest predicts heterogeneity, but does not transport

- **Same features** (baseline revenue, age, specific nationalities) drive heterogeneity in both cities ▸ details
- But these features predict **opposite effects** across sites: a profile that looks high-return in one city often looks low-return in the other (particularly age and refugee/host)
- Effective targeting specific to sites and designs: **learn-then-scale**

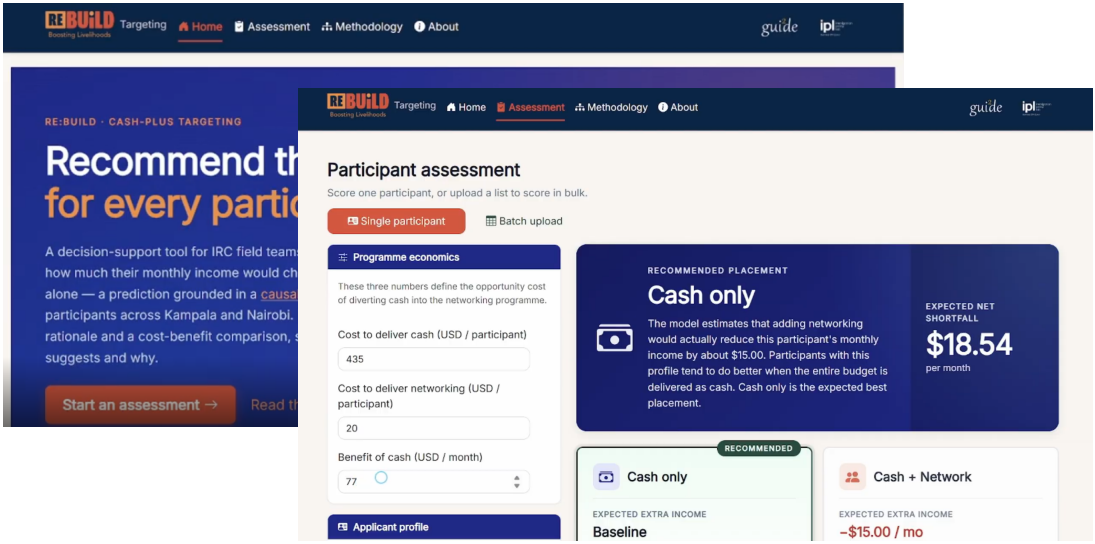


For each Kampala entrepreneur: predicted treatment effect from the Kampala-trained model (x-axis) vs. the Nairobi-trained model applied to Kampala (y-axis). Perfect transport = 45° line.

Next steps regarding targeting



Next steps regarding targeting



Four takeaways

1. **Cash has the largest positive effect:** Capital injections may be a more direct route to network expansion than structured networking.

2. **Cash+Network is an average null effect** but has positive implications for entrepeneurial behavior and may benefit some populations

3. **No effect on social cohesion** for either cash or intervention.

4. **Heterogeneity**: Causal forest analysis suggests that those who benefit differ across contexts. Site-specific targeting via *learn-then-scale* may raise program returns.

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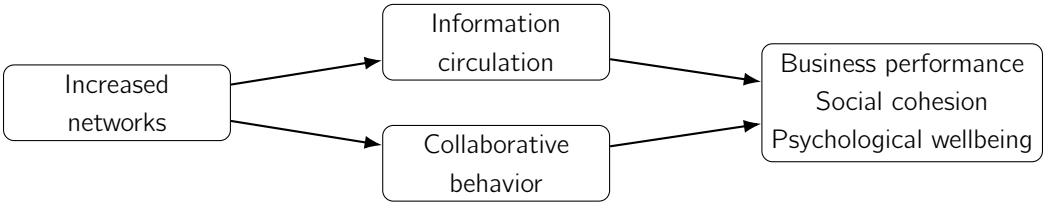
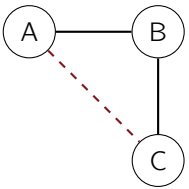
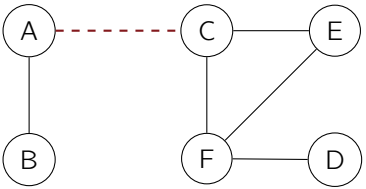
Appendix

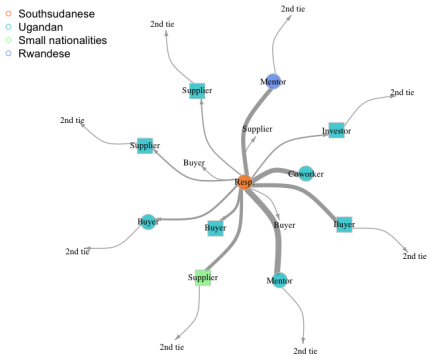
Theory of change



'Strong' vs 'weak' ties

	Strong ties	Weak ties
Mechanism	Bonding	Bridging
Network	Triadic closure 	(Local) bridges 
Advantage	Overcome limited opportunities through brokerage, enforcement, referrals and trust	Overcome low-information environment through diverse connections
Intervention	Intensive interaction	Extensive interaction

Example respondent



Business network

South Sudanese refugee, woman, 35
Rubaga, Kampala. Soap business, idea drawn from host community. 9.5 years in Uganda. Diverse ties across host and refugee nationalities, low interconnectedness.

Primary outcomes

Domain	Primary outcomes
Economic	Business ownership (1/0); real revenues, past 30 days, winsorized
Psychological	Life satisfaction (0–10, dichotomized); self-efficacy index (5 items, std.)
Social	Trust in hosts and refugees (std.); outgroup contact frequency
Network	Degree centrality; nationality diversity (Gini–Simpson)
Information	Index of six learned business practices (std.)
Collaboration	Index of six collaborative actions (std.); lottery submission (1/0); collaboration depth (1–3)

Randomization algorithm

For each city (Nairobi/Kampala):

1. Randomize the order in which groups are filled
2. Iterate through the groups: (a) list all groups still feasible under the criteria; (b) randomly select one and randomly assign participants; (c) remove assigned individuals; (d) repeat until all 194 groups are filled
3. Repeat 1–2 for 10,000 draws per city
4. Reduce draws by truncation criteria; randomly select one

Weighted balance

Indicator	PureCtrl	CashCtrl	mixed-fixed	mixed-rot.	same-fixed	same-rot.	p
Age	31.31	31.55	31.40	30.96	31.21	30.78	0.054
Children	0.48	0.50	0.49	0.49	0.48	0.55	0.005
Education	0.55	0.57	0.53	0.52	0.54	0.53	0.230
Biz training	0.37	0.38	0.38	0.36	0.35	0.39	0.206
Unemployed	0.18	0.18	0.18	0.18	0.16	0.18	0.743
Biz revenue	100.3	109.6	98.9	98.4	105.0	94.2	0.555
Trust refugee	0.00	0.01	-0.01	0.03	0.02	-0.01	0.883
Net diversity	0.24	0.23	0.23	0.22	0.23	0.24	0.544
Biz knowledge	0.00	-0.05	-0.02	-0.04	-0.02	-0.02	0.958
Biz collab	0.00	0.03	0.04	0.01	0.04	-0.03	0.412

Ex-ante power calculation

We base our estimates of the statistical power of our design on Frison and Pocock (1992; see also McKenzie 2021).

Outcome	Profits $	Own business (0/1)
Hypothesis I (Network-Cash)	3.21	0.02
Hypothesis II (Between arms)	3.20	0.02
Hypothesis III (Between arms, 50% subgroup)	4.52	0.02
Hypothesis IV (Cash-Control)	3.26	0.02

Minimum detectable effects for key comparisons

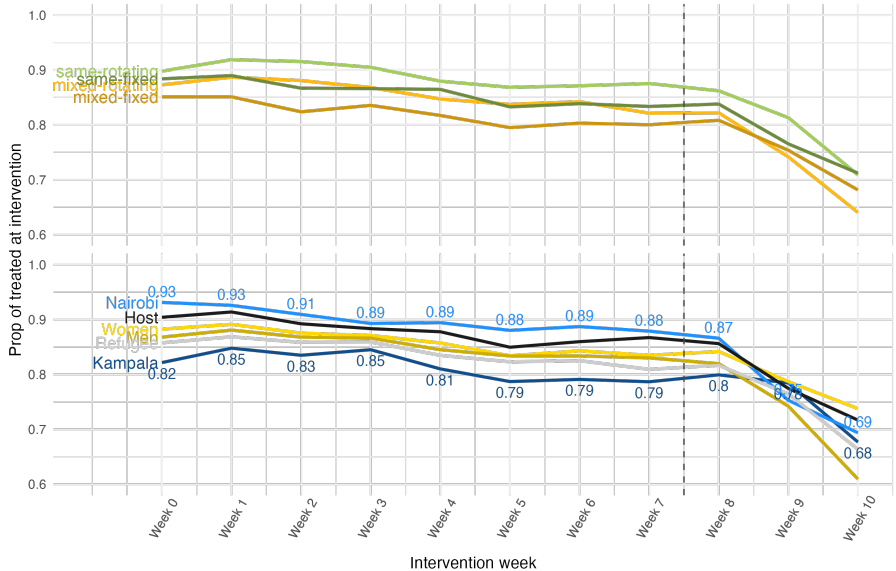
Positive power implications: power estimates based on single follow-up round; high autocorrelation between rounds.

Negative power implications: weighting

Intervention curriculum (11 weeks)

1. Program launch
2. Value of networking
3. Business set-up and growth
4. Suppliers, lenders, capital
5. Customers and marketing
6. Business fair (extensive) / Business visit (intensive)
7. Business grant and savings (**cash disbursed**)
8. Problem-solving in business
9. Business fair (extensive) / Business visit (intensive)
10. What's next?

Attendance


same-rotating
same-fixed
mixed-rotating
mixed-fixed
Nairobi
Host
Woman
Kampala
0.93
0.93
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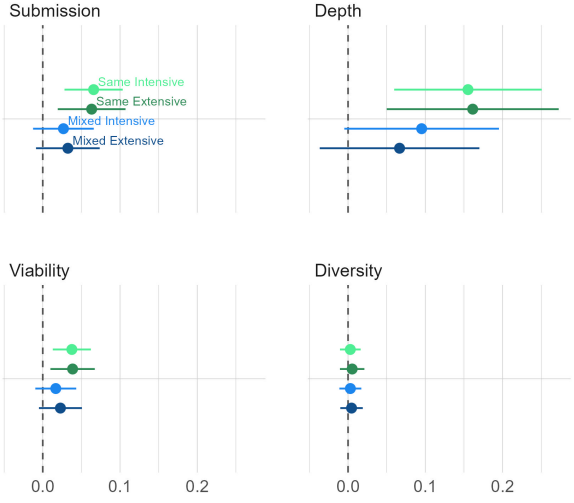
0.79
0.79
0.79
0.8
0.69
0.68
Prop of treated at intervention
Intervention week
Week 0
Week 1
Week 2
Week 3
Week 4
Week 5
Week 6
Week 7
Week 8
Week 9
Week 10

Full main coefficients

	Biz	Revenue	Satisfied	Efficacy	Trust(H)	Trust(R)	Interact.	Knowl.	Collab
Panel A. Cash vs. Control									
Cash	0.185*	0.454*	0.099*	-0.045	-0.039	-0.086*	-0.042*	0.070	-0.031
	(0.018)	(0.084)	(0.019)	(0.043)	(0.042)	(0.041)	(0.020)	(0.059)	(0.040)
Panel B. Cash+Network vs. Cash									
Cash+Network	0.033*	0.037	0.013	0.022	0.021	0.039	0.008	0.085	0.102*
	(0.014)	(0.055)	(0.016)	(0.036)	(0.034)	(0.033)	(0.016)	(0.048)	(0.033)

* $p < 0.05$. Weighted ANCOVA, double-Lasso controls, PQMLE for revenue, HC1 SEs, zone FE.

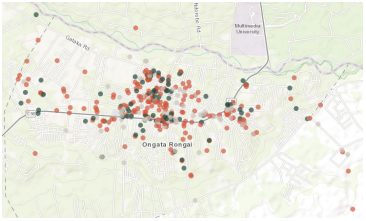
Lottery: coefficients by arm



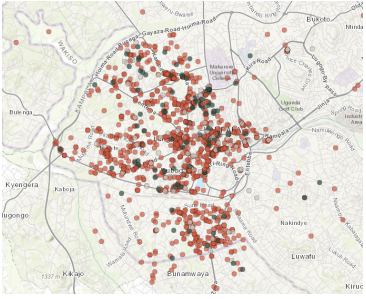
Diagnosing the Null: Methodological, Theoretical and Empirical explanations

Methodological concerns:

- Power power
- Measurement
- Treatment implementation attendance
- **Spillover**



Treatment and control across Rongai, Nairobi

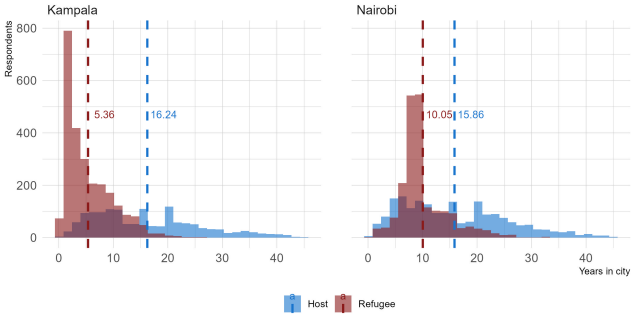


Treatment and control across Rubaga, Kampala

Diagnosing the Null: Methodological, Theoretical and Empirical explanations

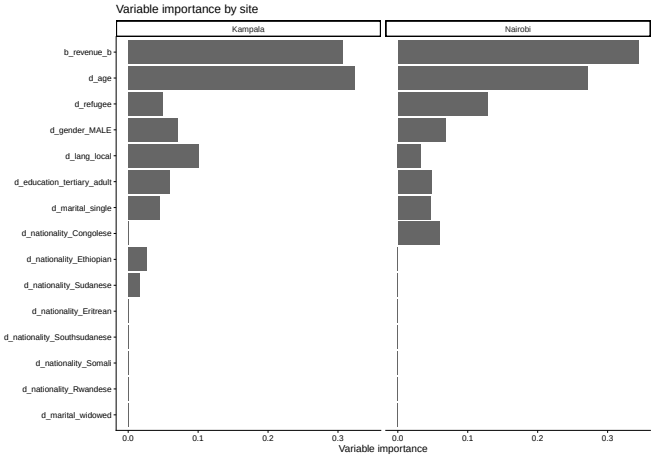
Substantive concerns:

- Diversity of population (and needs)
- Length in city!
- Shifts in economic conditions over study period
- Ceiling effects (e.g. cash pushes business ownership already to over 70%)
- Two-site heterogeneity



Correlates of network intervention CATE

Similar features predict heterogeneity across sites



Variable importance from site-specific causal forests. Baseline revenue and age are the top predictors in both sites.

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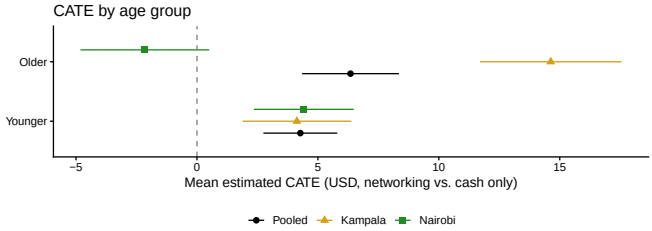
Conditional average treatment effect by age group



Unconditional mean CATE within age group (median split at 31 years), with 95% CIs.

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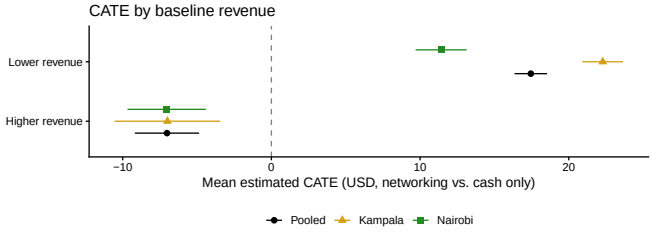
Conditional average treatment effect by baseline revenue



Unconditional mean CATE by baseline revenue (median split at USD 13.50), with 95% CIs.

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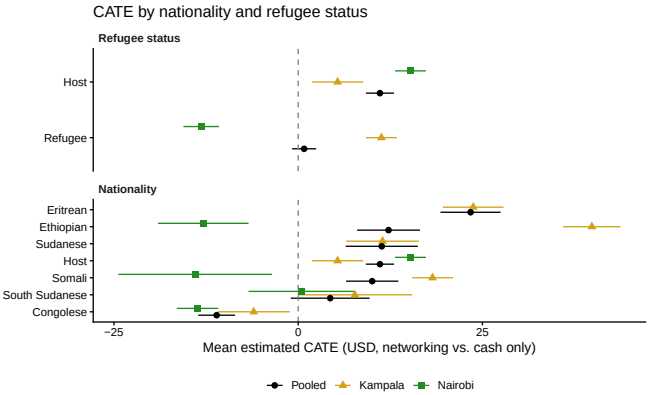
Conditional average treatment effect by nationality and refugee status



Unconditional mean CATE by nationality and refugee status, with 95% CIs. Groups with $n < 20$ omitted.

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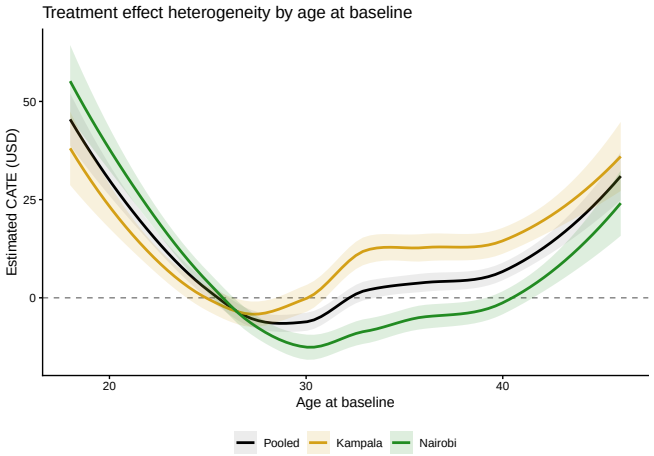
CATE vs. age (LOWESS)



LOWESS smooth of estimated CATEs against age, with 95% confidence bands. All CATEs from the pooled causal forest.

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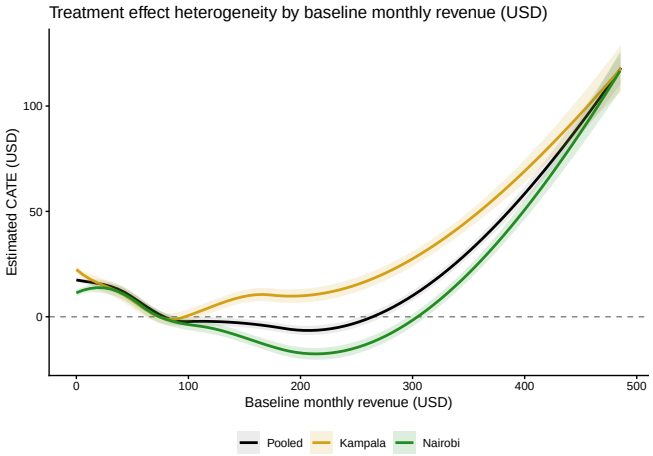
CATE vs. baseline revenue (LOWESS)



LOWESS smooth of estimated CATEs against baseline revenue (trimmed at 95th percentile). All CATEs from the pooled causal forest.

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