Psychosocial Constraints, Impact Heterogeneity and Spillovers in a Multifaceted Graduation Program in Kenya

Geyi Zheng, Michael R. Carter, Nathaniel Jensen & Laurel Krovetz

Nathan Jensen

Deep Dive Session 3: Aspirations, Agency, and Mental Health: Strategies for Addressing Psychosocial Constraints for Poverty Reduction

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BOMA RURAL ENTREPRENEURSHIP FOR PROSPERITY WITH DIGNITY

Graduation Programs

Graduation programs attempt to reduce chronic poverty by

- Transferring tangible productive assets, relaxing capital constraints
- Offering intensive mentoring intended to build participant's intangible assets, such as business skills, self-confidence and aspirations, relaxing what might be termed psychosocial constraints
- Relaxing these constraints is meant to facilitate the shift from lower income occupations to higher income entrepreneurial occupations that require capital and skills (business).

There is strong evidence that these programs can have positive impacts on their participants (e.g., Banerjee et al 2015).

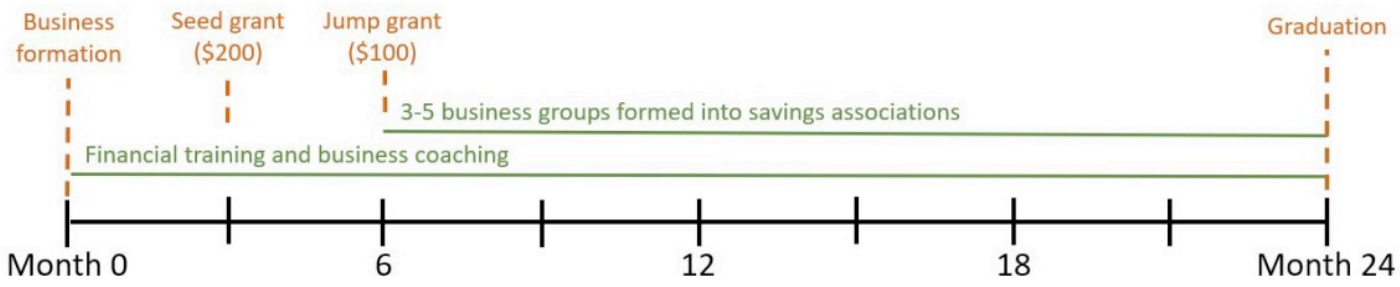
Our focus is on the role of psychosocial constraints in shaping who the program does and does not help.

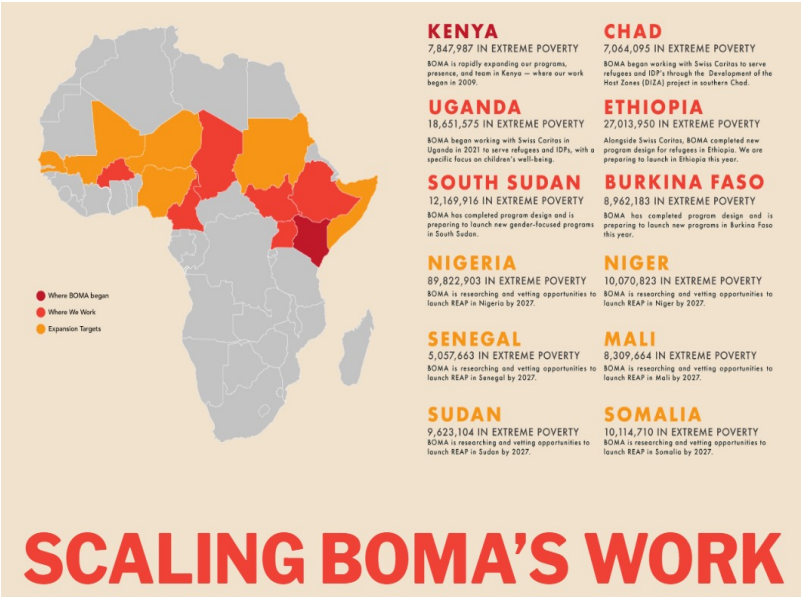
- What is the role that depression plays in determining the impacts of a graduation program on the financial situation of its participants?
- Are there financial spillovers from treated to non-treated individuals and, if so, is there evidence that such spillovers come from the transfer of (non-rival) psychological assets?

The Rural Entrepreneur Access Project (REAP)

REAP is implimented by the BOMA Project

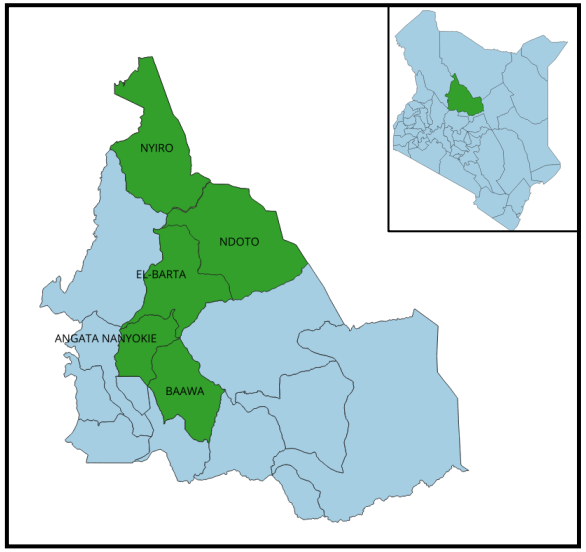
- Community based targeting to identify the poorest (i.e., lowest half) eligible females in each community
- Eligible participants form 3-person business groups
- Initial business planning, 24 months of skills training, and networking through a local BOMA mentor
- $200 seed grant at 3 months + $100 jump grant if business survived 6 months
- Business groups are combined into larger savings groups as the program progresses
- Small monthly grants to support consumption





Source: https://boma.ngo/

Research Design



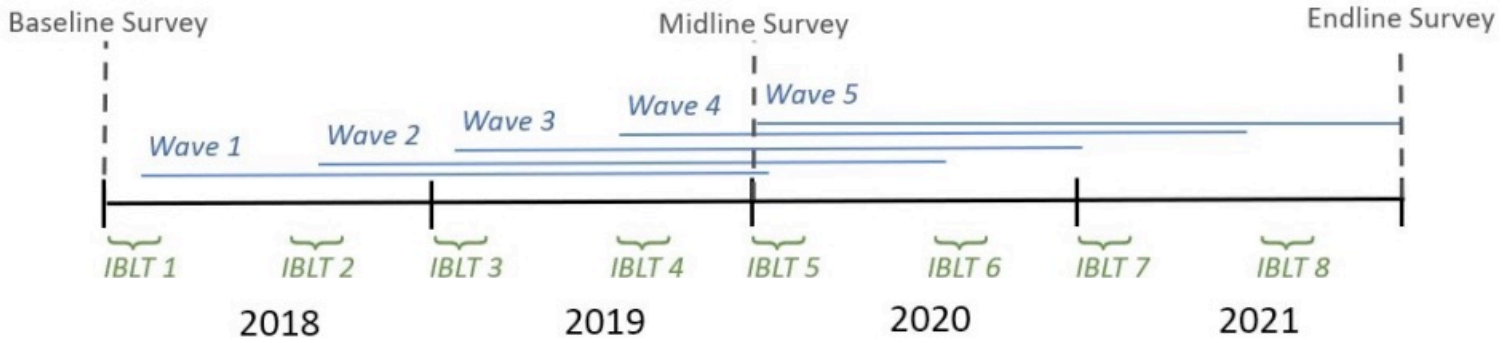
Sample:
A roster of REAP-eligible women from 88 manyattas (villages) in the pastoral and agro-pastoral region of northern Samburu County Kenya generated by BOMA

The study selected a subset of REAP-eligible women from each community into our study through stratified random sampling. These women were allocated into either treatment (anchor women) or control arm.

Non-study, REAP-eligible women were placed in the REAP pool.

Intervention:

- Enrolment into the REAP program is done in waves within community to increase BOMA's footprint and spread out the mentors' workload.
- We randomized which wave each anchor woman was designated (i.e., when they started).
- When enrolled, anchor women recruited 2 women from the pool with whom to start their business.
- Household economic outcomes and psychosocial indicators collected at baseline 2018 and 24 months later in 2020.
- The number of businesses within each wave was varied across community by design to create variation in intervention saturation at midline.



Average Treatment Effect: Empirical Strategy

Intent-to-treat (ITT) treatment ANCOVA model:

$$y_{1hm} = \alpha^0 + \alpha^1 y_{0hm} + \beta^a W_{hm}^a + \beta^b W_{hm}^b + \varepsilon_{hm}$$

Where:

- y_{1hm} is the 2020 outcome variable of interest for individual h in community m,
- y_{0hm} is the 2018 baseline value of that same variable,
- W_{hm}^a and W_{hm}^b are binary indicator variables for assignment to Waves 1 or 2 and 3 or 4, respectively of the BOMA program.
- The error term ε_{hm} is clustered by community.

Under this specification, the control is comprised of women selected for eligibility for REAP, but not assigned to any of the first four treatment waves.

Control	Waves 1& 2	Waves 3&4
830	318	237

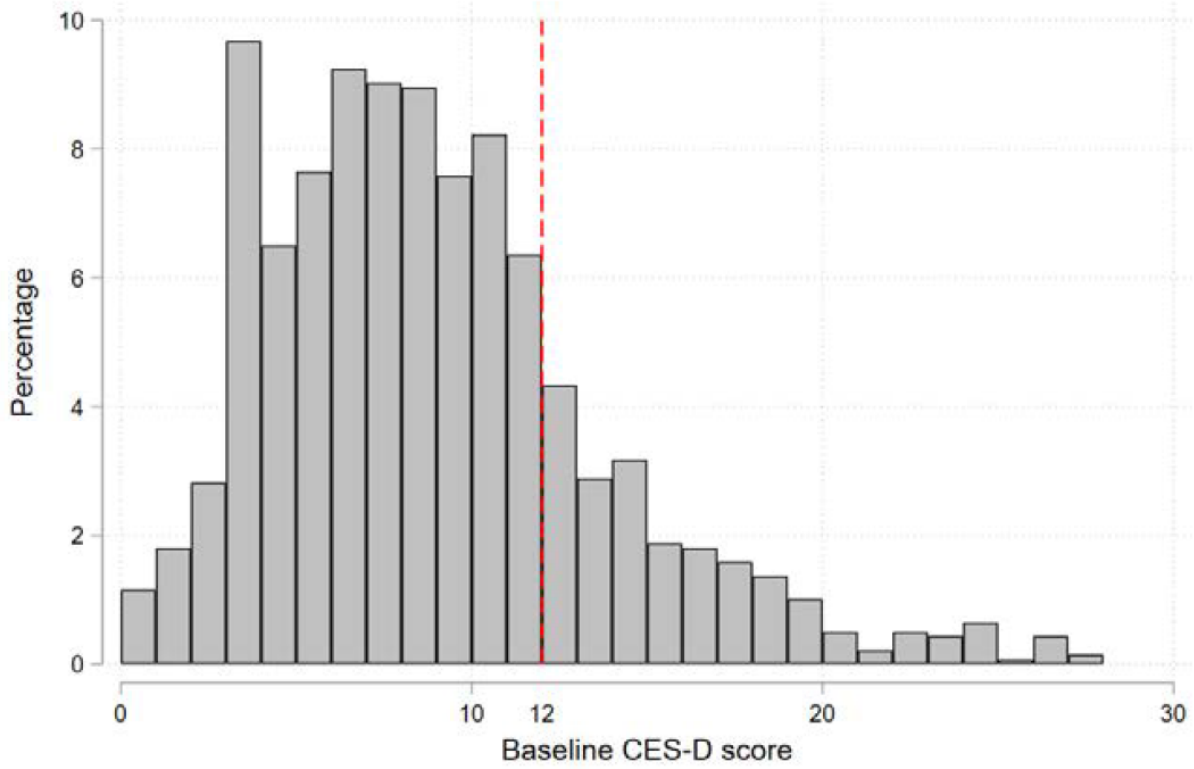
Average Treatment Effect: Results

	Treatment Waves 1-2	**Treatment Waves 3-4**
Women's Business Assets ($PPP)	190***	125***
	(22.3)	(18.6)
Household Income ($PPP)	98***	4.4
	(34.2)	(36.3)
Women's Savings ($PPP)	56***	25***
	(8.27)	(6.2)
Observations	1,385	

Notes: Average baseline values: Women's Business Assets $46, Household Income $817, Women's Savings $11. Regressions include baseline levels of the dependent variable. Standard errors for the average treatment effects are clustered at the community level. *** p<0.01, **p<0.05, * p<0.1

Heterogeneity in impacts by depression

- We use a 10-question variant of the Center for Epidemiological Studies-Depression (CES-D) score as a measurement of depressive symptoms.
- The distribution of CES-D among our sample is similar to those found in other studies in the region (e.g,. Kilburn et al., 2018).
- The threshold of 12 is used to indicate high likelihood of depression, which 20% of our respondents surpass.



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$$y_{1hm} = \alpha^0 + \alpha^1 y_{0hm} + \alpha^2 D_{0hm} + \beta^a W_{hm}^a + \beta^b W_{hm}^b + \gamma^a D_{0hm} W_{hm}^a + \gamma^b D_{0hm} W_{hm}^b + \varepsilon_{hm}$$

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- W_{hm}^a and W_{hm}^b are binary indicator variables for assignment to Waves 1 or 2 and 3 or 4, respectively of the BOMA program.
- D_{0hm} is an indicator =1 if CESD-10 >12 [0,30]
- The error term ε_{hm} is clustered by community.

Under this specification, the control is comprised REAP-eligible women that were not assigned to any of the first four treatment waves.

Heterogeneity in impacts by depression

	Treatment Waves 1-2		Treatment Waves 3-4	
	Not Depressed	*Depressed*	*Not Depressed*	*Depressed*
Women's Business Assets ($PPP)	209***	93	137***	55
	(23.1)	(45)	(26)	(54)
Household Income ($PPP)	121***	-21	2.9	4.1
	(39)	(76)	(43)	(91.2)
Women's Savings ($PPP)	56***	51***	25***	17
	(7.6)	(15)	(8.5)	(17.8)
Observations	1,385			

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Depressed women have not grown business assets nor have they converted them into income

Spillovers in graduation programs

We now turn to spillovers, testing for financial impacts on the non-treated and if psychosocial spillovers from treated onto non-treated may have been a mechanism for those spillovers.

There are several ways in which graduation programs could spill over.

- Between treated individuals: competition, local economies of scale
- Or from treated individuals onto non-treated individuals: redistribution of income gains, access to goods and services, transfers of skills, transfers of psychosocial assets, such as aspirations to start a business

The ratio of eligible women enrolled in each wave was exogenously varied across communities.

To measure the intensity of exposure to treated people, we used an indicator of that accounts for both the duration and density of others' treatments (S_m).

- Mean S_m =0.19; [min, max] = [0.0, 0.6]

	No one else treated in manyatta	100% treated in wave 1	50% treated in wave 1, no other treatment	100% treated in wave 3, no other treatment
S_m	0	1	0.5	0.5

Spillovers: Results

	Control	**Treatment Waves 1-2**		**Treatment Waves 3-4**	
	Mean Saturation	*Zero Saturation*	*Mean Saturation*	*Zero Saturation*	*Mean Saturation*
Women's Business Assets ($PPP)	51*	258***	240***	195***	171***
	(26.6)	(57.2)	(28.8)	(58)	(24)
Household Income ($PPP)	14.0	293***	137.1**	35	17
	(50.5)	(103.1)	(62.6)	(120)	(59.8)
Women's Savings ($PPP)	10.8	73**	67.2***	55**	34.5***
	(8.3)	(30)	(11.7)	(27)	(8.5)
Observations	1,385				

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Exposure to REAP-treated women leads to growth in business assets among the untreaded.

Impacts & spillovers in psychosocial assets

- Adaptive preferences are one channel by which graduation programs could impact the non-treated.
  - Seeing our peers improve their living standards can make that progress seem more achievable and desirable.

- We used a modified version of the Cantril Self-Anchoring Striving Scale (Cantril, 1965), which is use by the Gallop Poll to understanding participants' beliefs about the trajectory of their life

- To do so, we worked with community members to identify standards of living and characterize each standard along three dimensions: livestock, business and consumption.

- We then asked survey participants to identify their rung on this ladder (self-anchoring) and the importance of progressing to the next rung.

	Ultra - Poor 1: Losipu	Poor 2: Ldoropu	Vulnerable 3: Loikash	Middle Income 4: Loata	Well off 5: Lparakuo
Livestock	No livestock	Few livestock: - 10 shoats - No cattle	Some livestock: - 50 shoats - 15 cattle	Many livestock: - 100 shoats - 30 cows	Many livestock: - 300 shoats - 100 cattle
Business	No business	Petty trading: - Tobacco - Charcoal	Small business: - Miraa	Business: - Retail - Kiosk	Large business: - whole sale - livestock trade with a lorry
Food	1 meal a day	2 meals a day	2 meals a day	3 meals a day	3 meals a day

Impacts & spillovers in psychosocial assets

- REAP treatment, for W1&2 w/ mean saturation (S=0.19), increases the desire to:
  - move to step 3 by 0.27 SDs. (SE = 0.13)
  - and to step 4 by 0.18 SDs (SE = 0.11)

VARIABLES	Importance to get to rung 3	Importance to get to rung 4
ITT Wave 1 & 2	0.48**	0.37*
	(0.21)	(0.19)
*ITT Wave 1 & 2 * Saturation*	-1.08	-0.96
	(0.7)	(0.75)
ITT Wave 3 & 4	0.14	-0.13
	(0.25)	(0.25)
ITT Wave 3 & 4 Saturation*	1.08	2.12**
	(0.99)	(1.07)
*Control * Saturation*	0.62	0.84*
	(0.62)	(0.48)
Baseline level of outcome variables	-0.017	0.02
	(0.029)	(0.034)
Constant	-0.13	-0.15
	(0.11)	(0.092)
Observations	830	1,353
R-squared	0.013	0.009

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- REAP treatment has positive impacts on desirability of progressing to a higher standard of living among the treated.
- There is some indication that these changes to preferences are also spilling over to their non-treated neighbours.

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Discussion

The REAP program has positive impacts on average, but much smaller impacts on those with many depressive symptoms.

→ Some participants seem to face psychological constraints that limit REAP's effectiveness.

How should an organizations like BOMA respond to these findings?

There are negative spillovers between businesses and positive spillovers onto non-treated individuals.

→ BOMA should be sure to account for spillovers when assessing the impacts of REAP (TPE, ROI).

→ BOMA needs to consider these negative and positive spillovers when setting its saturation targets for REAP.

Are there strategies for increasing the positive and reducing the negative spillovers?

Thank you

njensen@ed.ac.uk