Gabriella Fleischman
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14 September, 2026

NBER Workshop on Development Economics and Networks for Early-Career Researchers

Dear Members of the Selection Committee,

I am writing to apply to participate in the NBER Workshop on Development Economics and Networks for Early-Career Researchers. My proposed work-in-progress presentation is titled "General Equilibrium Impacts of Social Network Formation."

The importance of social relationships at the individual level is increasingly gaining mainstream acceptance, with governments and health organizations recommending and funding initiatives to improve social relationships. A critical element of these relationships that much of the empirical literature abstracts from is that shocks to social networks, by definition, are almost guaranteed to have a general equilibrium impact. While the theoretical social networks literature explores the possibilities of propagation through networks extensively, there is limited empirical evidence, particularly causal evidence, of how social network shocks aggregate. If positive benefits are transmitted through network links, then a positive social network shock has the theoretical possibility of generating extremely large societal benefits. If instead networks compete and crowd each other out, then network shocks have the potential to generate no benefit to the complete network, or even negative effects (if, for example, one new network tie leads a more-societally-valuable network tie to sever).

My project utilizes randomized treatment saturation of a social network formation experiment to ask: how is the network at large affected when many new links form within the network, compared to when few new links form? I find that social networks change dramatically: When women are randomized to a program that encourages them to form friendship links, within- and across- social class, those women and their neighbors are all more likely to interact with friends rather than relatives, within- and across-social class. There is suggestive evidence that treated women enter into new business activities and earn significantly more business profits when they are in low-saturation areas, while no one in high-saturation areas experiences any direct or indirect treatment effects on business activity. At the same time, socio-emotional well-being propagates *positively* and grows with time. All women in high-saturation areas, regardless of treatment status, are 22% less likely to experience loneliness. This suggests that the social planner faces a trade-off between social integration, which is inclusive and benefits from scale, and business generation, which is competitive and benefits from sparseness.

I would be delighted and honored to have the opportunity to present these results at the workshop. I am eager to receive feedback from an audience that is knowledgeable about networks, can help me place my results in the existing literature, and explore directions for the ongoing analysis. Reshmaan Hussam is able to provide a recommendation if I am shortlisted (rhussam@hbs.edu).

Thank you for your time and consideration.

Sincerely,



Gabriella Fleischman

Gabriella Fleischman

Email : gfleischman@pitt.edu
Website: https://gabriella-fleischman.github.io

Academic Positions

University of Pittsburgh, Assistant Professor of Economics 2026 –

Education

Harvard University, Ph.D. in Public Policy (Economics Track) 2026
University of California, San Diego, B.S. in Joint Mathematics-Economics 2017

Working Papers

Experiential and Social Learning *with Agha Ali Akram, Reshmaan Hussam, and Akib Khan*

Economic and Psychological Returns to Social Relationships: Alleviating Constraints to Network Formation in Malawi

Distorted Signals and Evaluator Bias: A Two-Stage Experiment on Gendered Hiring in Malawi *with Mansa Saxena*

Gendered Misallocation of Agrarian Labor *with Nicholas Rahim*

Select Research in Progress

Why do we Pay for Symbolism? Evidence from U.S. Geographic Landmark Name Changes *with Emily McDonnell*

Peer Effects in Adherence to HIV Treatment *with Jessica Gallant*

General Equilibrium Impacts of Social Network Formation

Public Services and Private Behavior: Evidence from Water Infrastructure in Pakistan *with Akib Khan and Yousra Neberai*

Grants, Fellowships and Awards

2025	Merit/Graduate Society Term-Time Research Fellowship, Harvard University	
	Social Equity and Health Equity Research Grant, Harvard Kennedy School	$5,000
	Weiss Fund Piloting Grant	$14,739
2024	Weiss Fund Research Grant	$47,708
	J-PAL North American Social Policy Research Initiative Pilot Grant	$5,243
	IQSS Graduate Student Research Grant	$2,550
	Adrianne Hall Fund at the Women and Public Policy Program	$7,000
2023	Weiss Fund Research Grant	$50,000
2022	Weiss Fund Piloting Grant	$15,000
	John C. Hansen & Katherine Vogelheim Research and Travel Fund for Africa	$2,000
	Mind Brain Behavior Graduate Student Research Award	$5,000
	SurveyCTO Primary Data Collection Research Grant	$1,000
	GSAS Summer Society Pre-dissertation Fellowship, Harvard University	$3,000

Teaching

Harvard Kennedy School (Teaching Assistant for Marcella Alsan)

- Economics of Health Equity 2024
- Resources, Incentives, and Choices II: Analysis of Public Policy 2023

Harvard College Program in General Education (Teaching Assistant for David Cutler)

- Why is there no cure for health? 2022, 2023

Presentations

2026	University of Alabama (Upcoming); University of Pittsburgh; University of Houston; NBER Summer Institute Development Economics; Network Science in Economics Conference; 19th International Conference on Migration and Development; North Eastern Universities Gender Day
2025	Harvard University; Network Science in Economics Conference; Advancements in Field Experiments Conference; North Eastern Universities Development Consortium; World Bank-KDI School 6th Development Impact Conference; Pacific Conference for Development Economics

2024 Y-RISE Conference, North Eastern Universities Development Consortium
2023 Advancements in Field Experiments

Select Professional Experience

Harvard Business School, Research Associate 2023-2024
MIT/J-PAL, Research Associate 2018-2020
Innovations for Poverty Action Malawi, Research Associate 2017-2018
UC San Diego, Research Associate 2015-2016

All Ph.D. Coursework

Microeconomic Theory I (ECON 2020A - Harvard Kennedy School)
Microeconomic Theory II (ECON 2020B - Harvard Kennedy School)
Principles of Econometrics (ECON 2120 - Harvard Department of Economics)
Econometric Methods (ECON 2140 - Harvard Department of Economics)
Behavioral Development Economics (ECON 2338 - Harvard Department of Economics)
Field Experiments for Policy and Program Evaluation (GOV 2798 - Harvard Department of Government)
The Microeconomics of Development (ECON 2360 - Harvard Department of Economics)
Labor Market Analysis (ECON 2810A - Harvard Department of Economics)
Labor Economics and Labor Market Institutions (ECON 2810B - Harvard Department of Economics)
Health Economics (ECON 2465 - Harvard Department of Economics)
Introduction to Machine Learning (GOV 2018 - Harvard Department of Government)

Statement of Motivation to Attend the Workshop in Development and Networks for Early-Career Researchers

I would like to attend this workshop to (1) hone ideas for new projects by engaging with cutting edge research in networks and development; (2) forge meaningful connections with established and early-stage scholars and identify potential collaborators; and (3) receive feedback on a work-in-progress presentation about the general equilibrium impacts of social network formation.

My research examines the relationship between social inclusion and economic development. In prior and ongoing work, I have examined the individual-level causal impacts of social relationships and inclusivity for outcomes related to economic development and well-being. I am eager to dive further into this line of research by evaluating the relationship between social inclusion and economic development at the societal level, and in both directions: how does the social environment of a village or community at large affect its economic trajectory, and what does economic growth do to social relationships, community, and the inclusivity of a society?

I am currently analyzing data from a field experiment where I randomized the saturation of a social-network-formation intervention at the geographic-area level. This geographic randomization allows me to causally identify the effects of social network formation on the neighborhood. While the analysis is still at an early stage, I believe it is a good time for me to receive feedback, particularly from this audience that has a keen understanding of social networks in developing countries. I have so far focused on the most straightforward analysis: comparing people in high-treatment-saturation clusters with those in low-treatment-saturation clusters, interacted with "any treatment" status (where treatment is being randomized to send or receive meal-sharing invitations). This analysis alone yields striking results, but also raises complex questions. For example, does the identity of the treated or control women matter for spillovers? Do sub-arm treatments, which yield varying individual-level downstream impacts, yield differing or similar spillover effects? Are control women in low-saturation areas really unaffected, or might non-linear spillovers exist in both low- and high-saturation areas? There are many analyses that I can conduct to help address these questions – for example, evaluating exposure to treated neighbors at the individual level, across different types of treatment exposure, and between different types of people. I am eager to hear other scholars' hypotheses about what might drive the main results that I find, which will help guide this deeper analysis.

At the same time, I am developing a research project addressing what I believe is a harder question to answer: how does economic development affect social relationships and communal societies over the long run? This idea is in its infancy, and I am planning to conduct qualitative fieldwork in January that will make progress on this question. This conference is optimally timed to generate ideas and solicit feedback for this upcoming project, which serves as a strong motivator to attend.

General Equilibrium Impacts of Social Network Formation*

Gabriella Fleischman†

September 15, 2026

Abstract

What are the general equilibrium effects of social network formation? When two people form a new social tie, they experience direct effects of the social relationship. Theoretically, these effects can propagate through their existing networks, or can crowd-out benefits to counterfactual network ties; thus, the general equilibrium effects of more or less linking within a network is ambiguous. I leverage cluster-randomized treatment saturation of an experiment that creates exogenous opportunities for low-socio-economic status (SES) women to link socially with high-SES women, other low-SES women, or both. In high-saturation areas, I randomized 85% of women to send or receive invitations (treatment), while in low-saturation areas, I randomized 35% of women to send or receive invitations. Women self-report first-stage spillovers from the experiment: control women in high saturation areas are equally as likely as treated women to say they made a friend through the program.

Among all women who are exposed to the experiment — treated women (the group directly affected by the experiment) and control women in high-saturation areas (the group indirectly affected by the experiment) — networks undergo a striking transformation. High-SES and low-SES relatives are both far less likely to appear in the social network, leading to an overall shrinking in the network size (0.308 fewer friends, a 4.8% decrease, $p = 0.022$). However, there are more high-SES friends in the network, and no change in the presence of low-SES friends, leading to networks that are significantly more concentrated with friends rather than relatives (a 9% increase in the proportion of the network that is own friends, $p = 0.001$),

*I am thankful to Marcella Alsan, Emily Breza, Reshmaan Hussam, and Eliana La Ferrara for their guidance and support. James Mkandawire, Davie Chitenje, Tombozgani Mhango, and the Invest in Knowledge Initiative (IKI) data collection team were consequential to making this project possible. Reagan Curtis and Samira Mathur provided excellent research assistance. I gratefully acknowledge financial support from the Weiss Fund, the Adrienne Hall Fund at the Harvard Kennedy School Women and Public Policy Program, the Institute for Quantitative Social Sciences at Harvard University, the Center for International Development at the Harvard Kennedy School, the Graduate School of Arts and Sciences at Harvard University, the Center for African Studies at Harvard University, and SurveyCTO. This study received IRB approval from Harvard University protocol number IRB22-0484 and the Malawi National Committee on Research in Social Sciences and Humanities protocol P.05/23/760. The experiment was pre-registered under RCT ID AEARCTR-0013644.

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and slightly higher-SES (a 3.9% increase in the proportion of the network that is high-SES, $p = 0.082$; and a 12.8% increase in the proportion of the network that is own high-SES friends, $p = 0.013$). All exposed women are simultaneously 22% less likely to report experiencing loneliness ($p = 0.078$).

Treatment effects on downstream economic outcomes are noisy, and therefore the following analysis is largely suggestive. However, results are notable because the direction of effects are more consistently related to neighborhood treatment *saturation* than to individual treatment *assignment*. Treated women in low-saturation areas earned significantly higher business profits in the past year than control women in low-saturation areas, while there are no treatment effects on profits in the past year for any women in high-saturation areas (the difference in coefficients is significant in a one-sided t-test comparing low-saturation treatment profits with high-saturation treatment profits [$p = 0.056$], and comparing low-saturation treatment profits with high-saturation control profits [$p = 0.059$]). While the probability of operating a business in the past year does not differ by treatment or area, treated women in low-saturation areas are 12% more likely to try a *new* business during the duration of the intervention compared to control in low-saturation areas, while all women in high-saturation areas equally as likely, suggesting that competition can erode the economic value of social networks. Treatment effects on food security follow the effects on business profits, driven by reductions in protein consumption among women in high-saturation areas.

I infer two conclusion from the results. First, proximity to network activity causally reshapes networks in dramatic ways, where friendship (as opposed to kinship) and economic connectedness both propagate. Second, since loneliness reductions are generative while economic benefits are competitive, the results suggest that a social planner may face a trade-off between social integration for many, versus economic growth for few. Using a back of the envelope calculation, each additional case of averted loneliness that is generated by high treatment saturation bears the opportunity cost of $259 in business growth that would be generated with low treatment saturation.

Table 1: Treatment Saturation Balance

Variable	(1) Low Treatment Saturation Mean/(SE)	(2) High Treatment Saturation Mean/(SE)	(2)-(1) Pairwise t-test Mean difference
Age	-0.031	0.022	0.053***
	(0.042)	(0.034)	
Years in Village	-0.038	0.028	0.066
	(0.034)	(0.023)	
Chewa	0.018	-0.013	-0.031
	(0.090)	(0.066)	
Number of Children	-0.032	0.024	0.056**
	(0.032)	(0.027)	
SES Index (Z-Score)	0.008	-0.006	-0.014
	(0.037)	(0.029)	
Consuming Own Maize	0.025	-0.019	-0.044
	(0.070)	(0.054)	
VSLA	0.041	-0.030	-0.071
	(0.054)	(0.052)	
Rented Acres of Farmland	-0.034	0.025	0.059*
	(0.044)	(0.038)	
Rented Gardens	-0.021	0.015	0.036
	(0.030)	(0.032)	
Moved for Marriage	0.037	-0.027	-0.065**
	(0.046)	(0.059)	
Yearly Home Visits	-0.009	0.007	0.016
	(0.035)	(0.033)	
Social Network Size	0.003	-0.002	-0.005
	(0.051)	(0.049)	
Husband in Social Network	0.006	-0.005	-0.011
	(0.040)	(0.037)	
Listed in Others' Networks	0.021	-0.015	-0.036
	(0.053)	(0.052)	
% Network High-SES	-0.049	0.035	0.084
	(0.079)	(0.083)	
% Network Same Roof Material	0.020	-0.015	-0.035
	(0.050)	(0.033)	
UCLA-3 Score	0.007	0.009	0.001
	(0.040)	(0.037)	
Average Strength of Network Links	0.059	-0.043	-0.102**
	(0.047)	(0.033)	
F-test of joint significance (F-stat)			2.110**
Number of observations	1520	2087	3607
Number of clusters	54	58	97

If the table includes missing values (.n, .o, .v etc.) see the Missing values section in the help file for the Stata command iebaltab for definitions of these values. Fixed effect used in pairwise and f-test regressions: [treat_sat_strata]. Significance: ***=.01, **=.05, *=.1. Errors are clustered at variable: [cluster_id]. Full user input as written by user: [iebaltab age_z years_village_z chewa_z children_z ses_ind_icw_z maize_prod_z vsla_z rented_plot_z rented_garden_z move_why_1_z visits_per_year_z numfriends_z told_about_husband_z numtimes_listed_z p_hses_network_z p_same_roof_z ucla3_score_z avg_network_strength_z , grpv(treat_sat) fix(treat_sat_strata) savetex("/Users/GAF136/Library/CloudStorage/Dropbox//Nutritional Poverty Trap/RCT//Tables//bl_balance_pooled6_v2.tex") vce(cluster cluster_id) replace rowv ft co(0) onerow]

Table 2: Treatment Saturation Balance

Variable	(1) Low-Saturation Control Mean/(SE)	(2) Low-Saturation Treat Mean/(SE)	(3) High-Saturation Control Mean/(SE)	(4) High-Saturation Treat Mean/(SE)	(2)-(1) Mean difference	(3)-(1) Pairwise t-test Mean difference	(4)-(1) Mean difference
Age	-0.052	-0.011	0.026	0.021	0.041	0.078**	0.073
	(0.053)	(0.044)	(0.048)	(0.034)			
Years in Village	-0.039	-0.038	-0.009	0.046	0.001	0.030	0.084
	(0.045)	(0.038)	(0.036)	(0.028)			
Chewa	0.043	-0.004	0.019	-0.029	-0.047	-0.023	-0.072
	(0.086)	(0.097)	(0.058)	(0.072)			
Number of Children	-0.052	-0.015	0.004	0.033	0.037	0.055*	0.085*
	(0.045)	(0.036)	(0.042)	(0.031)			
SES Index (Z-Score)	-0.060	0.069	-0.119	0.050	0.129	-0.059	0.110
	(0.048)	(0.038)	(0.040)	(0.033)			
Consuming Own Maize	-0.015	0.062	-0.007	-0.024	0.078	0.009	-0.009
	(0.081)	(0.068)	(0.060)	(0.055)			
VSLA	0.011	0.069	-0.068	-0.012	0.058	-0.078**	-0.022
	(0.058)	(0.056)	(0.064)	(0.053)			
Rented Acres of Farmland	-0.036	-0.032	0.012	0.031	0.004	0.048	0.067
	(0.053)	(0.045)	(0.046)	(0.040)			
Rented Gardens	-0.062	0.015	0.021	0.012	0.077**	0.083	0.074*
	(0.028)	(0.041)	(0.048)	(0.035)			
Moved for Marriage	0.079	-0.000	-0.049	-0.017	-0.080*	-0.128***	-0.096**
	(0.050)	(0.055)	(0.062)	(0.066)			
Yearly Home Visits	-0.019	-0.001	-0.014	0.017	0.018	0.005	0.036
	(0.040)	(0.046)	(0.037)	(0.040)			
Social Network Size	-0.049	0.050	-0.008	0.001	0.098	0.040	0.050
	(0.054)	(0.058)	(0.066)	(0.047)			
Husband in Social Network	-0.026	0.035	0.027	-0.020	0.060	0.052*	0.006
	(0.050)	(0.043)	(0.048)	(0.039)			
Listed in Others' Networks	0.036	0.007	-0.075	0.015	-0.029	-0.112**	-0.022
	(0.053)	(0.063)	(0.055)	(0.058)			
% Network High-SES	-0.042	-0.054	0.004	0.051	-0.012	0.047	0.093
	(0.082)	(0.083)	(0.089)	(0.083)			
% Network Same Roof Material	0.008	0.032	0.003	-0.024	0.024	-0.004	-0.031
	(0.053)	(0.054)	(0.051)	(0.033)			
UCLA-3 Score	0.002	0.012	-0.005	0.016	0.010	-0.008	0.013
	(0.043)	(0.050)	(0.039)	(0.044)			
Average Strength of Network Links	0.111	0.012	-0.067	-0.032	-0.099	-0.178***	-0.143**
	(0.048)	(0.058)	(0.050)	(0.037)			
F-test of joint significance (F-stat)					1.924**	2.280***	1.206
Number of observations	720	800	686	1401	1520	1406	2121
Number of clusters	53	53	55	58	54	97	97

If the table includes missing values (.n, .o, .v etc.) see the Missing values section in the help file for the Stata command iebaltab for definitions of these values. Covariate(s) used in pairwise and f-test regressions: [i.wealth_quant_cluster]. Fixed effect used in pairwise and f-test regressions: [treat_sat_strata]. Significance: ***=.01, **=.05, *=.1. Errors are clustered at variable: [cluster_id]. Full user input as written by user: [iebaltab age_z years_village_z chewa_z children_z ses_ind_icw_z maize_prod_z vsla_z rented_plot_z rented_garden_z move_why_1_z visits_per_year_z numfriends_z told_about_husband_z numtimes_listed_z p_hses_network_z p_same_roof_z ucla3_score_z avg_network_strength_z , grpv(treat_sat_treat) fix(treat_sat_strata) savetex("/Users/GAF136/Library/CloudStorage/Dropbox//Nutritional Poverty Trap/RCT//Tables//bl_balance_pooled6_v3.tex") vce(cluster cluster_id) replace rowv ft onerow co(0) cov(i.wealth_quant_cluster)]

Table 3: Effects of High Treatment Saturation on Networks

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Program Reflections Open Response: Made a Friend	Network Degree		Percent of Network High-SES		Percent of Network Own Friends		Percent of Network Own High-SES Friends		Percent of Network Own Low-SES Friends	
	1 Year	1 Month	1 Year	1 Month	1 Year	1 Month	1 Year	1 Month	1 Year	1 Month	1 Year
Panel A: Pooled Effects of Any Exposure (Treated or High Treatment Saturation vs. Low-Saturation Control)											
Any Exposure	0.022***	0.142	-0.308**	0.008	0.016*	0.007	0.035***	-0.014*	0.018**	0.028	0.018**
	(0.008)	(0.177)	(0.135)	(0.018)	(0.009)	(0.025)	(0.011)	(0.008)	(0.007)	(0.021)	(0.009)
Panel B: High Treatment Saturation × Treatment											
High Treatment Saturation	0.018	0.144	-0.496***	0.007	0.010	0.004	0.046***	-0.015*	0.013	0.026	0.034**
	(0.012)	(0.182)	(0.193)	(0.018)	(0.011)	(0.027)	(0.016)	(0.008)	(0.009)	(0.023)	(0.014)
Inviter or Guest=1	0.019*	0.113	-0.094	0.002	0.018*	0.003	0.019	-0.009	0.017**	0.012	0.003
	(0.010)	(0.157)	(0.119)	(0.017)	(0.010)	(0.021)	(0.012)	(0.006)	(0.009)	(0.019)	(0.010)
High Treatment Saturation × Inviter or Guest=1	-0.008	-0.206	0.138	-0.008	-0.001	-0.004	-0.024	0.013	-0.005	-0.021	-0.020
	(0.013)	(0.183)	(0.142)	(0.018)	(0.014)	(0.024)	(0.016)	(0.008)	(0.011)	(0.021)	(0.014)
Observations	3444	1521	3444	1500	3443	1500	3444	1521	3444	1521	3444
Low Saturation Control Mean	0.030	6.053	6.484	0.296	0.408	0.419	0.371	0.145	0.141	0.273	0.230
Total Treatment Effects:											
Inviters & Guests in High Saturation Clusters	0.029***	0.051	-0.453**	0.000	0.027**	0.003	0.041***	-0.011	0.025***	0.017	0.017
One-Sided t-Tests (p-value):											
Inviters & Guests in Low-Saturation Clusters > Control in High-Saturation Clusters	0.472	0.566	0.023	0.661	0.270	0.506	0.938	0.204	0.326	0.777	0.981
Inviters & Guests in Low-Saturation Clusters > Inviters & Guests in High-Saturation Clusters	0.812	0.331	0.030	0.434	0.822	0.491	0.939	0.314	0.872	0.636	0.905

Standard errors in parentheses

* $p < .1$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Effects of High Treatment Saturation on Networks

	(1)	(2)	(3)	(4)
	Number of High-SES Relatives in Network	Number of Low-SES Relatives in Network	Number of High-SES Friends	Number of Low-SES Friends
	1 Year	1 Year	1 Year	1 Year
Panel A: Pooled Effects of Any Exposure (Treated or High Treatment Saturation vs. Low-Saturation Control)				
Any Exposure	-0.106***	-0.230***	0.086**	-0.000
	(0.036)	(0.062)	(0.040)	(0.070)
Panel B: High Treatment Saturation × Treatment				
High Treatment Saturation	-0.103**	-0.344***	0.045	0.006
	(0.048)	(0.096)	(0.047)	(0.097)
Inviter or Guest=1	-0.086*	-0.079	0.094*	-0.015
	(0.046)	(0.056)	(0.051)	(0.077)
High Treatment Saturation × Inviter or Guest=1	0.054	0.118	-0.034	-0.027
	(0.062)	(0.086)	(0.064)	(0.094)
Observations	3444	3444	3444	3444
Low Saturation Control Mean	1.198	2.064	0.886	1.468
Total Treatment Effects:				
Inviters & Guests in High Saturation Clusters	-0.135***	-0.305***	0.105*	-0.037
One-Sided t-Tests (p-value):				
Inviters & Guests in Low-Saturation Clusters > Control in High-Saturation Clusters	0.386	0.004	0.211	0.579
Inviters & Guests in Low-Saturation Clusters > Inviters & Guests in High-Saturation Clusters	0.135	0.006	0.582	0.401

Standard errors in parentheses

* $p < .1$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Effects of High Treatment Saturation on Networks

	(1)	(2)	(3)	(4)	(5)	(6)
	Mild-to-Severe Depressive Symptoms		Loneliness Symptoms		Perceived Acceptance (SDs)	
	1 Month	1 Year	1 Month	1 Year	1 Month	1 Year
Panel A: Pooled Effects of Any Exposure (Treated or High Treatment Saturation vs. Low-Saturation Control)						
Any Exposure	0.007	-0.000	0.008	-0.032*	-0.074	0.063
	(0.055)	(0.021)	(0.031)	(0.018)	(0.103)	(0.044)
Panel B: High Treatment Saturation × Treatment						
High Treatment Saturation	0.010	0.012	0.001	-0.042*	-0.067	0.096*
	(0.056)	(0.028)	(0.030)	(0.021)	(0.106)	(0.057)
Inviter or Guest=1	0.030	-0.021	0.031	-0.023	0.018	0.029
	(0.049)	(0.023)	(0.032)	(0.020)	(0.091)	(0.048)
High Treatment Saturation × Inviter or Guest=1	0.004	0.001	-0.021	0.020	0.106	-0.065
	(0.059)	(0.028)	(0.036)	(0.023)	(0.114)	(0.058)
Observations	1521	3444	1521	3444	1521	3444
Low Saturation Control Mean	0.311	0.312	0.212	0.146	-0.009	-0.061
Total Treatment Effects:						
Inviters & Guests in High Saturation Clusters	0.044	-0.008	0.012	-0.044*	0.058	0.060
One-Sided t-Tests (p-value):						
Inviters & Guests in Low-Saturation Clusters > Control in High-Saturation Clusters	0.329	0.870	0.147	0.181	0.163	0.907
Inviters & Guests in Low-Saturation Clusters > Inviters & Guests in High-Saturation Clusters	0.651	0.683	0.138	0.147	0.735	0.747

Standard errors in parentheses

* $p < .1$, ** $p < 0.05$, *** $p < 0.01$

Table 6: Effects of High Treatment Saturation on Businesses

	(1)	(2)	(3)	(4)
	Any New Business Since Baseline	Any New Business Since Last Survey		Any Lost Business Since Baseline
	1 Year	1 Month	1 Year	1 Year
Panel A: Pooled Effects of Any Exposure (Treated or High Treatment Saturation vs. Low-Saturation Control)				
Any Exposure	0.018	-0.035	0.024	-0.019
	(0.024)	(0.046)	(0.023)	(0.013)
Panel B: High Treatment Saturation × Treatment				
High Treatment Saturation	0.013	-0.044	0.026	-0.021
	(0.028)	(0.046)	(0.028)	(0.019)
Inviter or Guest=1	0.047*	-0.038	0.043	-0.016
	(0.028)	(0.038)	(0.028)	(0.016)
High Treatment Saturation × Inviter or Guest=1	-0.069*	0.025	-0.073**	0.022
	(0.037)	(0.050)	(0.035)	(0.024)
Observations	3444	1521	3444	3444
Low Saturation Control Mean	0.395	0.265	0.366	0.129
Total Treatment Effects:				
Inviters & Guests in High Saturation Clusters	-0.009	-0.057	-0.004	-0.015
One-Sided t-Tests (p-value):				
Inviters & Guests in Low-Saturation Clusters > Control in High-Saturation Clusters	0.135	0.436	0.286	0.425
Inviters & Guests in Low-Saturation Clusters > Inviters & Guests in High-Saturation Clusters	0.011	0.239	0.034	0.521

Standard errors in parentheses

* $p < .1$, ** $p < 0.05$, *** $p < 0.01$

Table 7: Effects of High Treatment Saturation on Business Profits

	(1)	(2)	(3)
	Business Profits this Year	Business Profit Last Six Months	Business Profit Last Month
	1 Year	1 Year	1 Year
Panel A: Pooled Effects of Any Exposure (Treated or High Treatment Saturation vs. Low-Saturation Control)			
Any Exposure	2.445	2.051	1.083*
	(3.641)	(1.747)	(0.602)
Panel B: High Treatment Saturation × Treatment			
High Treatment Saturation	-1.032	0.528	1.081
	(4.609)	(2.210)	(0.789)
Inviter or Guest=1	7.371*	4.183**	1.576**
	(4.437)	(2.093)	(0.730)
High Treatment Saturation × Inviter or Guest=1	-6.671	-3.756	-1.746*
	(5.596)	(2.588)	(0.944)
Observations	3444	3444	3444
Low Saturation Control Mean	29.791	13.775	4.373
Total Treatment Effects:			
Inviters & Guests in High Saturation Clusters	-0.331	0.955	0.910
One-Sided t-Tests (p-value):			
Inviters & Guests in Low-Saturation Clusters > Control in High-Saturation Clusters	0.059	0.075	0.289
Inviters & Guests in Low-Saturation Clusters > Inviters & Guests in High-Saturation Clusters	0.056	0.070	0.178

Standard errors in parentheses

* $p < .1$, ** $p < 0.05$, *** $p < 0.01$

Table 8: Effects of High Treatment Saturation on Food Security

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Food Security Index (SDs)		Average Daily Meals Last Month		Average Daily Meals Lean Season	Meals with Protein Last Month		Meals with Protein Lean Season
	1 Month	1 Year	1 Month	1 Year	1 Year	1 Month	1 Year	1 Year
Panel A: Pooled Effects of Any Exposure (Treated or High Treatment Saturation vs. Low-Saturation Control)								
Any Exposure	-0.004	-0.064	0.036	-0.010	-0.115	-0.190	-0.219	-0.114
	(0.126)	(0.056)	(0.065)	(0.067)	(0.158)	(0.377)	(0.293)	(0.276)
Panel B: High Treatment Saturation × Treatment								
High Treatment Saturation	-0.035	-0.127	0.026	-0.053	-0.049	-0.294	-0.643*	-0.243
	(0.134)	(0.082)	(0.070)	(0.084)	(0.224)	(0.386)	(0.368)	(0.434)
Inviter or Guest=1	-0.070	0.045	-0.019	-0.004	-0.116	-0.277	0.341	0.215
	(0.105)	(0.062)	(0.058)	(0.051)	(0.136)	(0.329)	(0.348)	(0.302)
High Treatment Saturation × Inviter or Guest=1	-0.042	-0.083	-0.049	0.153	-0.042	0.022	-0.341	-0.555
	(0.120)	(0.088)	(0.060)	(0.108)	(0.230)	(0.380)	(0.426)	(0.428)
Observations	1521	3444	1521	3444	3444	1521	3444	3444
Low Saturation Control Mean	0.053	0.305	2.242	2.387	1.685	3.409	7.986	4.087
Total Treatment Effects:								
Inviters & Guests in High Saturation Clusters	-0.147	-0.165**	-0.042	0.097	-0.207	-0.550	-0.644*	-0.583
One-Sided t-Tests (p-value):								
Inviters & Guests in Low-Saturation Clusters > Control in High-Saturation Clusters	0.643	0.033	0.786	0.198	0.663	0.476	0.010	0.177
Inviters & Guests in Low-Saturation Clusters > Inviters & Guests in High-Saturation Clusters	0.148	0.001	0.274	0.834	0.089	0.103	0.001	0.012

Standard errors in parentheses

* $p < .1$, ** $p < 0.05$, *** $p < 0.01$

0.1 Back of the Envelope Calcuation

Low Saturation Areas

Average gains to treated women: 7.371 USD and 0.032 percentage point reduction in loneliness × 800 treated women in low-saturation clusters = 5,896.80 USD + 25.6 averted cases of loneliness

Average gains to all women (800 treated + 720 control): 3.88 USD per person + 0.017 averted cases of loneliness per person

High Saturation Areas

Average gains to all women: 0.032 averted cases of loneliness per person

Comparing

It costs 3.88 USD to reduce the probability of loneliness by 0.032–0.017=0.015 percentage points.

Therefore, each additional case of averted loneliness bears an opportunity cost of $\$3.88 \div 0.015 = \$259$ in forgone business growth.