Technical Appendix to Women's Groups and Member Resilience After COVID-19: Evidence from Nigeria

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Background

This document provides details about the data sources, methodology, and complete sets of results, employed in the Research Brief – "Women's Groups and Member Resilience After COVID-19: Evidence from Nigeria".

Data Sources & Sample

The analysis employed data from multiple sources collected and used by Women for Women International (WfWI) for different purposes.

- First, the core outcomes of this study – the perceived and reported effects of COVID-19 – were collected through surveys with a convenience sample of current and past members (graduates) of WfWI's core program in May 2020. These data include responses from 557 women. We also used these data to access information on program participation status (current enrollee versus graduated member).
- The second data source includes multiple waves of the Monitoring & Evaluation (M&E) data, which are routinely collected by WfWI from 30% of all of program participants a few weeks before the program and a few weeks before graduation. These data include information on household wellbeing, decision making, health, income generating activities, and savings. The M&E data for the core program participants were collected at multiple time points, including in 2018, prior to and a few weeks after the program, and the endline data were collected in 2019 – 11 months after the start of the program.
- The third data source includes the household-level data collected for a Randomized Controlled Trial (RCT). These data include information on participation in savings groups and mentoring activities, as well as other social and economic characteristics similar to those collected in the M&E data. WfWI commissioned an RCT to understand the impact of programmatic variations to the 12-month core program in Bauchi and Plateau states. The variations include a follow-up individual or group mentorship for 6 months after women graduate from the training program. Within these treatment arms, women were further randomly assigned to receive or not receive VSLA training and mentorship. We used the data from the RCT to assess whether the impact of COVID-19 differed across those who received (1) VSLA training; (2) Individual mentorship; and/or (3) Group mentorship. The RCT data were collected in 2018 (baseline; before the start of the programming) and 2019 (midline data; end of 12-month programming for all – but with the noted variation where some participants received VSLA training, and some participants did not).

We merged these datasets using each woman's WfWI program ID. Out of 557 observations in the COVID-19 surveys, 133 were merged successfully with the M&E data, and 81 were merged successfully with the RCT data. Additionally, 197 out of 557 observations had background information available from either M&E or RCT evaluation data.

Methods & Findings

This section describes the sample and methodology employed for each research question.

RQ1: How are participant characteristics associated with resilience during the COVID-19 shocks?

This analysis is based on 197 observations in the COVID-19 surveys. These surveys also collected information on background characteristics from either the M&E data or the RCT evaluation data. We estimated the following multivariate regression, with heteroskedasticity-robust standard errors.

$$Y_i = \alpha_0 + \alpha_1 Age + \alpha_2 IncomeSource + \alpha_3 MaritalStatus + \alpha_4 WeeklyEarnings + \alpha_5 Children + \alpha_6 SelfAdvocacy + \alpha_7 DecisionMaking + \alpha_8 VSLAMember + \alpha_9 State + \alpha_{10} DataSource + \epsilon_i \quad (1)$$

In equation (1), Y_i denotes the outcome of interest. We reported five specific self-reported outcomes, measured as binary indicators for – disruption in social activities; disruption in savings groups activities; disruption in income generating activities; having gone out of business during the pandemic; and having had some profitable activity during the pandemic. We regressed each of these outcomes on 9 variables – respondent age, income source prior to pandemic (agriculture, retail, or other); marital status (married or not); weekly earnings prior to the pandemic; number of children; pre-pandemic self-advocacy index; pre-pandemic decision making index; VSLA membership (yes or no); state of residence (Bauchi, Kaduna, or Plateau). Additionally, because these indicators were collected from different data sources for different observations, we controlled for the data source (M&E data or RCT evaluation data).

RQ2: To what extent were current enrollees and program graduates (who had completed and exited the program) affected differently by COVID-19?

This analysis is based on mean outcomes of current and past members among the 557 observations in the COVID-19 surveys. As a robustness check, we also estimated a specification controlling for participant background characteristics listed in equation (1) using the same 197 observations as under RQ1. Although the differences between current and past members reduced slightly after controlling for these additional characteristics, they remained large and significant for most outcomes. Estimates based on the regression are shown in Table 1 below.

Table 1. Regression Coefficients on Graduated Status – Controlling for Member characteristics

	Social activities disrupted	SG activities disrupted	IGA activities disrupted	Out of business	Have other IGA
Graduated (v/s. current member)	0.50***	0.07	0.39***	0.34***	0.07
	(0.06)	(0.07)	(0.06)	(0.06)	(0.08)
Observations	197	197	197	197	197
R-squared	0.45	0.13	0.26	0.35	0.08
Dep. Var. Mean	0.685	0.264	0.685	0.269	0.416

Robust standard errors in parentheses. ***p<0.01; **p<0.05; *p<0.10. SG=Savings Groups; IGA=Income-Generating Activities

RQ3: To what extent do additional training and mentoring activities provide better support for business and savings groups activities against COVID-19 induced disruptions?

This analysis is based on 81 observations that appeared in both the COVID-19 dataset and the RCT dataset. We did not control for any background characteristics for two reasons – first, the small number of observations implied limited degrees of freedom, which would decrease further with more independent variables; and second, many of the pre-pandemic variables intended to be used as controls were reported after RCT baseline and may have been affected by group assignment. However, since women were randomized to specific program variations, we should expect close to equivalent outcomes at baseline among different groups, which minimizes concerns about potential confounding. We derived our main results from the following bivariate regression:

$$Y_i = \alpha_0 + \alpha_1 Group_i + \epsilon_i \quad (2)$$

Y_i in equation (2) represents each of the six outcomes introduced under RQ1. We ran equation (2) thrice for each of the three treatment effects, where $Group_i$ denoted VSLA trainings in the first regression, group mentorship trainings in the second regression, and individual mentorship trainings in the third regression. We show complete regression estimates in Tables 2 through 4.

Table 2. Impact of VSLA Trainings

	Social activities disrupted	SG activities disrupted	IGA disrupted	Out of business	Have other IGA
VSLA trainings	-0.05	-0.21*	0.02	-0.05	0.09
	(0.05)	(0.12)	(0.06)	(0.12)	(0.12)
Observations	81	81	81	81	81
R-squared	0.01	0.04	0.00	0.00	0.01

Robust standard errors in parentheses. ***p<0.01; **p<0.05; *p<0.10. SG=Savings Groups; IGA=Income-Generating Activities

Table 3. Impact of Group Trainings

	Social activities disrupted	SG activities disrupted	IGA disrupted	Out of business	Have other IGA
Group mentorship trainings	-0.03	-0.07	0.09	-0.09	0.20*
	(0.06)	(0.11)	(0.06)	(0.11)	(0.11)
Observations	81	81	81	81	81
R-squared	0.00	0.01	0.03	0.01	0.04

Robust standard errors in parentheses. ***p<0.01; **p<0.05; *p<0.10. SG=Savings Groups; IGA=Income-Generating Activities

Table 4. Impact of Individual Trainings

	Social activities disrupted	SG activities disrupted	IGA disrupted	Out of business	Have other IGA
Individual mentorship trainings	0.02	-0.07	0.04	-0.14	-0.00
	(0.06)	(0.11)	(0.06)	(0.11)	(0.11)
Observations	81	81	81	81	81
R-squared	0.00	0.01	0.01	0.02	0.00

Robust standard errors in parentheses. ***p<0.01; **p<0.05; *p<0.10. SG=Savings Groups; IGA=Income-Generating Activities