Replication Material: *Can Communities Take Charge? A Randomized Controlled Trial on Sustaining Schools in Afghanistan*

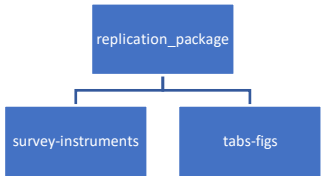
This repository contains the replication material for the paper "Can Communities Take Charge? A Randomized Controlled Trial on Sustaining Schools in Afghanistan," authored by Dana Burde, Joel Middleton, Roxanne Rahnama, and Cyrus Samii.

OVERVIEW

All analyses were run in **RStudio** 2024.12.1+563 using **R** version 4.5.0.

It is recommended that the replication be done using RStudio according to the information below. It is possible to run the code in R without RStudio so long as you set up the proper directory structure and set the working director to the top directory as below.

The directory structure is as follows:



- **replication_package** is the top directory
- **survey-instruments** contains the survey instruments that were used to gather the data. They offer a reference for details on what each variable measures.
- **tabs-figs** is the directory to which analytical outputs are written, including tables, in Latex or spreadsheets, and figures, in PDF.

Begin by ensuring the directory structure is as pictured above.

Then open the **replication_package.Rproj** in the top directory. This will open a new RStudio instance and should ensure that all filepaths are oriented properly.

Then run **main_master_file-2023-06.R** to produce all results.

SCRIPTS

main_master_file-2023-06.R – this is the script for replicating all the results in main body and appendix of the paper.

- **R packages**: the script uses functions from the following packages, which need to be loaded prior to running the code.
    - here
    - readstata13
    - xtable
    - clubSandwich
    - dplyr
    - ggplot2

    - gridExtra
    - survey
- **Input Data files:** all located within the replication folder, the R code assumes a directory structure as above. If you have things set up that way and have the **replication_package.Rproj** file in the top directory, there is no need to change and file paths to input the data files or write output files.
    - ANSO conflict events in study region: **anso-events-alse.csv**
    - ANSO conflict event totals in study districts: **anso-totals.dta**
    - Data from Randomization file: **estimated village sizes 2022-08.dta**
    - Community Leader Data with Community Capacity Assessments: **wave4_CL_merged_with_CA_READY.dta**
    - Community Leader Data: **wave4_CL_READY_district.dta**
    - Household/Child Data with Community Leader Variables: **wave4_merged_CL_child_scores.dta**
    - Household/Child Data: **wave4_merged_READY_district.dta**
    - Household/Child Data with Community Capacity Assessments: **wave4_merged_with_CA_READY.dta**
    - Teacher Data with Community Capacity Assessments: **wave4_TS_merged_with_CA_READY.dta**
    - Teacher Data: **wave4_TS_READY_new.dta**

- **Output of Replication:** file replicates the results in the following tables and figures
    - For main text:
        - Table 1: Summary Statistics for Equivalency and Non-Equivalency Outcomes (summary_statistics_tomod.tex)
        - Figure 2: The Logic of a Test for Non-Inferiority (sesoi_generic.pdf)
        - Figure 3: Primary Equivalence Results (primary_results_equiv.pdf)
        - Figure 4: Test of Potential Agency Issues (education_funding.pdf and teacher_motivation_performance.pdf)
        - Table 2: Community Leaders' Longer-Term Perceptions of Sustainability (cl_follow_up_sustainability_tomod.tex)
    - For appendix:
        - Table A2: Effect heterogeneity by past violence (hh_child_violence.tex)
        - Figure A.1 (violence.pdf)
        - Table A6: Realized distributions… (sample-sizes.txt)
        - Table A7: Covariate balance (covariate_balance_tomod.tex)
        - Table A8: Placebo test for differential missingness (missingness_test_tomod.tex)
        - Table A9: Primary Equivalence Results (primary_equiv_results_full_cov.tex)
        - Table A10: Heterogeneous Treatment Effects by Gender and Ethnic Status (equity_htes.tex)
        - Table A11: Heterogeneous Treatment Effects by Community Leader having School-age Children (cl_school_age_child_hh_htes.tex)
        - Table A12: Share of household heads who can correctly name local education CDC leaders (hh_name_leaders.tex)
        - Table A13: Share of household heads responding to how useful they think… (hh_value_cdc.tex)
        - Table A14: Interaction Effects Regressions with Village-Level General Management… (hh_child_ts_cl_CA_interacted_results.tex)
        - Table A15: Interaction Effects Regressions With Village-Level PCA Scores of Previous… (hh_child_ts_cl_prev_CBofCDC_PCA_results.tex)

- Table A16: Interaction Effects Regressions With Village-Level PCA Scores of Current… (hh_child_ts_cl_cdc_functionality_PCA_results.tex)
- Table A17: Effects of Sustainability Model on Sustainability Outcomes for Teachers and Community Leaders (cl_ts_sustainability_endline_results.tex)
- Table A18: Heterogeneous Treatment Effects by Implementing NGO (NGO_htes.tex)
- Table A19: Community Leaders' Longer-term Perceptions of CBE Sustainability (CARE and CRS Samples) (cl_follow_up_sustainability_full_sample.tex)
- Table A20: Interaction Effect Regressions With Community Leaders' Age... (cl_age_educ_endline_interactions.tex)
- Table A21: Interaction Effect Regressions With Community Mean Children's Test Score (cl_sustainability_endline_child_scores_interaction.tex)
- Table A22: Parent's Involvement and Contributions (hh_parent_involvment.tex)

Other outputs are additional results that were omitted from the appendix due to page length limitations.

KEY VARIABLES CODEBOOK

Variable name	***Description***
Household and child outcomes	
ros_attend	attendance
std_mathread	math and reading score
satisfaction_access_score	perception on access to quality education
sustainability_confidence_score	confidence in local institutions
teacher_attend_score	teacher attendance
teacher_perception_score	community perception of teacher quality
Community leader outcomes (endline and 1-year phone follow up)	
cl_satisfaction_access_score	perceptions on access to quality education
cl_funds_supplies_score	classroom supplies
cl_sustainability_score.COMBO	combined sustainability index
cl_sustainability_future_score	community provision for future classes
cl_sustainability_inst_score	confidence in local community institutions
cl_sustainability_classes_score	confidence that school will be sustained
cl_sustainability_MOE_score	MoE provisions for funding teachers
cl_sustainability_shura_score	shura provisions for future classes
phone_sustain_want_score_std	community desire to continue CBE
phone_sustainability_score.COMBO	combined sustainability index
phone_sustain_initiative_score_std	initiative to have CBE sustained
phone_sustain_provisions_score_std	provisions for sustainability without NGO
phone_sustain_confidence_score	confidence that school will sustain
phone_sustain_2018_score	continued CBE operations in spring 2018
Teacher outcomes	
t_funds_score.COMBO	combined fund application index

t_funds_supplies_score	classroom supplies
t_funds_regularpay_score	whether teacher is being paid regularly
t_sustainability_score.COMBO	combined sustainability index
t_sustainability_inst_score	confidence in local community institutions
t_sustainability_school_score	confidence that school will be sustained
t_sustainability_MOE_score	proactive management from MoE
t_sustainability_shura_score	proactive management from shuras
t_sustainability_teacher_score	teacher plans to remain CBE teacher
t_motivation_COMBO	combined motivation index
t_motivation_intrinsic_score	intrinstic motivation
t_motivation_material_score	material motivation and satisfaction