Development Economics Research Group

POLICY BRIEF

KØBENHAVNS UNIVERSITET

Findings

We find that the compared resilience measures identifies the bottom 20% least resilient household partly different.

This suggests that sensitivity and caution of using different measures has to be considered for development and humanitarian practitioners.

For more, see the DERG working paper 05-2024: "Resilience in Rural Ethiopia: Comparing Objective and Perception Based Measures"

Click here for article

UNIVERSITY OF COPENHAGEN
Faculty of Social Sciences
Department of Economics
econ.ku.dk/derg
#DERGDK

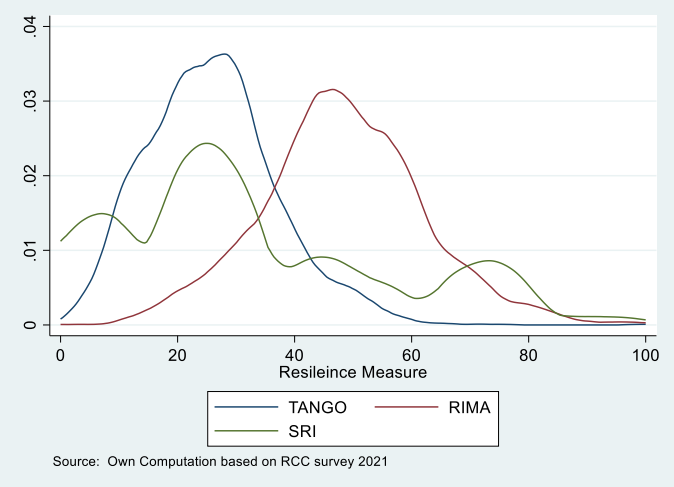
Resilience in Rural Ethiopia: Importance of caution in using measures for resilience-enhancing interventions

by Jacob Wiman based on a working paper by Mintewab Ayele, Peter Fisker, Tagel Gebrehiwot, Tseday J. Mekasha, Alemu Mekonnen, and Finn Tarp

Resilience has received considerable policy and scholarly attention from development practitioners, humanitarian agencies, and researchers in the recent decade. As resilience is a latent concept and not directly observable, its conceptualisation and definition are highly debated, especially regarding the strategies to measure it since there are various operationalisations and measurement approaches. This may be in part due to the different purposes of adopting different resilience measures, where they have largely been used to motivate development or humanitarian interventions, but also for targeting and impact evaluation applications over the past decade. Conceptualisations and measurements of resilience are therefore important for multiple reasons, as in many contexts it dictates interventions, specifically on who should be targeted and what impacts such interventions will have.

Despite this importance, comparisons of objective and subjective aggregated and disaggregated measures on development resilience, using data collected on the same households or community, are very limited. Thus, the main objective of the comparative analysis is to empirically compare objective and subjectively evaluated measures of development resilience, both aggregated and disaggregated, at the household level and analyse their correlates. We focus on two widely implemented approaches developed by the development and humanitarian community, the Resilience Index Measurement and Analysis (RIMA) developed by the Food and Agriculture Organization of the United Nations (FAO) and a similar but slightly different resilience capacity index (RCI) proposed by Technical Assistance for NGOs (TANGO) International. Figure 1 presents this comparison of aggregate measures by adding a subjective resilience indicator (SRI) that considers households' knowledge and assessment of their perceived ability to manage shocks, as such self-evaluation plays an important part in resilience capacity, uncaptured by objective measures. The SRI shows a higher dispersion of resilience scores compared to the objective measures, indicating that from the household perspective, the resilience levels are more varied.

Figure 1. Illustration of Kernel density for TANGO, RIMA and subjective (SRI) aggregate measures of resilience



Source: Own Computation based on RCC survey 2021

KØBENHAVNS UNIVERSITET

Findings

We find that the compared resilience measures identifies the bottom 20% least resilient household differently.

The results of this comparative analysis suggests that sensitivity and caution of using different measures has to be considered for development and humanitarian practitioners.

UNIVERSITY OF COPENHAGEN
Faculty of Social Sciences
Department of Economics
econ.ku.dk/derg
#DERGDK

To investigate the differences and similarities across the different resilience measures we use kernel density estimations of the distribution of the measures, as seen in Figure 1, as well as descriptive statistics particularly means and standard deviations, Spearman's correlation coefficients, and Kolmogorov-Smirnov test of equality of distributions. We also compare the different measures in terms of how they rank units/households, particularly the bottom 20% of the households (i.e., the least resilient households) who might be of relevance for targeting resilience-enhancing interventions.

We find that while there are similarities between the different objective and subjective resilience measures, there are also significant differences. These differences relate to the statistical distributions as well as the identification of households as least resilient, where we find that more than 50% of households identified as being in the bottom 20% of the sample in terms of a measure of resilience are typically not identified as such when using another measure.

In addition to kernel density estimations, looking at summary statistics, correlates, and test of equality of distributions also show the higher dispersion of resilience scores of SRI aggregate measures compared to the objective RIMA and TANGO measures, affirming that the subjective and objective measures would generate different distributions within the population using the same data. The disaggregated measures are divided into absorptive, adaptive, and transformative capacities, and are tested individually between objective and subjective measures of resilience. Subjective disaggregated measures of all three capacities show varied but overall higher dispersion and distribution when compared with the TANGO measure. When comparing correlates between disaggregated objective and subjective measures, there are some common determinants, for instance, household size, gender, and wealth indicators, however, the analysis also reveals notable differences in the factors that drive these three absorptive, adaptive, and transformative resilience capacities. This highlights the differences in the underlying drivers of these capacities.

The type of resilience measurement used will have a big impact on identifying who is the least resilient and thus most vulnerable to climatic shocks. The comparison between different objective measures, and between objective and subjective measures, shows that the measures identify the bottom 20% of least resilient households differently, based on the same data. Thus, it is important in the evaluation and monitoring of resilience-enhancing interventions to use consistent measurements and be cautious in making comparisons both within and across data that adopt divergent conceptualisations and measures of resilience.

Policy Recommendations

The results of our comparative analysis of both subjective and objective, and aggregated and disaggregated resilience measures, illustrate the importance of using appropriate measures for resilience-enhancing interventions. Given the multifaceted and latent conceptualisation of resilience, the knowledge of how different measures perform needs to be expanded, as it has a large implication for issues such as decisions on who should be targeted for resilience interventions and what such impacts would look like. As such, there is value in testing the usefulness of different measures before deciding on implementing resilience-improving initiatives. A necessary step towards more effective and targeted policy interventions for resilience includes using multiple measurement tools to accurately identify the least resilient households or communities, to ensure resilience-enhancing efforts reach those most vulnerable and least resilient.

This work was supported by the Danish International Development Agency—Ministry of Foreign Affairs of Denmark (MFA) under the project "Building Resilience to Climate Change in Ethiopia: Exploring Options for Action (Project file no.: DFC File No. 18-07-KU).