

Georgia - Samtskhe-Javakheti Roads

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Overview

Identification

COUNTRY

Georgia

EVALUATION TITLE

Samtskhe-Javakheti Roads

EVALUATION TYPE

Independent Impact Evaluation

ID NUMBER

DDI-MCC-GEO-GORBI-NORC-2013-v01

Version

VERSION DESCRIPTION

Anonymized dataset for public distribution

Overview

ABSTRACT

The evaluation uses three methodologies to rigorously evaluate the causal impact of the program on outcomes. The first is a difference-in-difference methodology, whereby the project roads are matched to a set of similar comparison roads where no intervention has taken place. These comparison roads are chosen from a number of potential candidates using a propensity score matching technique. The difference-in-difference analysis thus compares traffic counts as well as socioeconomic outcomes for residents of communities located near the project roads to those of residents of communities located near the comparison roads. Secondly, the evaluation incorporates a continuous treatment approach. Project impact is modeled in a dose-response framework, so that communities nearer the project roads are assumed to experience greater impacts than those more distant. Finally, the evaluation estimates a matched difference-in-difference model, using propensity score matching to improve the comparability between the treatment and comparison groups. Combining these three approaches allows for results from each to be compared in order to ensure a robust set of findings that is not dependent on the assumptions of one particular modeling approach.

EVALUATION METHODOLOGY

Difference-in-Difference, Continuous Treatment

UNITS OF ANALYSIS

Individuals, households

KIND OF DATA

Sample survey data [ssd]

Coverage

GEOGRAPHIC COVERAGE

The Samtskhe-Javakheti region

UNIVERSE

To collect the data, enumerators travelled to each settlement and worked with local authorities to identify a small group of individuals who were identified as knowledgeable about conditions in the settlement.

Producers and Sponsors

PRIMARY INVESTIGATOR(S)

Name	Affiliation
National Opinion Research Center (NORC)	University of Chicago

FUNDING

Name	Abbreviation	Role
Millennium Challenge Corporation	MCC	

Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
Millennium Challenge Corporation	MCC		Metadata Producer

DATE OF METADATA PRODUCTION

2014-06-18

DDI DOCUMENT VERSION

Version 1.0

DDI DOCUMENT ID

DDI-MCC-GEO-GORBI-NORC-2013-v01

MCC Compact and Program

COMPACT OR THRESHOLD

Georgia Compact I

PROGRAM

In September 2005, the Millennium Challenge Corporation (MCC) signed a five-year Compact with the Government of Georgia to foster economic growth in rural areas of Georgia. The Samtskhe-Javakheti Roads (SJ Roads) Activity was a primary component of the Compact designed to address chronic infrastructure challenges in one of the poorest regions of Georgia, with a particular focus on rehabilitating key regional transport routes. The S-J Road project thus undertook rehabilitation of approximately 220 km of roads in a predominantly agricultural area of south Georgia in order to reduce transportation costs, improve access to markets and employment, and spur economic activity. Construction began in the spring of 2008, and was completed by December 2010.

MCC SECTOR

Transport (Trans)

PROGRAM LOGIC

The evaluation draws on MCC's conception of the program logic as well as the existing literature to identify a broad range of outcomes to be evaluated. There are five categories of outcomes as follows: • Transportation related outcomes: traffic counts, vehicle speeds, travel times, and availability of public transport. • Investment, land use, and employment: industrial investment, land uses, cropping patterns, employment • Market prices: the prices of basic commodities on the local market • Household welfare: income, consumption, asset ownership • Access to health and education: utilization of health care and education services

PROGRAM PARTICIPANTS

The local population in Samtskhe-Javakheti, including ethnic minorities. Road-users and farmers.

Sampling

Study Population

To collect the data, enumerators travelled to each settlement and worked with local authorities to identify a small group of individuals who were identified as knowledgeable about conditions in the settlement.

Sampling Procedure

The sample for the first round used the 2002 Census to identify a sampling frame of 732 settlements around either the project or comparison roads, of which 690 were surveyed. The sample size was increased for the second and third rounds, which conducted surveys in all settlements that met at least one of the following criteria: settlements along the SJ Road; settlements along comparison roads where traffic counts are conducted; settlements included in the Integrated Household Survey (IHHS) that the evaluation uses to evaluate household-level outcomes, and any other village that was included in the baseline. The second and third rounds each included 960 settlements.

Our approach to selecting the comparison roads uses the technique of Propensity Score Matching (PSM) to identify eight comparison road segments to be included in the analysis. The comparison roads were selected from an inventory of 117 road segments for which data on a variety of characteristics was available from RDMED, the Georgian government roads agency. Our application of PSM in this case is to estimate a logistic regression model of the probability that a road is part of the treatment group as a function of observable characteristics. We then calculate the predicted probability (or propensity score) that a road segment is part of the treatment group for each of the eight treatment roads and 117 potential comparison roads using these estimated regression coefficients. Finally, each of the eight treatment roads is matched to a single comparison road for which the propensity score is the closest in value from among the 117 potential comparison roads.

Questionnaires

No content available

Data Collection

Data Collection Dates

Start	End	Cycle
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Data Collection Notes

The final round of IHHS data that was available for the evaluation was collected less than one year after the completion of construction.

Data Collectors

Name	Abbreviation	Affiliation
National Opinion Research Center	NORC	University of Chicago

Supervision

Miranda Berishvili, Giorgi Giorgadze, Sophia Chiburdanize, and Dea Tsartsidze

Data Processing

No content available

Data Appraisal

No content available