Road Construction and Water and Sanitation Projects in Argentina: Identifying Gender Specific Impacts and the Role of Self Esteem

Infrastructure projects pose an impact evaluation challenge because of the difficulty in eliminating endogeneity concerns. The existing infrastructure impact evaluation literature reflects this challenge, as authors apply a range of estimation methods and find varied levels of impact. Some evaluations show enhanced non-agricultural incomes, improved agricultural production, and poverty reduction, while other qualitative studies have also shown negative impacts on environmental outcomes and social cohesion. This evaluation in the Norte Grande region of Argentina will rigorously estimate impacts on standard outcomes (income productivity, transportation costs), and also shed light on the potential gender differentiated spillover effects on migration, social cohesion and community participation.

Program Design

Norte Grande is one of the most marginalized and impoverished regions in Argentina, today. The Norte Grande Development and Integration Program is part of a national strategy designed in 2004 to specifically address some of the challenges faced by the region. The program is funded by the World Bank as well as other partners. The objective of the Norte Grande Development and Integration Program is twofold: 1) rehabilitate and reconstruct existing provincial roads while minimizing negative environmental or social impacts, and 2) increase the sustainability of access to water and urban drainage. Through improving road quality and introducing road asset management tools, the program aims to reduce transportation costs, increase economic development, regional integration, and competitiveness of local producers. The water and sanitation component is comprised of aqueduct construction and repair.
The program design creates three types of treatment groups: 1) areas with road repairs only, 2) areas with water and sanitation improvements only, 3) areas with both road repairs and water and sanitation improvements. The evaluation is designed to estimate the direct effects of each intervention and the combined interventions on public transportation access and use, road quality, water connectivity, and the number of water shortages. The evaluation will also assess how the interventions affect other outcome variables that include: transportation costs, income, expenditures, small business development, access to markets, access to health services, access to education services, migration, community participation, health outcomes, time use, labor market participation, labor market productivity, and educational attainment.

The household data will be collected directly from each individual, for all individuals within the household – this will be instrumental to assessing how impacts may be different according to gender and age. The evaluators will use propensity score matching to pair communities that receive the different treatment types to communities that do not receive any treatments using observable characteristics. Panel data will be collected from people living in all treatment and control areas in three rounds: a baseline prior to the start of the program, a follow-up 1 year after program completion and a second follow up between 2 and 3 years after program completion. The evaluation will use a difference-in-differences estimation strategy to assess program impacts and address potential selection bias stemming from selection on observable characteristics and unobservable characteristics that are time invariant. The full target sample size is 6,000 households.

**Timeline:** The baseline data will be collected in 2013; road and water programs have not yet begun.

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