

Impacts of the Child Cash Grant on Consumption in Nepal Focusing on the Importance of Rural Infrastructure

(和訳：農村インフラに配慮したネパール連邦民主共和国における有子世帯に対する助成金が消費にもたらす効果)

47-206759, Jotaro Sunahara

Supervisor: Prof. Aya Suzuki

Keywords: Child Cash Grant, Nepal, Infrastructure, Malnutrition, Social Protection

1. Background, Motivation

Child malnutrition remains a challenge in the low- and middle- income countries in spite of the unremitting efforts by various stakeholders for decades, and Nepal is no exception. To address this problem, government of Nepal have launched the Child Cash Grant (CCG) policy, which could be classified as an unconditional cash transfer. The CCG offers grants to selected poor households with young children until they reach the age of five. Previous studies indicated that this treatment have contributed to improve child nutritious status, while recognizing the certain size of heterogeneous impacts across the districts (Renzaho et al. 2019). Heterogeneity in the impacts of cash transfer programs has been discussed to capture a deeper picture of how the policies work than just the mean estimation. However, many explored the heterogeneous impacts as a function of household characteristics like gender or poverty level (Dammert 2009) and little literature have probed deeply into the geographical difference. These fixed factors have not been appreciated in the impact evaluation schemes.

2. Objectives

This thesis focuses on the infrastructural elements as sources of heterogeneous impacts of the CCG, considering the harsh geographical conditions in rural Nepal. Many households have been suffering from large transportation costs due to the poor rural infrastructure. These additional burdens might have prevented the beneficiaries from realizing the full potential of the policy, leading to heterogeneous impacts among beneficiaries. Thus, in this thesis, I explicate the association of the CCG program and the

provision of infrastructure with two steps of analyses. First, available infrastructure could affect the decision of eligible households whether to attend the program because it demands extra expense in the registration and distribution process. Second, even after they receive the grants, poor infrastructure could limit the recipients' behaviors that result in the reduced treatment effects. Lack of infrastructure leads to poor access to market, which plays an important role for dietary situations (Hirvonen and Hoddinott, 2017).

Besides, the CCG has begun expanding gradually by districts since 2016 into the national coverage, though the impacts for newly targeted beneficiaries have not been examined in previous studies. As an additional analysis, therefore, this thesis briefly examines the effectiveness of the expanded policy using dataset collected in 2018.

3. Data

I conduct these three analyses using the household-level data collected in the Household Risk and Vulnerability Survey (HRVS) conducted between 2016 and 2018, combined with regional indicators from Geographic Information System (GIS). I apply the eligibility of the CCG on whole population and find 555 households who have at least one child aged under 59 months and resides in the targeted districts.

4. Results

Firstly, I investigate the effect on the decisions of participating the CCG program, using a simple logistic regression model on the likelihood of receiving the grants. I find that improved infrastructure represented by road facilities significantly related to high possibility

to receive the CCG. For second analysis, I adopted the Inverse Probability Weighting Regression Adjustment (IPWRA) method, which uses the inverse of propensity score as weights. Unlike the matching method, this allows us to capture the hidden selection effects of confounding and add interaction terms of treatment status and specific covariates, which indicates the synergetic impacts of infrastructure-related variables that are the focus of this analysis. Consequently, I find that the impacts of the treatment on the dietary consumption decrease for the beneficiaries who live with the inconvenient conditions due to the geographical features. For the final analysis, I employ the IPWRA estimation again for the subgroup who were targeted after the expansion strategy has implemented. There are no significant effects on dietary outcomes, and even significantly negative effects on the food expenditures for the households who received money, while I could not check the robustness of the results with the matching estimation.

5. Policy Implementation

From these findings I try to provide some policy implication. First analysis shows that social inclusion policies like cash transfers could not reach to the targeted population and cause the difference between the intentional and actual participation unless policy makers complement simultaneously with other policies related to the rural transportation. Moreover, I find the evidence that poor rural infrastructure decreases the impacts of the CCG treatment, partly confirming the second hypothesis. These effects include both direct and indirect channels which I was not able to decompose. The direct effect of infrastructure should be addressed with the project design of the CCG related to the amount of payment. The indirect influence would be attributed to the community-level underlying determinants that decides the food security and feeding practice (UNICEF 2020). Policy makers should intervene and enhance access to local markets that control these community-level

aspects. Finally, I could not find that the CCG have contributed for newly targeted beneficiaries, especially in terms of the food consumption. They should conduct the continuous feedback since the expansion has been ongoing.

Digressing from the main objectives of this thesis, I also find some suggestive estimates around the CCG program. In the regression model on the probability to attend the program, I find the strong and significant effects in the ethnic status of the household. For instance, households belonging to Dalit (“untouchable”) has high probability of attendance, while those belonging to Madheshi which is also a poor group has substantially low probability. In fact, Dalit was the targeted population of CCG before the policy expanded. This result indicates limited efforts by the government to spread the information about CCG policy and its expansion, and the overdependence on informal dissemination. Furthermore, to account for the difference in infrastructure, I used indicators that reflect the viewpoint of actual beneficiaries in my thesis, rather than indicators often used in other studies, such as distance or density. This provided me another insight for capturing infrastructural situations.

6. Reference

- Dammert, A.C. (2009). Heterogeneous impacts of conditional cash transfers: evidence from Nicaragua. *Economic Development and Cultural Change*, 58(1), 53-83.
- Hirvonen, K., and Hoddinott, J. (2017). Agricultural production and children’s diets: evidence from rural Ethiopia. *Agricultural Economics*, 48; 469-480.
- Renzaho, A. M. N., Chen, W., Rijal, S., Dahal, P., Chikazaza, I. R., Dhakal, T., and Chitek, S. (2019). The impact of unconditional child cash grant on child malnutrition and its immediate and underlying causes in five districts of the karnali zone, Nepal - A trend analysis. *Archives of Public Health* 77, 24.
- United Nations Children’s Fund. (UNICEF). (2020). *Nutrition, for Every Child: UNICEF Nutrition Strategy 2020–2030*. UNICEF, UNICEF, New York