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Role of credit in food security and dietary diversity in Bangladesh

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ABSTRACT

This work attempts to disentangle the relationship between credit, food security, and dietary diversity in the context of Bangladesh through descriptive and econometric analyses of the Household Income and Expenditure Survey of 2010 as well as a supplementary primary survey of 1200 households. To adequately address potential selection bias, we apply a variant of propensity score matching as well as an instrumental variable technique based on the distance from the nearest financial institution to account for endogeneity in our estimates. Our analysis reveals that access to credit tends to improve food security and allows households to achieve greater dietary diversity. In particular, food security is proxied by calorie consumption, and households with credit access tend to have greater calorie consumption per capita. Dietary diversity is measured through a number of dietary diversity scores, such as the food consumption score and the household dietary diversity score, and households with access to credit score higher than those without according to such measures. The results have been found to be robust following correction for endogeneity issues, and the paper therefore provides empirical evidence in favor of policies supporting accessible credit for poor households in Bangladesh.

1. Introduction

In the context of developing countries, lack of access to financial services prevents the poor from reaching their economic potential. Lack of credit undeniably impedes employment generation, savings mobilization, investment, and consumption smoothing of the rural poor in particular. However, in developing countries such as Bangladesh, credit markets are often underdeveloped in terms of both coverage and loan size, which forces households to access credit from informal sources at high interest rates and with unfavorable terms and conditions.

One particular contribution of access to credit concerns household consumption. While acting as an alternative source of income, credit can enable households to achieve greater caloric intake via larger meal portions or additional meals. With the help of credit, households also improve their meal quality and the diversity of their consumption patterns by adding

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healthier foods, which are often relatively more expensive, to their diets. Despite the plausible contribution of credit toward food security and dietary diversity, few researchers have analyzed these links in greater detail, and to our knowledge no study has attempted to understand such a relationship in the context of Bangladesh.

Against this backdrop, we analyze the importance of credit access for household food consumption. In particular, we provide empirical evidence of the role of credit in food security as well as dietary diversity. The paper is organized as follows: Section 2 provides a brief literature review, Section 3 outlines key issues of data and methodology, Section 4 provides the results of our empirical analysis, and Section 5 offers our conclusions.

2. Literature review

Analyzing the effect of credit on food security, Saha and Dutta (1971) have shown that an adequate supply of credit positively influences agricultural output and farm income in many countries. However, Rashid et al. (2004) have found that credit limits from lending programs and informal sources significantly determine whether small farmers choose high-yielding varieties (HYV) or traditional varieties of cultivars.

An important avenue of food security is purchasing power, and several studies have investigated the role of finance in improving purchasing power and thereby inducing consumption of essential food items. Zeller et al. (1997) have provided an extensive overview of the impact of rural finance on food security for the poor, from which they inferred that credit requirements for production and consumption are difficult to distinguish and that the poor are often vulnerable to production and consumption shocks. In the absence of low-cost financial services, poor households can respond to such shocks only by borrowing at a much higher interest rate. Under these circumstances, access to financial services can efficiently and effectively allow poor households to generate income and stabilize consumption and can likewise address long- and short-term food security issues. Based on their analysis, Zeller et al. (1997) concluded that enhanced household food security requires the provision of credit for agricultural production, microenterprise, and consumption smoothing.

Access to credit, especially from quasiformal sources such as microcredit providers, not only improves the purchasing power of credit recipients but also tends to empower those recipients in their households. Assuming that mothers are inherently conscious about child nutrition, the empowerment of mothers through income-generating activities can be argued to have a substantial positive impact on families' food security. Hazarika and Guha-Khasnobis (2008) have studied household access to microcredit and its impact on child food security by linking child health outcomes to the intrahousehold bargaining power of women as measured by access to microcredit. They found that according to the collective model, assuming intrahousehold distribution as the outcome of Nash bargaining, child food security is improved with enhanced access to microcredit among women.

Diagne (1998) has studied the impact of credit on income and food security in Malawi and found that access to formal credit has a marginally beneficial effect on household income. He highlighted conditions in which households have access to credit but can choose whether to borrow, and access to credit can therefore be measured by accounting for the maximum borrowable amount per household. This conceptualization of credit limits allowed Diagne to separately estimate the direct effect of access to credit and the indirect effect arising from households exercising their borrowing options. Applying this maximum credit framework, Diagne argued that access to formal credit positively affects household income by reducing borrowing from costly informal sources. However, the impact of credit on food security was found to be small and insignificant.

In the context of Bangladesh, Khanam (1989) has inferred that credit from informal sources does not help farmers in the preferred manner, as such sources offer high interest rates and inadequate loan sizes. According to Akhunji (1982), while the normal rate of interest on formal credit did not exceed 17.5% per annum at the time of the study, the rate of interest on informal credit ranged from 50% to 100% per annum, and in certain cases it rose to 150% per annum. Titumir et al. (2005) have similarly argued that lack of access to complex banking channels and microfinance institutions (MFIs) forces tenants and small farmers to depend on monopolistic moneylenders who insist on tied credit marketing contracts.

A recent study by Islam et al. (2016) has argued that calorie consumption at extensive and intensive margins increases with participation in microcredit programs. The research was conducted using a panel dataset obtained from four rounds of surveys over eight years (1997–2005). Along with other measures, Islam et al. considered the household dietary diversity score (HDDS) as a measurement of dietary diversity along with calorie consumption. The study revealed that while microcredit did not improve dietary diversity per se, microcredit participation was beneficial overall.

Wadud et al. (2013) has used farm survey data to explore the effects of microcredit on food security, with microcredit recipients found to be more efficient than nonrecipients. Credit was found to be associated with increased food supply, greater purchasing power, and better food security, suggesting that expansion of credit programs and timely and nondiscriminatory distribution of microcredit to small and marginal farmers could lead to improvement of farm output and performance. The analysis also suggested that microcredit tends to reduce poverty and strengthen food security.

In their seminal work on credit, Pitt and Khandker (1998) inferred that microcredit tends to reduce poverty and increase consumption expenditures substantially for both men and women. Their analysis also highlighted an interesting feature of credit programs in Bangladesh: The impact of credit was found to be greater when the borrower was a woman. When later discussing the challenges of estimating the impact of credit programs on different aspects of households, such as consumption, asset accumulation, and contraceptive prevalence, Pitt and Khandker (2011) highlighted the plausible endogeneity of credit variables, pointing out that a number of common household- and village-specific unobservables might