# Identifying Determinants of Farmers' Marketing Decisions: Evidence from Rural Bangladesh

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## Introduction

The agriculture sector is the primary source to ensure internal food security, employment growth, and poverty reduction in developing countries. Farms (smaller in size) play an important role in establishing a sustainable agri-food system. In developing countries, on average, about 80 percent of agricultural holdings are two hectares or less. These small farms are the key source of employment for a high percentage of labor force in most developing countries (Lowder et al., 2014). However, these farms generally fail to realize gains from trade and maximize income due to inefficient managerial skills. Both the small and informal farms (especially in rural areas) in developing countries still have a lack of market accessibility to sell their products (Saqib et al., 2018; Yadav & Sharma, 2005). The lack of access to product marketing destinations will lead to a decline in farm output and additional income, an impact on GDP, and national food security in developing nations (Ta et al., 2019).

Given the significance of the topic, few studies have paid attention to assess key determinants of farmers' marketing decisions. Both Amaya and Alwang (2011) and Tadesse and Bahiigwa (2015) examine the importance of cell phones to farmers' marketing decisions. While Amaya and Alwang (2011) show that access to cell phone technologies allow farmers to market their products at more distant and lucrative markets, Tadesse and Bahiigwa (2015) find no statistically significant relationship between access to cell phones and farmers' marketing decisions. In a recent study, Felipe et al. (2018) identify that farms with access to rural extension and credit are more likely to sell their products directly to companies and co-operatives than farms with no access to rural extension and credit. Further, existing studies presented agricultural farmers' adoption decision behavior by analyzing primary survey data including factors relevant to producer perception, adoption decision, and economic and socio-demographic issues (Parvez et al. 2017; Parvez & Janssen, 2011). It is useful to evaluate the economic value and economic risk associated with farm activities by analyzing different management decision criteria (Parvez et al. 2013).

## Objectives

The primary objectives of our study are:

(1) to identify whether access to rural agricultural extension, access to farm credit, access to technology, and access to facilities affect farmers' marketing decisions, and

(2) to determine the relationship between the gender of the household head and marketing decision.

First, it is the first study to examine how access to facilities affect farmers' marketing decisions. Second, our study also assesses the role of gender in marketing decisions. Finally, we develop a technology index (which includes access to cell phone technologies, the internet, irrigation pumps, tractors, fertilizer, and pesticides) to determine the effects of technology on farmers' marketing decisions.

In recent years, the agricultural policies of Bangladesh heavily focus on rural agricultural extension, access to farm credit, and access to technology to improve farmers' management skills, production techniques, and production efficiency.

## Data Collection

This study uses a large Bangladesh Integrated Household Survey (BIHS) (sample size of 6,500 rural households) to estimate the empirical model. BIHS is the nationally representative survey in Bangladesh that gathers comprehensive household-level data on the dynamics of poverty, food security, and agricultural development in Bangladesh. The first-round survey took place in 2013, and the second round in 2016. In our study, we use the second-round survey data since all variables required for this study are not available in the first-round survey. In the 2015 survey, participants were asked regarding the marketing destination. Survey results show that around 80 percent of farmers marketed their products (the rest 20 percent consumed their products). They mainly sell their products to (i) co-operative, (ii) processors, (iii) wholesalers, (iv) retailers, and (v) consumers.

## Methodology

We estimate a multinomial logit model, where the dependent variable is the marketing destination (categorical variable): in-farm consumption, sold to co-operative, sold to retailers, sold to consumers, and sold to others. The independent variables in this study include demographic characteristics of household head (i.e., age, education, gender, farm income, non-farm income, and marital status), farm size, storage capacity, access to rural agricultural extension, access to farm credit, and access to technology. It should be noted that both access to rural agricultural extension and farm credit are dummy variables (which take value one if there is access; zero otherwise). We measure farmers' access to technology by scoring their access to cell phones, the internet, irrigation pumps, tractors, fertilizers, and pesticides. Moreover, we calculate access to the facility by scoring farmers' access to the main road, bus stop, railway, bank, NGO, school, and fertilizer and pesticide dealers. The value of both the access to technology and facility indexes range from 0 to 1. The higher the value of the index, the better the access.

## Discussion

Empirical results show that access to rural agricultural extension, technology, and facility are important determinants of farmer's marketing decisions. Households with access to a rural agricultural extension are around 6 and 4 percent more likely to sell their product to consumers and retailers, respectively, as compared to households without any access to a rural agricultural extension. Results also find that households with higher access to technology and facilities are more likely to sell their products directly to consumers. Regarding gender importance in farmer's marketing decisions, survey results show that households with female heads are less likely to sell their product to retailers and consumers. Moreover, we do not find a statistically significant relationship between a farmer's marketing destination and access to farm credit.

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