

A Comparison of Agricultural Credit Use and Non-Use Among Limited-Resource Farm Households in Trinidad

Wayne Ganpat

Department of Agricultural Economics and Extension
Faculty of Agriculture and Natural Sciences
University of the West Indies, St. Augustine, Trinidad, West Indies

Joseph Seepersad

Senior Lecturer

Department of Agricultural Economics and Extension
Faculty of Agriculture and Natural Sciences
University of the West Indies, St. Augustine, Trinidad,
West Indies

Isaac Bekele

Lecturer

Department of Food Production
Faculty of Agriculture and Natural Sciences
University of the West Indies, St. Augustine, Trinidad, West Indies

Abstract

Issues surrounding credit use in developing countries have come to the forefront because of market globalization and the consequent need for farms to be competitive.

This study, conducted among 180 limited-resource, crop-based, commercial-oriented farm households in Trinidad, investigated the variables associated with the decision to use credit or not. Canonical Variate Analysis was used to test differences between group means, as well as to identify the main differentiating variables. Results showed that overall farm performance, some human capital variables (farm experience and education), along with several psychological variables (attitude toward risk, adventurism and fear of the future), and resource-base variables (capital base, entrepreneurial and managerial abilities) were the more important variables that explained differences in households' decision to use credit or not.

Based on the variables identified, profiles of credit users and non users were developed. The importance of the findings for policy and program development was discussed.

Introduction

Economic globalization has changed the nature of agricultural trade. Developing countries are now required to refocus strategies to compete successfully, and this involves strengthening institutional framework to facilitate increased and efficient production. One of the areas that needs attention (IICA, 1998) is the reform /development of specialist institutions that relate to credit, insurance and market promotion. Commercial-oriented, limited-resource farm systems constitute the majority of farm systems in developing countries (Rajack et al., 1990).

These systems have restricted access to most of the key resources necessary for improved, efficient production. Capital, as one of the main factors of production, is necessary to purchase farm inputs and to undertake development work necessary to enhance the competitiveness of farms. The degree of access to this resource will undoubtedly influence farming decisions. Where capital is not easily available from household resources, credit is an alternative.

Issues surrounding credit use or non-use are quite complex however. Using credit impacts production on one hand, while the level of farm

activities associated with production practices influences the use of credit. Further, credit can be obtained from informal lenders in addition to traditional sources, and terms and conditions of repayment may vary. All these add to the complexity of the situation. Consequently, the response of farm owners to access credit or not can be considered a behavioral issue, and is likely to be influenced by the characteristics of the decision-maker, available resources, market conditions, labor availability, and other factors in the immediate farming environment. An understanding of the circumstances that encourages credit use, as well as those that do not encourage its use, is important as policies and plans are developed.

Literature Review

Credit use determinants have been investigated mainly in developing areas primarily because of the vast numbers of small, limited-resource farmers and the importance of agriculture to these families and economies.

Hefferman and Pollard (1983) found that education, farm revenue, experience, on-farm investment, extension, and labor differentiated borrowers from non-borrowers in small holder farm systems in Jamaica. Mkandawire (1989) found that in Malawi "fear of getting credit" was a significant deterrent to farmers' accessing credit. Odoemenem (1991) found that in Nigeria, age, acreage cultivated, farmers' goals, labor used, and land owned were positively related to the decision to use credit, while non-farm income and percent inherited land negatively influenced farmers' decisions. Roth et al. (1994) indicated that land tenure was an important variable in accessing credit in Somalia. Among Philippine small farmers, farm size and cost of borrowing positively influenced decisions while high levels of interest rate characterized non-use (Cardenas, 1994). Kashuliza and Kydd (1996) determined that awareness of credit facilities, lack of experience in credit use, and gender of the recipient constrained credit use among Tanzanian small holders.

Because of its potential to improve productivity and farm performance, it is important to

understand the factors associated with limited-resource farmers' decisions to access credit or not. Moreover, an examination of the problem from the perspective of contrasts and commonalities among farm systems with respect to their differing credit responses can bring further insight to these issues. The set of characteristics that distinguish credit users from non-users is useful to planners and policy makers as they attempt to shape future policies and restructure institutions to encourage greater participation in credit markets. Formal credit institutions can also use this information to enable them to target potential customers, as well as identify possible defaulters. Knowledge of the variables associated with positive decisions is the base for programs to encourage non-users to enter credit markets, if it would be to their benefit to do so. Also, the profiles of different user groups present an opportunity to compare and contrast decisions, to highlight constraints and limitations to non-use, and can be used to predict the behavioral response of clients with respect to credit use. This study addresses these issues.

Objectives

The objectives of this study were to:

1. Determine the extent, nature, and purpose of credit use among limited-resource farm systems;
2. Identify and describe the most important variables that differentiate groups stratified *a priori* by their credit use decision;
3. Profile differentiated groups to highlight their contrasts and commonalities.

Methods

Sampling

Crop-based farm systems of sizes 1 ha. or less, that offered for sale at least 25% of their crops, were the focus of the study. These were regarded as commercial-oriented, and using Koppel's (1985) classification, regarded as limited-resource systems. These are the majority of farms in Trinidad (CSO, 1982).

Because of constraints of time and budget,

stratified random sampling was done in two stages to select the sample from a population estimated at 20,000 (Food Crop Bulletin, 1996). Seventy-five "pockets", where 50 or more farms were concentrated were demarcated over the country and 9 chosen by simple random sampling. Within each "pocket", 20 farms were chosen, again by simple random sampling, to select a final sample of 180 farms for survey. Data were collected using a structured interview schedule over a 3-month period in 1996.

Variables

A wide choice of variables was investigated. Variables were assembled under the following headings:

1. Farm performance: Net Cash Income.
2. Human Capital: Age, Farming experience, Health, Education and Agricultural training.
3. Psychological: Goals, Aspirations, and Attitudes of operators.
4. Farm-Related: Time spent farming, Land use intensity, Topography, Spacing practiced, and Farm risk-bearing ability.
5. Resource-base: Farm size, Labor base, Land tenure, Capital base, Access to resources, and Abilities.
6. Decision Factors: Record keeping, Extension influence.

Credit use was measured dichotomously and scored (Yes=1; No=0).

Analysis

Simple univariate as well as Canonical Variate Analysis (CVA) were used. CVA is useful to explore and describe which variables are most important for discriminating among groups, to develop profiles, and to test differences among groups.

Results

Extent, Nature and Purpose of Credit

Farmers' accessed credit from both informal and

formal lending sources (Table 1). Some 23.3% of farmers sampled took some form of credit to finance farming operations. Of those who took credit, the majority (66.6%) obtained it from agrosshops in the form of inputs to cultivate their crops. The credit was usually repaid promptly at the end of the crop season without interest. Only seven farmers reported borrowing money from banks or credit unions.

The value of supplies bought on credit from the agrosshop ranged from TT\$60 to TT\$10,000 (\$1 US = \$TT 6.30 approximately, in 1996). The majority (91%) of farmers bought supplies up to a maximum loan value of \$3,000; a large percentage (62.5%) bought supplies valued at \$1,000 or less. The amount of money borrowed from lending agencies ranged from \$400 to \$80,000; most, however, borrowed between \$1,000 and \$10,000. Money borrowed was used mainly to prepare land, finance labor, purchase inputs and repair equipment.

Differentiating Variables

CVA results (Table 2) show that credit users can be differentiated from non-users on the basis of the following eleven variables:

Net cash Income.

Human capital : Farming experience, and education.

Psychological: Attitude towards risk, Commitment to agriculture, attitudes labeled "adventurism," and "fear of the future."

Resource base: Capital base value, entrepreneurial ability, and managerial ability.

Decision making: Record keeping.

The discriminant function derived was moderately successful in distinguishing between the two groups (Canonical correlation = .592; Wilks Lambda =.644), and explained 35% of the variation between credit use and non-use (Table 2).

Table 1

Frequency Distribution of Number of Respondents Taking Credit and Source of Credit (N=180)

| Whether Obtained Credit | Credit Source | Number | % |
|-------------------------|-------------------|--------|-------|
| Yes | Agroshop | 28 | |
| | Family | 4 | |
| | Friend | 3 | |
| | Commercial bank | 4 | |
| | Agricultural bank | 2 | |
| | Credit union | 1 | |
| | Subtotal | 42 | 23.3% |
| No | | 138 | 76.7% |
| | TOTAL | 180 | 100% |

The group centroids are also presented in Table 2. The null hypothesis that "in the population from which the sample was drawn, there is no difference between the group means on the discriminant scores" is rejected based on Wilks Lambda (.644) and its associated statistics (Chi Square =75.7; df=11; and $p < .001$). Credit use groups are significantly different from non-credit use groups.

Group Profiles

The standardized discriminant function coefficients detail that credit users are characterized generally by greater entrepreneurial abilities, higher net cash income, a greater spirit of adventurism, a more positive attitude towards risk, less farming experience, positive record keeping practices and to a minor extent higher education.

On the other hand, non-credit users are distinguishable by their higher commitment to agriculture, higher capital base values, lower managerial ability and a greater sense of fearfulness of the future.

Accuracy of The Procedures

The discriminating variables correctly classified

80.6% of the cases (Table 3). The majority (79.7%) of the non-credit users and 83.3% of the credit users were predicted correctly by the discriminant function into their respective groups.

Based on knowledge of the discriminating variables, it is possible to predict with 80.6% accuracy whether a farm household would use credit or not.

Table 2

Results of CVA of Farm System Variables by Credit Use

| Variables | Standardized Discriminant Function Coefficients | Wilks Lambda |
|-----------------------------|---|-----------------|
| Entrepreneurial ability | .747 | .878 |
| Net cash income | .658 | .791 |
| Commitment to agriculture | -.493 | -.756 |
| Capital base value | -.424 | -.699 |
| Adventurism attitude | .402 | .834 |
| Attitude to risk | .377 | .721 |
| Farming experience | .370 | -.686 |
| Record keeping | .342 | .669 |
| Managerial ability | -.321 | .659 |
| Fear of the future attitude | -.206 | -.651 |
| Education | .180 | .644 |
| Groups | Centroids | |
| 1. Non credit use | -.407 | |
| 2. Credit use | 1.334 | |
| FUNCTION STATISTICS | | |
| Eigenvalue | .551 | |
| Canonical Correlation | .592 | |
| Wilks Lambda | .644 | |
| Chi. Sq. | 75.7 | |
| df. | 11 | |
| Probability | <.001 | |
| % Variance Explained | 35.0% | |

Table 3

Results of Classification Analysis - Credit Use Groups

| Actual Group | No. of Cases | Predicted Group Membership | |
|---|-----------------|----------------------------|-------------|
| | | 1 | 2 |
| 1. Non credit users | 138 | 110 79.7% | 28 20.3% |
| 2. Credit users | 42 | 7 16.7% | 35 83.3% |
| Percent of "Grouped Cases" Correctly Classified : 80.6% | | | |

Conclusion

Credit use by limited-resource farmers is low, and mainly accessed from informal sources. Farm-related, decision-making and most human capital variables did not differentiate credit users from non-credit users. Data show that abilities, resources, and attitudes are key considerations in credit use decisions. Action to encourage credit use lies in the domain of these variables. The variables associated with credit use are not unexpected. Credit users will have a more positive attitude to risk and an entrepreneurial, adventurous spirit. They are more likely to have more education and to keep records. Fewer years in farming may probably be associated with a younger, more enterprising class of farmer who may appreciate the need for some sort of credit if farming is to be successful. That farming is successful is borne out by the higher net cash incomes associated with using credit. Surprisingly, higher technology use was not a differentiating variable associated with credit use. This underscores the complex relationship between credit use and technology use.

Farmers who have a long term commitment to agriculture may not be inclined, as opposed to those who have shorter term interests and a more entrepreneurial spirit, to utilize credit facilities. A relatively sound capital base may not necessitate the need to borrow. In addition, a lower ability to manage resources may work against any desire to seek credit. Fear as well as a dismal outlook on farming will act as serious de-motivators to innovativeness and credit use.

There is a need for policy makers to make credit more accessible to limited-resource farmers. Extension also has a key role through education to improve farmers' managerial and technical abilities, as well as to foster more positive attitudes toward credit in their clients. Institutions have a role in making all activities related to credit farmer-friendly to allay farmers' fears and anxieties.

In the changing regional and international marketing scenes, competitiveness comes to the fore. Domestic farmers are constantly striving to compete against cheaper imported products and at the same time to improve exports to earn

foreign exchange. In Trinidad, unlike other developing countries in the region, credit is available for farmers from several institutions. That farmers use credit at low levels highlights the need for a concerted effort among all actors to re-evaluate their approaches and strategies to support those farmers who would like to increase their competitiveness.

References

- Cardenas, E.S. (1994) Use of Credit by Small Rice Farmers in Isabela (Philippines): a case Study. Journal of Research (Philippines), 7(1-2), 54-69.
- Hefferman, Peter and Stephen Pollard, 1983. The Determinants of Credit Use among Small Farmers in Jamaica. Social and Economic Studies, 32(1), 23-40.
- Inter-American Institute For Cooperation On Agriculture (IICA) (1998). Performance and Prospects For Caribbean Agriculture. IICA, Port of Spain, Trinidad.
- Koppel, B. 1985. Technology Adoption among Limited-Resource Rice Farmers in Asia. Agricultural Administration, 20, 201-223.
- Kashuliza, A.K. and J.G. Kydd, 1996. Determinants of bank credit access for small-holder farmers in Tanzania: A discriminant analysis application. Savings and Development, 20(3), 285-304.
- Mkandawire, R.M. (1989). Small Holder Survival Strategies in Malawi: a case study of the Salima Agricultural Development Division. Journal of Extension Systems, 5(2), 60-74.
- Odoemenem, I.U. (1991). The relationship of farmer goals and other factors to credit use in Anambra State, Nigeria. Bietrage zur tropischen lanwirtschaft und veterinamedizin Vol.29 no.3. pp. 267 - 276.

Rajack, T.A., Campbell, D & Hutton, D. (1990). The Organization and Management of Agricultural Services for Small Farmers in Grenada, Jamaica and Trinidad and Tobago. UWI/FAO Report.

Roth M., Unruh J, Barrows R, Bruce J.W, & S.E. Migot-Adholla. 1994. In Searching for Land Tenure Security in Africa. Inland Regulation, Tenure, security, credit use and investment in the Shebelle Region of Somalia. Ed. by J.W. Bruce. pp. 199 - 230. Kendall-Hunt Pub. Co. Iowa, U.S.A.

Republic of Trinidad and Tobago (1996). Food Crop Bulletin. Central Statistical Office. Vol 13. No. 232.

Republic of Trinidad and Tobago (1982). 1982 Agriculture Census. Central Statistical Office. Republic of Trinidad and Tobago: Central Statistical Office.