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Multivariate typology of milk producing households based upon farm and socioeconomic characteristics: Explaining competitiveness and intensity of market participation

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Abstract

The paper aims to analyze the cost efficiency of farm households in milk production and their intensity of market participation in the hills of Uttarakhand state of India. A farm typology study has been used to classify groups of farm households with similar farm and socioeconomic characteristics as typology constitutes an essential step in any realistic evaluation of the constraints and opportunities that exist within farm households. The objective is to evaluate the cost competitiveness and level of commercialization of different groups of milk producing households, as identified by typology study. The study was carried out in three Tehsils in each of two hill districts of Uttarakhand state, viz. Nainital and Almora. A total of 120 households constituted the ultimate sampling units for the study. Farm household typologies were constructed by using two multivariate statistical techniques, viz. Principal Component Analysis (PCA) and Cluster Analysis (CA). PCA was used to transform linearly an original set of 23 variables, representing farm and socioeconomic characteristics, into a smaller set of uncorrelated variables (factors) that represents most of the information in the original set. The factors retained from the PCA were used for cluster analysis. Four homogenous groups (clusters) were obtained. Cluster I (37%) was defined as *small herd-sized households with low farm family labour employment*. Cluster II (12%) was defined as *female headed households with low level of education*. Cluster III (13%) was defined as *full farm households with large scale of production and high intensity of market participation*. Cluster IV (39%) was defined as *low income households*. Stochastic frontier cost analysis and descriptive analysis were carried out, respectively, to estimate the cost efficiency in milk production and evaluate market participation behaviour across different clusters of households. Some policy suggestions are given in favour of improving farm households' cost competitiveness and level of commercialization.

Biography

Dwaipayan Bardhan is Assistant Professor in Department of Veterinary and Animal Husbandry Extension Education, G.B. Pant University of Agriculture and Technology, Pantnagar, with over nine years of teaching and research experience in the field of livestock economics. He did his Masters in Veterinary Economics and Ph.D. in Agribusiness Management. He has published 2 books, 43 research papers in reputed national and international journals, 24 semi-technical/policy papers, 3 chapters in books and presented 15 papers in international and national conferences.