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REVIEWS IN BRIEF

Applied Econometrics for Agricultural Economists, Acharya-Madnani, Himanshu Publications, Udaipur, 1988. Pp. viii+250. Rs. 50.00.

This textbook is designed to provide to the students of agricultural economics who have no formal orientation in mathematics a basic knowledge of econometrics, specially in relation to its application to the study of economic phenomena. Divided into ten chapters, the book discusses the concepts and types of econometric models, types of and problems with data and sources of data in agriculture. It presents the concepts and characteristics of single equation linear econometric and multiple regression models and the matrix approach to regression models. The text then deals with the estimation of growth rate models, Cobb-Douglas production functions, demand functions and fertiliser response functions, various problems related to multicollinearity, autocorrelation and heteroscedasticity and the limitations and problems of classical regression model and the ordinary least squares method of estimation. A chapter is devoted to the discussion of miscellaneous problems, such as specification error or left out variable, irrelevant, superfluous, lagged, dummy, proxy and instrumental variables and errors in variables and alternative estimation procedures to overcome the type of problems faced when the economic phenomenon to be analysed is represented through single relationship. Two other chapters consider respectively the specification of simultaneous equations model, problems involved in their specification and estimation methods of such models where a number of relations are to be dealt with simultaneously, and present an illustrative example for testing the identification and procedure for estimation of the coefficients of these models. The last chapter discusses some special applications of multivariate distributions in agriculture, such as discriminant analysis, canonical correlation and principal component analysis.

The text is written in a lucid style. The concepts of different estimation models are defined in such a way that an average student could comprehend their meaning. Another merit of the book is that the application of econometric techniques to solve economic problems in each chapter is neatly illustrated. The two appendices on a review of matrix algebra and probability distribution would help to refresh the understanding of the students. The book would be a very useful guide to the students and researchers for a better understanding of the econometric techniques used in empirical analysis of economic problems.

Communication Patterns in Innovation Development, Extension and Client Systems (A Systems Approach), Chandra Kishore Ambastha, B.R. Publishing Corporation, Delhi-52, 1986. Pp. xi+356. Rs. 160.00.

The results of National Demonstration Experiments in India have revealed that the average yield under national demonstrations is more than three times over the national average in the case of wheat and maize, four to five times in the case of bajra and paddy and seven times in the case of jowar, indicating the wide gap between the potential yields and the actual yields obtained in farmers' fields. The causal factors for this wide gap in yields are multidimensional. This study which is based on the author's doctoral dissertation submitted to the Indian Agricultural Research Institute, New Delhi, addresses itself to a discussion of the problems related to communication patterns of research, extension and client systems. The flow of farm information for modernising agriculture involves three basic, complementary social systems, namely, the innovation development system, creating new agricultural information, the extension system that disseminates farm information to the farmers and feeds back the problems of farmers to the researchers and the client system,

the potential user of farm information. The book makes an attempt to study these three systems in their totality, using the systems approach analysis. The focus of the study is confined to Bihar with the Rajendra Agricultural University identified as the innovation development system, the State Department of Agriculture as the extension system and the farmers of the State as client system under the systems perspective. A sample of 68 researchers, 107 extension personnel and 160 farmers growing summer paddy and dwarf wheat in four districts of the State were selected for the purpose of study which was conducted as early as in 1973. For the analysis of data collected by personal interview, the author has used standard scores, t-test, zero-order correlations, multiple correlations and path analysis.

The problems related to communication patterns of research, extension and client systems are studied by grouping them under individual, intra- and inter-system communication patterns. The different communication patterns of these three systems are analysed in terms of information input, information processing and information output; peer communication, communication network centrality and opinion leadership; contact span with extension personnel; communication and contact span between extension personnel, researchers and farmers. The study highlights the fact that modernisation of agriculture would be possible only when these three systems are closely interlinked with respect to flow of information. It offers a few suggestions for streamlining the flow of farm information and outlines an agenda for future research in this field. It also includes 30 appendix schedules canvassed for collecting the data from the respondents, which are informative and useful to the researchers. The book is a welcome addition to the literature on agricultural extension.

Fundamentals of Rural Economics, S.S.M. Desai, Himalaya Publishing House, Bombay-4, 1986. Pp. vii+242. Rs. 80.00.

The book is designed to cater to the needs of students appearing for the CAIIB examination and it claims to cover all the topics in the syllabus prescribed for this examination. It highlights the major economic problems in rural India and analyses the policies and programmes adopted for the solution of the various rural problems. The book begins with an examination of the role of agriculture in Indian economy and describes in the successive chapters the pattern of land ownership, land reforms, agricultural production and trends in yields, agricultural marketing, terms of trade of agriculture, foreign trade in agricultural commodities, problems of agricultural labour and rural artisans, agricultural development strategy, problems of rural industries, problem of rural unemployment and poverty, pressure of population in rural areas, rural development strategy, agricultural finance and co-operative movement in India. The institutional aspects of agricultural and rural credit are considered in as many as five chapters. The contents of these chapters could have been suitably integrated and presented in two chapters. The chapter on problems of agricultural labour and rural artisans contains very little discussion on the problems of rural artisans.

Regional Perspectives in Agricultural Development: A Case Study of Wheat and Rice in Selected Regions of India, Nalini Govind, Concept Publishing Company, New Delhi-15, 1986. Pp. xi+222. Rs. 110.00.

The book is revised version of the doctoral dissertation submitted by the author to the Jawaharlal Nehru University, New Delhi. It analyses the intra-regional and inter-regional variations in cropping pattern and productivity of rice and wheat between 1960 and 1972 in terms of physical, economic and institutional factors influencing them. The study covers

spatial and yield responses of the crops at the national, State (regional) and village levels. On the basis of analysis of primary data collected through a sample survey of 198 land holdings - 72 from wheat regions and 126 from rice regions - selected from 11 villages, one each from eleven States of India, relating to the year 1975-76, the study examines the inter-regional and intra-regional variations in rice and wheat responses to adoption of new technology among different size-groups of holdings. Factor analysis approach is used for analysing the primary data pertaining to 24 variables. Growth rates in area and yield of rice and wheat are analysed with the help of stepwise regression.

The major findings of the study are: At the national level, the percentage of area devoted to various crops has hardly changed between 1960 and 1972. Marked inter-State variations were observed in the growth rate in area under different crops between 1960-63 and 1967-70. In most States, increase in output was significant between these two periods while the growth rate of yield was not very significantly different, specially for food crops (rice and wheat) in the traditional rice and wheat growing regions. The analysis of overall crop pattern in the agricultural landscape has revealed that the core regions of rice accounted for 71 per cent of the total area under rice in the country as a whole during the period 1960-63 and 1970-72. Their contribution to rice production in the country as a whole was almost the same, with a share of 73 per cent in both the periods. In the case of core regions of wheat, their contribution to area under wheat in the country as a whole showed a significant increase from 70 per cent in the first period to about 88 per cent in the second period. Similarly, their contribution to all-India production of wheat also increased from 73 per cent to 77 per cent during the same period. The study suggests that the core regions provide a realistic framework for concentrated effort in agricultural development, particularly in the case of rice and wheat.

The analysis of variables influencing the response of area and yields indicated that the selected variables behaved more uniformly in wheat regions than in rice regions. In the wheat regions, the variables explained about 70 per cent of the total variation in the wheat area in 1970-71 and 60 per cent of the total variation in wheat yields. In all wheat regions except the Punjab plains, the proportion of wheat area irrigated exercised an important influence on wheat yields in 1970-71 while in the case of rice regions, the influence of this factor was significant only in the North-Eastern Peninsular plateau. Fertiliser consumption per hectare and price of the crop also influenced rice yields but the influence of these two variables was negative on wheat yields. It was also observed that the influence of pumpsets and tractors was not significant on rice yields and this factor emerged significant on wheat yields. When all rice regions are considered together, it was noted that the progress of adoption of high-yielding variety (HYV) was rather slow in most parts of India. In the seven rice villages studied, the HYV was not adopted on a large scale except in parts of the East Coast, the main constraint being high costs associated with the adoption of HYV. The results of cluster analysis indicated that the rice regions lagged behind the wheat regions in the adoption of modern practices of cultivation with some exception.

This painstaking study provides new insights into the regional dimensions of agricultural development and is a welcome addition to the literature on the subject.

Training and Visit Extension in Practice, Edited by John Howell, Agricultural Administration Unit Occasional Paper 8, Overseas Development Institute, Regent's College, London, 1988. Pp. 107. £ 4.95.

Sociology in Farming Systems Research, Alistair Sutherland, Agricultural Administration Unit Occasional Paper 6, Overseas Development Institute, Regent's College, London, 1987. Pp. 64. £ 4.50.

The two studies, above noted, which deal with inter-related themes, discuss respectively the role and management of agricultural extension in the countries of Asia and Africa and the role of sociology and anthropology in farming systems research in Southern and Eastern Africa. The first study includes a collection of six papers which focus on the role, management and performance of agricultural extension services, using the Training and Visit (T & V) system. It reflects the work of members of the Overseas Development Institute's Agricultural Administration (Research and Extension) network on agricultural extension management over the five-year period 1982 to 1987. The papers examine the role and management of agricultural extension in the development of the management skills of farmers in Asia and the impact of the T & V system on farm output and income in the countries of Zimbabwe, Somalia, Zambia and India. As Derek Byerlee observes in his paper, "in many of the post-green revolution areas, knowledge and skills of farmers have become critically limiting factors in maintaining increases in productivity. Investments to increase the quantity of technical information and develop the technical and managerial skills of farmers have not kept pace with investments in developing new technology. More importantly, institutional changes in research, extension and rural schooling needed to improve the *quality* of information and skill development have limited the opportunity to exploit the potential of the new technology, resulting in substantial inefficiencies in post-green revolution agriculture Unless these imbalances are corrected, there is a danger of further increasing inequalities in the agricultural sector between small and large farmers due to differential access to knowledge and skills." In most African countries the weakest link in extension organisation is the generation of useful information on farm operations and the transfer of this information through the extension service to the research station and how these should influence research design and recommendations.

The second study incorporates much of the material relating to the role of sociology in farming systems research, which was presented at a regional workshop organised by the author in November 1984 at the invitation of East Africa Economics Programme of the International Centre for Maize and Wheat Improvement (CIMMYT). It argues the need for a systematic incorporation of a sociological perspective into the farming systems research and offers some guidelines as to how this might be achieved, derived largely from the recorded experience of sociologists working in farming systems research and related agricultural development programme, both in the region and elsewhere. The study considers the guidelines for a sociological input in relation to the CIMMYT farming systems research sequence and outside the CIMMYT sequence. The former consists of four main activities, namely, (i) diagnosis for identifying major problems impeding expansion of farm activities, (ii) planning of on-farm experimental programme, (iii) experimentation under the field conditions of farmers with their participation and monitoring farmers' assessment of the performance of solutions and (iv) decentralisation of recommendations and dissemination of extension methods. Sociological inputs outside the CIMMYT sequence are sub-divided into two types: (a) contributions relating to factors which are internal to the local farming

system and (b) those that are external and beyond the influence of decision-making in local communities, but exerting an influence on this decision-making in relation to agricultural activities. The internal factors considered include collection and analysis of labour data, land tenure, local level ethnic and religious differences, equity, non-economic aspects of risk, local cash flows and investment, the social context of food processing and storage, indigenous knowledge and role of women in subsistence farming systems. Factors external to the farming systems relate to neglect of women in research and extension, rural-urban migration, the structure and functioning of agricultural support organisations, interplay between national policies and local farming systems and between local and external factors, regional interactions of farming systems and evaluation of farming systems research projects. All of these are strongly influenced by socio-cultural factors and are areas in need of social research input. The study also presents the range of feasible options for institutionalising sociology in farming systems research.

Both the studies are the outcomes of interdisciplinary team work, enriched with dynamic quality and will prove useful to both the students and practitioners of agricultural development.

Agrarian and Political Movements: State of Orissa: 1931 to 1949, Sadasiba Pradhan, Inter-India Publications, New Delhi-15, 1986. Pp. xix+248. Rs.175.00.

The book is based on the doctoral dissertation of the author submitted to the Sambalpur University and focuses on the agrarian character of the Prajamandal movement in the feudatory states of Orissa, the arbitrary and ruthless nature of feudal administration and the outcome of the series of disturbances in different states of Orissa during the period 1931 to 1949. The study discusses the origin and history of the feudatory states during the successive rules of the Mughals, Marathas and the British in Orissa, and their relation with the East India Company, the status and position of the ruling Chiefs and the pattern of judicial and revenue administration that was prevalent in these states. It also provides a brief account of facilities that were available for English education in some of these states and their impact on the growth of political consciousness among a small section of the population. In the main core of the study comprising over 100 pages, the author discusses the nature and consequences of the peasants' uprising in the feudatory states of Orissa which were later integrated with the Orissa province with the achievement of Independence. The study is well documented providing an incisive analysis of the peoples' movement in Orissa. Students of economic history and political science would find this book of interest.

Impact of Modernization on Development and Demographic Behaviour: Case Studies in Seven Third World Countries, Edited by Carol Vlassoff and Barkat-e-Khuda, International Development Research Centre, Ottawa, Canada, 1988. Pp. xi+123.

The volume examines the demographic effects of development policies and projects in rural societies in some of the countries in Asia and Latin America. The case studies presented in this volume have their origin from research projects completed by two networks of research teams, one from Asia and Africa, and the other from Latin America, funded by the International Development Research Centre. The papers prepared by the two network teams were discussed at a comparative workshop held in Vancouver, Canada in October 1984. The seven case studies included in the volume capture the complexity and variety of demographic response to development in the Philippines, Malaysia, Bangladesh, India,

Colombia, Argentina and Peru. The studies are all concerned with the changing economic conditions and the subsequent demographic and social adjustments among rural households. Many of the papers use the concept of 'survival strategies' to describe these processes. As Vlassof, one of the editors, rightly point out, the concept would seem to be most appropriate if limited to economic applications only. The studies have focused mostly on the impact of modernising forces, such as new technology and agrarian reform, on agricultural development, rural institutions, and demographic and social behaviour. One of the important conclusions, common to all the studies, is that the responses of peasant families to modernisation are varied, complex and adaptive. The case study in the Philippines shows that the green revolution led to diversification of employment and cropping patterns in the study area. The breaking of landlord-tenant bonds by land reforms and the provision of credit to the small-scale farmers have helped to transform traditional agricultural structures and expand business and employment opportunities in the rural areas. In Malaysia, industrial development led to significant changes in the patterns of rural subsistence and diversified roles for rural men and women. In the case study area in Bangladesh, the implementation of rural development programme resulted in diversified cropping and occupational patterns, including a much higher participation of women in the rural labour force than elsewhere in that country. The studies have also illustrated the resilience and determination of rural families in adjusting to deteriorating social and economic conditions by diversifying their productive activities both in the agricultural and non-agricultural sectors. The studies also reported that a substantial proportion of peasant families used unpaid family labour to increase household income but these family workers often earned less than they would have from wage labour. This would tend to support Chayanov's concept of 'self-exploitation' of the poorest among poor rural households. It is concluded that "the generally observed relationship between economic development and declining fertility was found to be true in most of the cases cited." Migration is shown to be an important response to differing levels of economic development. The case studies also highlight the social adjustments made by families to different economic circumstances. Education is seen as a means of both changing unfavourable economic conditions and of improving the already favourable circumstances, as illustrated in most of the case studies.

All the studies have had the advantage of complementing quantitative survey with micro level observations on local institutions, social and economic structures and traditional bonds and relationships among rural classes. This gives the analyses both richness and depth in the interpretation of the survey results that would not have been possible by the survey approach alone. Another merit of these case studies is that some of the authors are anthropologists, whereas the others are social scientists who stayed with the rural communities to observe and interpret rural behaviour, complementing their survey research. The volume, on the whole, makes a notable contribution to our understanding of the broad development processes and their diverse effects on economic classes, communities and families at the micro level in the selected study areas.