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**New Economic Approaches to Consumer Welfare and Nutrition**  
**A Food & Agricultural Marketing Consortium Conference**  
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# **New Economic Approaches to Consumer Welfare and Nutrition**

Conference Proceedings

Food and Agricultural Marketing Consortium  
Alexandria, Virginia  
January 14-15, 1999

## **FAMC99 Consortium Session:**

### **Applications and New Approaches to Understanding Food Demand**

Discussant: Kuo S. Huang, USDA/ERS

My discussion is focused on reviewing the methodology issues of the three papers presented in this section. The first paper is "US Food and Nutrient Demand and the Effects of US Agricultural Policies." The author explores various issues related to the basic properties of food demand structure such as aggregation, model stability, and exogeneity of food expenditure. These issues are interesting from an academic viewpoint, but the author should explain more about their usefulness to food and agricultural marketing research.

My another concern with the demand model developed in this study is its potential problem of application. The functional form is complicated and nonlinear in parameters, and their estimation could be difficult when the number of commodities included in the demand system is large. The application of the model requires estimation of a large number of parameters. Since lengthy time series data for food demand research are usually difficult to obtain, the problem of insufficient degrees of freedom in estimation could occur in applying the model. Even with the availability of lengthy time series data, introducing the issue of demand structural change could complicate the problem. Moreover, while applied economists are interested in obtaining the implied price and income elasticities, the derivation of the demand elasticities in the model is rather complicated and likely to cause more errors in the derived elasticities.

Finally, the author probably needs to present the derivation of some key equations in an appendix. For example, one of the key equations is the welfare measurement of compensating variation. To evaluate the welfare effects of price changes, say from  $p^0$  to  $p^1$  because of implementing a dairy program, one may hold the initial utility level ( $u^0$ ) constant and compute the compensating variation in expenditures as  $CV = E(p^1, u^0) - E(p^0, u^0)$ . Alternatively, the compensating variation can be defined from the indirect utility function as  $u^0 = V(p^0, m) = V(p^1, m + CV)$ . In either case, the author should address explicitly the problems of how to measure the compensating quantity change, and how to derive compensating variation in expenditures.

In the second paper, "Income, Program Participation, and the Choice of Dietary Pattern." The authors evaluate how income and program participation such as food stamps and the WIC affect the choice of dietary pattern. They specify a model to explain how the number of servings might change for 7 different kinds of food categories for each of 3,642 persons in a total of 1,901 low-income households. The explainable variables are ages, monthly income per person, dummies for food stamps, WIC, and others. Since each person in a household faces the same explainable variables like income, food stamps and WIC participation, it would be practical to take each household as a unit and define a household equivalent of servings as a dependent variable. Also, it is more accurate to collect data measured in the numbers of servings for a household instead of using individual members of the household.

In the third paper, “Measuring Consumer Demand for Functional Foods and the Impact of Health Labeling Regulation.” The authors propose a consumer demand model for functional foods. The model is specified under an assumption that a utility function is defined as the sum of quantities consumed for regular and health goods. The specification of this utility function is rather weak, because it is not proper to show the level of utility by using, for example, the total poundage of potatoes and apples. As an improvement, one might suggest specifying a directly additive utility function, which is the sum of two utility functions for each set of goods. Even with this modification, we should be aware of its restriction that the marginal utility of good in regular goods depends on its own quantity and not on the quantity of health goods, and vice versa.