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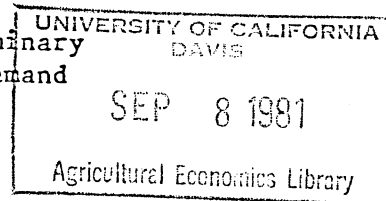
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Draft  
7-23-81Community Services Research: A Preliminary  
Conceptual Framework of Services Demand

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Background

Community services research has passed through a complete cycle during the past decade. In a few months exactly ten years will have passed since the December 1971 National Conference on the Delivery of Community Services in Rural Areas was held in Lincoln, Nebraska. It provided opportunity for formal presentations of papers and the sharing of insights among the members of four newly organized multi-state technical research committees (regional research committees).<sup>1</sup> Each regional committee was organized to conduct research on community services and services delivery systems.

As the conference went on, more than a touch of self congratulation was evident. USDA and the Land Grant Universities were making a new commitment to research on community services as a part of an overall thrust called "rural development." And, rural development was an idea whose time had come.

This celebration of a significant research commitment to community services research was not without antecedents. cursory examination of the literature provides evidence that concern with the organization, reorganization, and financing of local government services had been identified as priority concerns over at least the preceding 35 years, though the level of commitment to services research had been uniformly low throughout that time. Prescriptions for consolidation to attain "efficiency" were a part of research priority discussions in 1936 (The Future of the Great Plains . . .) and intermittently during the years subsequent to World War II (Selected Topics on Rural Development Research, 1963; Modernizing Local Government, 1966; Supplying and Financing State and Local Public Services in the Great Plains States, 1971; A New Life for the Country, 1971).

A Present Perspective

Foci of the December 1971 Conference were: (1) Problems of measurement and assessment of adequacy of community services, and (2) the organization of service delivery systems. From the perspective of almost a decade later it is both encouraging and frustrating to re-read the conference Proceedings (Working Papers on Community Services). Encouragement comes from realizing that the diagnostic quality of the 1971 papers was excellent with many high priority services research problems clearly identified. Frustration comes

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1. These technical research committees were designated as NC-144, NE-77, S-79, and W-144.

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from realizing that despite ten years of effort, numerous research projects, countless hundreds of thousands of dollars, and hundreds of manuscripts, most of the conceptual and measurement secrets of services research remain successfully resistant to the thinking, the cudgels and the blandishments of researchers.

Retrospective consideration of this decade of frustration makes understandable the cycle of rapid expansion of research efforts, the rush of researchers into the challenging services research arena, and the subsequent precipitous shift back to more conventional research. When careers, salary, advancement, recognition, and funding are all more secure in conventional research arenas, why struggle with the ill-defined and perennially elusive concepts and measures of services research? In the best tradition of "voting with one's feet" researchers and funding sources that once perceived services research as a priority concern moved on to problems that were more tractable and more likely to yield useful (publishable) research results.

Despite this diminished participation in services research, problems of conceptualization and measurement remain intellectually appealing. Many researchers who have shifted their research to other areas are eager participants whenever there are discussions of services research. Concern over analysis of nonmarket decision making and institutional arrangements for natural resources management has placed "public choice" in the vocabulary of many economists. Similarities and close linkages between research on services and research on many natural resource management problems has become more widely recognized. The optimist in me argues that the low point of the cycle is past and the stage is set for increased intellectual investment in the services research problems identified in 1971 and preceding years.

If this optimism on the part of a confirmed pessimist is to some extent justified, what conceptual and measurement problems might be of particular interest? Doubtless there are about as many answers as persons with interest in services research. But, a central aspect of many concerns almost certainly is the extent to which and the ways in which economic theory can be made applicable to services research. A few sentences gleaned from the 1971 National Conference will help identify this perspective.

In a paper that held the interest of conference participants, Lonnie L. Jones carefully spelled out in approach to services research that most of his listeners appeared to accept as appropriate. In doing so, he operated within the statement of intent in the second paragraph of his paper:

The central theme of this paper is that the basic economic concepts and many of the measures utilized by economists in analyzing the organization and operation of firms in the private sector can also be applied to problems in the organization and provision of public services for rural areas ("Organization of Public Service Delivery Systems . . ." 1971).

Willis and Engel subsequently developed a research report in which they identified portions of economic theory thought to be relevant to development planning and then applied that theory to actual data as a demonstration of its use (Economic Theory and Rural Development, 1973).

While both papers provide carefully prepared discussions of the application of traditional economic analysis in community development research, the track record of this approach has been mixed. As might be expected, it has been most useful in cases where the goods or services being examined are amenable to treatment as though they were market goods. Whenever the research examines non-market phenomena, or goods and services that approach being public goods, the usefulness of this approach has been very limited.

If we consider the nature of economic analysis based on conventional theory, a methodological deficiency becomes evident. This approach depends on decomposing a problem into its constituent parts until each part is small enough to allow the needed understandings of casual relationships (i.e. so the unit of analysis is small enough and simple enough to be appropriate for the methodology used). It also reflects an implicit belief that the resulting set of "mini-solutions" can be "reassembled" to produce a comprehensive answer. It reflects the economist's traditional approach of examining one aspect of a situation while holding all other aspects constant.

When used in situations where non-market phenomena were being examined, the results were generally not encouraging. Given the lack of any overall conceptual framework for analysis of the community or its constituent parts, the level of precision was generally low. The impacts of nonquantifiable intervening variables often over-ride the effects measured by analysis based on economic theory. Explanatory power typically is very low.

The responses of researchers to these weaknesses in the economist's conventional kit of tools took several forms. Some researchers "backed away" from involvement with services research based on the application of economic theory and became involved in case studies, needs assessments, or attitudinal surveys where the lack of adequate theoretical frameworks was not so seriously limiting. Others shifted to secondary data sources and concentrated their efforts on macro studies and policy evaluation. These efforts were consistent with previous research priorities (e.g. see papers by Wilbur R. Maki, Luther Tweeten, and Earl O. Heady in Rural Development Research Priorities), but added little to understanding of the delivery of services in a social and economic unit which we call a community.

#### Possibilities for the Future

Both the extent of our knowledge and the possibilities for future efforts appear to be implicit to papers presented at the January 1977 National Conference on Nonmetropolitan Community Services Research held in Columbus, Ohio. Papers at this conference, which has so far proved to be a final high visibility effort in community services research by USDA and the Land Grant Universities, were generally very good and addressed a wide variety of topics. Two of them are of particular relevance to this discussion.

Robert T. Deacon presented a comprehensive synthesis of published work related to the demand for public services ("Review of the Literature on the Demand for Public Services," 1977). Elinor Ostrom provided a cogent recap of public good measurement activities of the Workshop in Political Theory and Policy Analysis ("Why do we Need Multiple Indicators of Public Service Outputs?" 1977). Time and space do not permit the recapping of their

arguments here. Perhaps it will suffice to mention that both authors concluded that methodology for estimation of service demand is far from complete. In the hopes of advancing in some small measure our ability to conceptualize the estimation of demand for services, we now shift to consideration of two sets of related ideas.

### Classification

As pointed out by Stam, classification is the process by which facts, principles, and ideas are organized and made useful ("On the Taxonomy of Nonmetropolitan Community Services Research," 1977). In an earlier paper I have suggested that a preliminary system of classification for services might be based on the extent of labor intensity or capital intensity of the service delivery system and position on the public goods--private goods continuum (Public Services for Rural Communities, 1975).

This system of classification, if applied to the mix of services provided within a community, could result in "clusters" of services identified with each of the cells of Figure 1. If the system of classification had operational value (i.e. if labor intensity--capital intensity and public good--private good attributes are key variables in the analysis), one would expect a greater degree of consistency in techniques for demand estimation of services within a box than would be expected for services in different boxes. Unfortunately, in keeping with the general trend described earlier, my level of involvement in services research has not been such that I could collect data on the services available in a community, identify appropriate indexes or indicators, and experiment with the actual classification of services.

Continuum of Service Attributes

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<u>Delivery System Characteristics</u>	Approaches Pure Public Good	Approaches Pure Private Good
Labor Intensive		
Capital Intensive		

Figure 1. Paradigm for Classification of Community Services



Application of this classification scheme to services provided in a community or minor civil division would require specification of the level of aggregation that was to be examined. Data on each service that would provide indicators for classification on the other three attributes would provide the basis for identifying the subject services that appeared to belong in each cell. Assuming it was possible to identify the appropriate variables, assemble the data set, and establish cutting points, it should be possible to group in cell collection of services. Each cell should then contain services that have commonalities making possible similar approaches to their analysis. At the very least, their homogeneity should be sufficient to allow "within the cell" comparisons. With improved techniques attained through experience, one would hope to develop the ability to make "between cell" and "within the cell" analyses.

### Demand Estimation

Inasmuch as this paper consists mostly of recollection and speculation it probably is important to specify at this point that the shift to speculation is now complete. From here on the ideas are untested by either attempts at empirical verification or testing through discussion and reactions by other economists. Let the listener and/or reader beware.

In the conventional market situation, economists have long accepted that the demand relationship is one in which quantity is a function of price and the two are inversely related. A demand schedule represents the effects of price on the quantity demanded of a good assuming all other things are held constant. We express this "pure demand" relationship as:  $Q = f(P)$ .

In the empirical estimation of demand relationships quantity is estimated as a function of price and (typically) a number of demand shifter, time trend, and interaction variables. If simultaneity is hypothesized to exist between supply and demand, multiple equation models, price dependent formulations and so forth may be used. In all cases the intent is to specify insofar as is possible the structure of the underlying market forces.

When these theory-based estimation techniques are applied to data sets for services having a few to many nonmarket characteristics, the results have usually been not satisfactory. As detailed by Deacon in his 1977 paper referred to previously, the response to these problems has been the place emphasis on estimation techniques incorporating proxies as indicators. Public expenditure models, median voter rules, analyses of voting behavior and others as identified by Deacon have been incorporated into these analyses. Each has been developed in the attempt to better explain the quantity and quality of services demanded and the cost of those services that consumers are willing to pay.

Perhaps an alternative approach would provide insights that have so far not been obtainable with the methods described by Deacon. Our starting point for this approach will be the classical expression for demand,  $Q = f(P)$ . And, we will think in terms of developing a method of analysis that will be appropriate for the community services previously classified in an arbitrarily selected cell of Figure 2. The only specification regarding the location of this cell is that it is not at the "pure private goods" end of the public goods--private goods continuum.

Suppose then that we specify  $Q^* = f(P^*)$  where  $P^*$  is a column vector whose components are thought to be determinants of  $Q^*$ , the amounts of the service that must be supplied for citizen satisfaction. To distinguish from the  $Q$  in the classical demand relationship, we will designate  $Q^*$  as the "services demand," the level of services availability that results in an acceptable level of consumer satisfaction given consumer perceptions of the cost of the service.

$P^*$  might have at least three types of components. The first component or group of components would be the economist's old friend, price (as reflected in the cost of inputs, since by definition we do not have an output price for a public good). The second group of components would be socio-economic-demographic characteristics of the population being served. Some possible components for this category would be the proportion of population in each of several age categories, the proportion of households in each of several income categories, indicators of ethnic homogeneity (or diversity), and any preference information such as might be secured through needs assessments or attitude surveys.

The third category of components would reflect locality characteristics. Individual components might include objective indicators of services availability such as those developed by the Workshop in Political Theory and Policy Analysis and reported by Elinor Ostrom. ("Why do we Need Multiple Indicators of Public Service Outputs?" 1977). Other indicators of the locality characteristics would be included here such as the presence and type of community organizations, the type of governmental system, the institutional system through which services are made available. To borrow a term from Loomis and the Processually Articulated Social Systems Model, these components would represent the "conditions of social action."

Two additional comments seem to be in order. Both are disclaimers. The conceptualization suggested here is thus far untested. It obviously is based in part upon and borrows from the attempts of Elinor Ostrom and her coworkers to develop multiple indicators of public services output. The workshop may have already established that the complex of factors suggested here are unmanageably expensive to identify and unmanageably complex to analyze. Even if this is so, it seems to me to be a conceptualization that has potential as a reasonable representation of reality. Cost, preferences, and locality characteristics do appear to me to be co-determinors of services demand. The fundamental issues that are yet unresolved concern the nature of interactions between the various causal variables.

The second disclaimer concerns the differences between  $Q = f(P)$  and the  $Q^* = f(P^*)$  that is discussed here.  $Q = f(P)$ , when appropriately formulated estimation procedures are used, may yield insights into the effects of price on the quantity taken with all other things held constant. At this time, nothing suggests to me that the same can be said of  $Q^* = f(P^*)$ . I presently visualize  $Q^*$  as being unique to a set of components of  $P^*$  and cannot visualize circumstances under which it would be appropriate to vary one component such as price (cost) while holding other components constant.

As this stage of my thinking I suspect, but do not know with certainty that the  $Q^* = f(P^*)$  relationship is not necessarily the same for all services classified within a cell of Figure 2. Within a cell I expect the  $Q^* = f(P^*)$



relationship would be similar from service to service. I would also expect the relationship to vary in both the functional relationship and the components of P\* as the analysis is shifted from one cell to another. But, I emphasize again, this is all speculation and not tested at this time.

#### A Final Note

The next step with this set of ideas is to evaluate and synthesize feedback, clarify meanings, think, and decide whether there is enough of merit to justify attempts at empirical testing. I won't predict today how or when that will occur. Last week when these ideas were in even less coherent form than they are here, Jim Hildreth commented to me that we now have a unique opportunity in services research. As federal funding is cut back and the responsibility for services is increasingly handed back to local and state government, the resulting services delivery decisions should reflect the interactions of cost, preferences, and local conditions. As we think ahead to research during the next few years, this seems like an opportunity we should not miss.

## Cited Literature

Economic Theory and Rural Development, Cleve E. Willis and N. Eugene Engel, Cooperative Extension Service, University of Massachusetts; Amherst, Mass., Publication No. 87; April, 1973.

The Future of the Great Plains, Report of the Great Plains Committee, U.S. Government Printing Office, Washington, D.C., December, 1936, pp. 99-101.

Modernizing Local Government, Committee for Economic Development, 711 Fifth Avenue, New York, New York. 1966, p. 8.

A New Life for the Country, The Report of the President's Task Force on Rural Development, U.S. Government Printing Office, Washington, D.C., March 1970.

National Conference on Nonmetropolitan Community Services Research. Prepared for the Committee on Agriculture, Nutrition, and Forestry, United States Senate, Government Printing Office, July 2, 1977:

"Review of the Literature on the Demand for Public Services,"  
by Robert T. Deacon.

"Why Do We Need Multiple Indicators of Public Service  
Outputs?" by Elinor Ostrom.

"On the Taxonomy of Nonmetropolitan Community Services  
Research," by Jerome M. Stam.

Public Services for Rural Communities: Some Analytical and Policy  
Considerations, Paul H. Gessaman, "Delivery Systems and Decision Making  
for Rural Community Services: Some Implications for Research,"  
Department of Agricultural Economics, The Texas A & M University, Great  
Plains Agricultural Council Publication No. 70, January, 1975.

Rural Development Research Priorities. North Central Regional Center for  
Rural Development, Iowa State University Press, Ames, Iowa, 1976.

Selected Topics on Rural Development Research. E.L. Baum (Editor), ERS, USDA,  
January, 1963.

Supplying and Financing State and Local Public Services in the Great Plains  
States, John E. Thompson, "Horseback Government in the Interstate Age,"  
Proceedings of a Seminar of the Great Plains Resource Economics  
Committee, Denver, Colorado, April 20-21, 1971, pp. 1-4.

Working Papers on Community Services, Lonnie L. Jones, "Organization of Public  
Service Delivery Systems for Rural Areas: Concepts and Measures,"  
Department of Agricultural Economics and Rural Sociology; The  
Pennsylvania State University; University Park, Pennsylvania.