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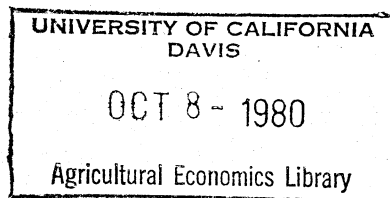
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DISTRIBUTIONAL CONSEQUENCES OF
CONSOLIDATED COMMUNITY SERVICE PROVISION

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Abstract

DISTRIBUTIONAL CONSEQUENCES OF
CONSOLIDATED COMMUNITY SERVICE PROVISION

Cost minimization decision criteria used to evaluate alternative community service delivery systems often ignore distributional incidence of public good provision and quality of service. Using public choice theory, relationships among transaction costs, political unit size, service quality and interest group conflict are examined for a case study.

DISTRIBUTIONAL CONSEQUENCES OF
CONSOLIDATED COMMUNITY SERVICE PROVISION

Rural residents are becoming increasingly concerned about the cost of financing and the quality of community services. In response to financial pressures, service consolidation has been frequently offered as a viable cost saving alternative (Gallas), despite certain methodological limitations and the paltry evidence on the distributional effects of consolidation.

Concomitant with this is a nationwide trend in local court consolidation. As population and financial pressures usher in the consolidation movement, local decisionmakers are now in need of empirical evidence and information on the costs and benefits of court reform in trend setting states (Gallas).

Empirical research on community service provision has concentrated primarily on production costs and physical units of quantity while ignoring conflicts of interest among residents by using models which assume that consumer preferences and service content are homogeneous within and across political units (Hall and Jones, Hitzhusen, Holland and Baritelle, and White and Tweeten). Violations of these homogeneity assumptions and changes in the incidence of costs and benefits invalidate economies of size analysis associated with political unit comparisons (Broder, White and Tweeten).

This paper will use the public choice paradigm and present results

of a model analyzing the distributional aspects of community service provision. Empirical results of model applications to judicial service provision are discussed along with empirical and methodological shortcomings encountered in consolidation analysis. An attempt is made to identify distributional consequence of consolidation and to offer explanations for welfare losses and gains from consolidation.

PROBLEM FRAMEWORK

The collective dimension of community service provision lends itself to public choice theory. Bish, Ostrom and Schmid offer conceptual models for analyzing costs and benefits of service consolidation. In contrast to private good analysis, consumers are assumed to be interdependent with respect to services which enter into utility functions irreducibly (Schmid, p. 70). The inability of individuals to adjust to costs in the form of taxes and/or prices and the service content gives rise to social interaction costs among residents consuming services with public good characteristics (Bish, p. 35). These costs, delineated as decision-making costs (DMC) and political externality costs (PEC), are thought to increase and decrease, respectively with the size of the community service unit. DMC are essentially transactions costs incurred to participate in the political process. PEC express the welfare losses resulting from paying taxes for unavoidable community services which are incompatible with unique individual local preferences.

Services financed by tax revenues which have public good characteristics permit few opportunities for citizen demand articulation.

Citizen demand for community services must be expressed in terms of service quality when service quantity is either fixed or mandated by law as in the case of judicial services. A conceptual functional relationship for services with public goods characteristics may be expressed between service quality, cost and quantity as eq. 1 (Schmid).

$$(eq. 1) \quad Q = F(TC/B, PD, I)$$

where: Q = Service quality

TC = Transactions costs

B = Size of political boundary

PD = Preference distribution

I = Income

Community service consolidation increases the size, and in some instances, the preference distribution of the political unit, both of which increase transactions costs of participating in the policy process. With constant citizen expenditures on transactions costs, increases in the size or heterogeneity of the political boundary mitigate the impact of transactions and result in a lower quality of service for the community. These relationships among political unit size, distribution of preferences and costs of policy participation are used in this paper to examine distributional impacts of court consolidation.

STUDY AREA AND PROCEDURE

Georgia's Athens-Clarke County local court consolidation experience was analyzed using the previously outlined constructs and are developed in more detail in Porter. The 1978 consolidation combined the Athens City and Clarke County court which served approximately 50,000 and 22,000 residents respectively. Specific performance measures selected for study included court service quality and the incidence of costs and benefits.

Data from court operating expenditures were examined to determine whether average cost savings were achieved through consolidation. Changes in the incidence of costs due to consolidation were measured by comparing city and county contributions to court operating expenditures before and after consolidation.

The homogeneity of service content hypothesis was tested to determine if service content changed with consolidation. Service content was expressed in terms of court policies toward various legal violations including: failure to stop for a stop sign; public drunkenness; failure to stop for a traffic light; speeding 10-15 mph over the limit; and driving under the influence. Data was available for fine levels before and after consolidation. Model development followed Campbell and was used to determine if statistically significant changes in five levels occurred at the time of consolidation. The model developed employed a method reported in Kmenta for detecting structural shifts in regression lines using binary variables.

Using the models shown in footnote 1, separate regression lines were fitted for 1) the period before consolidation, 2) the period after consolidation and 3) both periods combined. If the error associated with the two separate regression lines is significantly less than that associated with the two period regression, the level of fines are significantly different at the point of consolidation. As reported in Kleinbaum and Kupper, the appropriate method for testing significant intercept differences (in this case structural shifts) is the partial F test shown in footnote 2.

Since consolidated related changes in service content are necessary but not sufficient evidence of changes in the incidence of costs and benefits due to consolidation, comparisons between resident preferences and actual court policies were also made. An ordinal ranking of group preferences for court policies was obtained from a randomized cluster sample of local residents. Citizens were asked to rank the severity of the five crimes. Various socio-economic and political subgroup were identified and their degree of preference association measured by Kendall tests for concordance (Siegel). Overall subgroup rankings were determined by aggregating the rankings of individual members (Siegel, p. 238).

The rankings of various subgroups were compared to the rankings of courts before and after consolidation using distribution-free Spearman rank correlation coefficients (Siegel, p. 202). The Spearman coefficients expressing the degree of compatibility between court policies and resident preferences were used to measure whose preferences were being reflected under alternative court systems.

SELECTED MAJOR FINDINGS

The consolidated court operated at an average of \$8.60/case. This new operating cost was confounded with changes in service content and the incidence of costs and benefits. Despite general cost savings, the financial burden of court operation increased for city residents (up from \$2.76/case) and decreased for rural residents (down from \$15.12/case). These distributional changes in court operating costs obviously affected city and county residents in a substantial negative and positive manner, respectively and were not considered in the decision to consolidate.

The results of the binary variable tests for qualitative (structural) changes in court policies indicated a statistically significant change in policy occurred for five crimes previously heard by the city court and for three of five crimes previously heard in county court (Table 1). These policy changes are interpreted as violations of the homogeneity of service content assumption, the results of which invalidate meaningful cost-size comparisons. It is important to emphasize that not only did the incidence of costs change substantially, but also the service provided. Thus, when consolidation issues are being considered by communities, there must be an explicit recognition of distributional benefits and costs and service quality changes.

Expressed in terms of Spearman rank correlation coefficients, the degree of compatibility between court policies and interest group preferences declined for city residents from (.82) to (.41) and increased for rural residents from (.2) to (.5), (Table 2). These

Table 1. Consolidation Related Changes in Court Fine Policies

COURT COMPARISONS	OFFENSE	F VALUE	MINIMUM APPROXIMATE SIGNIFICANCE LEVEL
A			
Athens Recorders	Stop Sign	4.7	.025
Court vs. Con- solidated Court	Traffic Light	45.7	.001
	D.U.I.	12.6	.001
	Drunkenness	37.2	.001
	Speeding	5.5	.025
B			
County Magistrates	Stop Signs	12.5	.001
Court vs. Con- solidated Court	Traffic Light	12.1	.001
	D.U.I.	1.7*	.10
	Drunkenness	.23*	.50
	Speeding	.11*	.50

*No significant difference between courts for this offense at $\alpha = .10$ level.

changes reflect substantial changes in desired service and actual service provided. These qualitative gains and losses were consistent with the analytical framework developed earlier which predicted that a loss in court service quality would result after consolidation, ceterus parabus, due to an increase in the number of residents served by the court.

The distribution of preferences was also hypothesized as a factor in service demand articulation. Kendall tests for concordance (Table 2) indicated that the degree of aggregate preference homogeniety increased for rural residents from (.298) to (.382) and decreased for city residents from (.401) to (.382). These changes in preference homogeniety are hypothesized to partially explain the loss and gain in preference compatibility by city and county residents respectively.

SUMMARY AND CONCLUSIONS

Economic studies of community service provision generally ignore conflicts among residents by assuming that consumer preferences and service content are homogeneous within and across political units. Violations of these homogeneity assumptions weakens efficiency comparisons made by conventional production cost and benefit-cost analysis and invites paradigms more condusive to analyzing conflict and interdependence among consumers. A theoretical framework using public choice theory was developed for analyzing community services with public good characteristics. Empirical results of the theoretical framework were obtained in a study of local court consolidation.

Table 2. Group Concordance and Degree of Compatibility Between Group and Court Rankings

Interest Group ^a	Coefficient of Concordance	SPEARMAN COEFFICIENTS		
		Athens Recorders Court	Clarke Co. Magistrates Court	Athens-Clarke Consolidated Court
All residents	.382***	.7*	.7*	.5
City residents	.401***	.8**	-	.4
County residents	.298***	-	.2	.5

^a Some of the other interest groups examined and available in Porter were: students, males and females, blacks and whites, various income groups, various age groups and various political groups.

***significant of the $\alpha = .01$ level

**significant at the $\alpha = .067$ level

*significant at the $\alpha = .117$ level

The major categories of costs associated with court service provision were identified as transactions costs of political participation and political externality costs, the former of which were shown to be a relevant factor in determining service quality. The ability for an individual to effectively gain access to the community service production function was shown to be a function of transaction costs, distribution of preferences and wealth.

Relationships between transactions costs, political unit size, service quality and interest group preferences were examined in the local court consolidation experience. Analysis of the binary model indicated evidence of statistically significant court policy changes associated with consolidation and that these changes violated the homogeneity of service content assumption. For residents indifferent as to service content, the study found that average cost savings were achieved by consolidation, but that these savings were confounded with changes in the distributional incidence of costs among rural and city residence.

Qualitative measures of court services were obtained from Spearman rank correlation coefficients which compared ordinal preferences of resident groups and actual court policies toward selected misdemeanors. Verified by Kendall tests for concordance, these groups were found to differ in their preferences for court service content and in benefits received from services within and across court systems. Disaggregate losses and gains in services compatibility were shown to be a partial function of changes in the degree of preference homogeneity due to consolidation.

Comparisons of aggregate community satisfactions with service content before and after consolidation indicated a general decline in service quality. These results are consistent with most public choice paradigm's hypothesis that changes in political group size and content change the effectiveness of transactions costs invested in political participation.

To be meaningful to local decision-makers community service research should give explicit recognition to conflicts over the service definition process. Communities should consider distributional changes in service content and the incidence of cost and benefits which accompany consolidations and weigh these consequences against potential cost savings from community service consolidation. To view the consolidation issue as a cost minimization change is simply not enough!

FOOTNOTES

$$1 \quad Y = B_0 + B_1T + e \quad (\text{continuous binary variable model})$$

$$Y = B_0 + B_1T + JP + e \quad (\text{discontinuous binary variable model})$$

where: Y = monthly mean fine levels

T = time

JP = binary variable

e = error

²The partial F statistic is calculated as:

$$\text{Regression Discontinuity F} = \frac{\begin{array}{l} \text{sum of squares} \\ \text{of discontinuous} \\ \text{equation} \end{array} - \begin{array}{l} \text{sum of squares of} \\ \text{continuous equation} \end{array}}{\begin{array}{l} \text{mean square for residual of} \\ \text{discontinuous equation} \end{array}}$$

Comparison between the above calculated partial F and a theoretical F allows for 1) failure to reject the null that there has been no significant structural change associated with a policy shift or 2) that the null may be rejected in favor of the alternative that there has been a structural shift.

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