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INFORMATION AND PARTICIPATION IN A PUBLIC TRANSFER PROGRAM

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1. Introduction

Common to many studies of public transfer programs is the implicit assumption that program information is available and costless to the eligible population. A priori this would seem unreasonable and, empirically, the inavailability and cost of obtaining such information may explain why participation in various U.S. public transfer programs is below the numbers eligible, e.g. Boland (1973) and Projector and Murray (1977). While the effect of program information availability would seem to be an important determinant of participation, there are no U.S. estimates of its impact at the micro level.[1]

Accordingly, the purpose of this paper is to examine empirically the effect program information has on local participation in an income transfer program. In particular, we examine for North Carolina counties whether the presence or absence of a Federal eligibility determination office per county, which is taken to proxy for the differential availability of program information, affected the enrollment in a recently federalized program of aid to the blind, aged and disabled.

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[1]There is a growing literature on the empirical determinants of participation in social welfare programs; however, none examines the issue at the local level. For example, Toikka (1976) examines the impact of unemployment on disability caseloads at the State level; Scanlon, Larkin and Holahan (1976) examine the impact of wages and unemployment on utilization of medical assistance to the needy at the State level; and Greenston and MacRae (1974) examine the impact of growth in the number of eligibles on participation in AFDC at the State level. See also Atkinson (1969), especially chapter 4, for a discussion of British 'pickup' rates under social security, and a review by Lister (1974) of 'takeup' of means tested programs.

2. Hypotheses and data base

2.1. Hypotheses and regression model

After January 1, 1974, the U.S. Government assumed financial and administrative responsibility for cash assistance to the blind, aged and disabled. The new, Supplemental Security Income (SSI)[2] program replaced a cooperative Federal–State–local program of cash assistance, administered by the counties in the case of North Carolina. Prior to federalization, the adult poor in North Carolina applied to one of 100 county welfare offices for cash assistance as well as for Medicaid, General Assistance, and Social Services. With federalization, direct cash assistance became the administrative reposnibility of Federal Social Security offices.

In January 1974, there were 40 such offices: 16 main district offices and 24 branch offices. To qualify for SSI as a disabled or blind person, one must obtain medical evidence from a State–approved physician. The Disability Determination Service, a State agency, identifies and makes agreements with physicians and clinics in the State to obtain the requisite medical evidence. As of late 1974, about 20 percent of the State's physicians were *nominally* willing to do certain examinations for SSI applicants. As with those receiving just Social Security payments, the availability (for SSI applicants) of medical attention is alleged to have a significant effect on participation and the speed with which one's application can be ultimately processed. Since previous State beneficiaries in North Carolina were automatically converted to the Federal roles in 1974, and since benefit levels rose, there was a general increase in enrollment in 1974 over 1973.

The basic hypothesis we wish to test is whether differential increases in enrollment can be attributed in part to there being a Federal eligibility determination office. We take the presence of such an office to proxy for there being more program information to potential beneficiaries, and expect the presence of such an office to exert a positive effect on SSI enrollments. Also, we examine the related impact of physician availability on the growth in enrollment of SSI disabled. Four types of total SSI participation are of interest: the historical State level of enrollment as of December 1973 (*STATE*): the growth in enrollment with federalization from December 1973 to January 1974 ($GRTH_1$); the growth from January 1974 to August 1974 ($GRTH_2$); and the growth from August 1974 to September 1974 ($GRTH_3$).

In explaining $GRTH_1$, we use the number of district and branch SSA offices per county (*DISTR* and *BRNCH*) as of August 1974 to represent the effect of availability of information on eligibility. A positive, significant effect is interpreted as evidence in favor of the information hypothesis. We separate the offices by type because most of the branch offices are relatively new in terms of

[2]See Joint Economic Committee (November 1973) for a more complete discussion of the SSI program.

location and staff. Of the 24, eleven were opened in 1973, three in 1972, one in 1969 and 1968, and eight in 1967.

In addition to this central explanatory variable, we need to control for other background factors that might be reasonably thought to affect participation. Various Community Action Programs had outreach projects in early 1974. Accordingly, we include a dummy variable, *CAP*, which reflects the presence of a *CAP* office in a county. Discussions with local officials indicate that attitudes toward 'getting on welfare' vary considerably across the State. Apparently, among the black population, which is disproportionately poor, there is thought to be less resistance or onus to being on public assistance. Accordingly, we use percent nonwhite, *PCTNW*, to hold constant possible differences in attitudes about SSI.

Three other factors may affect participation behavior per county: the relative number of eligibles, the ease of getting to each of the two offices for application, and the absolute number of eligibles per county. The first effect involves consideration of who the marginal enrollee might be per county. Generally, we would expect the poorest to enroll first. If most of the eligible in a county were already enrolled, we would expect fewer to sign up for SSI. The proxy measure of this effect varies according to the dependent variable. When we explain State enrollments, we use eligibles under State law as a percent of population (PCT_1); when we explain the growth resulting from federalization, we use State enrollees in December as a percent of total SSI eligibles (PCT_2); when we explain the January to August growth, we use SSI enrollees in January, 1974, as a percent of eligibles (PCT_3); and when we explain the August to September growth, we use SSI enrollees in August as a percent of eligibles (PCT_4).

The second effect involves the ease of getting to an office and the 'multiplier' effect of many SSI eligibles being close to one another. Accordingly, we create a density measure defined as the number of total SSI eligibles per square mile (*DENT*).

The third effect reflects our concern that the observed variation in county enrollment growth may simply reflect the differential size of the eligible recipient population under the State and SSI programs. Accordingly, we introduce the total number of eligibles, *ELIGT*, as another control variable, and also form interaction terms (*I*1 and *I*2) of *ELIGT* with *DISTR* and *BRNCH* because offices tend to be in more populous areas.

With regard to the analysis of the effect of proximate medical care to the enrollment of disabled poor on SSI, three types of participation are of interset. First, we examine the December 1973 level of disabled beneficiaries, *DISAB*, prior to federalization. Second, we examine the growth in enrollment of disabled poor on SSI, from December 1973 to August 1974 ($GRTHD_1$), and the growth in enrollment of the disabled from August 1974 to September 1974 ($GRTHD_2$). Unfortunately, disaggregate information for January SSI enrollees is not available.

To examine the effect on participation of information on medical care, we use three variables that reflect the types and quantity of medical expertise available per county. The first measure, $DOC1$, represents the number of doctors per county under agreement with the Disability Determination Service to see SSI applicants. These include both specialists and general practitioners. The second group of doctors, DOC_2, have agreed only to see their own private patients under SSI; the third variable reflects the number of clinics, DOC_3, in the county. Local officials indicated that as a consequence of long waiting times for medical examinations, SSI applicants have increasingly been directed to outpatient clinics of hospitals or other private clinics.

As with the analysis of aggregate participation, we include as background variables CAP and $PCTNW$. Also, we form a density measure defined as the ratio of disabled eligibles to area per square mile ($DEND$), and create three measures of the relative numbers of disabled: the ratio of eligible disabled to the total population ($PCTD_1$), the ratio of December 1973 State disabled enrollees to disabled State eligibles under State law ($PCTD_2$), and the ratio of August 1974 disabled enrollees to disabled SSI eligibles ($PCTD_3$). Finally, we include as additional control factors the total number of eligible disabled ($ELIGD$), and interaction terms of $ELIGD$ with the two types of general offices ($I3$ and $I4$).

The models of total SSI enrollment to be estimated then are:

$$STATE_i = \beta_1+\beta_2 CAP_i+\beta_3 PCTNW_i+\beta_4 PCT_{i1}+\beta_5 ELIGT_{i1} +\beta_6 DENT_i+s_{i1} \quad (1)$$

$$GRTH_{ij} = \theta_{1j}+\theta_{2j}CAP_i+\theta_{3j}PCTNW_i+\theta_{4j}PCT_{ij+1} +\theta_{5j}ELIGT_{ij+1}+\theta_{6j}DISTR_i+\theta_{7j}DENT_i +\theta_{8j}BRNCH_i+\theta_{9j}I1_i+\theta_{10j}I2_i+u_{ij}, \quad j = 1, \ldots, 3, \quad i = 1, \ldots, 100. \quad (2)\text{–}(4)$$

The models of disabled SSI enrollment to be estimated then are:

$$DISAB_i = \alpha_1+\alpha_2 CAP_i+\alpha_3 PCTNW_i+\alpha_4 PCTD_{i1}+\alpha_5 ELIGD_{i1} +\alpha_6 DENTD_i+\alpha_7 DOC1_i+\alpha_8 DOC2_i+\alpha_9 DOC3_i +s_{i2}, \quad (5)$$

$$GRTHD_{ij} = \delta_{ij}+\delta_{2j}CAP_{ij}+\delta_3 PCTNW_{ij}+\delta_{4j}PCTD_{ij+1} +\delta_{5j}ELIGD_i+\delta_{6j}DEND_{ij}+\delta_{7j}DISTR_i +\delta_{7j}BRNCH_i+\delta_{9j}I3_i+\delta_{10j}14_i+\delta_{11j}DOC1_i +\delta_{12j}DOC2_i+\delta_{13j}DOC3_i+r_{ij}, \quad j = 1,2. \quad (6)\text{–}(7)$$

2.2. Data base

Responses to the detailed questionnaire of the 1970 Census of Population provide data in reasonable congruence with the income[3] and eligibility requirements of SSI programs for the aged and disabled poor. However, with regard to the blind, we are more limited. As there are only 17,000 blind persons in North Carolina, according to reliable sources, and only a portion of them are poor, the omission of the blind should not materially affect our results. A further limitation of the Census data is that it provides primarily income data.[4] Information on wealth or resources is not available. However, since the value of a home and adjacent land up to $30,000 of market value is *excluded* from the wealth test, we feel reasonably confident that the income information is a reliable indicator of eligibility.

Tabulation of earned and unearned income by age provides information on the distribution of eligible aged. Determination of the eligible disabled population from the Census data is more difficult. Those over 14 and under 65 years of age were asked three questions about their disability and labor force status. We can segregate those disabled more than 12 months and unable to work as a consequence of this disability and will use this grouping to proxy for those eligible under the Act as a consequence of disability and income poverty. It should be noted that those disabled children under age 14, now eligible for assistance for the first time, will be missed by this procedure; however, those 14 and older will be counted.

Using the 5-percent portion of the 1970 U.S. Census of Population 1/100 Public Use Sample, we may generate a distribution of eligible units by benefit level. Table 1 provides this tabulation by marital status of eligibility. There are

[3]Total Census income is the sum of wage or salary income, nonfarm net self-employment income, farm net self-employment income, Social Security or railroad retirement income, public assistance or welfare income, and other miscellaneous income. Excluded from Census income are receipts from sale of property, value of income 'in kind' such as food produced in the home or free living quarters, withdrawals from bank deposits, loans, tax refunds, gifts and lump-sum inheritances, insurance payments, and other types of lump-sum receipts. The SSI earned income concept reasonably compares to the above Census components. Income under SSI is defined as wages and net earnings from self-employment. Unearned income includes private and public pensions, retirement, disability, or unemployment benefits, dividends, interest, and royalties, prizes, awards, gifts, support and alimony payments, and inheritances, proceeds of life insurance policies, and support and maintenance furnished in kind. The primary area of difference between the Act and Census definition involves unearned income. Census proxies for this include only Social Security and railroad retirement receipts, although the miscellaneous category includes receipts from public and private pensions as well as dividend income. Independent studies of old age assistance income sources indicate that Social Security benefits, a separate Census income item, are the largest source of unearned income. Accordingly, the Census category of retirement income was used to proxy for unearned income.

[4]Weisbrod and Hansen (1968) and Murray (1964) both note that counting the annuity value of wealth holdings measurably alters the poverty profile obtained from just income data, especially for the aged. However, the primary asset that has this effect is the value of one's home, which is essentially disregarded by SSI.

349,500 eligible units which if all were enrolled would annually receive $402.8 million. The average benefit is $927. Two-thirds of the eligible are single persons and they would receive two-thirds of the total benefits. Of related interest is that more than two-thirds of the eligible units are aged (rather than disabled). One-fifth of the eligibles had no income at all. Also of interest is that more than half live in places with under 2,500 population.

County-by-county estimation of the 349,500 potential recipient units ($ELIGT_i$) is complicated by the absence of data analogous to that used to create table 1. Fortunately, we do have by county the number of poor aged using the Census poverty line,[5] and can obtain from the Fourth Count Summary Tapes[6] of the Census numbers of persons unable to work and disabled more than six months. Unfortunately, the disability information is not available by income class. In both instances, the county totals were adjusted to sum to the State totals in table 1. Data for the *PCTNW* and geographic area were obtained from county summary data available from the Census. Data on SSI enrollment was obtained from the Social Security Administration; data on the number of physicians and clinics was obtained from unpublished State sources.

3. Empirical results

Table 2 reports the ordinary least squares regressions for the four aggregate equations. Our model explaining variations in the 1973 State enrollment levels performs reasonably well. On average, 22 percent of the average county eligible population were enrolled. Those counties with heavy concentrations of non-white populations tended to have more beneficiaries. Thus, our proxy measures of attitudes towards getting on welfare performs as expected. Interestingly, as the percentage of the poor per county increased, the number of adult enrollees drops. One would have expected a positive historical relationship between the relative extent of eligibility and State enrollment. However, this inverse relationship is not statistically significant at any reasonable confidence level.

Evidence in favor of the information hypothesis is found in the remaining equations of table 2. Thus, the presence of a branch office yielded an average additional enrollment of 169 persons from December 1973 to January 1974; 245 persons from January to August, 1974; and 17 persons from August to September 1974. This last effect, however, is not statistically significant. The larger coefficient for *BRNCH* in the third equation is somewhat misleading because of the longer period of time it reflects. Viewed on an average monthly basis, we find the effect of *BRNCH* declining from 169 to 31 to 17 additional enrollees. While the newer Social Security offices initially increased participation, the older district offices apparently did not have a discernible effect in the December 1973

[5]Table 124, U.S. Bureau of the Census (1972a).
[6]Table 52, U.S. Bureau of the Census (1972b).

Table 1
1970 distribution of SSI eligibles in North Carolina by benefit level and type of eligibility.[a]

Benefit Levels ($)	Single	Couples			All
		Both eligible	Husband eligible only	Wife eligible only	
1–100	2,300	1,600	1,300	500	4,400
101–200	3,000	1,600	2,000	1,500	8,100
201–300	4,000	2,700	2,700	500	9,900
301–400	4,800	1,700	2,700	2,600	11,800
401–500	6,400	1,800	1,500	900	10,600
501–600	10,500	2,300	2,700	800	16,300
601–700	7,500	2,300	1,800	600	12,200
701–800	12,200	2,400	2,100	500	17,200
801–900	13,600	2,600	2,600	1,800	20,600
901–1,000	14,700	2,900	1,700	300	19,600
1,001–1,100	18,300	3,900	2,700	700	25,600
1,101–1,200	31,700	3,200	2,200	400	37,500
1,201–1,300	12,100	3,400	1,700	600	17,800
1,301–1,400	12,200	3,300	1,200	900	17,600
1,401–1,500	4,400	3,500	800	400	9,100
1,501–1,600	74,600	4,000	5,100	3,800	875
1,601–1,700		3,900			3,900
1,701–1,800		3,600			3,600
1,801–1,900		2,100			2,100
1,901–2,000		3,100			3,100
2,001–2,100		1,600			1,600
2,101–2,200		800			800
2,201–2,300		7,000			7,000
Total number	232,300	65,600	34,800	16,800	349,500
Total benefit ($)	271,670,000	86,040,000	30,250,000	14,880,000	402,840,000
Mean benefit ($)	1,081	1,107	488	340	927

[a]*Source:* Tabulations of 1970 1/100 sample of North Carolina Population.

Table 2
Determinants of aggregate adult participation (t-ratio in parentheses).

Dependent Variable	Constant	*CAP*	*PCTNW*	*PCT*[a]	*ELIGT*	*DENT*	*DISTR*	*BRNCH*	*I1*	*I2*	Barten's[b] $\hat{R}^2$
(1) *STATE*	−242.58	52.72	620.19	−315.52	0.22	9.38	—	—	—	—	0.8247
		(0.76)	(3.48)	(−0.27)	(11.03)	(0.99)					
(2) $GRTH_1$	−37.27	−32.96	77.04	101.84	0.05	−2.67	−34.90	168.72	0.008	−0.02	0.4163
		(1.18)	(1.07)	(0.55)	(4.55)	(−0.73)	(−0.62)	(2.24)	(0.68)	(−2.82)	
(3) $GRTH_2$	−77.24	−14.65	287.02	377.26	0.09	−12.86	97.57	245.57	0.004	−0.02	0.7927
		(0.50)	(3.73)	(2.09)	(7.91)	(3.35)	(1.65)	(3.09)	(0.32)	(2.34)	
(4) $GRTH_3$	48.91	−1.89	−26.14	−66.48	0.006	0.10	3.97	17.36	0.001	0.002	0.5155
		(0.39)	(1.89)	(2.61)	(3.53)	(0.17)	(0.41)	(1.33)	(0.58)	(1.32)	

[a]The definition varies with the dependent variable – see text for definition.
[b]$\hat{R}^2$ is defined as: $R^2-(1/I)\,(1-R^2)\,[k-(1-R^2)(1+2R^2)]$, where R is the 'raw' multiple correlation coefficient with T observations and k regressors [see Christ (1966, pp. 509–510)].

to January 1974 period, but did affect participation in the period January to August, 1974. Then, an average district office yielded an additional 98 enrollees.

The effects of the various control variables are interesting and reflect the declining impact we observed for *BRNCH*. For example, the average monthly effect of our control for the total number of eligibles declines. This coefficient of eligibles on enrollment growth can be viewed as the odds that another eligible will be enrolled. Viewed on this basis, the odds decline from 5 percent to 0.9 percent to 0.6 percent.

The importance of welfare attitudes on aggregate enrollment growth similarly changes, and in fact reverses. The average monthly effect of *PCTNW* falls from 77 to 36 to −26. This change in attitudes is consistent with the observation of State officials that enrollment in the mountainous western part of North Carolina, which is relatively white in racial composition, was finally beginning to occur as historical resistance to 'getting on welfare' was overcome by outreach workers. Finally, we note that the relative measure of number of eligibles, *PCT*, was initially positive but in the last period reflected the diminishing returns we expected to find.

Table 3 reports the ordinary least squares results for the three equations explaining variations in enrollment of the disabled. The explanation of 1973 disabled enrollment patterns is quite strong; note that more than 90 percent of the variation is explained. Of immediate interest is the finding that the presence of private physicians (*DOC*1) increased the level of enrollment while the presence of doctors willing only to see their private patients *or* the presence of clinics decreased enrollment. On average, 26 percent of the average county's eligible disabled population was enrolled in 1973, although, again, the more *relatively* disabled a county's population was, the smaller the enrollment was.

The importance of Social Security Office location on enrollment growth in 1974 appears to be somewhat greater for the disabled than for the overall group. Given the greater transportation difficulties the disabled face, this is not surprising. Note, for example, that in the last period (August–September 1974), the effect of a *BRNCH* office on disabled enrollment was the same as for the entire group. Similarly, the effect of *DISTR* on disabled enrollment participation was about the same size as for aggregate participation.

The effects of the control variables on enrollment growth of the disabled parallel those of the entire group (table 2). Thus, there is a downward drift in the average monthly impact of *PCTNW* (17 to 2), of the relative number of eligibles (19 to −12), and of the total number of eligibles (0.02 to 0.01) on enrollment growth.

While the presence of various types of physicians was statistically significant in terms of determining the 1973 enrollment levels, it is not significant in the 1974 equations. We may infer, then, that the geodistribution of doctors was not a limiting factor once federalization occurred, although it apparently had been when the State controlled the adult categories.

Table 3
Determinants of disabled adult category participation (t-ratios in parentheses).

Dependent variable	Constant	*CAP*	*PCTNW*	*PCTD*[a]	*ELIGD*	*DEND*	*DISTR*
(5) *DISAB*	−48.80	10.42 (0.41)	155.62 (2.41)	−1178.30 (−0.70)	0.26 (7.29)	221.83 (10.37)	—
(6) *GRTH*4	−62.03	7.70 (0.52)	141.09 (3.85)	152.67 (3.33)	.1433 (6.22)	−16.92 (1.18)	1.53 (.06)
(7) *GRTH*5	5.30	−1.80 (1.11)	1.86 (0.43)	−12.54 (3.63)	.001 (3.80)	−3.62 (−2.45)	5.11 (1.75)

Dependent variable	*BRNCH*	*I*3	*I*4	*DOC*1	*DOC*3	*DOC*3	Barten's $\hat{R}^2$
(5) *DISAB*	—	—	—	6.42 (3.55)	−19.44 (−3.28)	−25.12 (1.84)	0.9168
(6) *GRTH*4	151.09 (3.49)	.07 (2.55)	−.07 (2.35)	.46 (.32)	−4.24 (1.17)	11.95 1.38)	0.8016
(7) *GRTH*5	18.63 (3.88)	.0001 (.03)	−.01 (3.52)	.47 (2.94)	.60 (1.52)	.18 (.18)	0.7169

[a]The definition varies with the dependent variable – see text.

4. Conclusion

In many respects the conclusion that the availability of information on eligibility determination affects participation in a social welfare program is unexceptional. It is quite reasonable to assume that the smaller the information and search costs, the more likely one will participate in a particular activity. To be sure, the point estimates obtained reflect the short experience of one State which is more rural and generally less densely populated than most. In the larger urban States, intra-county variation in participation may be more important than the inter-county variation studied here.

From a policy perspective, several conclusions may be suggested. First, as it matters where welfare offices are located,[7] and which physicians or clinics are contracted with for services, it necessarily follows that attempts to increase participation in SSI must be accompanied by a rather careful geographic design. As more than half of North Carolina's SSI eligibles live in places of under 2,500 population, some attention must be given to alternatives to fixed or permanent sources of eligibility determination or medical services. Second, even though the findings are not counterintuitive and the prescription for careful planning is just good sense, the results here suggest that additional welfare reform, e.g. a negative income tax or national health insurance, must give attention to geographic aspects of the participation problem. Thus, the success of AFDC reform, apparently a goal of the 95th Congress, may hinge in some measure on the location of the field offices of the parent agency. It would seem to matter, therefore, whether a new welfare system were administered by Social Security Administration, the Internal Revenue Service, or a new agency, for the two existing agencies differ markedly in the dispersion of their field offices.

[7]To test the stability of the impact of offices on participation, 40 offices were randomly assigned among the 100 counties and (2)–(4) were reestimated. In none of the equations was the randomly assigned office statistically significant.

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