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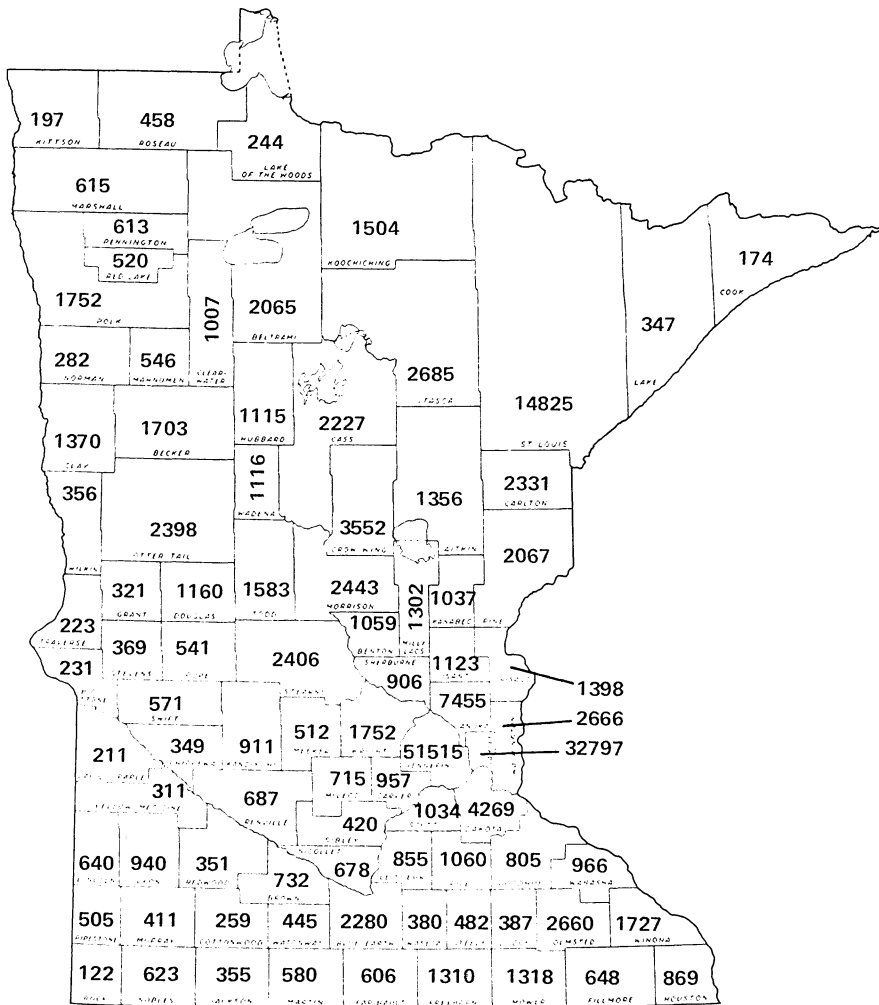
Participation In Minnesota's Food Stamp Program

By Benjamin Sexauer, Rebecca Blank, and Henry Kinnucan

Introduction

In April 1975, 19.6 million people in the United States and Puerto Rico—about 9 percent of the total population—were receiving food stamps. Among these were 193,648 Minnesotans. In Minnesota at that time, \$6.8 million in food stamps were being distributed. The bonus stamps, which represent the value of the food subsidy, were 55 percent of the total—about \$3.8 million.

Minnesota's Food Stamp Program shows wide variation in county participation levels, both in the numbers of participants and—more significantly—in the participation rate, which is the percentage of a county's population participating in the program. Figure 1 shows participation varied from 122 people in Rock County to 51,515 in Hennepin County. These numbers, though, primarily reflect the size of a county's population. More meaningful is the percentage of a county's population utilizing the program. Some 4.9 percent of all Minnesotans received food stamps in April 1975. The state's participation rate is lower than is the national average, primarily because Minnesota is a relatively wealthy state; it has a lower proportion of citizens eligible for food stamps than do most states.





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However as shown in figure 2, participation as a percent of each county's population varied from 11.5 percent in Cass County to 1 percent in Rock County.

This *Minnesota Agricultural Economist* examines the differences in food stamp participation among Minnesota's counties in April 1975. The study used economic analysis and statistics to estimate the relationship between county participation and various socioeconomic variables. The information can be used to project future changes in food stamp participation in Minnesota. The findings can also identify counties whose participation rate diverges from the norm.

Operation of the food stamp program

Food stamps were introduced to Minnesota in 1961 when the Virginia-Hibbing-Nashwauk region was chosen as one of eight pilot study areas to test the proposed Food Stamp Program. National use of food stamps was then approved

in 1962, both to provide additional food income to the poor and to supplement the demand for agricultural products. Minnesota, just as did other states, established food stamp offices in counties where significant income needs seemed to exist. Since then, major changes have occurred, both in the scope and design of the program. Food Stamp Program benefits were significantly increased in 1970 as it became more evident that low income families needed government help to afford a nutritionally adequate diet. Participation in the program has grown dramatically since 1970, especially in the last 2 to 3 years of economic hard times.

Eligibility for the Food Stamp Program is based on national standards which consider family size, income level, and family assets. Often, those people already enrolled in a public assistance program are considered automatically eligible. Once accepted into the program, participants pay between 15 and 30 percent of their monthly incomes for food stamp coupons which are

worth more than what the participants pay for them. The extra value of coupons beyond the amount recipients pay for them is the "bonus." The size of the bonus and the amount paid to receive it is determined by a family's income and size.

The Food Stamp Program is under the auspices of the U.S. Department of Agriculture. However, in Minnesota as in the other states, the program's administration is handled through County Welfare Offices and the State Department of Public Welfare, in conjunction with other social welfare programs.

Influencing factors

An analysis of county participation rates (figure 2) for April 1975 indicates that the major factors influencing participation were apparently economic ones: the proportion of the county's population below the poverty level or below 125 percent of the poverty level as measured in the 1970 U.S. Census; the unemployment rate in April 1975; the proportion of the popu-

lation receiving welfare payments in April; and the average per capita income in 1974. Together, these four economic factors accounted for some 75 percent of the differences observed in figure 2 in food stamp participation rates among Minnesota counties.

Some secondary, largely social, characteristics have also influenced participation, although these effects were frequently too small to statistically measure with satisfactory reliability. Therefore for these factors, only a qualitative indication is given of their probable impact on food stamp utilization. Secondary factors analyzed in this study included: the percentage of a county's total population in a minority group; the proportion of the population 65 years and older; the proportion 17 years and younger; and the proportion of the county's population which was rural nonfarm and rural farm; and the length of time the Food Stamp Program had been in operation in the county.

These economic and social characteristics affect both the number of people eligible for food stamp benefits and the proportion of those eligible who actually participate. The economic factors primarily influence the former, and the social characteristics the latter. The results summarized in table 1 are estimates of these effects based on the techniques of statistical analysis.¹

Poverty: An increase of 100 persons with incomes below the poverty level produces 34 additional participants in the food stamp program. The number of people below the poverty level plus a differential to account for rural nonfarm, farm, and urban participation differences can explain some 49 percent of the variation in the participation rate among Minnesota counties. If changes in the other major economic factors, the unemployment rate, the welfare participation rate, and the

¹These results are on the basis of weighting each county equally as an observation, rather than on the basis of their populations, which would change the results somewhat. In addition, what happens over time to a county or the state may differ from the pattern predicted at a point in time across counties.

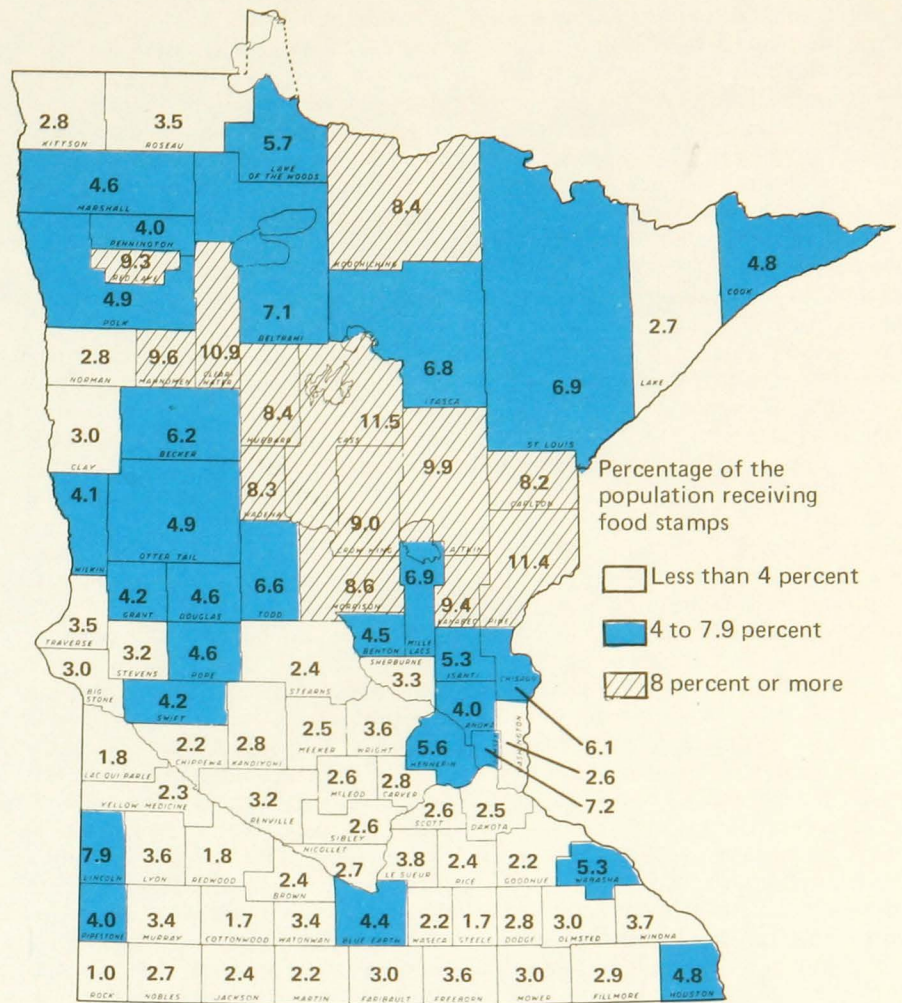


Table 1. Effect of changes in certain economic and social characteristics on participation in Minnesota's Food Stamp Program.

Characteristic	Effect
A. Assuming each factor could be changed independently, for an additional 100 persons in each of the following specified categories participation in the food stamp program would increase (+) or decrease (-) by approximately the following number of people:
1. low income—below the poverty level	+11 +34 if other factors are not considered*
2. low income—below 125% of the poverty level	+6 +21 if other factors are not considered*
3. unemployed	+60
4. receiving welfare	+83
B. For an increase of \$1,000 in the average per capita income, the participation rate would be decreased by the following percentage: -.6

*See text for a more detailed explanation of the magnitude of this effect.

average per capita income are considered, an additional 100 persons below the poverty level is associated with an increase of 11 persons using food stamps. The reason for the two different estimates is that the same person may be unemployed, receiving welfare, and have an income below the poverty level. To avoid double counting when considering together the proportion of the population below the poverty level, the unemployment rate, the welfare participation rate, and the income level, the estimated effect of each is lower than if each factor were considered separately.

The data for the proportion of the population below the poverty level are from the 1970 census. However since inflation and the recession have combined to erode people's real incomes the last few years, the assumption should be fairly accurate that the percentage of the population below the poverty level is the same in 1975 as in 1970. In counties having large proportions of farm incomes, this is not true because the period 1970-1975 witnessed a sharp jump in farmers' incomes. Therefore, average 1974 per capita income was introduced as an additional explanatory factor to compensate for this substantial shift in the income level. The counties' economic situations were also updated by including current unemployment and welfare participation figures. If a county had a significant decrease in the number of poverty families since 1970, this was reflected in a lower unemployment rate, a lower number of welfare recipients, and a higher per capita income.

When the proportion of the population below 125 percent of the poverty level is used as the explanatory factor, the effect per 100 additional people is a 21-person increase in participation, if considered separately, and a 6-person increase if the other pertinent factors are also considered. The smaller effect of changes in the proportion of the population below 125 percent of the poverty level—as opposed to those below the poverty level—indicates that the poorer of the low income families make greater use of the program.

Unemployment: For each 100 additional persons who become unemployed, utilization of food stamps increases by some 60 people, when other factors are accounted for.

This effect is substantially higher if considered alone, because the unemployed are low income and frequently need welfare assistance. If the officially computed unemployment rate is used as a gauge, a 1 percent increase in unemployment is associated with a .25 increase in the percentage participation rate in the Food Stamp Program. This effect is lower because the official unemployment rate is measured only against that proportion of the population that is 16 years and older and in the labor force—only about 42 percent of the total population. This figure of .25 must therefore be divided by .42 to measure this effect in terms of the total population.

If unemployment in Minnesota dropped from the 7.3 percent rate current in April 1975 to 4 percent, which is considered full employment, the food stamp participation rate would be reduced from 4.9 percent—the rate for April—to 4.1 percent. The size of this effect, together with the influence of the income level and the number of welfare recipients on participation, means that an improved economy could produce a considerable drop in the number of food stamp recipients.

Welfare Recipients: Food stamp recipients are presently placed into two categories: public assistance; and nonpublic assistance recipients. If a welfare recipient lives in a household in which everyone is on public assistance, he is automatically eligible for food stamps and the application procedure is abbreviated. Of Minnesota's 193,648 food stamp recipients in April, 88,221 were listed under the public assistance category.

Some 48 percent of Minnesota's welfare recipients were classified as public assistance food stamp participants. This number is both disturbingly low and also misleading. A welfare recipient who does not live in a household in which everyone receives public assistance must go through the normal food stamp application procedure and would not be counted in the public assistance food stamp recipient category.

This study indicates that over 80 percent of all welfare recipients in Minnesota receive food stamps. An increase of 100 persons on public assistance adds some 83 people to the Food Stamp Program. The County Welfare Offices seem to be making sure that families receiving

welfare payments also take advantage of their eligibility for food stamps.²

Significantly, when the effects of unemployment, the income level, and the proportion below the poverty level are corrected for, the results show a welfare recipient food stamp participation rate of 83 percent for the state as a whole, but only 73 percent for the rural or non-Standard Metropolitan Statistical Area counties of Minnesota. A welfare recipient is more likely to also receive food stamps in an urban than in a rural county.

Income: For a \$1,000 increase in average per capita income, food stamp participation will fall by .6 percentage points. If real per capita income in the state improves by \$500, the participation rate would fall from April 1975's 4.9 percent to 4.6 percent.

Minority Groups: If considered separately, each additional 100 members of a minority group increases the number of food stamp recipients by 58 persons. However, this figure is misleading because minority groups contain a large proportion of the unemployed, the poverty and low income people, and the welfare recipients. After the effect of these factors are accounted for, minority people are less likely to utilize food stamps than their basic economic needs would indicate.

Age: The results seem to indicate that an older person is more likely to utilize the program than someone under 65 in the same economic position. This is quite surprising and should be treated with considerable caution in light of the earlier results of a study for the U.S. Department of Agriculture by Fred K. Hines.³ That national study for May 1970 found senior citizens were less

²The categories of public assistance recipients considered in this analysis were those families receiving either General Assistance payments, Aid to Families with Dependent Children, or Supplemental Security Income.

³You may want to look at the entire Hines' study, since he conducted an analysis similar to this one, but on a national level. See Agricultural Economic Report No. 298, Economic Research Service, USDA, "Factors Related to Participation in the Food Stamp Program." July 1975, Washington, D.C.

likely to utilize the program, with participation decreasing by 19 persons per 100 people over 65. If, in fact, the number of persons over 65 has a positive influence on food stamp participation in Minnesota as a whole, this is not to say that elderly persons might not have a very low participation rate in some counties.

An increase in the percentage of the population 17 years and younger was also connected with an increase in food stamp participants. This indicates that larger families lead to higher participation in the program, if other factors are constant. This makes sense because food stamp eligibility considers not only income, but also family size.

Urban/rural differences: When the percentage of rural population—as opposed to urban was considered as a factor alone, it increased participation by 22 persons for each additional 100 rural people. However, this effect is largely because the rural population has a lower average income and a higher proportion below the poverty level than does the urban population. When these factors are considered, the effect is so statistically insignificant that an accurate estimate cannot be obtained.

The rural population was separated into farm and nonfarm popu-

lations. The number of rural non-farm people in a county had a very small positive effect on food stamp utilization. However, the size of a county's rural farm population had a very small negative effect on program participation, when the other major factors were corrected for. Farm families are less likely to utilize the food stamp program than are nonfarm and urban families of the same economic status. Farm people are the segment of our society that continues to most strongly adhere to a traditional value system that has a strong stigma against accepting public welfare. In addition, because of the nature of farm income and assets, determining food stamp eligibility is more complicated for farm families.

As computed by the federal government, the poverty level for farm families is considered to be 15 percent lower for rural farm families than for urban or rural nonfarm families. This differential is introduced to compensate for the availability of home-produced products to farm families. However, food stamp eligibility is based on national standards that are applied to all. In analyzing the effect on the food stamp program, the same poverty income level should therefore be applied to all families. If the rural nonfarm and urban poverty stand-

ards were applied to farm families, considerably more farm families would have incomes below the poverty level. On the other hand, it is generally assumed that the number of farm families below the poverty level is overestimated in the Census because of the way farmers calculate their incomes, allowing for depreciation and farm expenses. These two effects tend to off-set *each other*, but the estimated number of farm families below the poverty level still must be considered to have substantial inaccuracies and should be used with considerable caution.

Length of program's operation: A program in a county operating 12 months or less may have had a very small negative effect on the participation rate. However, the precise magnitude and whether the effect is actually significant could not be clearly defined. Once the Food Stamp Program has been operating in a county at least 1 year, the length of operation does not seem to further effect the participation rate.

Projected participation rates

Table 2 compares each county's participation rate for April 1975 with a projected participation rate based on that county's relevant socioeconomic characteristics. The projected rates consider the follow-

Table 2. A comparison of the actual food stamp participation rates for Minnesota's counties with the rates projected on basis of their socioeconomic characteristics.

County	Actual rate (%)	Projected rate (%)	Difference (%)
1 Aitkin	9.89	9.77	.12
2 Anoka	4.02	3.47	.55
3 Becker	6.17	7.41	—1.24
4 Beltrami	7.12	9.31	—2.19
5 Benton	4.54	3.46	1.08
6 Big Stone	3.00	4.62	—1.62
7 Blue Earth	4.41	2.94	1.47
8 Brown	2.40	3.10	— .70
9 Carlton	8.15	6.68	1.47
10 Carver	2.83	2.59	.24
11 Cass	11.47	10.17	1.30
12 Chippewa	2.25	4.29	—2.04
13 Chisago	6.10	4.51	1.59
14 Clay	2.95	3.04	— .09
15 Clearwater	10.94	11.62	— .68
16 Cook	4.83	5.37	— .54
17 Cottonwood	1.67	2.64	— .97
18 Crow Wing	8.96	7.66	1.03
19 Dakota	2.46	2.45	.01
20 Dodge	2.84	3.20	— .36
21 Douglas	4.60	6.05	—1.45
22 Faribault	2.95	3.57	— .62
23 Fillmore	2.88	4.15	—1.27
24 Freeborn	3.56	3.22	.34

Table 2. A comparison of the actual food stamp participation rates for Minnesota's counties with the rates Projected on basis of their socioeconomic characteristics.

	County	Actual rate (%)	Projected rate (%)	Difference (%)
25	Goodhue	2.18	2.68	— .50
26	Grant	4.22	3.02	1.20
27	Hennepin	5.61	4.59	1.02
28	Houston	4.77	3.02	1.75
29	Hubbard	8.44	8.62	— .18
30	Isanti	5.29	4.39	.90
31	Itasca	6.84	8.61	—1.77
32	Jackson	2.38	2.43	— .05
33	Kanabec	9.42	7.43	1.99
34	Kandiyohi	2.84	5.13	—2.29
35	Kittson	2.81	4.15	—1.34
36	Koochiching	8.44	8.39	.05
37	Lac Que Parle	1.81	2.63	— .82
38	Lake	2.71	4.20	—1.49
39	Lake of the Woods	5.67	6.34	— .67
40	LeSueur	3.75	4.27	— .52
41	Lincoln	7.90	5.32	2.58
42	Lyon	3.65	3.96	— .31
43	Mahnomen	9.57	8.24	1.33
44	Marshall	4.55	5.50	— .95
45	Martin	2.23	2.35	— .12
46	McLeod	2.58	1.55	1.03
47	Meeker	2.47	3.97	—1.50
48	Mille Lacs	6.92	7.03	— .11
49	Morrison	8.63	7.12	1.51
50	Mower	2.99	3.13	— .14
51	Murray	3.42	4.21	— .79
52	Nicollet	2.72	1.88	.84
53	Nobles	2.74	3.67	— .93
54	Norman	2.84	3.01	— .17
55	Olmsted	2.95	1.58	1.37
56	Otter Tail	4.90	4.41	.49
57	Pennington	3.95	5.44	—1.49
58	Pine	11.41	8.00	3.41
59	Pipestone	4.04	3.37	.67
60	Polk	4.88	3.94	.94
61	Pope	4.58	4.11	.47
62	Ramsey	7.19	6.16	1.03
63	Red Lake	9.28	6.80	2.48
64	Redwood	1.80	3.39	—1.59
65	Renville	3.21	3.39	— .18
66	Rice	2.38	3.02	— .64
67	Rock	1.01	1.25	— .24
68	Roseau	3.46	5.24	—1.78
69	St. Louis	6.88	6.90	— .02
70	Scott	2.59	3.17	— .58
71	Sherburne	3.33	3.12	.21
72	Sibley	2.62	3.10	— .48
73	Stearns	2.36	3.56	—1.20
74	Steele	1.66	1.72	— .06
75	Stevens	3.15	3.19	— .04
76	Swift	4.16	4.93	— .77
77	Todd	6.56	7.24	— .68
78	Traverse	3.53	3.01	.52
79	Wabasha	5.33	3.46	1.87
80	Wadena	8.26	7.09	1.17
81	Waseca	2.23	2.14	.09
82	Washington	2.56	4.04	—1.48
83	Watonwan	3.39	2.90	.49
84	Wilkin	4.13	1.20	2.93
85	Winona	3.67	3.21	.46
86	Wright	3.61	5.24	—1.63
87	Yellow Medicine	2.27	3.28	—1.01

ing factors for each county: the proportion of the population below 125 percent of the poverty level; the unemployment rate; the percentage of minority groups in the population; the percentage that is rural nonfarm; the percentage that is rural farm; the welfare participation rate; the average per capita income; and whether the food stamp program has been in operation less than 1 year. The projected participation rates are based on the average relationship for all 87 counties between these characteristics and the rate of participation in the food stamp program. A positive difference indicates that the rate of participation in a county is higher than the normal participation rate for a county with those social and economic attributes. A negative difference arises if the projected rate is larger than the actual food stamp participation rate. A negative difference means that utilization of the program is below the average rate in Minnesota, based on the relevant socioeconomic factors for that county. In light of the statistical techniques employed, little meaning should be attached to small differences between the actual and projected rates in table 2. However, negative differences greater than 1 percent have interesting policy implications in terms of expanding food stamp participation.

The levels of food stamp program participation in April 1975 were more than 1 percentage point below the projected rates in these counties: Becker; Big Stone; Douglas; Fillmore; Itasca; Kittson; Lake; Meeker; Pennington; Redwood; Roseau; Stearns; Washington; Wright; and Yellow Medicine. The participation rates were more than 2 percentage points below the projected levels in Beltrami, Chippewa, and Kandiyohi Counties. The participation rate averaged only 3.5 percent in these 18 counties in April, whereas the average for all counties was 4.6 percent.¹ Usage of food stamps is

below the level that should exist, given each county's number of poor, unemployed, minority people, rural and farm people, welfare recipients, income level, and the length of time the program has been in operation.

Because the actual and the projected participation rates in table 2 are both a percentage of the county's population, the difference is also a percentage of the population. The absolute size of the divergence between the projected and actual participation level depends, therefore, on the size of the county's population. By multiplying the percentage difference by the county's population, the number of people represented by the gap between the actual and projected levels of participation can be derived. Even though the percentage difference is quite large, the gap may represent only a few hundred persons in a county having a small population. On the other hand, the gap may be quite large in terms of the number of people if the county's population is large, even if the percentage difference is low. Therefore, it is useful to consider the absolute number of persons represented by the differences for those counties where the actual rate is more than 1 percentage point below the projected: Becker (342); Beltrami (635); Big Stone (125); Chippewa (316); Douglas (365); Fillmore (286); Itasca (694); Kandiyohi (733); Kittson (94); Lake (191); Meeker (311); Pennington (231); Redwood (309); Roseau (235); Stearns (1219); Washington (1541); Wright (791); and Yellow Medicine (138). In addition, in Brown, Nobles, Rice, and Scott Counties, the differences are greater than 200 persons, respectively 213, 211, 285, and 231, when the percentage difference is applied to the county's population. This is even though the actual rate is less than 1 percentage point below the projected rate. All these figures are, of course, statistical approximations and should be treated as such, and not as precise numbers.

By court order, an outreach program now must be an integral part of every state's Food Stamp Program. The outreach program attempts to expand utilization of food stamps among those eligible. A county in which the participation rate is below normal—based on its socioeconomic characteristics—probably has a greater potential for expanding the number of food stamp recipients than does a county that is at or above its projected participation level. Counties in which the projected rates are above the actual participation rates indicate a gap in food stamp utilization which can be closed by simply bringing participation in line with the statewide average for a county having those characteristics.

On the other hand, the actual rates of participation are more than 1 percentage point above the projected levels in Benton, Blue Earth, Carlton, Cass, Chisago, Crow Wing, Grant, Hennepin, Houston, Kanabec, Mahnomon, McLeod, Morrison, Olmsted, Ramsey, Wabasha, and Wadena Counties. They are over 2 percentage points above in Lincoln, Pine, Red Lake, and Wilkin Counties. The participation rate averaged 6.9 percent in these 21 counties—2.3 percentage points above the average of 4.6. In Wilkin County, the relative difference—the difference divided by the actual rate—is some 71 percent. In other words, projected participation is 71 percent lower than is actual participation, but this figure represents only 252 persons because of the county's relatively small population. The counties with the biggest positive difference in terms of absolute numbers are, of course, Hennepin and Ramsey as well as other major urban counties. This is because the percentage difference is applied to a large population base. These counties might be examined in greater detail to determine if there are any identifiable reasons in terms of a county's program management or population characteristics that explain why the program is functioning above the expected level. These figures do not mean participation is higher than it should be in these counties, or that ineligibles are participating. In every county, the participation rate is well below the level that could be attained if all those eligible participated.

Large differences between the actual and projected rates might be

¹The participation rate for the state was 4.9 percent. However, the average rate derived from participation rates in the 87 counties is only 4.6 percent. The two figures would be the same if, in computing the average, each county were weighted by the proportion of the

state's population that it contains. If, in obtaining the statistical results, counties could be weighted by their population size, more counties, primarily rural, would have actual levels of participation below the projected levels.

attributed to some factor influencing participation in that county other than the eight characteristics accounted for in this analysis. In addition, the April 1975 participation level may be atypical for a county for some reason. If the April level of food stamp utilization was unusually high or low in a county, data in table 2 will represent a distortion of that county's normal pattern.⁵ It is also possible that the

⁵By August, 1975, the number of food stamp recipients in Minnesota had dropped to 185,886. Participation fell by 1,318 in St. Louis County and by 1,190 in Crow Wing County and had also declined substantially in Carlton, Cass, Itasca, Kanabec, Koochiching, Mille Lacs, Morrison, and Pine Counties. There would seem to be a seasonal factor influencing participation in the counties in the northeastern part of the state. On the other hand, participation increased by over 1,000 people in both Hennepin and Ramsey Counties.

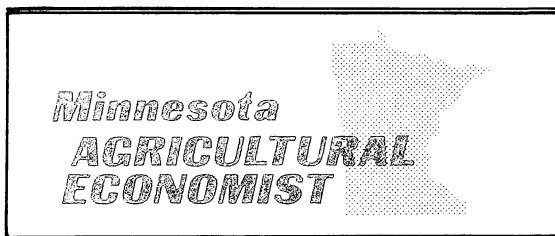
values for the factors used in this study do not accurately describe the county's socioeconomic attributes, since they are only estimates and several of the estimates were derived in 1970, the year of the most recent U.S. Census.

Remember, a small change in the absolute number of participants has a much greater effect on the participation rate in a county having a small population than on a county with a large population. If the number of participants in Rock County increased by 100 from 122 to 222, the participation rate would increase to 1.8 percent—a change of 80 percent. If the number of participants increased by 100 in Hennepin County, the effect would be so small that the participation rate would still be 5.6 percent. An increase of 41,212 persons utilizing food stamps would be necessary to increase the participation rate by 80 percent in Hennepin County. Sparcely populated rural counties can significantly raise their participation rates by attracting fairly small numbers of additional eligibles to utilize the program.

Conclusions

These results can help predict future changes in Food Stamp Program participation in Minnesota and be a guideline for evaluating county participation rates. The primary economic factors affecting food stamp utilization—such as the unemployment level, welfare recipients, the number below the poverty level, and per capita income—are highly correlated with the general state of the economy. As economic conditions improve and the economy returns to low unemployment and sustained real growth, the number of food stamp recipients should decline.

Counties in which the actual participation rate is lower than the rate projected on the basis of their socioeconomic characteristics may want to scrutinize their programs for factors having an adverse effect on food stamp participation. The state may want to examine more closely those counties where the participation rate is substantially higher than expected in an attempt to further identify factors enhancing program participation.



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