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ABSTRACT

Families cope with economic and social changes by (consciously or unconsciously) choosing behaviors that make up an overall economic "survival strategy." Hypothesized elements of the household survival strategy are formal and informal work, use of household resources, and use of community services. Government policies on rural and community economic development have largely overlooked family decision making. To inform policy, a telephone survey of 1,611 families in 52 nonmetropolitan Wisconsin counties examined household characteristics as predictors of use of community services and assistance. Household characteristics included nature of household (structure, size, presence of children, income, shared housing); employment variables; educational attainment and continuing education; economic options if unemployed; and other socioeconomic characteristics. Services and assistance included public health services; child care; community assistance with costs; welfare and other supplemental income; and housing assistance. The results indicate that households do a remarkable job of piecing together community services as part of their survival strategy, and that some community services play a critical role for younger, less economically secure households. Analysis suggests that the tendency to treat community development, social development, and economic development as separate policy spheres increases the risk of adverse or unintended consequences. Contains 48 references and 11 data tables and figures. (SV)

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Staff Paper 97.4

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Survey responses from 1611 nonmetropolitan Wisconsin households are used to estimate individuals use of community services. It is argued that households balance formal and informal work, household resources, and community services in their efforts to survive. This analysis looks at the use of community services. It finds that households do a remarkable job of piecing together community services to fulfill that portion of their survival strategies. The implications of this study are that some community services do play a critical role for younger, less economically secure households and that rural households are similar to urban households. In particular, the study re-enforces the need to treat community development, social development, and economic development as part of a whole.

The Use of Community Services by Rural Families in Wisconsin

The changing United States economy impacts the welfare of rural families and alters policy choices [Deavers & Hoppe, 1991, 1992; Galston & Baehler, 1995; Lobao, 1990; Reich, 1988]. For example, the rising proportion of low-wage job opportunities, general wage inequality, the shrinking middle class, and the increasing number of children in poverty affect family employment choices and have major implications for welfare reform [Nightingale & Haveman, 1995; Reich, 1988]. While these changes affect both urban and rural areas, rural families face unique problems and limited options making rural policy choices particularly important [Bokemeier & Garkovich, 1991; Deavers & Hoppe, 1991, 1992; Galston & Beahler, 1995; Lobao, 1990].

The shifting nature of rural communities, and their changing role in the national economy, increases the importance of examining the economic and social well-being of rural families. In the 1970's and 1980's, research on rural communities and rural policy centered on farm families and their struggle with declining farm incomes. However, most rural residents are members of nonfarm families and in the late 1980's researchers recognized that the growing proportion of rural families depending on wage and salary incomes were also experiencing economic distress. In the past decade, nonfarm families have had to manage declining real earnings, rising unemployment and an increasing number of low paying jobs [Kassel & Gibbs, 1996; Kusmin & Gibbs, 1996].

Many factors contribute to the declining economic security of rural people. Economists point to increased involuntary part-time employment, loss of real wages and fringe benefits, and shifts in occupations caused by changing technology and international competition. Tickamyer and Duncan [1991] and Bluestone and Harrison [1988] attribute much of the increase in low-wage jobs to a rise in service employment. However, Gorham [1992] hypothesizes that it results from the decay of union power, the disintegration of the standard minimum wage and the internal restructuring of wage systems. Regardless, researchers agree that recent changes in rural employment have reduced living standards for the average rural resident.

Families cope with these economic and social changes by making decisions (consciously or not) on a broad spectrum of resource allocation issues, such as, adjusting expenditures, selling assets, migration, family size, education, housing, informal economic activities, reliance on family support networks and the allocation of members' time to paid work and unpaid work.

Many families select a combination of coping behaviors to make up an overall economic "survival strategy" [Moen and Wethington, 1992]. In a general sense, the hypothesized elements of the household survival strategy are:

- alter level of involvement in formal economic activities by one or more household members(such as participation in the labor force);
- alter level of informal economic activity to increase income or reduce expenditures(such as the exchange of goods and services for cash or by barter); and
- alter the use of community services (such as local day-care provision, food pantries, job-training programs, transportation services, and financial support).

For example, rural families are resorting to a number of creative alternatives or supplements to formal wage labor as part of their overall survival strategy [Allen, 1991; Duncan, 1992; Fitchen, 1992, Lyson & Falk, 1993].

Hence, the formulation of appropriate rural policy, and development of relevant community services for rural families, depend on greater understanding of the choices available to families and how they build and modify a survival strategy.

Government policy has largely overlooked family decision-making. Policy makers have centered community development policy on job creation and education/training. Research has shown that these approaches have merit. However, reviews are mixed regarding their overall application to rural community economic development and their success in terms of raising rural living standards [Summers et al, 1976].

Family Decision Making

How families perceive and respond to change is by no means simple. Figure 1 describes a three-stage process where family members incorporate information and resources from within and outside the family and prepare to adopt a single coping behavior. In Stages II and III, the family chooses from a set of options they perceive available which alters the family's well-being. In reality, the process is less linear and more simultaneous or circular and the choice of one coping behavior may influence the choice of other options.

Moen and Wethington [1992] outline three models that also conceptualize the development of family survival strategies - structuralist, rational choice, and life course.

The **structuralist model** presents family behaviors as constrained, and to some extent determined, by external factors. For example, structuralists explain family fertility behaviors as

responses to economic crises, such as the Great Depression, and economic boom times, such as the post-World War II period. Recently, structuralists have examined family adaptive strategies as a response to massive economic restructuring and dislocation in the 1980's.[2]

The structural model assumes that families can partly control their immediate economic activities, and the complexity of family structure, household composition, and relationships among family members affect the process. Moen and Wethington [1992] argue that

> *"...social structural forces have impact not only on the adaptations that are possible, but also on which families--and which individuals within families--receive the most benefit from a given strategy."*

They feel that four social structural systems influence economic opportunities - social status, educational stratification, gender relationships, and age/generational hierarchy.

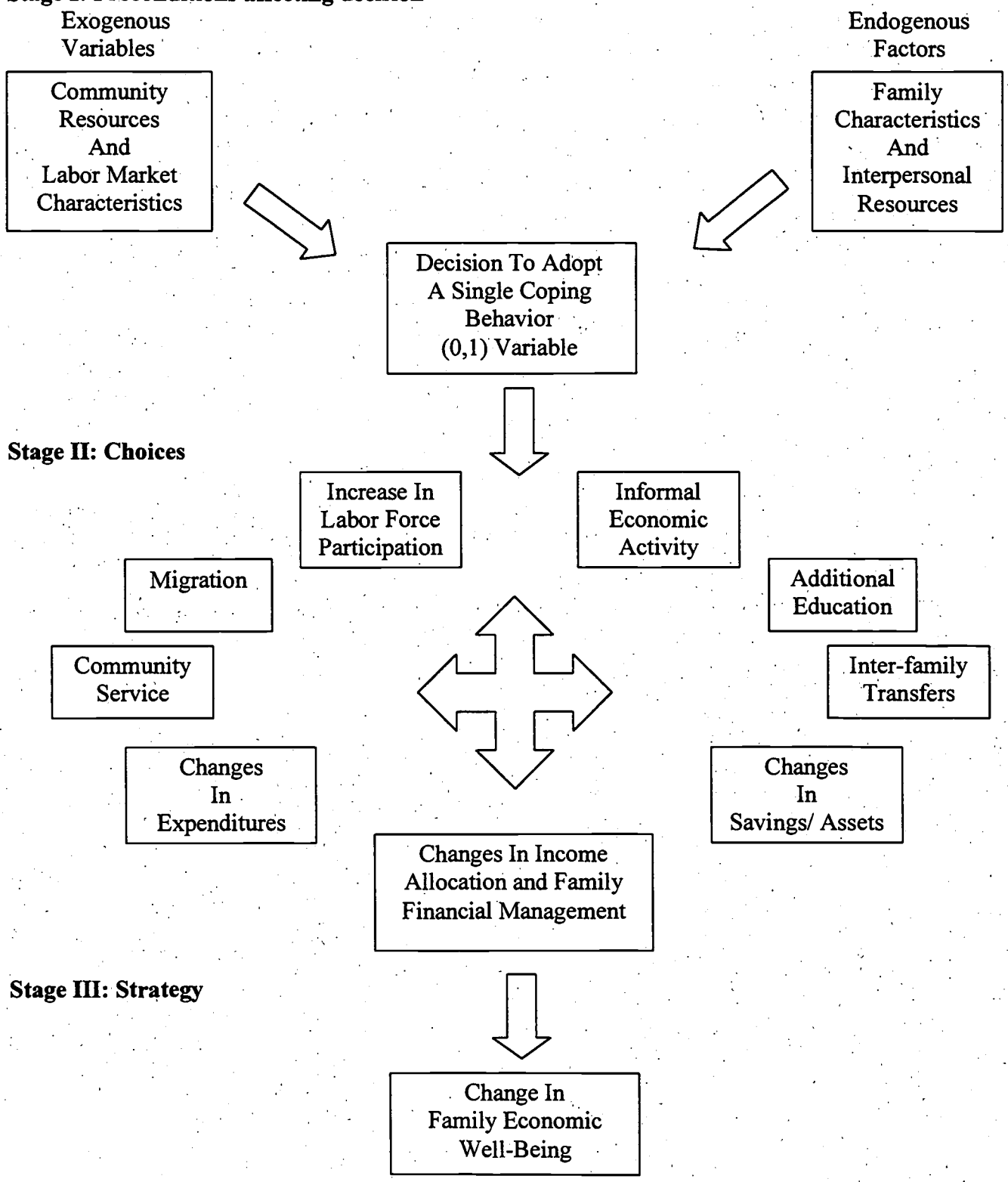
The **rational choice position** forms the basis of the New Home Economics (NHE) model. This model assumes householders make a rational choice to allocate resources to maximize the joint utility (satisfaction) of the household subject to constraints on time, income, and the production of home goods [Becker, 1965]. This approach ignores individualism and lumps each family member's preferences into a collective decision unit. New Home Economists assume either perfect "altruism," where household members subordinate their individual preferences for the good of common household goals, or the existence of a benevolent dictator who acts unilaterally in everyone's best interests [Katz, 1992].

Intra-Household Bargaining theorists improve on the NHE model by recognizing that each member of a household has individual preferences and that household decisions are made Through negotiation based on the relative bargaining power of each member [Bourguignon & Chiappori, 1992; Horney & McElroy, 1981; Manser & Brown, 1980; Thomas, 1990]. This bargaining power is determined by each individual's potential satisfaction if he or she were to leave the household.

"Life course" models combine aspects of structural and rational choice theories. They place family and individual strategies in a broad context of shifting opportunities and constraints over time. Social, institutional, and economic transformations change family resources and needs (or aspirations). They also prompt families to adopt patterns of behavior designed to reconcile needs and resources [Moen & Wethington, 1992]. These models realize the strength of the concept of family adaptive strategies by bridging the gap between social structures, social change, and individual lives. Family adaptive strategies are not just dependent variables to be explained by external forces and family interests, but independent and intervening variables in models of how family strategies facilitate or hinder changes.

[2] See Clay and Schwarzweller (1991) for studies on rural areas, and Voydanoff (1990) for a review of research primarily with an urban focus.

Figure 1
Schematic of Proposed Community and Family Interaction



Regardless of how these models conceptualize family decision-making processes, they all emphasize that survival strategies are formed through interactions of individuals, families, and communities (Figure 2). Families and individuals are not atomistic units, but involved in a complex web of interactions. As Unger and Sussman [1990, p.1] argue;

> *"Understanding the life situations of families, identifying their problems, and developing new solutions require an ecological framework that recognizes that families are embedded in a matrix of relationships within community and larger social systems."*

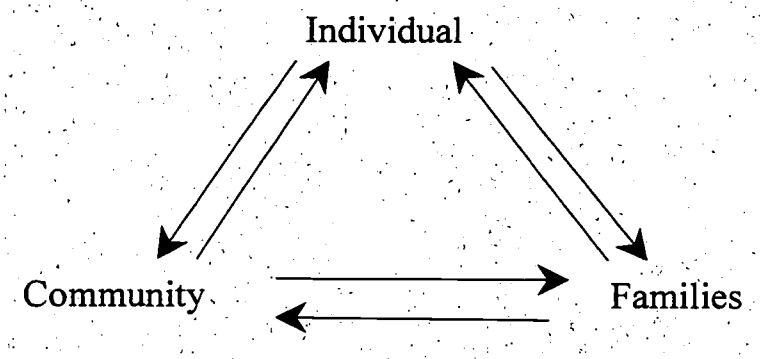
Households represent a resource-pooling unit where the actions of individuals affect other member's decisions. Individuals work together to ensure the survival of the family unit [Tickamyer, et al., 1993].

Various approaches focus on the individual, family, and community aspects shown in Figure 2. Traditional human capital models focus on the characteristics of the individual in determining the rate of labor force participation. An individual's willingness to participate in the labor force is largely determined by the market wage available to that particular individual. The individual's personal characteristics and qualifications play a major role in determining the level of the wage offered. These personal characteristics and qualifications are most often measured by observable attributes such as education level, years of work experience, age, special skills, and more recently, sex and race [Bryant, 1990].

Other conventional economic approaches have ignored family and community dimensions of an individual's decision to enter or increase participation in the labor force. Studies have addressed the relationship of childcare costs or marital separation and women's labor force participation [Johnson & Skinner, 1986; Mason & Kuhlthau, 1992]. However, most research of the labor force participation decisions of both men and women generally focuses on the effect of public assistance and various demographic characteristics such as gender, race, education, fertility, and previous work experience.

Figure 2

Interactions involved in the development of family survival strategies.



Community Resources and Family Strategies

Other work focuses on the interaction between family and community resources in determining survival strategies. In one of the few studies to address the community dimension of family decision making, Allen [1991] examines how family income generation decisions influence community structure and cohesion.

There is a weight of research that addresses the converse relationship – the impact of community resources on family decisions. In the late 1980's, social scientists began to study anew the relationships between economic distress from economic restructuring and family outcomes. The topic gained credence and was covered in the Journal of Marriage and Family decade review for the first time in 1990. In her review, Voydanoff [1990] discussed the relevance of studying families as economic units and the ways in which families experience economic distress.

Sociologists and anthropologists have long understood the importance of community in shaping the decision-making processes of its residents. Duncan and Lamborghini [1994] point out that communities provide an environment for the shaping of aspirations and expectations of escaping or avoiding poverty. The authors assert that individuals' opportunities to overcome obstacles and change their lives depend greatly on the tool kits they develop and the resources offered by the community. They feel that "culture [is] a tool kit from which individuals draw to solve problems they encounter" [p. 439].

Studies have focused on the social aspects of community effects on family choices and prospects, such as positive role models and attitudes about the future. Duncan and Lamborghini [1994] argue that rural communities suffer from the 'resource side of isolation' entailing a lack of sufficient job opportunities, fewer contacts for obtaining jobs, and less money and influence over public goods. They also emphasize the 'social side of isolation' involving the lack of sufficient numbers of positive role models and the existence of destructive peer influences which may suppress attitudes of local residents toward the future.

A growing number of studies recognize the value of community social capital in shaping family economic choices. Duncan and Lamborghini [1994] define social capital as the "features of social organization, such as networks, norms, and trust that facilitate coordination and cooperation for mutual benefit" [p. 438]. This broad definition easily accommodates the myriad community institutions that provide services to local residents such as local service clubs, food pantries, church donations, and volunteer job counseling and training programs.

Community factors affect many of the choices individuals make or even consider. There is some research that discusses community and neighborhood influences on the perceived quality of life and on the levels of involvement in community development activities. O'Brien, et al., [1989] demonstrate how social support systems affect individuals' perceptions of their life satisfaction derived from their urban neighborhood. Warren [1981, p. 61] notes that differences in social support services among neighborhoods are particularly crucial when differences among individuals' abilities to establish other supporting links among geographically dispersed sources

are considered. This is a phenomenon particularly relevant to rural families. Sorter [1987] finds access to selected social services is affected not only by physical distance, but also by such behavioral dimensions as supportive relationships, peer group relationships, and social relationships. Abrahams [1992] also notes the importance of such community factors as social structure, economic structure, political structure, and service capacity in judging the impact of a social development model of community development.

Finally, community resources are intimately connected to family and economic life. A good example of the interplay of informal activities, family networks, gender roles, and community resources can be found in Levitan and Feldman's [1991] study of the inter-household informal economic exchanges in a rural community in New York. This research documents the types and prevalence of nonmonetary exchange and the relationship of these behaviors to household structure and the rurality of the community context.

Levitan and Feldman show that families engage in nonmonetary exchange for a variety of reasons, including social ones, such as neighborliness. They note that rural areas are more conducive than urban areas to certain types of nonmonetary exchange activities, especially those that utilize natural resources. Spatial considerations also play a role; a sparsely distributed population can make the provision of community or market services difficult or unprofitable. In these cases, inter-household exchanges from social networks may serve as a lifeline to ensure well-being. This has implications for rural development policy in that the cumulative and thus community-wide value of informal arrangements needs to be taken into account; those without access to these networks and their services are especially vulnerable [Levitan & Feldman, 1991, p. 168]. They conclude that:

> *"Nonmarket activities of the informal sector may be sufficient to de-couple the ranking of the quality of life in a community from a positioning based upon formal sector income and employment data. Support generated within social networks may be the catalyst which provides the time, economic relief or social nourishment that enables the household to function."*

Complexity

It's clear that the economic well-being of families results from a complex process of utilizing community and interpersonal resources, allocating family labor to formal and informal economic activities, and making key decisions about a variety of conditions from education, to living arrangements, to financial management. Individuals make decisions, such as labor force participation, within the context of family needs and capabilities and a complex web of community opportunities and constraints.

Policy approaches are shifting from interpreting economic choices as simple individual decisions to more complex considerations of family needs and considerations. Questions that we now realize are important include: How many children are in the family? What are the ages of these children? How many working individuals are in the family? What is the overall family income? In other words, students of the labor force behavior are now paying closer attention to the

characteristics of the individual's other family members. What makes families choose their particular family work pattern, the mixture of formal and informal work among its members?

To help develop better policy approaches from this complexity, our study aimed to assess and quantify the relative impact of different family characteristics (such as income, employment status, number and age of children) on the use of community services by families (such as health care services, transportation services, childcare, public assistance). The fundamental hypothesis is that particular household characteristics influence the level of use of particular community services to different degrees.

The Model

The model can be represented in the following fashion (see also Table 1):

Y = f (HH, ECON, EMPL, ECOPT, PUB)

Where

Y = use/non-use of selected community services
HH = household characteristics including age, size, children, housing;
ECON = income, financial needs, ...
EMPL = work status, experience, ...
ECOPT = perceived economic options if lost main income
PUB = use of other forms of public assistance

The following section describes the survey used to collect data to test this model.

The Sample

Between November 1995 and April 1996, the University of Wisconsin Letters & Sciences Survey Center (LSSC) conducted a 30-minute telephone survey.[3] The survey was a random sample of households[4] in telephone exchange areas characterized as Nonmetropolitan. Our target was to contact rural (nonfarm and farm) families and collect information from them regarding what they were doing to support themselves, i.e., survival strategies.

There were 1611 completed and useable surveys representing a completion rate of 55.9% from the households contacted in 52 nonmetro counties. The LSSC contacted the same household repeatedly (up to 20 times) until a completed interview or refusal occurred. We solicited

[3] The Letters and Science Survey Center, University of Wisconsin-Madison conducts research projects for university administration, faculty, staff, and service departments. The Center has conducted a wide variety of survey research projects mostly utilizing Computer Assisted Telephone Interviewing (CATI) applications.

[4] Households rather than families were sampled. While the initial contact to a residential phone number was random, households were screened to determine if they fit our sample criteria.

information from households that were in rural areas, were not adult sibling or roommate households, and were not male single head of household.[5]

The survey instrument elicited information from the respondent on household composition, formal wage work, self-employment, informal economic activities, networks, and community social services used. Each respondent was asked the same questions (except for skip patterns) from a survey instrument. Questions required a yes/no response (e.g., employed or not), a choice from a series of options, or an open answer soliciting specific information (e.g., number of persons in a household).

The survey instrument was built from our review of the literature (conceptual and empirical) and from focus group interviews conducted in January to March of 1995 [Tigges, et al, 1995]. The survey instrument was pre-tested in interviews with 25 respondents chosen at random from the target population. Several questions were modified to improve phrasing, and to ensure that they required mutually exclusive responses. [6]

Statistical Analysis

The study examined only the use of selected community services. Figure 3 shows the hypothesized household characteristics expected to influence the use of different forms of assistance by households.[7]

The independent variables used to measure each household characteristic in Figure 3 were based on prior empirical and conceptual work reviewed earlier. The survey elicited data on a respondent's use of numerous community services, and their involvement in both formal and informal economic activities. The large array of proxy measures of the relationship among household characteristics and the use of community service in the service was reduced to a manageable number.

The 'full' empirical model for each dependent variable – the use of different forms of assistance is displayed in Table 1. This reflects an initial effort to uncover statistically significant relationships within this sample, although causal relationships were not identified. The full range of possibilities came from the literature, but the response to many specific questions were insufficient to justify further analysis, and several of the questions gave insight to similar phenomena. Thus the 'winnowing' to improve testing efficiency.

The winnowing process was Cramer's V statistic, a modified chi-square statistic which measures the interaction between variables on a scale of 0 to 1 [Everitt, 1977; Feinberg,1977]. A threshold of significance ($p < 0.05$) was used to select those interactions between variables to be included.

[5] It was anticipated that this category would be so small that serious analysis would not be meaningful. So attention was directed to household types more prevalent.

[6] A copy of the survey instrument is available, upon request, from the NRI principle investigators.

[7] Assistance, public assistance, community services, and services are used interchangeably through out this report.

Figure 3

Household Characteristics Used to Predict the Use of Assistance by Households

HOUSEHOLD CHARACTERISTICS

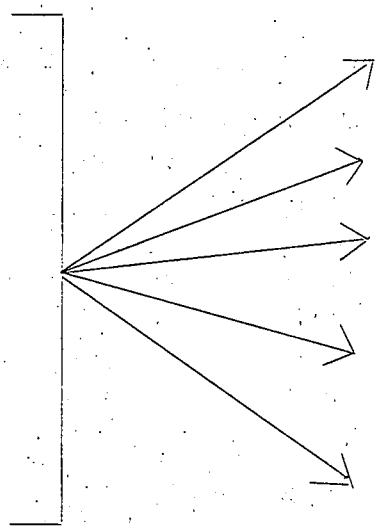
Nature of Household

Employment

Education

Economic Options

Other Socio-Economic Characteristics



USE OF ASSISTANCE

Assistance with Costs

Housing Assistance

Public Health Services

Supplemental Income

Childcare

Table 1
Empirical Model for the Households use of Community Assistance

Hypothesized independent variables	Hypothesized use of assistance	Cramer's V interaction*
Nature of household		
Household type	- or +	a b c d
Household size	+	c d
Children in household	+	a c d
Household income	-	a b c d
Shared housing with others	+	a b c d
Employment		
At least one adult employed	-	a b c d
Type of employment (self vs other)	- or +	c
Years of employment	-	a b c d
Job shift (night, day)	- or +	
Job works same shift	- or +	a c d
Job location (home or other)	-	a b c d
Works for insurance	+	a
Education		
Educational attainment	-	a b
Acted to improve education	-	
Economic options if lost main income (e.g. *borrow money, live off savings)*	- or +	a b
Public Assistance		
Use supplemental income	- or +	a c d
Use housing assistance	- or +	b c d
Use public health services	- or +	a b c
Use assistance with cost	- or +	a b d
Other Socio-economic Characteristics		
Age of respondent	- or +	a b c d
Feel financial needs are not met	+	a b c d
Home owned	-	a b c d
Use public transport	+	a b c d
Have insurance	-	a b c d

* Indicates a Cramer's V of at least 0.1 (range 0-1) for interaction with each of the variables -- use of housing assistance (a), supplemental income (b), assistance with costs (c), and the use of public health services (d).

Community Service Measures:[8]

Five types of community services – public health services, childcare, community assistance with household costs, supplemental income, and housing assistance – were explored in greater detail. The use/non-use of these becomes the dependent variables in the following regression analysis, and all were dichotomous, i.e., either used or not used.

Whether through lack of availability of a specific community service or sample bias (see weighing), the frequency of use of the numerous specific community services proved insufficient for detailed statistical analysis. However, the detailed information requested represents components of more generalized community services. The composite community service does have sufficient observations for further analysis (Table 2). For each generalized community service, the use of at least one of the component forms of community assistance was deemed to be use of that community service. For example, use of Aid to Families with Dependent Children (AFDC) only and use of both AFDC and food stamps, were coded as the use of the supplemental income community service. A type of community assistance was deemed to not be used if none of the component forms of community assistance were used. The use of childcare was a single uncombined variable analyzed only for households with children under 13 years of age.

Hypothesized Influences on the Use of Community Assistance: Table 1 contains the hypothesized forces and the nature of the influence. These are the independent variables in the regression analysis. These influences were described by three forms of data. First, variables, such as household income were measured directly. Second, variables measured by dichotomous yes/no data (e.g. respondent was employed or not) were coded as 0 or 1. Third, variables with more than two classes of nominal data, such as options if the household lost its main income, were coded as categorical dummy variables.

Weighing. Based on income, the sample gained from the telephone survey was not representative of households in nonmetropolitan counties in Wisconsin [U.S. Bureau of the Census, 1990]. Income for nonmetropolitan households in the state was calculated by adjusting 1990 census data to 1996 dollars using a CPI increase of 13.9% since 1990 [U.S. Department of Labor, (1990-1996)]. The survey sample included a disproportionately high number of households earning greater than median income, and low-income households were underrepresented (Figure 4).

Because use of public community assistance was likely to be strongly influenced by income, the sample was adjusted to approximate the distribution of household income for nonmetropolitan counties. This was done by weighing the data based on the proportion of households in the sample and in nonmetropolitan counties for each household income category.

[8] The terms community services, community assistance, public assistance, assistance will be used interchangeably.

Table 2
Community Services

Combined Variable	Households Using at Least One Form of Assistance	Component Forms of Community Assistance	Households Using Each Form of Assistance
Public health	351	Free immunization	197
		Low cost clinics	31
		In-home nursing	9
		Healthy Start	112
		Other public health service	65
Assistance with costs	191	Help with food	118
		Help with clothing	73
		Help with paying bills	67
Supplemental income	570	Social security or SSI*	197
		Unemployment compensation	255
		Workers compensation	78
		AFDC**	78
		Food Stamps or WIC***	186
		General assistance	3
Housing assistance	177	Heating or cooling assistance	116
		Public housing	68

*SSI – Supplemental Security Income
**AFDC – Aid to Families with Dependent Children
***WIC – Women, Infants, and Children

Figure 3
Differences in Sample and Nonmetro Income Distributions

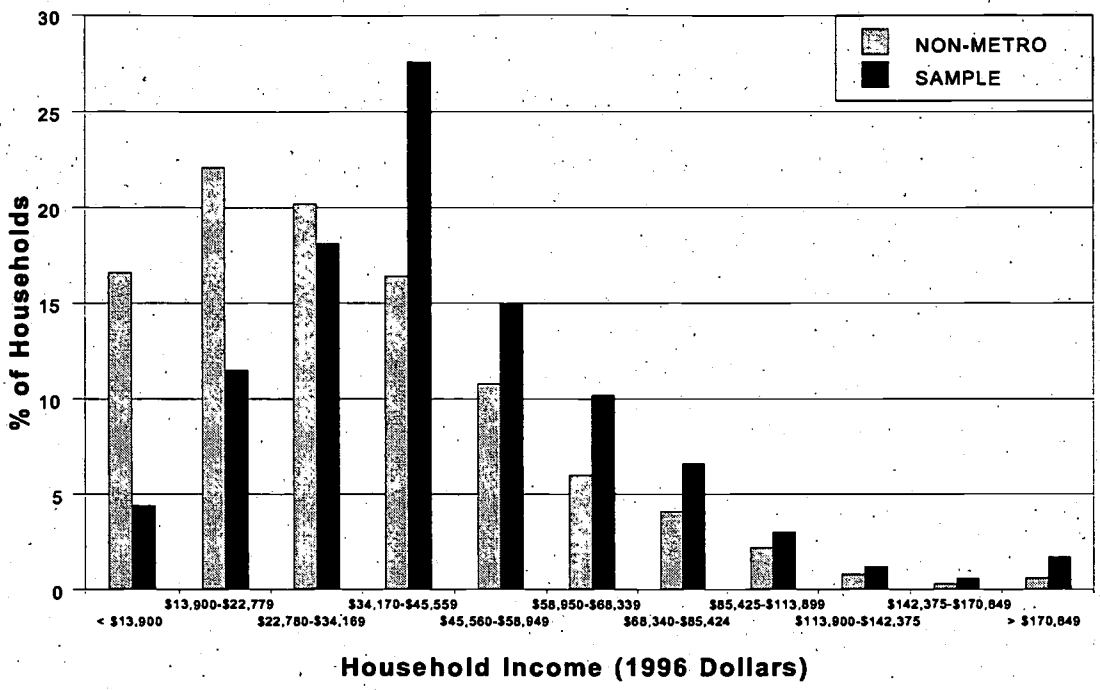


Table 3

The weighting factors to adjust the income distribution of the sample to that of households in nonmetropolitan counties in Wisconsin

Household Income (1996 dollars)	Nonmetro Households %	Sample Households %	Weighting factor
< $13,900	16.6	4.4	3.773
$13,900 - $22,779	22.1	11.5	1.922
$22,780 - $34,169	20.2	18.1	1.116
$34,170 - $45,559	16.4	27.6	0.594
$45,560 - $56,949	10.8	15.0	0.720
$56,950 - $68,339	6.0	10.2	0.588
$68,340 - $85,424	4.1	66	0.621
$85,425 - $113,899	2.2	3.0	0.733
$113,900 - $142,374	0.8	1.2	0.667
$142,375 - $170,849	0.3	0.6	0.500
> $170,849	0.6	1.7	0.353

For each income bracket in Figure 4, the percentage of households in nonmetropolitan counties was divided by the percentage of households in the sample. This gave a weight by which the number of households in each income bracket in the sample was multiplied (Table 3). This meant that data from a low-income household in the sample was included in data analysis more frequently, and data from a high income household was included less frequently.

Logistic Regression

Data were analyzed using logistic regression. Logistic regression was chosen because the dependent variables were dichotomous, i.e., people either did or did not use supplemental income. Furthermore, the aim was to use household characteristics to predict whether forms of community assistance would be used or not. This suits logistic regression where independent variables are used to estimate the probability of an event occurring (in this case, the use of community assistance) [Hosmer & Lemeshow, 1989].

Other statistical techniques did not suit the data or the objectives of the study as well as logistic regression. Discriminant analysis allows prediction of group membership with a dichotomous dependent variable. Predicting the classification of the population into groups that did or did not use forms of assistance would be a way of inferring the influence of household characteristics on the use of community assistance. However, for the predicted classification to be optimal, Discriminant analysis assumes that independent variables are distributed normally, and that the variance-covariance matrices of the two groups are equal [Klecka, 1980; Lachenbruch, 1975]. Neither of these represented the current data set. Logistic regression requires far fewer assumptions [Hosmer & Lemeshow, 1989; Rao, 1973].

Multiple least squares regression is not appropriate because a dichotomous dependent variable violates the assumptions for hypothesis testing. For example, errors cannot be normally distributed.

Factor analysis would have allowed the large number of independent variables to be condensed into several factors that would explain most of the variation in the dependent variable. However, at least interval data is required for factor analysis to explain variation accurately [Kim & Mueller, 1978; Rummel, 1970]. The dichotomous nature of the dependent variables (and many of the independent variables) limited the variation of the data for any analytical technique chosen, but factor analysis suffered most from this limited variation.

Interpreting Logistic Regression. In multiple least squares regression, the coefficient of each independent variable measures the extent of change in the dependent variable for every unit change in that independent variable, holding all others constant. Logistic regression is similar but uses a logarithmic function.

$$\text{Odds} = \frac{\text{Probability (event)}}{\text{Probability (no event)}} = e^{B_0 + B_1X_1 + \ldots + B_nX_n}$$

The coefficient B_i is the change in the log odds of an event occurring that results from a one unit increase in the *i*th independent variable, holding all others constant. Hence, *e* raised to the exponent B_i, (described as (exp)B) is the factor by which the odds change when the *i*th independent variable increases by one unit, holding all other variables constant.

If the coefficient B_i is positive, the probability of the dependent event occurring increases. In this case, a one-unit increase in the *i*th independent variable increases the odds of households using community assistance. If the coefficient B_i is negative, the probability of the dependent event occurring decreases with an increase in the respective independent variable.

For example, in Table 4 with regard to the use of childcare, a categorical ("0 or 1") independent variable describing whether households are covered by insurance or not has a coefficient of 1.613 and an exp (B) of 5.020. This means that a household with insurance has 5.02 times the odds of using childcare than a household without insurance. In the same table, the variable describing the age of a respondent has a coefficient of -0.191 and an exp (B) of 0.826. Hence, for every additional year of age, a respondent's odds of using childcare are multiplied by 0.826 thus is decreased.

Goodness of Fit. Comparing the predicted use (or non-use) of forms of assistance by households, with their actual use (or non-use), provides a measure of the goodness of fit of the logistic regression model. Classification tables were used to determine the percentage of households that were correctly predicted to use and not to use different forms of community assistance. The accuracy of predicting both the use, and non-use, of community assistance provided a dual measure of the goodness of fit of the model. A robust model should be able to predict both accurately. The prediction of the use of community assistance was always less accurate than the prediction of non-use, despite income weighing, because there were far fewer cases of use than non-use. The overall prediction accuracy of the equations varied from 74.0% (supplemental income) to 90.5% (housing assistance). The prediction of the use of community assistance varied from 32.0% (use of housing assistance) to 51.8% (use of supplemental income). The prediction of non-use varied from 87.3% (supplemental income) to 98.0% (housing assistance).

Childcare

The use of childcare by households with a child under 13 was influenced by a combination of household structure and economic factors (Table 4). Household structure affected household arrangements for caring for children. As household size increased, households were less likely to use childcare - presumably because older children could care for younger siblings, or one of the parents remained home. Households with older respondents (probably with older children) were less likely to use childcare than households where respondents were younger.

Economically secure households tended to use childcare. Better-educated, higher income people with longer employment histories, and who would borrow money in a crisis were considerably more likely to use childcare. These proxy situations where both partners were employed, in better than minimum-wage jobs. Hence, apart from household structure, the economic ability to pay for childcare was a second major determinant of its use by households. Supporting evidence

was single parenthood. Single mothers were 4.2 times more likely than couples with children to use childcare, holding others variables constant. The economic factors associated with the use of childcare suggest that many single mothers chose to remain employed in relatively high quality jobs. The results challenge the image of a low-income, poorly skilled, single mother using childcare to attend a low-paying job.

The use of childcare was not significantly ($p<0.10$) associated with use of community assistance. This is not surprising since community assistance, particularly supplemental income, allows unemployed adults to remain with children.

One unusual result was the influence of insurance. Households covered by any form of insurance (e.g. health, home, life) were over five times more likely to use childcare than households without insurance. This may reflect the use of childcare by more affluent households since lower income households are more likely to be unprotected or self-insured.

Table 4
Use of Childcare by Households with Children <13. (n = 651)

Variable	Coefficient	S.E.	exp (B)
STATISTICALLY SIGNIFICANT (p<0.10)			
Covered by any form of insurance	1.613	0.377	5.020
Single mothers with children < 18 compared to couples with children < 18	1.453	0.554	4.275
If lost main income: Borrow money compared to living off savings	0.381	0.167	1.464
College degree compared to high school diploma or less	0.361	0.179	1.435
Household income ($/10000)	0.100	0.045	1.106
Respondent years of employment	0.084	0.029	1.088
Age of respondent (years)	-0.191	0.032	0.826
Household size (persons)	-0.323	0.106	0.724
Constant	4.062	1.121	
NOT STATISTICALLY SIGNIFICANT			
Household Characteristics			
Other household types compared to couples living alone	-1.071	1.052	0.343
Shared housing with others	0.171	0.252	1.186
Employment			
At least one adult in the household is employed	-0.210	0.590	0.811
At least one adult in the household is self employed	-0.208	0.386	0.812
At least one adult in the household works at home	-0.736	0.395	0.479
Works for insurance	0.148	0.265	1.159
Education			
Vocat .degree/college experience compared to high school diploma or less	-0.042	0.152	0.959
At least one adult in the household continued education in last ten years	-0.266	0.207	0.766
Economic Options			
If lost main income: Sell assets compared to living off savings	-0.099	0.180	0.906
If lost main income: Use govt. assistance compared to living off savings	-0.114	0.222	0.893
Public Assistance			
Use at least one form of supplemental income	0.071	0.236	1.074
Use at least one form of assistance with costs	-0.286	0.315	0.751
Use at least one form of public health service	0.379	0.224	1.461
Use at least one form of housing assistance	-0.230	0.336	0.795
Other Socio-economic Characteristics			
Used public transport	0.126	0.249	1.134
Home owned	0.358	0.261	1.430
Feel household financial needs are not met	0.348	0.268	1.416

Fit of Model	n	% of cases
Correctly predicted non-use of childcare	429	88.2
Correctly predicted use of childcare	228	57.6
Overall prediction accuracy		77.6

Supplemental Income

The use of supplemental income was determined almost solely by economic status (Table 5). If a household was already using other types of community assistance, or felt that their financial needs were not met, or considered government assistance as the first option if they lost their main income, they were considerably more likely to use at least one form of supplemental income assistance. There was also the greatest interaction among community services and the use of supplemental income.

Conversely, greater economic status reduced the likelihood of a household using supplemental income. If at least one adult in the household was employed, a respondent had a college education vs high school or less, or was self employed (as opposed to working for someone else), the household was considerably less likely to receive supplemental income (the odds were multiplied by 0.061, 0.659, 0.579 respectively). Every $10,000 increase in income and each additional year of employment also reduced the odds of a households use of supplemental income (exp (B) = 0.855 and 0.976 respectively).

Public Health Services

Both household structure and economic status (Table 6) influenced the use of public health services. The presence of children made households most likely to use at least one public health service (exp (B) 3.064). Couples with children under 18 years were over 1.5 times as likely to use public health services than couples without children at home.

The use of other types of community assistance - community assistance with costs and supplemental income - increased the odds of the use of public health services by 2.345 and 1.768 times compared to households that did not use these forms of community assistance.

Conversely, households with higher economic status made less use of public health services. Having at least one adult employed, or having a vocational degree or college experience compared to a high school diploma or less reduced the odds most (exp (B) = 0.353 and 0.723 respectively). Each $10,000 increase in income reduced the odds, but to a lesser extent (exp (B) = 0.893).

The specific reasons why households with at least one adult working at home have almost double the likelihood of using public health services is unclear. It may be due to home work allowing greater flexibility to attend public health clinics, or visiting services may be utilized more if household members are at home during the day, or public health services represent the households implementation of their self-insurance.

Table 5
Use of Supplemental Income (n = 1201)

Variable	Coefficient	S.E.	exp (B)
STATISTICALLY SIGNIFICANT (p<0.10)			
Use at least one form of housing assistance	0.942	0.251	2.566
Feel household financial needs are not met	0.731	0.172	2.077
Use at least one form of public health service	0.575	0.180	1.777
Use at least one form of community assistance worth costs	0.515	0.241	1.673
If lost main income: Use govt. assistance compared to living off savings	0.414	0.142	1.514
Age of respondent (years)	0.029	0.013	1.030
Respondent years of employment	-0.024	0.012	0.976
Household income ($/1000)	-0.157	0.043	0.855
College degree compared to high school diploma or less	-0.417	0.145	0.659
At least one adult in the household is self employed	-0.546	0.217	0.579
At least one adult in the household is employed	-2.794	0.764	0.061
NOT STATISTICALLY SIGNIFICANT			
Household Characteristics			
Couples with children < 18 compared to couples living alone	0.001	0.161	1.001
Single mothers with children < 18 compared to couples living alone	-0.326	0.197	0.722
Other household types compared to couples living alone	0.340	0.237	1.406
Household size (persons)	0.114	0.077	1.012
Children < 13 years in household	-0.113	0.231	0.894
Shared housing with others	0.105	0.197	1.111
Education			
Vocat. degree/ college experience compared to high school diploma or less	0.074	0.116	1.077
At least one adult in the household continued education in last ten years	-0.126	0.146	0.881
Economic Options			
If lost main income: Sell assets compared to living off savings	-0.084	0.123	0.919
If lost main income: Borrow money compared to living off savings	-0.064	0.125	0.938
Other Socio-economic Characteristics			
Home owned	-0.079	0.187	0.924
Used public transport	0.176	0.190	0.890
Covered by any form of insurance	0.019	0.258	1.019
Works for insurance	0.160	0.184	1.174
Constant	1.201	0.929	

Fit of Model	n	% of cases
Correctly predicted non-use of supplemental income	725	87.3
Correctly predicted use of supplemental income	431	51.8
Overall prediction accuracy		74.0

Table 6
Use of Public Health Services (n = 1196)

Variable	Coefficient	S.E.	exp (B)
STATISTICALLY SIGNIFICANT (p<0.10)			
Children < 13 years in household	1.120	0.297	3.064
Use at least one form of assistance with costs	0.852	0.237	2.345
At least one adult in the household works at home	0.692	0.278	1.998
Use at least one form of supplemental income	0.570	0.182	1.768
Couples with children < 18 compared to couples living alone	0.428	0.205	1.534
Household income ($/10000)	-0.114	0.046	0.893
Vocat. degree/ college experience compared to high school diploma or less	-0.325	0.133	0.723
At least one adult in the household is employed	-1.040	0.472	0.353
NOT STATISTICALLY SIGNIFICANT			
Household Characteristics			
Single mothers with children < 18 compared to couples living alone	0.141	0.237	1.152
Other household types compared to couples living alone	0.273	0.359	1.314
Household size (persons)	-0.011	0.077	0.989
Shared housing with others	0.376	0.206	1.456
Age of respondent (years)	-0.007	0.017	0.994
Employment			
At least one adult in the household is self employed	0.106	0.288	1.111
Respondent years of employment	-0.020	0.015	0.981
Works for insurance	0.115	0.220	1.122
Education			
College degree compared to high school diploma or less	0.296	0.153	1.344
At least one adult in the household continued education in last ten years	-0.041	0.169	0.960
Economic Options			
If lost main income: Sell assets compared to living off savings	0.237	0.144	1.268
If lost main income: Borrow money compared to living off savings	-0.189	0.141	0.828
If lost main income: Use govt. assistance compared to living off savings	0.115	0.163	1.122
Public Assistance			
Use at least one form of housing assistance	0.384	0.245	1.468
Other Socio-economic Characteristics			
Used public transport	0.292	0.200	1.339
Feel household financial needs are not met	-0.027	0.208	0.973
Covered by any form of insurance	0.152	0.264	1.165
Home owned	-0.221	0.203	0.802
Constant	-0.809	0.293	

Fit of Model	n	% of cases
Correctly predicted non-use of public health	877	94.9
Correctly predicted use of public health	272	39.4
Overall prediction accuracy		81.7

Housing Assistance

Economic need was important to the use of housing assistance (Table 7). The use of assistance with costs (exp (B) 6.303) and use of supplemental income (exp (B) 2.636) were the factors that most increased the likelihood of the use of housing assistance. Single mother households were also over twice as likely to use housing assistance than couples living alone. Every $10,000 dollar increase in income (exp (B) 0.599), or at least one adult being employed (exp (B) 0.264), or the household owning their home (exp (B) 0.325) were increases in economic status that reduced the likelihood of the use of housing assistance.

However, some contradictory results suggest that housing assistance may not depend simply on economic adversity. Households with insurance and households where at least one adult had continued his/her education were 2.183 and 1.702 times as likely to use housing assistance than households without insurance, and where no adult had improved his/her education, respectively. Also households where one member works just for insurance had less than half the chance (exp (B) 0.429) of using housing assistance than households where members do not work for insurance.

Assistance with Costs

A household's use of at least one form of community assistance with costs was associated with a contradictory mix of factors suggesting both low and reasonable economic status (Table 8). Low economic status factors considerably increased the likelihood of the use of community assistance with costs. These factors included the use of housing assistance (exp (B) 6.231) and public health services (exp (B) 2.186), feeling that financial needs are not met (exp (B) 2.725) and being a single mother compared to couples living alone (exp (B) 2.445).

However, criteria that pointed to reasonable economic status were also associated with use of at least one form of community assistance with costs. These criteria included at least one adult in the household being employed (exp (B) 3.412), households owning their home (exp (B) 2.075), and borrowing money as the first option if the household lost its main income (exp (B) 1.471).

This suggests that, more than any other type of community assistance, assistance with costs may be used most by "the working poor" and even households with some assets, as opposed to only households in serious economic need. This may reflect the true economic strategies of households, or it may mean that in qualifying for assistance with costs, households must met an employment stipulation or less stringent economic criteria. The results may also be inaccurate due to the relatively low number of households using assistance with costs in the sample (n = 140). Note the relatively low probability of correctly predicting use of assistance with costs.

Table 7
Use of Housing Assistance (n = 1196)

Variable	Coefficient	S.E.	exp (B)
STATISTICALLY SIGNIFICANT (p<0.10)			
Use at least one form of assistance with costs	1.841	0.301	6.303
Use at least one form of supplemental income	0.969	0.262	2.636
Covered by any form of insurance	0.781	0.343	2.183
Single mothers with children < 18 compared to couples living alone	0.736	0.307	2.087
At least one adult in the household continued education in last ten years	0.532	0.253	1.702
Household income ($/10000)	-0.513	0.110	0.599
Works for insurance	-0.846	0.383	0.429
Home owned	-1.125	0.271	0.325
At least one adult in the household is employed	-1.330	0.486	0.264
NOT STATISTICALLY SIGNIFICANT			
Household Characteristics			
Couples with children < 18 compared to couples living alone	0.220	0.295	1.246
Other household types compared to couples living alone	-0.712	0.601	0.491
Household size (persons)	0.137	0.108	1.147
Children < 13 years in household	0.052	0.399	1.053
Shared housing with others	-0.195	0.300	0.823
Age of respondent (years)	-0.022	0.026	0.979
Employment			
At least one adult in the household is self employed	0.562	0.432	1.754
At least one adult in the household works at home	0.532	0.426	1.703
Respondent years of employment	0.043	0.024	1.044
Education			
Vocat. degree/college experience compared to high school diploma or less	0.096	0.212	1.101
College degree compared to high school diploma or less	-0.288	0.289	0.750
Economic Options			
If lost main income: Sell assets compared to living off savings	-0.081	0.230	0.922
If lost main income: Borrow money compared to living off savings	0.122	0.198	1.130
If lost main income: Use govt. assistance compared to living off savings	0.141	0.203	1.151
Public Assistance			
Use at least one form of public health service	0.379	0.260	1.461
Other Socio-economic Characteristics			
Used public transport	-0.298	0.292	0.743
Feel household financial needs are not met	-0.459	0.284	0.632
Constant	-1.454	1.014	

Fit of Model	n	% of cases
Correctly predicted non-use of housing assistance	1020	98.0
Correctly predicted use of housing assistance	130	32.0
Overall prediction accuracy		90.5

Table 8
Use of Assistance with Costs (n = 1191)

Variable	Coefficient	S.E.	exp (B)
STATISTICALLY SIGNIFICANT (p<0.10)			
Use at least one form of housing assistance	1.830	0.302	6.231
At least one adult in the household is employed	1.227	0.537	3.412
Feel household financial needs are not met	1.003	0.274	2.725
Shared housing with others	0.986	0.259	2.681
Single mothers with children < 18 compared to couples living alone	0.894	0.411	2.445
Use at least one form of public health service	0.782	0.251	2.186
Home owned	0.730	0.290	2.075
If lost main income: Borrow money compared to living off savings	0.386	0.187	1.471
Respondent years of employment	-0.045	0.021	0.956
Covered by any form of insurance	-1.062	0.322	0.346
At least one adult in the household works at home	-2.062	0.637	0.127
Constant	-5.334	1.069	
NOT STATISTICALLY SIGNIFICANT			
Household Characteristics			
Couples with children < 18 compared to couples living alone	-0.003	0.406	0.997
Other household types compared to couples living alone	-1.533	1.017	0.216
Household size (persons)	0.132	0.106	1.142
Children < 13 years in household	0.530	0.407	1.699
Age of respondent (years)	0.028	0.022	1.029
Employment			
At least one adult in the household is self employed	-0.381	0.504	0.683
At least one adult in the household works other than a daytime shift	0.152	0.247	1.165
Works for insurance	0.004	0.322	1.004
Education			
Vocat .degree/college experience compared to high school diploma or less	-0.117	0.176	0.890
College degree compared to high school diploma or less	0.388	0.211	1.473
At least one adult in the household continued education in last ten years	-0.431	0.239	0.650
Economic Options			
If lost main income: Sell assets compared to living off savings	-0.223	0.232	0.800
If lost main income: Use govt. assistance compared to living off savings	-0.052	0.214	0.949
Public Assistance			
Use at least one form of supplemental income	0.481	0.257	1.617
Other Socio-economic Characteristics			
Used public transport	0.460	0.269	1.585
Household income ($/10000)	-0.051	0.073	0.950

Fit of Model	n	% of cases
Correctly predicted non-use of assistance with costs	1004	97.8
Correctly predicted use of assistance with costs	140	37.2
Overall prediction accuracy		90.4

Summary And Conclusions

The key findings were that low income and less economically secure households are using multiple activities to support themselves. This initial analysis only hints at some of the activities and their linkage. However, our data has two important implications. First, our results confirm earlier work and observations indicating that rural Wisconsin household choices do parallel other areas and contexts. Second, the analysis uncovers some community assistance programs that rural households are linking together in imaginative ways that previously have not been confirmed.

Four composite forms of community services were examined. Public health was composed of use of free immunization, low-cost clinics, in-home nursing care, and healthy start. Supplemental income was composed of using social security (remember these were pre-retirement age households) and/or SSI, unemployment compensation, workers compensation, AFDC, food stamps and/or WIC, and general assistance. Housing assistance was composed of using heating and/or cooling assistance and living in public housing. Assistance with costs was composed of help with food, help with clothing, and help with paying bills. Use of childcare services both public and private was the fifth service examined.

Younger respondents and increased household income increased the use of childcare services. The implications for the current debate on childcare and welfare reform suggests that younger and income, single parent families are more vulnerable to availability of childcare services.

The analysis indicates that people use supplemental income when economic circumstances worsened and use it in conjunction with several other forms of community support.

The use of public health services, as well as several other forms of community services, increased with the loss of economic status.

Single moms with lower income were households with increased use of housing assistance. Unexpectedly, however, households with insurance and continued education were also frequent users of housing assistance.

The analysis suggests households experiencing financial difficulties use community services that help reduce costs. There was an unconfirmed hint that even those just exceeding a threshold found this form of support useful.

Community services played a substantial role in the choices made by households. The dominance of economic status/security implies low-income households ability to acquire economic security has great implications for the demand for community services. Community services are of great importance to low-income households. It also means that the need for community services will be particularly susceptible to the economic status (real and perceived) of its residents.

The analysis reported suggests that the tendency to treat community development, social development, and economic development as separate policy spheres of influence increases the risk of adverse or unintended consequences. As Wisconsin moves forward on its welfare reform experiment, these data confirm the need to link policy initiatives for some family types, in particular single moms. It is particularly crucial to remember welfare reform and poverty elimination are not the same policy issue.

The results provide valuable insight into the linkages between community and family economic survival. Illuminating this important connection will draw attention to the need for rural development policies that target those community institutions and interpersonal resources directly affecting rural family welfare.

References

Abrahams, C., 1992, "A Social Development Practice Model for Community Development," Journal of the Community Development Society, 23, 2: 103-115.

Allen, J. C., 1991, "Household Income Generation in Rural Communities: A Comparison of Downeast Maine and Eastern Washington State." Paper presented at the Annual Rural Sociological Meeting, Columbus, Ohio, August.

Becker, G. S., 1965, "A Theory of the Allocation of Time," Economic Journal, 75 (Sept): 493-517.

Bluestone, B. and Harrison, B., 1988, "The Growth of Low-Wage Employment: 1983-86," American Economic Review, 78, 2 (May): 124-128.

Bokemeier, J.L. and Garkovich, L.E., 1991, "Meeting Rural Family Needs," in Rural Policies for the 1990s, C. B. Flora and J. A. Christenson (eds.) Boulder, CO: Westview Press: 114-127.

Bourguignon, F. and Chiappori, P.A. 1992. "Collective Models of Household Behavior," European Economic Review, 36, 2/3 (April): 355-364.

Bryant, K., 1990, The Economic Organization of the Household, Cambridge University Press.

Clay, D. C. and Schwarzweller, H.K., 1991, Research in Rural Sociology and Development, A Research Annual: Household Strategies, 5, Greenwich, CT: JAI Press Inc.

Deavers, K. L. and Hoppe, R.A., 1992, "Overview of the Rural Poor in the 1980s," in Rural Poverty in America, C. Duncan (ed.), Westport, CT: Auburn House: 3-20.

Deavers, K. L. and Hoppe, R.A., 1991, "The Rural Poor: The Past As Prologue," in Rural Policies for the 1990s, C. B. Flora and J. A. Christenson (eds.) Boulder, CO: Westview Press: 85-101.

Duncan, C. (ed.), 1992, Rural Poverty in America, Westport, CT: Auburn House.

Duncan C. M. and N. Lamborgini, 1994, "Poverty and the Social Context in Remote Rural Communities," Rural Sociology, 59, 3: 437-461.

Everitt, B.S., 1977, The Analysis of Contingency Tables, New York, Halsted Press.

Feinberg, S.E., 1977, The Analysis of Cross-classified Categorical Data, Cambridge, MIT Press.

Fitchen, J. 1992, Poverty in Rural America: A Case Study, Westview Special Studies in Contemporary Social Issues, Boulder, CO: Westview Press.

Galston, W. A. and K. J. Baehler, 1995, Rural Development in the United States: Connecting Theory, Practice, and Possibilities, Washington DC: Island Press.

Gorham, L., 1992, "The Growing Problem of Low Earnings in Rural Areas," in Rural Poverty in America, Duncan, C. (ed.), Westport, CT: Auburn House; 21-40.

Horney, M.J. and M. McElroy, 1981, "Nash Bargained Household Decisions: Toward a Generalization of the Theory of Demand," International Economic Review, 22, 2 (June)

Johnson, W. and J. Skinner, 1986, "Labor Supply and Marital Separation," American Economic Review, 76, 3: 455-69.

Kassel, K. and R.M. Gibbs, 1996, "Rural Nonfarm Earnings Edge Up," Rural Conditions and Trends, 7 #3: 22-24.

Katz, E., 1992, "Intra-Household Resource Allocation in the Guatemalan Central Highlands: The Impact of Non-Traditional Agricultural Exports," Dissertation, Department of Agricultural Economics, University of Wisconsin-Madison.

Kim, J. and C.W. Mueller, 1978, Factor Analysis: Statistical Methods and Practical Issues, Sage University Paper Series, Sage Publications, Beverly Hills, CA.

Klecka, W.R., 1980, Discriminant Analysis: Quantitative Applications in the Social Sciences, Sage University Paper Series, Sage Publications, Beverly Hills, CA.

Kusmin, L. and R.M. Gibbs, 1996, "Rural Employment Gains Continue, But Pace Slows," Rural Conditions and Trends, 7 #3: 18-21.

Lachenbruch, P.A., 1975, Discriminant Analysis, Hafner, New York, NY.

Levitan, L. and S. Feldman, 1991, "For Love or Money: Nonmonetary Economic Arrangements Among Rural Households in Central New York," in Research in Rural Sociology, A Research Annual: Household Strategies, D. Clay and H. Schwarzweller (eds.), 5, Greenwich, CT: JAI Press Inc.: 149-172.

Lobao, L. M., 1990, Locality and Inequality: Farm and Industry Structure and Socioeconomic Conditions, State University of New York Press: Albany NY.

Lyson, T. A. and W.A. Falk (eds.), 1993, Forgotten Places: Uneven Development in Rural America, Lawerence KS: University of Kansas Press.

Manser, M. and M. Brown, 1980, "Marriage and Household Decision-Making: A Bargaining Analysis," International Economic Review, 21, 1 (February).

Mason, K. and K. Kuhlthau, 1992, "The Perceived Impact of Child Care Costs on Women's Labor Supply and Fertility," Demography, 29, 4 (November) 523-43.

Moen, P. and E. Wethington, 1992, "The Concept of Family Adaptive Strategies," in Annual Review of Sociology, 18: 233-251.

Nightingale, D. S. and R. Haveman (eds) 1995, The Work Alternative: Welfare Reform and the Realities of the Job Market, Washington DC: The Urban Institute Press.

O'Brien, D., McClendon, M. and A. Ahmed, 1989, "Neighborhood Community and Quality of Life," Journal of the Community Development Society, 20, 2: 59-71.

Rao, C.R., 1973, Linear Statistical Inference and its Application, 2nd Edition, Wiley, New York, NY.

Reich, R. B., 1988, "The Rural Crisis and What to Do About It," Economic Development Quarterly, 2, 2: 3-8.

Rosenzweig, M., 1990, "Programme Interventions, Intra-Household Allocation, and the Welfare of Individuals: Economic Models of the Household". in Intra-household Resource Allocation: Issues and Methods for Development Policy and Planning, B. L. Rogers and N. P. Schlossman (eds.), Tokyo: United Nations, University Press,

Rummel, R.J., 1970, Applied Factor Analysis, Northwestern University Press, Evanston, IL.

Sorter, B., 1987, "Community Development Analysis Through Behavioral Patterns," Journal of the Community Development Society, 18, 2: 42-53.

Summers, G. F., S. D. Evans, F. Clemente, E. M. Beck, and J. Minkoff, 1976, Industrial Invasion of Nonmetropolitan America: A Quarter of Century of Experience, New York: Praeger.

Thomas, D., 1990, "Intra-Household Resource Allocation: An Inferential Approach," Journal of Human Resources, 25, 4, Fall:. 634-664.

Tickamyer, A.R. and C. M. Duncan, 1991, "Work and Poverty in Rural America," in Rural Policies for the 1990s, C. B. Flora and J. A. Christenson (eds.) Boulder, CO: Westview Press: 102-113.

Tickamyer, A., J. Bokemeier, S. Feklman, J.P. Jones, D.A. Wenk, and R. Harris, 1993, "Women and Persistent Rural Poverty," Persistent Poverty in Rural America, G. F. Summers (ed), Boulder, CO: Westview Press: 200-229.

Tigges, L., A. Ziebarth, and R. Shaffer, 1995, "Wisconsin Community Discussion Group Summary Report," UW-Madison, Dept of Rural Sociology.

Unger, D. G. and M. B. Sussman (ed), 1990, Families in Community Settings: Interdisciplinary Perpsectives, Binghamton, NY: The Howorth Press.

U.S. Bureau of the Census,1990, Census of Population, US Bureau of the Census, Washington D.C..

U.S. Department of Labor, 1990 through 1996, Detailed CPI Report, Bureau of Labor Statistics, Washington D.C..

Warren, D.I., 1981, Helping Networks, West Bend IN: Notre Dame University Press.

Voydanoff, P., 1990, "Economic Distress and Family Relations: A Review of the Eighties," Journal of Marriage and Family, 52 (November): 1099-1115.

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