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Labor Force Participation of Rural Farm, Rural Nonfarm, and Urban Women: A Panel Update

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ABSTRACT In this paper, we analyze the paid labor force participation rates and continuity patterns of rural farm, rural nonfarm, and urban women. Specifically, we trace the labor force participation of a panel of approximately 800 women in Nebraska from 1977 to 1985. This paper has a twofold purpose. First, we examine changes in the work status of the cohort of Nebraska women during the farm crisis years. Second, we identify individual factors influencing labor force participation and continuity, contrasting all three residential groups of women.

A loglinear model isolates differences in participation rates for rural and urban women as well as for rural farm and rural nonfarm women during the 1977, 1981, and 1985 panel years. A discriminant analysis then ascertains the nonlinear relationships in women's work histories for the same time period. A comparison of continuous, discontinuous, and non-participatory labor force patterns illustrates that rural women, and farm women in particular, entered the wage labor force in disproportionate numbers during the farm crisis years. The farm crisis provides a framework for discussing accelerated participation rates and changes in the effects of individual human capital characteristics. Increases in participation rates are most evident among married farm women with discontinuous part-time work histories. Over the three data points, the effect of preschool children on labor work force participation was attenuated for farm women and higher education levels became less salient in predicting labor force participation rates for both rural and urban women.

Introduction

The intent of this research is to ascertain changes in the paid labor force participation of rural women vis-à-vis urban women, as well as farm women in rural areas. We use a human capital model and focus on individual characteristics and changes in their influence on work patterns over time, especially as they are reflected for farm women in rural settings. Residential differences have been identified as significant in past research (Bokemeier et al. 1983). We are interested in the changes in individual factors predicting women's labor force participation over time and investigate the years 1977, 1981, and 1985. Structural factors do play an important role in predicting work

¹ The order of authorship does not reflect differences in contribution to the article.

experiences, including income (Tickamyer and Bokemeier 1988) and participation rates (Semyonov 1983), and it is likely that differences in rural and urban labor markets fluctuate over the years as well.

Human capital predictors have been used successfully in predicting women's incomes and participation rates (Bokemeier et al. 1983; Lord and Falk 1980; Maret and Chenoweth 1979). However, Tickamyer and Bokemeier (1988) note that this model has become less effective over time in accounting adequately for factors such as earnings and work stability. In this research, we focus on the labor force participation rates of farm women and contrast them to rural nonfarm and urban women to assess the influence of individual human capital characteristics. Past research demonstrates the importance of treating farm women as a distinct group from rural nonfarm women in research (Bokemeier et al. 1983). Our data allow us to compare earlier research on the general labor force participation rates, identify patterns of continuous participation, and explore the varying influences of individual characteristics over time.

Human capital model

Both individual and structural factors influence farm women's off-farm employment; these include increased elasticity of women's farm economic roles, decreased job opportunities from the rural labor market, increased economic pressures from the general farm crisis, and the general family factors of marriage and/or children which affect all women workers. Two major explanations of women's work patterns have been employed, the human capital model and the structural model.

The human capital model examines jobs and income distribution in relation to individual skill levels and other salient individual differences. There are a number of significant individual predictors for women's labor force participation in both rural and nonrural communities. Income and education generally affect labor market participation with lower family incomes forcing higher work rates among married women and more education making women more likely to join the labor force (Maret and Chenoweth 1979). Maret and Chenoweth (1979) found income to be the most salient predictor of labor force participation for rural non-SMSA women with lower family income predicting higher female participation rates. They also found marriage and children to be significant predictors of labor force participation for rural women. Bokemeier et al. (1983) found that family variables and status variables (income and education) were the most significant correlates of labor force participation among metropolitan and nonmetropolitan women, while status variables were the most influential for farm women.

The structural opportunities for all women workers are affected

by both their geographic labor markets and the traditional segmentation of labor markets by sex (Treiman and Hartmann 1982). Maret and Chenoweth (1979) found that among rural women, proximity to an urban SMSA setting creates differential labor market rates with higher rates of labor market experience among rural women in SMSAs. Pigott (1985) found that the opportunity for female employment in rural communities is a direct result of the geographical and ecological factors associated with the development of community business and industry. If the labor market available to women is restricted by its rural characteristics (i.e., fewer white collar and skilled jobs and more service, private household, and farm-related employment opportunities), this becomes an added factor by which *weak sellers* (i.e., women and minorities) in a market may remain in low paying and segregated occupations.

Both structural factors as well as individual factors play an important role in explaining women's employment patterns (Tickamyer and Bokemeier 1988). We suspect that important fluctuations in both structural and individual factors may have occurred in rural areas over the past ten years. In this paper, we address changes in the strengths of the human capital model as a predictor of labor force participation and changes in the independent variables which comprise human capital. In other words, we anticipate a slippage in the explanatory power of the human capital model.

Historical transitions and women's labor

Rachel Rosenfeld's (1985) study of farm women presents women on the farm not as "helpers, mothers, and wives" but as economic actors who have contributed to the family farm in a number of ways. These productive roles have changed over time. Rosenfeld traces a history, suggesting that in general women's work within the home (paid and otherwise) has changed significantly over the last century.

In the past, women on the farm were able to respond to economic crises by increasing farm production. Schwieder and Fink (1988) demonstrated through diaries and county production data that during the 1930s, women increased their production of farm goods as a response to the economic crisis. However, between 1930 and 1980, the consumption patterns of rural households changed and became more like urban consumption patterns.

Today, at a time when more cash is needed to support farming activity (mechanization, smaller families with fewer *free* laborers, etc.) and family consumer expenses, women's opportunities to earn money at home are decreasing. "Over time . . . many products that women made at home for family use became things the family bought" (Rosenfeld 1985:20). Rosenfeld concludes that farm women now produce less in the home for the family's subsistence and for sale and barter.

As a result, we can hypothesize that women's productive labor in the home is more inelastic today than during the early farm crisis of the 1930s. Thus, women might be pushed into off-farm work at a rate accelerated over rural nonfarm women and urban women. This hypothesis will be tested by using a human capital model and focusing on the changes in the influences of individual characteristics such as education, number of children, residence, and age.

Methods

The data for the present study come from the 1977, 1981, and 1985 panels of the Nebraska Annual Social Indicators Survey (NASIS). This is a state-wide telephone survey of noninstitutionalized adults 18 years of age or older. The random digit dialing techniques and representativeness of the sample and panel structure have been discussed elsewhere in detail (Booth et al. 1980; Johnson 1985). Beginning in 1977, a total of 1,877 respondents were surveyed, traced in the interim years, and recontacted in every odd-numbered year. Of the total sample, 959 women were surveyed in 1977. In even-numbered years a general random sample survey is conducted, and panel members in the following year who cannot be surveyed, due to death, migration to another state, or refusal to participate, are replaced with individuals who have similar sex, age, and residence characteristics. In 1985, we sampled 809 Nebraska women who had participated in at least one of the earlier panel surveys (1977 or 1981).²

As previously mentioned, our primary interest is to track the labor force participation rates and continuity of paid labor for farm women and to contrast them to urban and rural nonfarm women. This enables us to compare the general increase in labor force participation for all women with the specific individual factors which affect participation rates of farm women. Respondents who are categorized as "farm women" described themselves as living in a rural area or in open country and as having some member of their family actively involved in farming or ranching. Rural nonfarm women reside either in a town of fewer than 2,500 residents or in open country and have no family members actively involved in farming or ranching. We removed women who described themselves as rural nonfarm, but who live within the Omaha SMSA boundaries from the analysis because their labor market structure would differ significantly from other rural women in the state.

Individual factors cited in past research as having direct effects upon labor force participation of rural women in general are analyzed. The educational level achieved was coded as follows: (1) less than

² Because of the replacement process, the 1985 panel year does not contain women who were younger than 18 in 1981. Thus, by 1985, women in this sample are 22 years of age or older, and the findings are generalizable only to that age range of women.

Table 1. Work status of rural and urban Nebraska women, panel data from 1977, 1981, and 1985

Residence/work status	1977	1981	1985
Urban women (N = 692)		(N = 601)	(N = 617)
Full time	27.7	33.9	35.0
Part time	13.9	17.0	15.2
In the home/school	58.4	49.1	49.8
Rural nonfarm women (N = 183)		(N = 136)	(N = 116)
Full time	20.8	12.5	18.1
Part time	16.4	16.2	14.7
In the home/school	62.8	71.3	67.2
Farm women (N = 69)		(N = 72)	(N = 76)
Full time	13.0	31.9	30.3
Part time	11.6	20.8	18.4
In the home/school	75.4	47.2	51.3

high school, (2) high school degree, (3) some college, (4) college degree, and (5) advanced degree (M.A., Ph.D., M.S.W., J.D., etc.). women with preschoolers in the home were coded (1), while women with no preschoolers (including those women who also had older school-aged children) were coded (0). Marital status was coded (1) for currently married and (0) for widowed, divorced, separated, or never married. These data were coded separately for each of the panel years. Thus, a change in marital status or number of preschool children is salient only to that measurement year.

Labor force participation

A preliminary review of the panel data identifies the continued trend of rural and urban differences in labor force participation for women. Table 1 shows marked increases in the full- and part-time participation for all three groups. Urban women have the highest participation rates in each of the three panel years, and by 1985, slightly over half of all urban women 18 years of age and older were in the paid labor force. By 1985, farm women and rural women also increased their participation rates to 48.7 and 32.8 percent, respectively. These 1985 farm figures and those in 1981 exceed the estimates of the 1980 Census. The data gathering period for NASIS extends from early February to late May and is thus more likely than the Census to find women (and men) on active farms who are working full or part time during the week preceding their contact with an interviewer.

Of special interest is the disproportionate increase in full-time labor for farm women; it more than doubled between 1977 and 1981. This

increase may be inflated by a survival/selection process in the distressed farm economy: those families with women in the labor force are more likely to persist in farming through the farm crisis years.³

The figures in Table 1 suggest that movement into the paid labor force by rural women has been primarily a movement of rural farm women. In 1977, 75 percent of the farm women in the survey were working in the home and on the farm exclusively. In 1985, this figure decreased to 51 percent. Between 1977 and 1985, an additional 7 percent of farm women were working part time and 17 percent more were working full time. For rural nonfarm women, there was a slight increase (4%) of women working in the home.

These statistics indicate that urban women are still more likely to participate in the paid labor force than are women in rural areas, but the gap is closing. In the following analyses, we examine the independent effects of our model separately for each category of residence—urban, rural nonfarm, and farm—using separate loglinear analyses. Our initial focus is on the full- or part-time wage work status of women, compared to those who remain in the home or on the farm.

Rural/urban comparisons

Loglinear analysis is used to compare rural and urban women's employment status from 1977 to 1985; the outcome is shown in Table 2. For 1977, 1.84 is the overall effect or mean. The marital status effect of 1.30 is such that other factors being equal, more single women than married women are working by a ratio of 1.30 to 1. The net effect of education on working status is 1.17. Other things being equal, women with more than a high school degree are more likely to be working by 1.17 to 1. The net effect of having preschool age children in the home is .9918. Since the antilog is approximately 1, this indicates that women with preschool children are as likely to be working as women who do not have preschoolers. The net effect of community type is .94. Other things being equal, women in rural areas are more likely to be working by .94 to 1.

Comparing the net effects over time reveals some important changes between 1977 and 1985. First, the net effect of marital status drops from 1.30 in 1977 to 1.06 in 1985. This reflects an overall increase of married women in the paid labor force. Second, the net effect of the presence of preschool children increases from .99 in 1977 to 1.22 in 1985. This means that since 1977 and particularly since 1981, more women who have preschool children are working in the paid labor force. Third, the net effect of residence increased from .94 in

³ The initial drop in farm women (from 183 to 138 from 1977–1981) may also be an artifact of change in the panel instrument to more accurately identify rural farm families. In further analyses, we use the 1985 designation as a farm resident.

Table 2. Rural and urban employment status, 1977-1985

Variables	1977		1981		1985	
	Coefficient	Antilog	Coefficient	Antilog	Coefficient	Antilog
Work status (by):						
Work status	.6090	1.8385	.4691	1.5985	.4397	1.5522
Marital status	.2611	1.2983	.2031	1.2251	.0618	1.0637
Education	.1606	1.1742	.2017	1.2234	.2085	1.2318
Children	-.0082	.9918	.0257	1.0260	.1983	1.2193
Residence	-.0603	.9414	.1388	1.1488	.0298	1.0302
Income	.2035	1.2256	.1462	1.1574	.1168	1.1238
Marital status by education	-.0109	.9891	-.1108	.8951	-.0030	.9970
Marital status by children	-.1091	.8966	-.2447	.7829	-.1936	.8239
Marital status by residence	-.0063	.9937	.1048	1.1104	.1290	1.1376
Marital status by income	-.0243	.9759	-.0026	.9974	.0440	1.0449
Education by children	-.0549	.9465	-.0011	.9989	.0356	1.0362
Education by residence	-.0324	.9681	.0620	1.0639	.1172	1.1243
Education by income	-.0513	.9499	.1707	1.1861	.0748	1.0776
Children by education	.1596	1.1730	-.0952	.9091	-.0004	.9996
Children by income	.1255	1.1377	.0124	1.0124	.0400	1.0408
Education by children by residence by income	.0641	1.0661	-.1378	.8712	.0169	1.0170

Codes:

Work status	0	Not in PLF
Marital status	0	Married
Education	0	High school
Children	0	No preschooler
Residence	0	Rural & Farm
Income	0	Below \$25,000
	1	In PLF
	1	Single
	1	More than high school
	1	One or more preschoolers
	1	Urban
	1	Above \$25,000

1977 to 1.15 in 1981. Overall, more urban than rural women were entering the paid labor market between 1977 and 1981; however, after 1981 the gap between the two decreased (to 1.03) as more rural women entered the paid labor market.

Interaction effects are indicators of the combined effects of variables. If the interaction effect antilog is less than one, this means that the combined effect of the independent variables is less than the sum of the main effects. Likewise, if the interaction effect antilog is greater than 1, then the combined effect of the independent variables is greater than the sum of the main effects. In 1981, we find an interaction effect of 1.11 between marital status and community residence. This indicates that the effect of being an urban woman and being married on working status is greater than combining the main effect of being an urban woman with the main effect of being married.

In 1985, there are positive two-way interaction effects in the following combinations: being married and living in an urban community and being married and having an annual income of more than \$25,000. This reflects the tendency for urban married women in high income families to be working. Between 1977 and 1985, increasingly more married women with preschool children entered the paid labor market. Although this has generally affected urban women more than rural women, the gap between rural and urban has decreased since 1981.

These analyses indicate that individual factors contributing to women's labor force participation still vary by rural and urban residence. Next, we question how these same factors might affect full- or part-time labor force activity during the same time periods, as contrasted to full-time housework. We present a discriminant analysis to look for nonlinear relationships in work histories. The dependent variable is structured at the nominal level: (1) full-time labor force participation, (2) part-time participation, and (3) full-time home work. These categories are not theoretically or statistically assumed to be ordered on any continuum. Discriminant analysis (Klecka 1980) creates one or more linear prediction equations which best predict the category of the dependent variable in which a particular case appears. If there is only one significant function (as in the 1977 analysis in Table 3), then the relationship between the independent and dependent variables is adequately described by the single linear combination of independent variables. If more than one significant function is generated (as in the 1981 and 1985 analyses), then additional orthogonal continua are needed to account for the relationships of the variables. Because our dependent variable has four categories, a maximum of three discrete functions is possible.

The standardized discriminant function coefficients are similar to standardized regression coefficients, indicating the relative loading of each independent variable. The group centroids indicate the po-

sition along the continuum of a specific function where each category of the dependent variable appears. This indicates not only linearity, but also takes into account unequal intervals between dependent categories. Finally, the canonical correlations estimate the significance of each function in discriminating among the dependent variable categories.

Table 3 demonstrates that in each year, full- and part-time workers are distinguishable from houseworkers and from each other. The first factors are significant descriptors of full-time workers and, to a lesser extent, part-time workers. In 1977, single women, women with higher educational levels, women without preschoolers, and women from high-income families are more likely to work full time than to be in the home full time. In 1981 and 1985, a second significant factor emerges which describes the ability of these same factors to accurately predict part-time as compared to full-time work in the labor force or in the home. The loadings of the group centroids ($-.439$ and $-.296$) indicate the nonlinear relationship for part-time work when compared to full-time wage earners or houseworkers. In 1985, married women living in rural areas with low family incomes are most likely to be working part time. The presence of preschoolers and educational level has little substantive effect when other factors are taken into account.

Rural farm/nonfarm comparisons

The outcome of the loglinear analysis comparing rural farm and rural nonfarm women's employment status from 1977 to 1985 is shown in Table 4. For 1977, 1.57 is the mean or overall net effect. The marital status effect is 1.18. Other things being equal, single women are working by 1.18 to 1 when compared with married women. The net effect of education is 1.17 for women with some college or more education. These women are more likely to be working by 1.17 to 1. The net effect of having preschool children at home is 1.19. Here, other things being equal, women with preschool age children are more likely to be working by 1.19 to 1. The net effect of community type is .99 with rural nonfarm and farm women equally likely to be working when all other independent variables are taken into account.

Again, there are important changes occurring in the net effects over time. The net effect of marital status changes from 1.18 in 1977 to 1.28 in 1981 back to 1.21 in 1985. This means that while single rural women were more likely than married rural women to be working in 1981, this fluctuated over the time period examined. The net effect of having preschool children in the home increases from 1.19 in 1977 to 1.22 in 1985 with a low of 1.00 in 1981. In 1985 proportionately more rural women with preschool children were working than at any other time period. The net effect of community type

Table 3. Discriminant analysis of full-time and part-time labor force participation and home workers: 1977, 1981, 1985

Variables/ categories	1977		1981		1985	
	1	2	1	2	1	2
Single status	-.529	-.486	.050	-.097	-.089	.966
Preschoolers	.594	.219	.586	.289	.507	-.029
Education	-.231	.598	-.196	.753	-.013	-.075
Urban residence	.005	-.428	-.386	.594	-.185	.165
Family income	-.215	.175	-.177	-.142	-.198	.678
Age	.878	.101	.947	.651	.837	.151
Canonical correlation	.408***	.103	.451***	.169***	.503***	.131*
Eigenvalues	.199	.011	.256	.029	.338	.018
			Group Centroids			
Full-time L.F.P. ¹	-.684	-.059	.427	.150	-.681	.105
Part-time L.F.P.	-.101	.246	.743	-.439	-.378	-.296
Home workers	.347	-.036	-.501	-.031	.559	.022
Percent correctly classified		53.1		52.2		61.1

* Significant beyond the .05 level.

*** Significant beyond the .001 level.

¹ L.F.P. = Labor force participation.

Table 4. Rural farm and rural non-farm women's employment, 1977-1985

Variables	1977		1981		1985	
	Coefficient	Anti-log	Coefficient	Anti-log	Coefficient	Anti-log
Work status (by):						
Work status	.4532	1.5733	.4728	1.6044	.4347	1.5444
Marital status	.1694	1.1845	.2445	1.2769	.1890	1.2080
Education	.1563	1.1691	.1738	1.1898	.2272	1.2550
Children	.1772	1.1938	.0024	1.0024	.1974	1.2182
Residence	-.0028	.9972	-.1762	.8385	-.0954	.9090
Income	.2701	1.3100	.2116	1.2356	.1490	1.1606
Marital status by education	.1215	1.1291	-.0970	1.1018	-.0003	.9997
Marital status by children	-.1065	.8989	-.1342	.8744	-.0940	.9102
Marital status by residence	.0317	1.0322	-.1345	.8741	.0067	1.0067
Marital status by income	-.0315	.9865	-.0165	.9836	-.0508	.9504
Education by children	-.0176	.9825	.0909	1.0951	.0112	1.0112
Education by residence	.1214	1.1290	-.0955	.9089	-.0667	.9354
Education by income	-.0292	.9172	.1404	1.1507	.0623	1.0642
Children by residence	.0017	1.0017	-.0052	.9984	-.0202	.9800
Children by income	.1387	1.1487	.0372	1.0379	.0490	1.0502
Education by children by residence by income	.0438	1.0447	-.0141	.9859	-.0143	.9858
Codes:						
Work status	0	Not in PLF	1	In PLF		
Marital status	0	Married	1	Single		
Education	0	High school	1	More than high school		
Children	0	No preschooler	1	One or more preschoolers		
Residence	0	Rural farm	1	Rural nonfarm		
Income	0	Below \$25,000	1	Above \$25,000		

increases from .99 in 1977 to .84 in 1981 to .91 in 1985. In 1977, there were no essential differences in paid labor force for rural farm and nonfarm women. By 1981, this reverses, and in 1981 and 1985, more rural farm women were in the paid labor force than rural nonfarm women. The interaction effect for marital status and education, evident in 1977 and 1981, is mitigated by 1985.

As with the general rural/urban comparisons, we next analyzed rural farm and nonfarm women's labor force participation for more detailed variations in full- and part-time labor force participation and full-time home work. In each panel year, only one significant function emerges to describe differences in the prediction equations. In 1977, the first function defines the full-time labor force participants (centroid of $-.785$). Younger, single women without preschoolers who live in rural nonfarm settings are the most likely to hold full-time labor force positions.

By 1981, the first function defines part-time labor force participation. Marital status has no effect on variation in labor force status at this point. However, presence of preschoolers predicts part-time labor, in contrast to either full-time wage work or home work. Lower education levels and nonfarm residence also predict increased part-time work over other categories.

The 1985 equation indicates some change in these trends in labor force participation for farm women. This last equation describes both full- and part-time labor at levels similar to 1981. Education and farm residence predict higher labor force participation rates, but presence of preschoolers has an opposite effect. Most importantly, marital status effects have shifted their direction. In 1985, married women are more likely to be participating in the labor market once other factors (farm residence and education) are controlled.

This shift in marital status effects is similar to that found in the more general rural and urban comparison found in Table 3. One possible explanation for these sudden shifts could be the mistaken assumption that women are entering and leaving the labor force in a linear fashion. That is, we may assume that married women have moved from predominantly full-time home work in 1977 to more part-time labor force participation in 1981, to a mix of full- and part-time labor in 1985. However, these cross-sectional analyses do not describe individual career paths, and the growth of participation in one sector (full-time wage labor) may not be tied to prior experiences in another sector (part-time labor). In the next section, we assess the discontinuous patterns of rural and urban women's labor force participation.

Labor force continuity

We are also interested in the individual work histories of women throughout the farm crisis years. The general trend of labor force

Table 5. Discriminant analysis of full-time, part-time labor force participation and home workers: rural farm and nonfarm from 1977, 1981, 1985

Variables/ categories	1977		1981		1985	
	1	2	1	2	1	2
Single status	-.280	-.557	.035	-.256	.187	.089
Preschoolers	.313	.846	.882	.596	.574	.189
Education	-.044	.232	-.323	.834	-.561	.546
Farm residence	.485	-.411	.417	-.219	-.225	-.227
Family income	-.765	.294	-.046	-.315	.308	-.018
Age	.544	.869	.537	.411	.917	.468
Canonical correlation	.374***	.114	.457***	.181	.357***	.177
Eigenvalues	.163	.013	.103	.022	.146	.032
			Group Centroids			
Full-time L.F.P. ¹	-.785	-.076	.282	.186	-.254	-.288
Part-time L.F.P.	-.107	.259	.662	-.311	-.663	.241
Home workers	.255	-.042	-.615	-.061	.302	.052
Percent correctly classified		51.94		52.03		51.03

*** $p < .001$.

¹ L.F.P. = Labor force participation.

participation rates for women suggests a linear, incremental history. At the same time, women's social obligations to domestic demands of family life have changed little, though the consumption patterns of rural and urban women are growing more similar. Added to this is a volatile farm economy and market restrictions of the rural geoeconomic setting. Rural women and farm women in particular may demonstrate distinct work histories from their urban peers.

We first constructed an indicator of labor force discontinuity that consists of four categories: 1) no labor force participation from 1977 to 1985; 2) discontinuous part-time labor force participation; 3) discontinuous full-time labor force participation (including dropping into part-time wage labor or full-time home work); and 4) continuous full-time labor during the 1977 to 1985 time period. Again, the six individual variables of marital status, presence of preschoolers, education, rural residence (as measured in 1985), family income, and age were used as predictors.

The first analysis (see Table 6) contrasts urban and rural workers in general. The first function and its group centroids identify this equation as describing women with a discontinuous part-time or full-time wage history during the time period. Over one-third of the panel respondents ($N = 309$) fit this work pattern. We find that when rural/urban residence patterns are controlled, women who are married, younger, or without preschoolers have higher rates of discontinuous participation. This may appear counter-intuitive, but the function defines continuous participation or nonparticipation in similar dimensions of the equation. Thus preschoolers appear to have contributed to more continuity over the panel years in the paid or unpaid work patterns of women.

Residence in a rural area, whether farm or nonfarm, contributes to a more marginal, discontinuous participation pattern, as does presence of preschoolers in the household. Education level and family income have no substantive effects in predicting discontinuity.

The appearance of a second orthogonal function reveals that considerable information about these work histories remains unidentified in the first equation. This next function describes the continuous labor force participants—women who held the same job throughout the panel years. The predictor variables show a markedly different weighting of family and residential patterns. Women who head their own households (divorced, widowed, never married) show stronger continuous work patterns, as do women with higher education levels and older, urban residents. The presence of preschoolers negatively affects the continuous full-time labor of women.

Findings in Table 7 indicate that rural farm women and nonfarm women have work patterns that can be distinguished by individual factors and residence patterns. Only one significant function is generated, essentially describing continuous nonparticipants over the

Table 6. Discriminant analysis of labor force discontinuity: rural and urban women, 1977–1985

Variables/ categories	N	Function 1	Function 2
Marital status		.077	.190
Preschoolers		.337	-.511
Education		.020	.123
Rural residence		-.167	.123
Family income		-.021	.073
Age		.886	.161
Canonical correlation		.473***	.180**
Eigenvalue		.287	.033
Group Centroids			
No participation	308	.632	-.046
Part time discontinuous	125	-.579	-.197
Full time discontinuous	184	-.495	-.069
Continuous participation	142	.220	.364
Percent correctly classified			44.53

** $p < .01$.

*** $p < .001$

panel years. The two dominant predictors are age and presence of preschoolers. Older women and women with preschoolers were most likely to be continuous nonparticipants. Women with higher education levels were more likely to participate in the wage labor force, even if discontinuously. Once education and family factors are controlled, marital status and farm/nonfarm residence show no effects. The income variable demonstrates that continuous nonparticipation is most likely among families with higher incomes.

Discussion and conclusions

During the past forty years, women’s paid labor force participation has steadily increased. Individual characteristics such as age, marital status, education level, presence of preschoolers, and place of residence continue to affect labor force participation rates. Because of shifts in economic conditions and demographics, more women with preschool children are entering the labor market. More married, widowed, and divorced women are entering the labor market and the numbers of both urban and rural women wage workers are rising, though not at similar rates.

In previous years, a large gap existed between rural and urban women’s labor force participation rates. Although these rural-urban differences remain strong predictors of higher participation rates for urban women, rural women are seeking outside employment at an accelerated rate. By 1985, we find that proportionately more rural women who are married were working than in 1977 or 1981. Like-

Table 7. Discriminant analysis of labor force discontinuity: rural farm and nonfarm women, 1977–1985

Variables/ categories	N	Function 1	Function 2
Marital status		-.002	.433
Preschoolers		.511	.703
Education		-.385	.159
Rural residence		-.089	-.432
Family income		.334	-.519
Age		.879	.250
Canonical correlation		.465***	.166
Eigenvalue		.276	.028
Group Centroids			
No participation	91	.433	.091
Part time discontinuous	34	-.101	.125
Full time discontinuous	35	-.089	-.031
Continuous participation	32	-.053	-.356
Percent correctly classified			45.88

*** $p < .001$.

wise, more rural women with preschoolers were employed than in the past.

We examine these changes within the human capital model, which suggests that jobs in the paid labor force are distributed according to individual characteristics. When we examine residence patterns, levels of education, presence of preschoolers, and marital status, we find that individual differences among women play a part in their paid labor force participation patterns. However, these effects are changing over time as rural and urban women become more similar in their work patterns.

The decade of the 1980s has been described as a time of farm crisis, particularly for small, family farms. The crisis was a result of low commodity prices, high interest rates, and falling land values (Murdock and Leistriz 1988). Farming costs are rising, especially for irrigation and petroleum-based fuels and fertilizers. At the same time, economic control of agriculture is rapidly becoming concentrated with approximately 20 percent of all farms accounting for approximately 80 percent of total farm sales (Belden 1986).

We recognize the importance of these structural factors for farm women. In this paper, we use the farm crisis years as a bracket to investigate changes in the human capital model for women workers, but we do not test these structural factors directly.

Detailed examination of rural women workers reveals that their farm or nonfarm status does influence paid labor force patterns. In

1977 more rural nonfarm women were in the labor force than farm women. By 1985 this trend was reversing, with proportionately more farm women entering the market. In general, rural women's paid work tends to be part time and discontinuous in comparison to urban workers.

The acceleration of rural women, and particularly farm women, into the labor market has reduced the marked effects of human capital factors on labor patterns. The presence of preschoolers and level of education had smaller effects on full- or part-time employment of women by 1985. The data also delineate two distinct groups of women laborers in terms of work continuity. Women with discontinuous employment show a wide range of educational backgrounds as do women remaining outside the wage labor market during the 1977 to 1985 time period. Women with continuous employment between 1977 and 1985 tend to be rural women who are married and have preschoolers and lower levels of education. Perhaps the nature of farm work with a heightened need for family farm resources during the farm crisis years has created a volatile supply and demand framework for farm women.

In conclusion, these patterns demonstrate that farm women are now more likely than their nonfarm rural counterparts to participate in the paid labor force when they have high educational levels and when they are single, divorced, or widowed (and remain unmarried). We do not test farm economy factors directly, but these may increase pressures for women to seek off-farm employment. These women are competing for jobs in relatively restricted rural markets. We find that their employment is more likely to be part-time labor, but no more discontinuous than rural nonfarm women.

Rural farm and nonfarm women work in the paid labor market in patterns that are increasingly similar to urban women. The accelerated rate of employment and the part-time employment of farm women in particular suggest trends that should be noted by business and public policy makers, as well as by social service providers in rural areas. Child care, dual career mobility, low wages, lack of benefits, and disproportionately female work sectors loom on the rural horizon as increasingly important issues in this accelerated wage labor activity.

Our original hypothesis suggested that farm women's labor force participation should differ from both rural nonfarm and urban women. The unique pressures of the farm economy have been suggested as factors that might shift patterns of full- and part-time labor and employment continuity and that these may differ across locale. In light of the changed productive and consumer roles of farm women as discussed by Schwieder and Fink (1988), these work roles need further investigation up through and beyond the end of the current farm crisis. During the 1977 to 1985 period covered by this research, the gap between the groups shows some closure. The rates of full-

and part-time employment have become similar among the three groups over the years. Yet, regardless of the year, urban residence remained a strong predictor of women's employment. Individual characteristics of age, family income, education, marital status, and presence of preschoolers had diverse effects on the three groups in each of the panel years. Generally, though, by 1985 none of these factors significantly inhibited women from entering the labor market overall.

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