FACTORS CONSTRAINING LABOR FORCE

PARTICIPATION OF RURAL

OKLAHOMA WOMEN

By

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ABSTRACT

This study investigates the relationship between rural
Oklahoma women's labor force participation and ten job
factors identified as possible constraints. These job
factors were asked of all women in the sample, regardless of
employment status, to determine which factors constrain
labor force participation. Included in the model, in
addition to the job factors, are family of origin variables,
human capital variables, and sociodemographic variables.
The primary focus of the analysis is a comparison of
ordinary least squares (OLS) and a newer, more efficient
technique, logistic (logit) regression. Results are
similar; however, differences in the variables included in
the models exist. Logit corrects for many of the
statistical problems encountered with the OLS statistical
method. Job factors identified by logit as having a
negative effect on the likelihood that a rural woman will be
in the labor force include: too far to travel to available
jobs, inadequate child care, and husband disapproves

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of wife working. Two job factors, inflexible work schedules and jobs do not pay enough, are found to constrain rural Oklahoma women from having the type of job they would like.

INTRODUCTION

The growing importance of women in the labor force has contributed largely to the recent United States employment growth over the past two decades (Oppenheimer, 1973). The overall changes in women's labor force activity are attributed to social and economic changes, as well as greater labor market opportunities and shifts in demographic characteristics such as education and family size. (Brown & O'Leary, 1979). As the potential rewards and job opportunities for rural women expand, the labor market exerts a greater influence on attracting these women into the workplace. During the 1960-1970 period, women accounted for 89 percent of the employment growth in rural areas. This is comparable to only 58 percent of the employment growth in metropolitan areas (Brown & O'Leary, 1979). The U.S. Department of Labor (1980) reports that 44 percent of farm women and 48 percent of rural women are employed for pay outside the home.

In addition to the rise in labor force participation of women, including rural women, another factor, the population growth of nonmetropolitan areas indicates there is potential

for further growth of women's labor force participation in these areas (Heaton & Martin, 1979). These three developments substantiate the need to explore determinants of rural women's labor force participation but also factors that constrain rural women's participation or influence these women having the type of job they would like. Rural women are different from their urban counterparts, in that they not only have different employment opportunities but also different options for combining employment with other responsibilities related to the household and/or family business or farm (Bokemeier, Sachs & Keith, 1983).

The purpose of this study is to examine the relationship between labor force participation of rural Oklahoma women and ten job factors identified as possible constraints. The study provides insight specifically filling a void in the literature regarding constraints to rural women's labor force participation. The identification and understanding of factors constraining rural women's labor force participation is necessary for the implementation of effective rural development policies that address these constraints.

An empirical model of labor force participation is identified that includes job factors identified as potential constraints to employment for rural women. The labor force

participation model uses a multidisciplinary theoretical model identified by Peck and Nickols (1984) with job factors added to the basic model. The Peck and Nickols (1984) multidisciplinary theoretical model incorporates economic, sociologic, and psychological perspectives into sociodemographic, both family and current, and human capital components. This study examines the job factors as an additional component. The following groups of predictor variables are incorporated into the model: 1)FAMILY OF ORIGIN VARIABLES--mother's education level, father's education level, mother's occupation, father's occupation, whether mother worked or not, race, family religion and whether the respondent grew up in a rural or urban area; 2)HUMAN CAPITAL VARIABLES--respondent's age, respondent's age squared, respondent's education level, on-the-job training, and a health status indicator; 3)SOCIODEMOGRAPHIC VARIABLES--marital status, type of rural area in which the respondent currently resides, presence of children less than six years of age, children six to twelve years of age, children thirteen to eighteen years of age, husband's occupation, husband's education level, and husband's employment status; and 4)JOB FACTOR VARIABLES--lack of transportation, too far to travel to available jobs, inadequate child care, child care costs too much, inflexible

work schedules, no part-time work available, jobs don't pay
enough, no jobs available, not enough time for housework,
and husband disapproves of wife working. The model uses a
variation of the U.S. Department of Labor's definition of
LABOR FORCE PARTICIPATION, the dependent variable.
Individuals are in the labor force if they worked for pay
during the year in which the survey was taken. Also, women
who worked 15 hours or more as unpaid workers in a family
operated business are counted among the employed.

In addition to exploring the relationship between rural
women's labor force participation and the ten job factors, a
secondary purpose of this study is to compare linear and
curvilinear methods of statistical analysis. First, a brief
overview of literature related to women's labor force
participation and each of the 10 job factors is presented.
Second, the research question is stated and descriptions of
the variables are detailed. The third section describes the
methodology. Findings and discussion of the ordinary least
squares and logit techniques are presented in section four.
Finally, a summary with implications for family life
professionals and policy makers is discussed.

REVIEW OF RELATED LITERATURE

Labor Force Participation

The composition of the labor force has changed dramatically from a time when employed women were either single or were married with grown children, to the present where employed women represent all ages, marital status categories, and may or may not have children. With over half of all women in the United States in the labor force, (U.S. Department of Labor, 1985) there are more working wives than full-time homemakers (Hefferan, 1982).

The increase in labor force participation of women is due to changing economic, social and demographic trends (Grossman, 1975). These shifts in women's labor force participation have significantly altered attitudes and time use of women in paid employment and housework. Since 1960, these changes have not only affected metropolitan women but nonmetropolitan women also (Brown & O'Leary, 1979). During the period between 1960 and 1970, metropolitan women were more likely to be in the labor force but the labor force participation gap between them and their nonmetropolitan counterparts was narrowing (Brown & O'Leary, 1979). Greater educational attainments of nonmetropolitan women during this ten year span contributed to this increase. Furthermore,

Brown and O'Leary (1979) indicate nine out of ten jobs created in nonmetropolitan areas are occupied by women. Traditionally, rural women have concentrated in low wage occupations where, typically, women outnumber men (Waldeman, 1970).

Job Factor Variables

Westcott (1979) notes that workers in nonmetropolitan areas are least likely to commute because time and costs associated with commuting rise with distance traveled to work. Occupation and sex appear to be related to commuting patterns also. Garkovich (1982) found blue collar workers to be more likely to commute than white collar workers. Rural women are likely to commute shorter distances to work than rural men (Garkovich, 1982; Bryant, Dudley, & Shoemaker, 1980).

The labor force has more mothers of small children among its members in the 1980s than ever noted previously (Grossman, 1982). The negative effect of children on women's labor force participation is strongest for women with young children (Gronau, 1973; Huffman & Lange, 1982; Stolzenberg & Waite, 1981) and women with small children tend to work part-time (Long & Jones, 1980b). There is also evidence that the re-entry of the mother into the labor force is constrained by her ability to find an acceptable child care

substitute (Stolzenberg & Waite, 1981). Stolzenberg and Waite (1981) also have found the availability of adequate child care to have a greater influence than cost of child care.

Bowen and Finegan (1969) and Long and Jones (1980a) address the relationship between work schedules, job availability, and women's labor force participation. The availibility of part-time work increases labor force participation. Other important determinants include the wife's wage, husband's income, presence of children, ages of children and wife's education. The presence of children or presence of health problems may constitute less of a barrier to labor force participation if part-time work is available (Long & Jones, 1980b).

Wage rates continue to be a relevant factor in the labor force decision process. In 1980, working women were in the same relative earning position as men were at the outset of the 1970s (U.S. Department of Labor, 1980). Lower investments in human capital are a major cause of lower earnings (Mincer & Polachek, 1974). Ferber and Birnbaum (1977) believe this is a circular problem in that women specialize in housework because they earn less in the labor market and they earn less in the labor market because they specialize in housework.

The value of time spent in market work versus the value
of time spent in nonmarket work determines whether or not
women will find wage rates acceptable. Two approaches to
estimating market work and nonmarket work have been used:
the opportunity cost approach and the market cost approach.
Many economists use the opportunity cost approach. It is
based on the premise that the income a person could earn in
the market is equal to the value of the work done at home.
The market cost approach is used primarily by home
economists. This approach is based on an attempt to place a
value on work at home dependent on the cost of replacement
services (Ferber & Birnbaum, 1977; Hefferan, 1982; Ferber,
1982). Many researchers note the problems presented by each
of these methods as they attempt to provide useful
information upon which women can base their labor force
decisions (Cogan, 1980; Heckman, 1974; Heckman, 1970; Ferber
& Birnbaum, 1977; Gronau, 1974; Hausman, 1980). The value of
work at home at zero hours of market work is referred to as
the "reservation wage." If the market wage offered is lower
than the reservation wage then women will return to their
nonmarket activities, whereas, if the market wage is higher,
then the probability of a woman entering the labor force is
increased (Cogan, 1980). Hausman (1980) states that wages
alone are insufficient and other factors must be

considered. Huffman and Lange's (1982) work also emphasizes the many factors influencing farm women's decisions to participate in wage work and implications of these decisions on the farm household.

Women's workloads are also an important factor in influencing their employment status. This is especially true for married women (Hefferan, 1982). The U.S. Department of Labor (1980) reports that in 1980 seven out of ten persons not in the labor force were women and most of these women did not want a job because of their household responsibilities.

Husbands' attitudes directly influence wive's labor force participation; however, the direction of causation is unclear. The attitudes of husbands in rural areas appear to be no more traditional than husbands in urban areas (Chenoweth & Maret-Havens, 1978). Attitudes of husbands of employed women are considerably less traditional than husbands married to full-time homemakers (Ferber, 1982). In the Ferber study, the husbands of working women agree they should do more of the housework when their wives work, but it is noteworthy that they do not live up to their professed beliefs. Husband's positive attitude toward the wife's working outside the home increases the probability of the wife being in the labor force (Weil, 1961). There is also

evidence that at the time of marriage, the husband's
attitude is significantly related to the husband's level of
education (Ferber, 1982).

Past research provides a theoretical and empirical
basis for investigating the relationship between the ten job
factors and rural women's labor force participation. This
multidisciplinary approach to predicting labor force
participation probabilities exemplifies the important
interdependence between and among each of the variables
including those factors identified in this study as possible
constraints.

RESEARCH QUESTIONS

Statement of the Problem

The question addressed by this study is: What is the
relationship between rural Oklahoma women's labor force
participation and family of origin variables, human capital
variables, sociodemographic variables and the job factor
variables? Variable definitions are listed below.

Variable list

Labor force participation, the dependent variable, is
defined as follows: Individuals are considered to be in the
labor force if they did any work for pay or profit during

the year in which the survey was taken. This includes all part-time and temporary work as well as full-time, year-round employment. In addition, those who worked 15 hours or more as unpaid workers in a family operated business were considered to be employed. Also counted in the labor force were those who were not currently working but had jobs or businesses from which they were temporarily absent for noneconomic reasons. Women classified as unemployed were counted among those not in the labor force if they were unemployed at interview time and did not meet the employment criteria previously in the year.

Independent variables include:

Family of Origin

- Mother's and father's education is comprised of five dummy variables:

    MEDUC1 and FEDUC1 = Grade school education or less

    MEDUC2 and FEDUC2 = Some high school

    MEDUC3 and FEDUC3 = Completed high school

    MEDUC4 and FEDUC4 = Additional vocational training or some college

    MEDUC5 and FEDUC5 = College graduate

- Mother's and father's occupations are constructed by combining component census titles into five major categories (see Schmidt & Strauss, 1975, for a more

complete description of the constructed category

titles). The occupation dummy categories are as

follows:

MOCC1 and FOCC1 = Professional

MOCC2 and FOCC2 = White collar

MOCC34 = Craft and blue collar

FOCC3 = Craft

FOCC4 = Blue collar

MOCC5 and FOCC5 = Menial

MOCC6 = Homemaker

- Mother's work pattern while respondent was growing up

is comprised of three dummy variables:

MNOWORK = Mother did not work

MWKOFFON = Mother worked off and on, either
part-time or full-time

MWKCONT = Mother worked continuously, either
part-time or full-time

- Race of the respondent includes two dummy variables:

CORACE1 = White

CORACE2 = Other races including Blacks, Native
Americans, Hispanics, Orientals and others

- Family of origin religion dummy variables are as

follows:

FRELIG1 = Liberal Protestant

FRELIG2 = Conservative Protestant

FRELIG3 = Catholic

FRELIG4 = No religious preference

- Area where respondent grew up is comprised of four

dummy variables.

CRESTYP1 = On a farm

CRESTYP2 = In a rural area or small town, but not
a farm

CRESTYP3 = In a city (2,501 to 50,000)

CRESTYP4 = In a large city (over 50,000)

CRESTYP0 = More than one location or moved around

Human Capital Variables

- Age (AGE) is measured in actual years.

- Age squared (AGESQ) is a measure of the marginal effect

of the respondent's age.

- Education level of the respondent (REDUC1-5) is

comprised of the same dummy variables as found in the

mother's and father's education variables.

- On-the-job training (RJOBTR) is a yes/no variable

indicating the improvement of skills through training

at one's job.

- Health status indicator (DISABCON) is a yes/no variable

indicating whether or not a disability or health

limitation has influenced the respondent's labor force

participation.

Sociodemographic Variables

- Marital status dummy variables are as follows:

    MARRIED = Married

    REMAR = Remarried

    OTHMARST = Other marital status including single,
               widowed, divorced and separated

- Area where the respondent resides dummy variables

    include:

    RURAL1 = Open country and towns of 2,500 or less

    RURAL2 = Rural area near town of 2,501 to 10,000

    RURAL3 = Rural area near town of 10,001 to 50,000

    RURAL4 = Rural area near town of more than 50,000

- Respondent's current religion (CORELIG1-4) dummy

    variables are constructed using the same criteria as

    the family of origin religion variables.

- Presence of children is constructed by introducing

    dummy variables noting the presence of at least one

    child in each of the three age groups.

    NOCHILD = No children present

    DUMCH6 = Child less than 6 years of age

    DUMCH12 = Child ages 6 to 12

    DUMCH18 = Child ages 13 to 18

- Husband's occupation (HOCC1-5) dummy variables are
  constructed using the same criteria as father's
  occupation.

- Husband's education level (HEDUC1-5) is constructed
  using the same criteria as respondent's education.

- Husband's employment status is a created variable using
  information about his primary job. Dummy variables are
  combined into the following categories:

> HSELEMP = Self-employed or works in a family farm
> or business
>
> HEMPWG = Employed for a wage
>
> HNOTINLF = Not in the labor force

Job Factor Variables

- Each job factor tested as a constraint was asked of all
  women regardless of employment status. Respondents
  could answer yes or no to the job factor questions.
  Nonemployed women were asked, "Have any of the
  following factors influenced your decision not to be
  employed?" Employed women were asked, "Have any of the
  following factors influenced your opportunity to have
  the type of job you would like?" Job factors include:

    1. Lack of transportation

    2. Too far to travel to available jobs

    3. Inadequate child care

4. Child care costs too much

5. Inflexible work schedules

6. No part-time work available

7. Jobs I can get don't pay enough

8. No jobs available

9. Not enough time for housework

10. Husband disapproves of my working

It is hypothesized that the job factors constrain labor force participation of rural Oklahoma women. This study examines the relationship between each job factor and labor force participation while controlling for empirically identified variables in the literature. The analysis is expected to reveal a more comprehensive understanding of the complexity of the labor force participation decision for rural women.

METHODOLOGY

The study uses data from a larger project entitled "Factors Influencing Rural Oklahoma Women's Labor Force Decisions." The data were collected as part of a 1983 questionnaire administered by trained interviewers to 400 rural Oklahoma women between the ages of 16 and 64. A two-stage stratified random sample was drawn in order to obtain a sample of women with varying employment

possibilities might be obtained that is representative of the State. The first stage of stratification divided the state into four quadrants using the Cooperative Extension Districts as boundaries. The second stage of stratification was by distance from towns of varying sizes. The four categories of the second stage include: 1) open country and towns of less than 2,500, 2) rural area near town of 2,500 to 10,000, 3) rural area near town of 10,001 to 50,000, and 4) rural area near town of 50,001 or more. Distances from each size town were varied. Within each quadrant, the number of interviews obtained from each of the four categories was proportional to the percent of the population in each category (Fox, Peck & Nickols, 1985).

The data used in this study were weighted using whole number weights proportional to the Oklahoma rural population represented by 100 cases in each quadrant. The total nonweighted of each quadrant is 100. The total weighted of the four quadrants is 1,000. The latter is used for all analyses in this study.

Characteristics of the Sample

Labor force participation, race, age, marital status, and education level of the sample are presented in Table 1. Sixty percent of the rural women in the sample are in the

TABLE 1

SAMPLE CHARACTERISTICS

	%
Labor force participation	
No	39.9
Yes	60.1
Race	
White	94.7
Other	5.3
Age (grouped in categories)	
16-25	8.8
26-35	25.7
36-45	26.2
46-55	20.5
56-64	18.8
Marital status	
Married	82.2
Remarried	11.2
Other marital status	6.6
Respondent's education level	
Grade school or less	4.4
Some high school	16.8
Completed high school	37.8
Additional vocational training or some college	28.8
College graduate	12.2

* N=1000
Frequencies of all variables in OLS and Logit models are available, see Appendix A.

labor force. The sample is predominantly white with five percent other races. The representation of non-white women is almost exclusively Native American. The distribution is fairly even for each age cohort with over 50 percent of the sample in the 26 to 45 cohorts. Over 90 percent on the women are currently married with 82 percent of the sample in an original marriage. Most of the women have a high school education and over 40 percent have some post high school training or education.

Insert TABLE 1

The primary focus of the analyses is a comparison of the use of stepwise ordinary least squares (OLS) regression and stepwise logistic (logit) regression methods for estimating labor force participation of rural women in the presence of job factors that may be constraints. Both stepwise OLS and stepwise logit identify statistically significant (at 0.05 level) predictors. However, the use in many labor force participation studies of OLS to estimate a model with a dichotomous dependent variable is not the appropriate statistical specification of the model because: 1)the error distribution is not normal in the OLS model so the usual statistical tests are not reliable; 2)the presence

of heteroscedasticity results in a loss of efficiency; and
3) the predicted probabilities can fall outside the zero-one
range (Pindyck & Rubinfeld, 1981). The logit technique is
the specification of choice because it ensures that the
parameter estimates are consistent and the usual tests for
statistical significance can be performed. Additionally,
the OLS method predicts the probability of participation
while the logit technique predicts the likelihood or odds
that an individual will be in the labor force. The
comparison of these statistical methods fills an additional
void in the literature regarding rural women's labor force
participation.

FINDINGS AND DISCUSSION

In the regression analyses, dummy variables were
created for each variable in the identified empirical model,
excluding age and age squared. Respondent's race and
current family religion were deleted from the analyses
because of limited dispersion among the categories in each
variable. Also, because of suspected interaction between
the marital status dummies, the Chow test was used to test
the hypothesis that there is no statistical difference in
the slopes of the interaction variables and therefore can be
pooled. Using separate regression models, 1)with

restrictions (R) or interaction between the marital status category and each independent variable and, 2)unrestricted (UR) or without the interaction between the marital status category and each independent variable. The appropriate F statistic is

$$F_N = \frac{(SS\ Model_R - SS\ Model_{UR})/(df_R - df_{UR})}{MSE_R}$$

The F statistic is smaller than the critical value of the F distribution with the specified degrees of freedom; therefore, we can fail to reject the null hypothesis which means the data can be pooled (Pindyck & Rubinfeld, 1981).

Results of the stepwise OLS and the stepwise logit are similar (See Table 2). After comparisons are made comments will be directed toward interpretation of the logit model.

Insert Table 2

Variables that are unique to the linear model include a positive effect on rural women's labor force participation when the father does not have even a grade school education, when the mother has post-high school training or education, and when the family of origin religion is conservative Protestant. Variables with negative effects are some high

TABLE 2

RESULTS OF STEPWISE OLS AND LOGIT REGRESSION
ON LABOR FORCE PARTICIPATION

Independent variables	OLS Estimates[a]	Logit Estimates[b]
Mother's education level		
MEDUC1	---	---[c]
MEDUC2	---	-.16 (.23)
MEDUC3	---	-.12 (.20)
MEDUC4	.14 (.051)	---
Father's education level		
FEDUC1	.077 (.031)	---
FEDUC2	---	---
FEDUC3	---	---
FEDUC4	---	---
Mother's occupation		
MOCC1	.26 (.066)	.25 (.41)
MOCC2	---	---
MOCC34	---	---
MOCC6	-.12 (.029)	-.18 (.16)

(Table 2 continued)

	OLS Estimates	Logit Estimates
Father's occupation		
FOCC1	---	---
FOCC2	-.25 (.059)	-.30 (.32)
FOCC3	---	---
FOCC4	---	---
Whether mother worked		
Worked off and on	---	---
Worked continuously	---	---
Family religion		
Liberal protestant	---	---
Conservative protestant	.075 (.032)	---
No preference	.24 (.067)	.26 (.40)
Area where respondent grew up		
RESTYPE1	---	---
RESTYPE2	---	---
RESTYPE3	---	---
RESTYPE4	---	---
Age	---	---
Age squared	-.000058 (.000016)	-.000094 (.000089)

(Table 2 continued)

	OLS Estimates	Logit Estimates
Respondent's education level		
REDUC2	---	---
REDUC3	-.078 (.031)	-.093 (.16)
REDUC4	---	---
REDUC5	.14 (.047)	.23 (.30)
On-the-job training	---	---
Health status indicator	-.25 (.042)	-.30 (.22)
Marital status		
Married	---	---
Remarried	.13 (.045)	.19 (.26)
Area where respondent lives		
RURAL1	---	---
RURAL3	---	---
RURAL4	-.073 (.03)	-.11 (.17)
Presence of children		
Under 6 years of age	-.16 (.039)	-.22 (.22)
6 to 12 years old	---	---
13 to 18 years old	---	---
Husband's occupation		
HOCC1	---	---
HOCC2	---	---
HOCC3	---	---
HOCC4	-.16 (.035)	-.20 (.19)

(Table 2 continued)

	OLS Estimates	Logit Estimates
Husband's education		
HEDUC2	-.10	---
	(.045)	
HEDUC3	---	---
HEDUC4	---	---
HEDUC5	---	---
Husband's employment status		
Self-employed	.097	.12
	(.031)	(.17)
Not in the labor force	---	---
Job factors		
Lack of transportation	---	---
Too far to travel to available jobs	-.16	-.22
	(.038)	(.20)
Inadequate child care	-.089	-.16
	(.042)	(.23)
Child care costs too much	---	---
Inflexible work schedules	.18	.30
	(.04)	(.24)
No part-time work available	---	---
Jobs do not pay enough	.13	.13
	(.037)	(.19)
No jobs available	-.077	---
	(.038)	
Not enough time to do household chores	---	---
Husband disapproves of my working	-.12	-.13
	(.034)	(.18)

(Table 2 continued)

----

[a]OLS estimates are regression coefficients.

[b]The estimates shown are the marginal effects of each
variable evaluated at the mean {(i.e., (.6)(.4)}
of the probabilities.

[c]--=Variables did not meet 0.05 significance level for entry.
Standard errors are in parentheses.

Note: Information on mother's and father's education is recorded
in the appropriate category with that dummy variable=1;
else the dummy variable=0. The later includes 18 missing
responses for mother's education and 29 missing responses
for father's education. For single respondents in the
sample, not applicable codes for husband data are
included in the zero category. The absence of variation
among these variables for single women does not adversely
affect the analyses.

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school education of the husband and an indication of lack of available jobs.

Variables unique to the logit model are negative effects of mother with some high school education and high school completion by mother. The logit equation with variables entering only if they meet the 0.05 significance level is

$$
\begin{array}{llll}
+.56 & -.30 \text{ FOCC2} & +.25 \text{ MOCC1} & -.18 \text{ MOCC6} \\
 & (.32) & (.41) & (.16) \\
\\
 & -.16 \text{ MEDUC2} & -.12 \text{ MEDUC3} & +.26 \text{ FRELIG4} \\
 & (.23) & (.20) & (.40) \\
\\
 & -.000094 \text{ AGESQ} & +.09 \text{ REDUC3} & +.23 \text{ REDUC5} \\
 & (.000089) & (.16) & (.30) \\
\\
 & -.30 \text{ DISABCON} & +.19 \text{ REMAR} & -.11 \text{ RURAL4} \\
 & (.22) & (.26) & (.17) \\
\\
 & -.22 \text{ DUMCH6} & -.20 \text{ HOCC4} & +.12 \text{ HSELFEMP} \\
 & (.22) & (.19) & (.17) \\
\\
 & -.22 \text{ JOBFAC3} & -.16 \text{ JOBFAC4} & +.30 \text{ JOBFAC6} \\
 & (.20) & (.23) & (.24) \\
\\
 & +.13 \text{ JOBFAC8} & -.13 \text{ JOBFAC12} \\
 & (.19) & (.18)
\end{array}
$$

Sixty percent of the sample are in the labor force and forty percent are not, therefore the estimates shown are the marginal effects of each variable evaluated at the mean [(i.e., (.6) (.4)] of the probabilities. Standard errors are in parentheses.

The mother's and father's occupational status dummy variables decrease the likelihood of labor force

participation when the father has a white collar occupation (FOCC2) as well as when the mother is a homemaker (MOCC6). If the mother's occupation is in the professional category (MOCC1), then the odds are increased that the respondent will be in the labor force. Both mother's education dummy variables for some high school (MEDUC2) and completed high school (MEDUC3) have a negative effect on participation. When the family of origin has no religious preference (FRELIG4) then the likelihood of labor force participation is increased. The marginal effect of the respondent's age squared (AGESQ) is positive. Also, when the respondent has only completed high school (REDUC3) she is less likely to be in the labor force than when she has completed a college degree (REDUC5). Completing a college degree increases her likelihood of being employed by 23 percent. Having a disability or health limitation (DISABCON) decreases her likelihood of being in the labor force by 30 percent when all other variables are held constant.

Sociodemographic variables having a positive influence on labor force participation include whether or not the respondent is remarried (REMAR) or has a husband who is self-employed (HSELFEMP). Living near a town of 50,000 or more (RURAL4), having a child under six years of age (DUNCH6) or a husband who is a blue collar worker (HOCC4)

have a negative influence on labor force participation.

Job factors having a negative effect on the likelihood that a rural woman will participate in the labor force include too far to travel to available jobs, inadequate child care, and husband disapproves of wife working. When empirically identified predictors are held constant, the participation differences are notable. Participation is 22 percent lower when it is too far to travel to available jobs, 16 percent lower when adequate child care is not available and 13 percent lower when the husband disapproves of wife working.

Other supportive analyses include cross-tabular frequencies and chi square tests performed on each independent variable and labor force participation. These indicate significant relationships between labor force participation and age squared, education, presence of children less than six years of age, husband's occupation, and husband's employment status when self-employed or unemployed. Job factors, too far to travel to available jobs, inadequate child care, inflexible work schedules and husband disapproves of wife working are also significantly related to labor force participation.

Table 3 shows cross-tabular frequencies of each job factor by labor force participation. Almost one-fourth of

TABLE 3

CROSS-TABULAR FREQUENCIES OF LABOR FORCE
PARTICIPATION AND JOB FACTORS

Job factors	Labor Force Participation	
	No n	Yes n
Lack of transportation		
No	364	567
Yes	35	25
Too far to travel to available jobs*		
No	273	495
Yes	126	106
Inadequate child care*		
No	311	519
Yes	88	82
Child care costs too much		
No	329	527
Yes	70	74
Inflexible work schedules*		
No	349	482
Yes	50	119
No part-time work		
No	335	535
Yes	64	66
Jobs don't pay enough		
No	282	427
Yes	117	174
No jobs available		
No	293	472
Yes	106	129
Not enough time to do housework		
No	335	521
Yes	64	80
Husband disapproves of my working*		
No	271	496
Yes	128	105

n=1000

* Chi-square statistically significant at 0.05

the sample indicate the job factor, too far to travel to available jobs influences their labor force decisions. Seventeen percent of the respondents say inadequate child care and inflexible work schedules influence labor force participation. Almost one-third of the sample indicate that jobs do not pay enough; however, 59 percent of these women are in the labor force despite this constraint. Twenty-three percent of the respondents indicate the husband disapproves of wife working. As a result, over half of these women choose not to be employed in the labor force.

Insert Table 3

The cross-tabular presentations of the three job factors indicating a negative relationship to labor force participation are consistent with the logit analysis. In each of these job factors (too far to travel to available jobs, inadequate child care and husband disapproves of wife working) the actual frequency of women indicating the job factors influenced their labor force decisions also has a greater expected frequency indicating the job factors constrain them from entering the labor force.

The two job factors that are statistically significant in the logit model and appear to have a positive influence

on labor force participation are inflexible work schedules
and jobs do not pay enough. Recognizing that the
cross-tabular frequencies of the job factors and labor force
participation do not control for other influences, the
information provides insight and is useful in interpreting
the logit results. The cross-tabular frequencies of
inflexible work schedules and labor force participation
indicate that 169 of the 1,000 women in the sample say the
job factor is a concern. Of this total, 50 women are not in
the labor force, indicating the job factor has influenced
their decision not to be employed. One hundred nineteen
women (expected frequency is 102) indicated inflexible work
schedules are a concern but are in the labor force anyway.
This suggests that the job factor constrains these woemn
from having the type of job they would like. Regarding the
job factor, jobs do not pay enough, 291 women say it
influences their labor force decisions. Of this total, 117
women are not employed, therefore the job factor has
influenced their decision not to seek employment. The 174
women who are employed despite the concern regarding jobs do
not pay enough, indicates the job factor influences their
opportunity to have the type of job they would like.

All five job factors constrain rural Oklahoma women's
labor force participation. Each job factor either

constrains these women from seeking employment or constrains them from having the type of job they would like.

SUMMARY AND IMPLICATIONS

The labor force participation decision is complex with many factors influencing the choice available to rural women. By using the theoretical model developed by Peck and Nickols (1984) and including the job factors identified as possible constraints, a more comprehensive understanding of conditions that limit the labor force participation choices of Oklahoma women can be reached. This study indicates how households facing the necessity of labor force choices, with given constraints, will, at the margin weigh benefits and costs of participation. For example, two job factors—inflexible work schedules and jobs do not pay enough—constrain women who are in the labor force from having the type of job they would like. The job factors, too far to travel to available jobs, inadequate child care, and husband disapproves of wife working, constrain labor force participation.

There are three major implications. 1) Distance to work is a constraint for rural women. Rural development policy could facilitate decentralization of employment centers by providing incentives for small or ancillary

businesses locating in rural areas. 2) Inadequate child
care is a constraint that both business and government can
address with policies to encourage provision of, child care
in the workplace or by providing an incentive for more
available adequate day care. 3) The husband's attitude
affects the wife's labor force behavior. The woman's
satisfaction level may be reduced when the husband
disapproves of her employment. Satisfaction level: in
households where the husband disapproves of the wife working
are even lower when the wife is employed anyway. Even
though household's tastes and preferences toward the
work/leisure tradeoff have changed over time, individual's
attitudes differ and these differences are important in
predicting labor force participation.

This research substantiates the previously established
theoretical relationship between rural women's labor force
participation and family of origin, human capital and
sociodemographic components. However, results are lacking
without including those job factors identified as possible
constraints. A comparison of a newly developed statistical
technique, logistic regression, and frequently used ordinary
least squares regression reveals differences not only in the
variables included in the model, but also provides more
efficient estimates when logit is used.

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APPENDIXES

APPENDIX A

REVIEW OF LITERATURE

Introduction

Throughout time, women have been engaged in economic production. For ages this type of production was carried on in the home and unless a product was made and sold or traded there was no economic value given to this type of production. Beginning in the early 1900s American women began to leave the home opting for the employment opportunities created by industrialization. With the development of factories, single women and children entered the ranks previously held by men in the labor force. However, it was not until World War I that married women were to become a major segment of the labor force. After World War II employment of married women with children began, continued to the present, and is expected to increase in the future (Rallings & Nye, 1979).

There have been dramatic changes in women's role in the labor force in the last fifty years. Fifty years ago only one in eight married women participated in the paid labor

force. Concern for the nonworking sector is still the impetus for much research concerning the value of the homemaker's work at home as well as identifying factors that influence her labor force decisions (Hefferan, 1982). Today there are more working wives than full-time homemakers (Hefferan, 1982). The amount and type of research devoted to the employed and nonemployed wife has increased as well. Beginning with the time-use studies of nonemployed married women, researchers noted the shift from time spent in household duties to managerial and family care activities. Finally, the research of the 1960s and 1970s began to include employed women in the data.

The economic value of household work performed in families remains a major economic contribution by married women to the family. It has been shown that women in multi-earner families produce major nonmoney and money contributions to the family's financial security (Hefferan, 1982).

The increase in rural women employed for pay has been a more recent trend in women's labor force activity. From 1960 to 1970, women accounted for 89 percent of the employment growth in nonmetropolitan areas compared with only 58 percent in metropolitan areas (Brown & O'Leary, 1979). The growth in the nonmetropolitan sector was not

associated with commuting to metropolitan workplaces as much
as to the increased job opportunities in rural areas.
During this period, metropolitan women were more likely to
be in the labor force but the labor force participation gap
between them and their nonmetropolitan counterparts was
decreasing. Greater educational attainments of
nonmetropolitan women during this period also contributed to
this increase. Furthermore, in nonmetropolitan areas nine
out of ten jobs created were occupied by women. The Brown
and O'Leary study (1979) reveals that rural labor market
opportunity and traditional rural attitudes interact with
economics and family life cycle stage to play important
roles in facilitating or constraining rural women's labor
force decisions.

In 1970, 61 percent of metropolitan women were in white
collar occupations. Nonmetropolitan women were more highly
represented in operative and service jobs because the
primary growth in the rural labor market was in craft and
operative-type jobs (Brown & O'Leary, 1979). Women were
concentrated in the low-wage occupations where typically
women outnumbered men (Waldeman, 1970). Even though the
labor market situation was less than ideal, these were jobs
that had not previously existed in rural areas. While wages
might be seen as relatively low for rural women, their

income made a major contribution to family living
standards.

The labor market picture has not improved since the
Brown and O'Leary study. Since 1979 employment growth in
rural areas has declined. This decline is attributed to the
type of industry and jobs created in these areas (Daberkow &
Bluestone, 1984).

The slowed growth of rural areas must become a public
policy issue in order to expand economic opportunities for
rural women. The following review of literature is
organized by topics that will be examined in order to
determine factors that constrain rural women's labor force
participation. These factors include: lack of
transportation, too far to travel to available jobs,
inadequate child care, child care costs too much, inflexible
work schedules, no part-time work available, jobs do not pay
enough, no jobs available, not enough time for housework,
and husband disapproves of wife working.

Transportation and Distance Travelled Factors

For a given market wage, fixed costs associated with
commuting to work can be expected to reduce the probability
of labor force participation (Huffman, 1975; Cogan, 1980).
Increasing the distance reduces the probability of the
wife's or husband's wage work. Using census data,

Stolzenberg and Waite (1981) examined convenience factors, including public transportation use and distance travelled but found no relationship between these characteristics and the constraint of children and women's labor force participation. The relationship was strongest for women with young children. For women with heavy child care responsibilities, convenient working conditions reduces the constraint of children (Darian, 1975). Women's home role requirements are important predictors of the distance travelled to work.

Travel to work literature is often contradictory and is limited where rural women are concerned. Garkovich (1982) noted that persons in totally rural counties are more likely to commute than those in urban counties. In addition, commuters from totally rural counties are proportionally less likely to travel to metropolitan jobs. Conversely, Westcott (1979) noted that workers in nonmetropolitan areas are least likely to commute because time and costs associated with commuting rise with distance traveled to job. Therefore, many nonmetropolitan workers seek jobs close to home. Access to employment may be a key factor related to women's labor force participation (Sweet, 1972).

Occupation type and sex appear to be related to commuting patterns also. In most cases, blue collar workers

are more likely to commute than white collar workers (Garkovich, 1982). The influence of sex is greater than the occupation type. Bryant et. al., (1980) found rural men travelled farther to work than rural women but upper status workers travelled less distances than middle and lower status workers.

Child Care

The labor force has more mothers of small children among its members in the 1980s than ever recorded in our history. In 1981, 54 percent of children below age 18 had mothers who were either employed or looking for employment and 45 percent of all preschoolers had working mothers (Grossman, 1982).

Long and Jones (1980b) indicate that the presence of children affects employment choices of women since women with young children tend to work part-time rather than full-time. Gronau (1977) found the presence of preschool children to have a negative effect on women's labor force participation. The ages of children may have the greatest effect of child-related variables on labor force participation of married women. Again, the relationship between constraints on labor force participation and presence of children is strongest for women with younger children (Huffman & Lange, 1982; Stolzenberg & Waite, 1981).

While much research points to a relationship between

presence of children and labor force participation, there is

little agreement on the direction of the relationship.

Wife-mother employment has generated a new type of role

conflict. The question is whether to remain home caring for

children or to opt for substitute care that is acceptable

and adequate. There is evidence that indicates that

re-entry of the mother to the labor force is constrained by

the ability of mothers to find an acceptable child care

substitute (Stolzenberg & Waite, 1981). It would seem that

when child care is expensive or difficult to arrange, then

labor force participation might be constrained. However,

availability of child care has a greater influence than cost

of child care (Stolzenberg & Waite, 1981).

Traditionally the major portion of responsibility for

child care has been left to the mother. If women are to

enter the labor market, some of this responsibility will

have to be shared by other family members, provided by

society or contracted by the mother (Rollings & Nye, 1979).

A contingent factor is the interpretation of the terms

acceptable and adequate. Thus quality and cost of

substitute care is of concern to families. In some cases,

lack of adequate care may be a definite constraint to

employment; whereas, adequate care would be considered a

facilitator (Rallings & Nye, 1979). Economic need could

overshadow this constraint as more families are dependent on

two wage earners for economic survival (Sweet, 1972;

Grossman, 1975). These concerns appear to be much the same

for women regardless of place of residence.

For a majority of children, families and public schools

are the caretakers. Surprisingly, only small proportions of

children spend more than thirty hours per week in

nonparental or nonschool care (Bane et al., 1979). For

children over 6 years of age the public school is the major

caretaker with supplement care needed for only a small

amount of time.

Work Schedule and Job Availability

Availability of part-time work positively influences

women's labor force participation (Bowen & Finegan,1969).

Long and Jones (1980b) found the wife's wage and husband's

income to be very important in determining whether the wife

works part-time, full-time or not at all. Other

determinants include presence and ages of children and

wife's education. The presence of children or the presence

of health problems may constitute less of a barrier to labor

force participation if part-time work is available.

Part-time work may also allow some women to continue in the

labor force while fulfilling other responsibilities.

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Job availability is dependent on many factors. As
previously stated, opportunities in nonmetropolitan areas
have declined (Daberkow & Bluestone, 1984); however, the
answers to job availability questions require more than the
study of unemployment rates for an area. Other factors that
may influence this decision include: educational
attainments, amount of on-the-job training and others.

Wage Rates of Women

The work of Gronau (1973) and Becker (1965) suggest
that market time of the wife is directly related to her
market wage and inversely related to her husband's wage, to
nonlabor income of the family and to the number of children
of various ages. After a period of nonparticipation, wives
are more likely to reenter if their earnings capacity has
increased. Race is also a factor, as seen by nonwhites'
reentry not necessarily being related to wage rates (Long &
Jones, 1980a).

Wage rates then may be viewed as either a constraint or
facilitator for women's labor force participation. The
hourly wage rate for women depends on the individual's
schooling, experience and additional training (Mincer,
1974). A year of a womans schooling may be more effective in
raising her wage rate than a year of husband's schooling is
in raising his wage rate. Increasing the woman's experience

also has a positive but diminishing marginal effect on wage rates (Huffman & Lange, 1982). Gronau (1977) finds education and wages to have a positive effect on women's labor force participation.

Wage rates continue to be a relevant factor in the labor force decision process. In 1980, working women were in the same relative earning position as men were at the outset of the 1970s (U.S. Department of Labor, 1980). Lower investments in human capital are a major cause of lower earnings (Mincer & Polachek, 1974). Ferber and Birnbaum (1977) believe this is a circular problem in that women specialize in housework because they earn less in the labor market and they earn less in the labor market because they specialize in housework.

Economic need is a major influence in keeping women in the labor force despite wage inequity. Wive's labor force participation tends to be higher when the husband's income is low (Bowen & Finegan, 1969). An increase in wives in higher income groups entering the labor force indicates that economics may no longer be a primary reason for their participation. The earnings of the wife in the emerging society of multi-earner families allows the family to enjoy a higher level of living.

The value of time spent in market work versus the value

of time spent in nonmarket work determines whether or not women will find wage rates acceptable. Women must first know how much could be earned. Because of the intermittent work histories of women, losses in earnings are inevitable. This is partly due to training obsolescence and anticipated possibilities that another leave-of-absence from the work force may occur. Knowing their current market worth could assist women in projecting long term worth (Ferber & Birnbaum, 1977).

An estimated value of nonmarket work is equally important in reaching a rational decision regarding labor force participation. Two approaches have been used: the opportunity cost approach and the market cost approach. Many economists use the opportunity cost approach. It is based on the premise that the income a person could earn in the market is equal to the value of the work done at home. The market cost approach is used primarily by home economists. This approach is based on an attempt to place a value on work at home dependent on the cost of replacement services (Ferber & Birnbaum, 1977; Hefferan, 1982; Ferber, 1982). Problems are noted by many researchers with each of these methods as they attempt to provide useful information upon which women can base their labor force decisions (Cogan, 1980; Heckman, 1974; Heckman, 1978; Ferber &

Birnbaum, 1977; Gronau, 1974; Hausman, 1980). The value of work at home at zero hours of market work is referred to as the "reservation wage." If the market wage offered is lower than the reservation wage, research shows that a woman will return to her nonmarket activities. Whereas, if the market wage is higher, then she will enter the labor force (Cogan, 1980). Hausman (1980) states that wages alone are insufficient but that other factors must be considered when predicting women's labor force probabilities. Huffman and Lange's (1982) work also emphasizes the many factors influencing farm women's decisions to participate in wage work and implications of these decisions on the farm household.

Household Responsibilities

Married women's workload is very important in influencing their employment status (Hefferan, 1982). Wives responsibilities outside the home have not significantly influenced a reallocation of household tasks among other family members. The 1980 General Mills American Family Report found more women chose full or part-time work over homemaking even though their home workload had not decreased. Even in the absence of economic necessity, a majority of the women surveyed stated they would choose to work outside the home.

In contrast the U.S. Department of Labor reported that in 1980 seven out of ten persons not in the labor force were women and most of these women did not want a job. These women neither worked nor looked for work because of their household responsibilities.

Husband's Attitude Toward Wife's Employment

Husbands' attitudes are an important factor in determining their wive's labor force status. These attitudes are directly influenced by the wife's labor force status, in that husband's attitudes tend to be unfavorable toward women in the labor market when they become accustomed to a wife who has been a full-time homemaker (Ferber, 1982). Attitudes of husbands of working women are considerably less traditional than husbands married to full-time homemakers. In addition, the husbands of working women agree they should do more of the housework when their wives work, but it is noteworthy that they do not live up to their professed beliefs (Ferber, 1982).

Spitze and Waite (1981) also investigated perceived husbands' attitudes influence upon wive's employment. Spitze and Waite (1981) indicate husband's attitude change to conform to the wife's attitude and employment status but that the husband's perceived attitude is the most influential in predicting labor force status. Husband's

positive attitudes toward work outside the home increase the probability of the wife being in the labor force (Weil, 1961). Therefore the more conservative the husband's attitude, the more likely the wife's career will be in the home.

At the time of marriage, the husband's attitude is significantly related to the husband's level of education (Ferber, 1982). This is consistent with other studies that suggest that highly educated people have less traditional attitudes toward women's roles.

It is still unclear if husband's attitude influences women's labor force participation or visa versa but it is clear that a strong relationship exists between the two variables.

Summary

The theoretical and empirical evidence provides a sound basis for investigating the relationship between the ten job factors and women's labor force participation. While few of the studies cited address rural women's labor force decisions, the information is applicable to this study and strengthens the justification for more research regarding rural women.

APPENDIX B

METHODOLOGY AND SAMPLE DESCRIPTION

The data used in this study were part of a larger
research project entitled "Factors Influencing Oklahoma
Rural Women's Labor Force Participation" which was
administered by the Family Study Center, College of Home
Economics, Oklahoma State University. The purpose of this
study was two-fold: 1) to examine respondent's response to
ten possible labor force participation constraint factors
and to identify constraints, and 2) to examine the
relationship between labor force participation and family of
origin, human capital and sociodemographic variables when
job factors are added to the analysis. Data were collected
on each of these subtopics including:

Family of origin   father's occupation
                               mother's occupation
                               father's education
                               mother's education
                               mother's work history
                               race
                               respondent's age
                               area where respondent grew up
                               family religion

Human capital	respondent's age
	respondent's age squared
	respondent's education
	on-the-job training
	whether respondent is disabled
Sociodemographic	respondent's marital status
	rural area where presently residos
	respondent's religion
	presence of children under age 6, ages 7 to 12 and 13 to 18
	husband's occupation
	husband's education
	husband's employment status

Description of Sampling Technique

These data were collected as part of a 1983 questionnaire administered to rural Oklahoma women. A sample of 400 women between the ages of 16 and 64 was obtained. The two-stage stratified random sample was selected proportional to the population of designated rural areas.

The State of Oklahoma was divided into four quadrants (northwest, northeast, southwest, and southeast). These are the same boundaries designated by Oklahoma Cooperative Extension to divide the state. One hundred interviews were conducted in each quadrant. Data from each quadrant were weighted so that results might be generalized to the entire state. Weighting is necessary because of the uneven

distribution of the rural Oklahoma population. The sample
was weighted using whole numbers so that the sample total is
1,000.

To ensure a sample representative of the entire State,
as well as a sample with varying employment possibilities,
rural areas were divided into four categories. The
categories included: 1) open country and towns of 2,500 or
less, 2) rural areas near towns of more than 2,500 to
10,000, 3) rural areas near towns of more than 10,000 to
50,000, and 4) rural areas near towns of more than 50,000.
The number of interviews obtained in each category was
proportional to the percent of the population in each
category. For a more complete explanation of the sampling
design, refer to Fox, Peck and Nickols (1985).

Description of Variables of Interest and Sample Description

The variables used in this analysis come from a more
comprehensive list of variables identified in the Peck and
Nickols (1984) multidisciplinary labor force participation
model. Inclusion of these variables into this study is
based on previous research relating these to labor force
participation. The number of cases may vary from the 1,000
total because of missing responses to some questions. For
example, missing information in the husband related

variables is due to the number of women without husbands
present.

Labor force participation. Individuals are considered
to be in the labor force if they did any work for pay or
profit during the survey week. This includes all part-time
and temporary work as well as full-time year-round
employment. In addition, those who work 15 hours or more as
unpaid workers in a family-operated enterprise are also
counted as employed. Individuals who are not working but
who had jobs or businesses from which they are temporarily
absent for personal or non-economic reasons are also counted
as in the labor force. Sixty percent of the women in this
study are considered to be in the labor force based on this
definition. Many of these women are homemakers but
contributed 15 hours or more as unpaid workers in the family
business.

Family of Origin Variables. The variables in this
component provide information on the respondent's family
history. These variables are included because of their
relevance to the respondent's labor force participation
decision. Because there are so few responses in some
categories, these categories are combined to form the
following variables (see Appendix Table 1).

The occupation variables are grouped according to

TABLE I

FAMILY OF ORIGIN VARIABLES

	%
Father's occupation	
Professional	12.2
White collar	6.2
Craft	48.8
Blue collar	25.3
Menial	2.9
Mother's occupation	
Professional	5.1
White collar	11.5
Craft or blue collar	9.7
Menial	37.7
Homemaker	34.2
Father's education*	
Grade school or less	51.1
Some high school	13.8
Completed high school	21.0
Additional vocational training or some college	7.4
College graduate	6.7
Mother's education*	
Grade school or less	43.1
Some high school	15.5
Completed high school	26.9
Additional vocational training or some college	9.6
College graduate	5.0
Mother's work pattern	
Mother did not work	58.9
Mother worked off and on	20.3
Mother worked continuously	20.8

(Table I continued)

	%
Race	
White	94.7
Other	5.3
Age (grouped in categories)	
16-25	8.8
26-35	25.7
36-45	26.2
46-55	20.5
56-64	18.8
Where respondent grew up	
On a farm	55.5
In a rural area or small town but not a farm	20.3
In a city (2,501-50,000)	12.4
In a large city (over 50,000)	9.7
More than one location or moved around	2.1
Family religion	
Liberal protestant	25.9
Conservative protestant	63.0
Catholic	5.9
No religious preference	5.2

*N=1000 unless missing information

census titles used to classify occupations (Schmidt and

Strauss, 1975). They include:

1. Professional   professional technical and kindred
                  workers, manager, officials, and
                  propietors, except farm
2. White collar   clerical and kindred workers, sales
                  workers, military and
                  protective workers
3. Craft   craftsmen, foremen and kindred workers,
                  farm managers and farmers
4. Blue collar   operatives and kindred workers,
                  laborers, except farm and mine
5. Menial   private household workers, service
                  workers, except private household
                  farm laborers and foreman

The homemaker grouping is added to the mother's

occupational categories. Over one-half of the respondents'

fathers are in craft occupations. This is primarily due to

the number of farmers in the sample. Two-thirds of the

mothers are homemakers and/or menial workers which includes

unpaid farm laborers. Parents of the respondent's are not

highly educated as 49 percent of fathers and 41 percent of

mothers have only completed grade school. Few have

additional training or education past the completion of high

school. Fewer women in the sample have mothers who worked

outside the home in either part-time or full-time jobs. The

sample is predominantly white and is fairly evenly

distributed among each of the age cohorts. Over one-half of

the women in the sample grew up on a farm. Most of the

respondent's grew up in families professing a religious

preference. Over 60 percent of these women grew up in families attending conservative Protestant churches including Baptists, Church of God, Church of Christ, and others considered fundamental in their beliefs.

Human Capital Variables. Human capital theory suggests that when more resources are invested into the training of labor, then labor becomes more productive. The relationship between earnings and investment of resources such as on-the-job training and education is a positive but decreasing function of these human capital variables (Mueller, 1982). Because of the few responses in some categories these categories have been grouped to form the following variables (see Appendix Table 2).

Over 40 percent of the women in the sample have some training or post-high school education. However, only one in every eight women sampled have a college degree. Ninety-five percent of the women have been employed for pay or done more than 15 hours of work per week unpaid work in a family farm or business since age 18. Almost one-fourth of the women have worked more than twenty years. Disabilities restrict the labor force participation of only 13 percent of rural Oklahoma women.

Sociodemographic variables. The sociological and demographic characteristics provided here include: marital

TABLE II

HUMAN CAPITAL VARIABLES

	%

Education

Grade school or less	4.4
Some high school	16.8
Completed high school	37.8
Additional vocational training	
or some college	28.8
College graduate	12.2

On-the-job-training

No	41.4
Yes	58.6

Whether respondent is disabled

No	85.9
Yes	14.1

N=1000

status, area where respondent resides, presence of children,
husband's occupation, husband's education and husband's
primary job or employment status (See Appendix Table 3).

Approximately nine out of ten women interviewed are
married. Over one-third of the sample live in rural areas
and near small towns whose population is less than 7,500.
Another third of the sample live in rural areas near towns
of over 50,000. Almost one-fourth of the women have children
under the age of six. Almost one-third of the women had
children ages 6 to 12 and/or children ages 13 to 19. Using
the same occupational categories described in the family of
origin variables section, almost 40 percent of the husbands
are craft workers which include farmers and farm managers.
Another 25 percent of the husbands are professional workers
made up primarily of administrators and managers. Forty-six
percent of the husband's have completed high school and 43
percent have some additional training or education past high
school. Over 80 percent of the husbands are employed or
selfemployed. Only 2 percent of the husbands are
unemployed.

Job Factors. Each job factor tested as a constraint
was asked of all women regardless of employment status (See
Appendix Table 4). Non-employed women were asked if the
factors influenced their decision not to be employed.

TABLE III

SOCIODEMOGRAPHIC VARIABLES

	%
Marital status	
Married	82.2
Remarried	11.2
Other marital status	6.6
Residence type	
Open country and towns of 2,500 or less	39.0
Rural area near town of >2,500-10,000	11.8
Rural area near town of >10,000-50,000	15.6
Rural area near town of >50,000	33.6
Presence of children under 6	
No	76.2
Yes	23.8
Presence of children ages 6 to 12	
No	67.1
Yes	32.9
Presence of children ages 13 to 18	
No	67.0
Yes	33.0
Husband's occupation*	
Professional	24.9
White collar	7.5
Craft	39.5
Blue collar	22.6
Menial	5.4

(Table III continued)

	%
Husband's education*	
Grade school or less	21.5
Some high school	34.6
Completed high school	7.4
Additional vocational training or some college	21.2
College graduate	15.3

* N=1000 except for husband variables. Of the 1000 respondents 6.6% have no husband present, therefore the information is not applicable and is coded as missing.

Employed women were asked if the job factors influenced their opportunity to have the type of job they would like.

Almost one-fourth of the women indicated that it is too far to travel to available jobs. Seventeen percent of the women said that inadequate child care and inflexible work schedules influence their labor force participation decisions. Jobs do not pay enough is an influential factor in the employment decision of one-third of the rural women in the sample. Job factors, no jobs available and husband disapproves of my working also influence the decisions of almost twenty-five percent of the sample.

Analysis

The relationship between labor force participation and family of origin, human capital, sociodemographic, and job factor variables is analyzed using stepwise ordinary least squares (OLS) regression and stepwise logistic (logit) regression. Both techniques are methods for estimating labor force participation. Both stepwise OLS and stepwise logit identify statistically significant predictors at the 0.05 significance level. However, the use of OLS to estimate a labor force participation model with a dichotomous dependent variable is not the statistical specification of choice because: 1)the error distribution is

TABLE IV

JOB FACTOR VARIABLES

	No %	Yes %
Lack of transportation	94.0	6.0
Too far to travel to available jobs	76.8	23.2
Inadequate child care	83.0	17.0
Child care costs too much	85.6	14.4
Inflexible work schedules	83.1	16.9
No part-time jobs available	87.0	13.0
Jobs I can get do not pay enough	70.9	29.1
No jobs available	76.5	23.5
Not enough time for housework	85.6	14.4
Husband disapproves of my working	76.7	23.3

N=1000

not normal in the OLS model so the usual statistical tests
cannot be performed; 2) the presence of heteroscedasticity
results in a loss of efficiency; and 3) the predicted
probabilities can fall outside the zero-one range. The
logit technique is the specification of choice because it
ensures that the parameter estimates are consistent and the
usual statistical tests can be performed. Additionally, the
OLS method predicts the probability of participation while
the logit technique predicts the odds that an individual
will be in the labor force.

Summary

This study used data from a larger study and
investigated job factors influencing rural Oklahoma women's
labor force participation with family of origin, human
capital, sociodemographic variables added to the analyses.
The job factors tested as constraints were asked of all
women in the sample, regardless of employment status. The
primary focus on the analyses is a comparison of linear and
curvilinear methods of estimating labor force
participation.

APPENDIX C

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TABLE V

RESULTS OF CHI SQUARE TEST ON LABOR FORCE PARTICIPATION
AND INDEPENDENT VARIABLES

Independent Variables	Labor Force Participation
Family of Origin Variables	
Father's occupation	
Mother's occupation	
Father's education	
Mother's education	
Mother's work pattern	
Race	
Age of respondent	
Where respondent grew up	
Family religion	
Human Capital Variable	
Education	*
On-the-job training	
Whether respondent is disabled	
Sociodemographic Variables	
Marital status	
Rural area where currently resides	
Respondent's religion	
Presence of children < 6 years of age	*
6-12 years of age	
13-18 years of age	
Husband's occupation	*
Husband's education	
Husband's employment status	
Self-employed	*
Employed	
Unpaid worker	*
Paid-in-kind	
Student	
Unemployed	*
Discouraged worker	
Laid-off	
Retired	*
Job Factor Variables	
Lack of transportation	
Too far to travel to available jobs.	*
Inadequate child care	*
Child care costs too much	
Inflexible work schedules	*
No part-time work available	
Jobs don't pay enough	
No jobs available	
Not enough time to do housework	
Husband disapproves of wife working	*

*Notes statistical significance ($\underline{p} < 0.05$)

TABLE VI

RESULTS OF CHI SQUARE TEST ON LABOR FORCE PARTICIPATION AND INDEPENDENT VARIABLES CONTROLLING FOR JOB FACTORS

Independent Variables	Lack of Transportation		Too Far to Travel to Available Jobs		Inadequate Child Care		Child Care Cost is Too Much		Inflexible Work Schedules		No Part-time Jobs Available		Jobs I can Get Do Not Pay Enough		No Jobs Available		Not Enough Time to do Housework		Husband Disapproves of Wife Working	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Family of Origin																				
Father's occupation								*y					*n							
Mother's occupation									*n											
Father's education																				
Mother's education																		*y		
Mother's work pattern		*y																		
Race																				
Age						*y														
Where respondent grew up																				
Family religion																				
Human Capital Variables																				
Education	*n		*n		*n		*n		*n		*n		*n		*n		*n		*n	
On-the-job training													*n	*y						
Whether respondent is disabled	*n		*n		*n		*n		*n		*n		*n		*n		*n		*n	
Sociodemographic Variables																				
Marital status																				
Rural area where currently resides				*y																
Respondents religion																				
Presence of children < 6	*n		*n							*y		*y	*n						*n	
6-12																				
13-18																				
Husband's occupation	*n		*n		*n	*y	*n								*n		*n			
Husband's education																				

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TABLE VI (Continued)

Independent Variables	Job Factors																			
	Lack of Transportation		Too Far to Travel to Available Jobs		Inadequate Child Care		Child Care Cost is Too Much		Inflexible Work Schedules		No Part-time Jobs Available		Jobs I can Get Do Not Pay Enough		No Jobs Available		Not Enough Time To Do Housework		Husband Disapproves of Wife Working	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Husband's Employment Status																				
Self-employed	*n		*n	*y	*n		*n		*n		*n	*y	*n		*n	*y	*n		*n	*y
Employed																				
Unpaid worker	*n		*n		*n		*n		*n		*n		*n		*n		*n		*n	
Paid-in-kind																				
Student																				
Unemployed																				
Discouraged worker																				
Laid-off																				
Retired			*n								*n		*n		*n		*n			

*Notes statistical significance ($p < 0.05$)

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