

Demand for Skills Training in the Rural South

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ABSTRACT

This paper examines the value that people in the rural South place on job training. It investigates the factors associated with individuals' willingness to participate in skills training. The analysis uses an extended version of a human capital approach that incorporates individuals' attitudes and expectations, and community factors combined with other socioeconomic and demographic variables. The study employs survey data of 1200 individuals in eight southeastern states and a logistic regression model of 676 workers in the sample. The findings suggest that while a human capital approach is useful in studying the factors that affect individuals' willingness to participate in job training programs, a wider framework incorporating individuals' attitudes, expectations, and other community factors provides a better representation.

INTRODUCTION

A widely held explanation of high poverty rates in rural America is that rural residents lack human capital relative to those in metropolitan America (Jensen and McLaughlin, 1995). Lower levels of education, training and labor force experience, it is argued, increase poverty rates by reducing the prevailing wage and impeding business investment (Smith, 1993). Improved productivity of the local labor market is consequently indispensable to developing new businesses and hence, to economic development in most rural areas.

A major form of human capital formation, other than education, is job skill training. Many workers seek further training to enhance existing skills or develop new ones, with the expectation that training leads to better jobs and a higher standard of living. Training gives employees an opportunity for enhancing their own performance in a current, or, future workplace (Jacobs et al., 1996), and makes productivity higher in firms with a well-trained labor force. The effects of training on the individual's subsequent earnings and career development have been found to be beneficial in several earlier studies (Greenhalgh and Mavrotas, 1994; Booth, 1991; Greenhalgh and Stewart, 1987). Public policy makers see training as contributing to the larger goal of improving the quality of the

workforce and enhancing national competitiveness (Jacobs et al., 1996). Hence, insights into the factors affecting individuals' demand for training or, in other words, improving our knowledge of the attributes of individuals who are willing to gain further training, as well as those who are not willing to undergo training, is important. Such information could lead to policies that promote training, by offering better incentives tailored to participants, and improving the effectiveness of prevailing programs.

The prevailing literature in this area is less than comprehensive. These studies are grounded on the fact that training decisions, like any other investment decision, are based only on economic incentives (see Greenhalgh and Stewart, 1987; Altonji and Spletzer, 1991; Greenhalgh and Mavrotas, 1992; Green, 1993). Understanding the decisions individuals make about participation in training programs requires a consideration of more than "rational self-interest." The factors that encourage or discourage participation in training programs go beyond individual economic motives to encompass a wide array of other factors that are important from a policy perspective, such as, employee aspirations, expectations, job characteristics, and community factors. These issues have not been considered jointly in prior studies.¹

The purpose of this paper is to propose and test a conceptual model of individuals' willingness to undergo skills training in the rural South. Our objective is to incorporate a wide range of factors into the model to demonstrate the complexity of skill development decisions. We analyze a data set from an extensive survey of residents of the rural South of the United States, which includes measures of individuals' career aspirations, expectations and attitudes, community (structural and social) factors, demographic and economic factors, and current job characteristics. The survey was conducted in January and February of 1996 by Roper Starch Worldwide. In total, 1200 people were interviewed face-to-face in rural areas of Alabama, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia.

Previous Work

Most of the studies on job and skills training are grounded in human capital theory. This theory suggests that individuals forgo present earnings to enhance the quality of their labor skills to augment their future earnings. The theory assumes that individuals rationally decide whether or not to invest in their human capital after undergoing careful analysis of the costs and expected returns from such investments.

Therefore, those investing in human capital delay present returns in exchange for greater expected returns in the future. Following is a list of various hypotheses based on the human capital model and citations of empirical support for the predicted relationship:

- Age has a negative association with the demand for re-training (Allen, McCormick, and O'Brien, 1991; Booth, 1991; Greenhalgh and Mavrotas, 1994; Beenstock, 1997; Oosterbeek, 1998).
- Better-educated workers are more likely to demand job training (Allen, McCormick, and O'Brien, 1991; Altonji and Spletzer, 1991; Greenhalgh and Mavrotas, 1994; Jacobs, Lukens, and Useem, 1996; Beenstock, 1997; Oosterbeek, 1998).
- Married people have a lower demand for training (Booth, 1991; Green, 1993; Beenstock, 1997).
- Membership in trade unions negatively affects the demand for job training² (Allen, McCormick, and O'Brien, 1991).
- Part-time workers tend to participate less in training programs than do full-time workers. (Greenhalgh and Mavrotas, 1994; Jacobs, Lukens, and Useem, 1996; Oosterbeek, 1998).
- Positive attitudes toward career advancement are positively related to demand for job training (Greenhalgh and Mavrotas, 1994).
- Level of income has a negative relationship with willingness to demand re-training (Greenhalgh and Mavrotas, 1994).
- Job attributes matter. Holding a position that is high in prestige increases the likelihood of obtaining training (Jacobs, Lukens, and Useem, 1996; Beenstock, 1997; Oosterbeek, 1998).
- If there is a second source of income in the household (the spouse is also working), the

demand for training is reduced (Beenstock, 1997).

- Women³ are less likely to demand training than men are (Beenstock, 1997). Women are more likely to demand training than men are (Oosterbeek, 1998).
- Individuals who have children living with them are less likely to demand training (Booth 1991; Green 1993; Beenstock, 1997).

A major assumption of human capital theory is that rational behavior, on the part of employees and the institutions that are willing to supply training, allows the market to bring the two forces together. Some critics argue, however, that the linkage between investing in human capital and economic gains is far from direct (see Beaulieu and Mulkey, 1995). The social environment represented by the community establishes another vital factor impacting individuals' aspirations and attainment.

Investment in human capital is also motivated by social capital (norms, social networks, and interpersonal interactions; Beaulieu and Mulkey, 1995). The social dimension is directly relevant when employees consider enhancing their occupational skills (Leiter et al., 1994). Personal attitudes and expectations are related to each individual's willingness to enhance job skills. Therefore, the issues that facilitate or deter job skills training participation go beyond economic incentives and individual initiative. While individuals' socioeconomic and demographic characteristics are clearly related to their commitments to enhance occupational skills, one should include both individuals' personal attitudes and expectations, and also community factors when analyzing willingness to participate in job training.

RATIONALES FOR TRAINING

We begin by looking at some data drawn from all the participants in the rural South survey and examine some factors related to, considerations to seek training, and, to potential barriers to enrolling. Next, we explore these issues in a more sophisticated logistic regression model focusing on only those sample respondents who were in the work force when surveyed. The respondents were asked a series of questions about their community, quality of life, the role of government, and economic development. The margin of error for the survey was ± 3 percentage

points. This means that in general, there is a high probability that the true response is within ± 3 percentage points of the sample estimate.

Poor Job Satisfaction

Overall, workers in the survey expressed high levels of work satisfaction. Of the 693 that were employed (57.8%), most were satisfied with their current employment. The combined categories of *Completely Satisfied* and *Fairly Well Satisfied* were over 80 percent, in terms of personal satisfaction, job security, and hours. Slightly lower levels of satisfaction, but still over

60 percent, were indicated for income, opportunities, and benefits. The lowest level of satisfaction was for “the ability to move up” (see Table 1 and Figure 1). However, if we only look at *Completely Satisfied*, only one-quarter to one-third of the respondents were completely satisfied with the major factors of work. The highest levels of complete satisfaction were for personal satisfaction (35.9%), job security (36.1%), and hours (35.8%). The lowest levels of complete satisfaction were for income (21.5%) and ability to move up (21.1%).

Table 1. Worker Satisfaction with Various Aspects of Their Current Employment

ASPECT OF JOB	COMPLETELY SATISFIED	FAIRLY WELL SATISFIED	COMPLETELY OR FAIRLY WELL SATISFIED
The personal satisfaction you get from the kind of work you do	36%	50%	86%
The number of hours you work	36%	47%	83%
Your job security	36%	46%	82%
The income it provides	22%	53%	75%
The opportunities you have to influence decisions at work	27%	45%	72%
The benefits it provides	28%	40%	68%
The chance it offers to move up	21%	37%	58%

Similar results were also found in a series of questions regarding descriptions of the worker’s personal work situation. High marks were given for such things as expectations, reasonable hours, respect, recognition, and a feeling they produce something important (all 70% or better for excellent and good responses). The lowest responses were for: a say in decisions, opportunity for creativity, and opportunities for promotions.

The finding that opportunities for promotion receive low marks is more important when we consider that the same sample identified opportunity for advancement as a critical factor when considering a job. Furthermore, 32% of those with a job in the rural South study sample indicated they considered changing jobs in the past year. Thus, we might

expect interest in skills training from at least a portion of the work force.

Negative Job Changes

Another rationale for training relates to negative job experiences, particularly layoffs or loss of hours. The respondents were asked if any of the following negative job experiences had happened to them, or anyone in their household, in the last six months. The list included job loss, being laid off, having overtime cut, or lost benefits. The percentage answering yes for each question was relatively low, with no individual change affecting more than 11 percent of the respondent households (see Figure 2). However, across all the possible changes, one-quarter of the households in the rural South have experienced a negative job change. This figure is similar to that from a national sample.

Awareness and Interest in Skills Training

Most of the respondents were not aware of *skills training programs in their area that have been successful in placing participants*. Only 24 percent indicated they were aware of such programs and another 18 percent indicated they didn't know. When asked directly if they were interested in learning new skills or technologies, 37 percent indicated they were very interested, and another 27 percent indicated they were somewhat interested (see figure 3). Those that were employed were more likely to be either very interested (45%) or somewhat interested in learning new skills (32%) when compared to those who were not employed.

The majority of the respondents indicated that their interest in skills training would be predicated on having opportunities for a new job (63%). Once again this figure was higher for those who were currently employed (74%; see figure 3). Furthermore, most of the respondents expressed optimism that new skills would lead to an improvement of their current standard of living. One-third felt it would definitely improve their standard of living, while one-quarter felt it would somewhat improve their standard of living.

Barriers to Skills Training

Given this optimism about the effects of training and learning new skills, we might expect a far greater interest. However, there are barriers to adult education that might impede a person from seeking skills training. The survey asked the respondents a series of questions about potential obstacles and how important they were in their decision making process. The obstacles identified were: the length of training, cost of the training, loss of income while retraining, commuting time to training, and availability of daycare.

Table 2 contains the responses to potential obstacles to training. The most serious obstacles are the cost of training, the length of the training, and loss of income while training, with 79 percent or more of the respondents feeling that each was a very important, to somewhat important obstacle. Commuting time was also a consideration, although most expressed this as being somewhat important. Very few felt that lack of daycare was an issue for training. All of these figures were higher for those who were employed. In particular, loss of income was a very important obstacle for 74% of working respondents (see figure 4).

Table 2. Importance of Potential Obstacles to Training

ASPECT OF TRAINING	VERY IMPORTANT	SOMEWHAT IMPORTANT	VERY & SOMEWHAT IMPORTANT
The length of the training	44%	37%	81%
The cost of the training	62%	23%	85%
Loss of income while training	62%	17%	79%
Commuting time	27%	42%	69%
Availability of daycare.	15%	13%	28%

A MODEL OF JOB SKILLS TRAINING

The next section explores a model of job skills training for those already working. Suppose that an individual chooses two goods, consumption (C) and time devoted to training (T). We postulate an individual utility function of the following form.

$$(1) U \equiv U(C, T)$$

This utility function assumes certainty with regard to both types of consumption. In reality,

individuals' decisions on time devoted to training are based on expectations about the future. These expectations can be incorporated into a utility maximization framework by using the expected utility theorem (von Neuman and Morgenstern, 1947). Under some additional hypotheses (see Varian, 1992), we can develop a particular monotonic transformation of the above utility function in terms of expected utility.

Incorporation of expectations requires identification of the set of outcomes facing the

consumer and the probability of each of these outcomes. If $p(x)$ is a probability density function defined on outcomes x ($=C, T$), then the expected utility of the consumption bundles can be written as

$$(2) E[u(x)] = \int u(x)p(x) dx$$

where E denotes the expectation operator. We can calculate the expected utility of each outcome if we know the potential outcomes and the probabilities of each outcome. Each individual's risk preferences then determine which outcome to choose. The source of uncertainty in our utility function is T , the benefit from the time spent on skills training. The monotonic transformation of the utility function (1) can be written as

$$(3) E[U] = U[C, g(T)\varepsilon]$$

where E is a random variable. It denotes individual's subjective perception about the returns to training. This particular specification assumes that the utility function is additive (Varian, 1992). Utility of the composite consumption good is nonstochastic. However, the utility from time spent on training is unknown, availability of opportunities for new skills and the returns from a future job are uncertain, and this uncertainty is captured by the stochastic part of the utility function, $g(T)$. It is also assumed that $g(0) = 0$, suggesting that consumer's utility is nonrandom in the absence of time spent on training. We assume that there are no additional expenses for obtaining training other than lost wages, the opportunity cost of time spent on training. The individual's income constraint may be written as

$$(4) Y = PX + WT$$

where P denotes the price of the composite good, W is lost wages over the time spent on training. The consumer maximizes his/her expected utility through optimal choice of X and T , subject to the income constraint. The formation of the constrained optimization problem yields the equation

$$(5) L = U[X, g(T)\varepsilon] + \lambda[Y - PX - WT]$$

with following first order conditions, assuming interior solutions,

$$(5a) (\partial L / \partial X) = U' - \lambda P = 0$$

$$(5b) (\partial L / \partial T) = U' g'(\cdot) \varepsilon - \lambda W = 0$$

$$(5c) (\partial L / \partial \lambda) = [Y - PX - WT] = 0$$

where apostrophes denote derivatives of functions. These first order conditions give the necessary conditions for utility maximization. We assume that the second order sufficient conditions are satisfied.

It is evident from the first order conditions that the two choice variables, X and T , are "separable" in the sense that one can be solved independently of the other. This "separability" of X and T allows us to focus on our main objective of the study, individuals' willingness to obtain job training. Dividing equation 5b by λ yields the expression

$$(6) [U' g'(\cdot) \varepsilon] / \lambda = W.$$

Although the first order condition in equation 5b assumes an interior solution, it is possible that $T^* = 0$. The condition that T^* is strictly positive may be characterized by the inequality that the expected net marginal utility of time spent on participation in training programs exceeds its marginal opportunity cost:

$$(7) [U' g'(\cdot) \varepsilon] / \lambda > W.$$

Empirical Analysis

Equation (7) provide the basis for our empirical analysis. It was previously mentioned that the individual participates in skills training programs if the perceived marginal utility from participation minus the opportunity cost of doing so is positive. This may be expressed as

$$(8) Y^* = [U' g'(\cdot) \varepsilon] / \lambda - W > 0.$$

As before, ε is an unobservable random variable. The observable elements in the expression are the individual's wage rate and other sociodemographic and attitudinal variables. All these observable variables are captured in the vector of explanatory variables x , and expressed in the regression relationship

$$(10) y_i^* = \beta x_i + \mu_i$$

where μ is an error term.

A measure of individuals' willingness to undertake training can be formulated from the following question in the survey (the response percentages are also given):

Many people in business and government think that in the future workers will need to retrain to keep up with changes in the workplace. How interested are you in learning new skills or technologies?

Very interested	1	44.7%
Somewhat interested	2	31.6%
Not interested	3	22.5%
Don't know	4	1.2%

A new variable was created which is a dichotomy of those who are *Very Interested* (coded as 1) versus all others (coded as 0). Nearly 45 percent of the sample indicated they were very interested in skills training. The dependent variable is dichotomous and we use a logistic regression model (see Allison, 1999). The logistic regression model is a maximum likelihood method that estimates values for the model parameters when the dependent variable is dichotomous. The logistic regression model distinguishes between a dependent variable of theoretical importance that is unobserved and the observed dependent variable or response variable (interest in skills training). The model is based on the following specification:

$$(11) \quad \ln \left[\frac{p_i}{1 - p_i} \right] = \alpha + \beta_1 x_{i1} + \beta_2 x_{i2} + \dots + \beta_k x_{ik}$$

Where p_i is the probability that $y_i = 1$

$$(12) \quad p_i = \frac{1}{1 + \exp(-\alpha - \beta_1 x_{i1} - \beta_2 x_{i2} - \dots - \beta_k x_{ik})}$$

The logistic regression model has the property that the estimated value for p_i will always be between 0 and 1. The coefficients generated from the model are expressed as logarithms of the odds and thus easily transformed to an odds ratio. The model also allows independent variables that are both dichotomous or continuous. Finally, large sample asymptotic properties allow significance tests

both for the model and for individual coefficients (Allison, 1999).

Explanatory Variables

Explanatory variables to be used in the analysis were selected as suggested by the conceptual framework and earlier work. In some cases, theory and previous work are lacking, and we present generalized expectations of effects. For this reason, the model analysis might also be characterized as exploratory. The four categories of variables are:

- Socioeconomic and demographic factors
- Job characteristics
- Community Factors
- Perception of Skills training

Socioeconomic and Demographic Factors. The socioeconomic and demographic factors that we include are age, sex, race, and education.⁴ We have the following sign expectations for these variables:

AGE (coded as the midpoint of 12 age categories). The expectation is that the demand for skills training will be highest for the youngest workers and will decline as the worker approaches retirement.

FEMALE (coded as 1, if female). No prior expectations, although interest may be lower than for males because of past discrimination and an expectation that the return on the investment will be lower.

BLACK (coded as 1, if African American). No prior expectations, although interest may be lower than that for whites because of past discrimination and an expectation that the return on the investment will be lower.

EDUCATION (coded as three dichotomies, less than high school, high school, and post high school). Interest in skills training is expected to be higher for higher education levels. The lowest education dichotomy (less than high school) was used as the reference group for the analysis.

Job Characteristics. The characteristics included in the model are full time status, whether the

respondent was a skilled or unskilled laborer, and a job satisfaction scale.

FULLTIME (coded as 1, if the respondent worked 35 or more hours per week). It is expected that full-time workers would have a greater interest in skills training.

LABORER (coded as 1, if the respondent indicated he/she was a skilled or unskilled laborer). It is expected that those in labor positions would be less interested in skills training than those in professions or management type positions.

JOBOPP (a scale constructed from seven variables, with values ranging from 7 to 35). The questions used in the scale focus on aspects of job satisfaction in relation to opportunities, involvement, and a feeling of creativity. The specific questions used in the scale are:

- 1. I have opportunities for promotion*
- 2. I have a say in decisions*
- 3. I have security, that is, little danger of becoming unemployed*
- 4. I have opportunity for creativity*
- 5. I feel I produce something important*
- 6. The opportunities you have to influence decisions made at work*
- 7. The chance it offers to move up*

The specific response items were Excellent, Good, Fair, Poor, Don't Know for the first five items, and Completely Satisfied, Fairly Well Satisfied, Not Too Satisfied, Not at All Satisfied and Don't Know, for the last two items. Each question was rearranged on a five point ordinal scale with five being Excellent/Completely Satisfied and 3 being the Don't Know Category. The correlations among the items were examined and they ranged from a low of .39 to a high of .70. Cronbach's Alpha for the items was .89 and the removal of any item would not improve alpha. Based on this information, a simple additive scale was created. It is expected that those with lower satisfaction with their current job opportunities would be more interested in skills training.

Community Factors. This set of variables are included to capture the effect of community

related factors on skills training. Included are: proximity to a 2 year technical school, to a 4 year community college, or to a 4 year university; whether the respondent felt his/her skills were needed in the region; whether the respondent was aware of a successful skills training program in the region; and whether the respondent or a relative had been affected negatively by the economy.

PROX1 (coded as 1, if the respondent lived within a 1/2 hour drive of a 2 year technical school or junior college). Given that driving time was seen as an impediment to skills training by two-thirds of the respondents, it is expected that proximity to a 2 year technical school or junior college would be positively related to interest in skills training.

PROX2 (coded as 1, if the respondent lived within a 1/2 hour drive of a 4 year community college). Given driving time was seen as an impediment to skills training by two-thirds of the respondents, it is expected that proximity to a 4 year community college would be positively related to interest in skills training.

PROX3 (coded as 1, if the respondent lived within a 1/2 hour drive of a 4 year public or private university). Given that driving time was seen as an impediment to skills training by two-thirds of the respondents, it is expected that proximity to a 4 year college or university would be positively related to interest in skills training.

REGION (coded as 1, if the respondent felt his/her skills were needed in the region). It is expected that those that felt their skills were needed would be less likely to be interested in new skills training.

SUCCESS (coded as 1, if the respondent was aware of successful skills training in the community). It is expected that knowledge of a successful skills training program would be positively related to interest in skills training.

AFFECTED (coded as 1, if the respondent knew someone negatively affected by the economy). Each respondent was asked seven questions relating to whether each item

happened to someone in their household in the last six months. The items ranged from losing a job, to having hours cut, to being retired earlier than expected (the total list is reported earlier in this chapter). The percentage answering yes for each question was relatively low, with none more than 11 percent. However, across all the possible changes, one-quarter of the households in the rural South have experienced a job related loss. It is expected that a respondent who knows a household member that has been negatively affected by the economy would be more likely to be interested in skills training.

Perception of Skills Training. Two variables are used to capture individual perceptions of the benefits of skill development. The first reflects the linkage in the respondents mind of skills training to a new job. The second is whether the respondent felt that skills training would improve his/her standard of living. In the interview, both questions were asked after the question of interest in skills training.

STANDARD (coded as 1, if the respondent indicated that training in a new skill would definitely increase his/her standard of living). It is expected that those who feel they would benefit from enhanced skills would be more likely to be interested in skills training.

NEWJOB (coded as 1, if the respondent indicated that interest in skills training would depend upon having opportunities for a new job). The exact wording of this question is *“Would your interest in retraining depend upon having opportunities for a new job?”* This variable reflects a belief in skills training, leading to a new job. It is expected that, if the respondent ties skills training to a new job, he/she would be more likely to be interested in skills training.

A summary table listing univariate statistics and the correlation of each variable with the dependent variable is listed below (see Table 3). Most of the correlations are in the expected direction. However, the correlation for BLACK and FEMALE are both positive, contrary to expectations. The largest correlation with INTEREST is for the two perception variables, STANDARD and NEWJOB. Interest in skill training is positively correlated with the perception that skills training would increase quality of life ($r=.528$) and whether one feels interest in skills training is tied to job opportunities ($r=.463$).

Table 3. Univariate Statistics of the Variables in the Model and Correlations with the Dependent Variable

VARIABLE	DESCRIPTION	MEAN	STD DEV	MIN	MAX	CORR WITH INTEREST
INTEREST	Interest in skills training	.447	.499	0	1	
BLACK	Coded 1, if African American	.157	.365	0	1	.121
FEMALE	Coded 1, if Female	.464	.500	0	1	.048
EDUC1	Less than H.S.	.193	.396	0	1	-.125
EDUC2	High School Degree	.445	.499	0	1	.054
EDUC3	Post H.S.	.363	.482	0	1	.047
AGE	Age in years	38.809	12.599	19	74	-.243
LABORER	Skilled/unskilled laborer	.479	.501	0	1	-.027
FULLTIME	Coded 1, if 35+ hours per week	.752	.433	0	1	.018
JOBOPP	Job Opportunity scale	23.220	7.421	7	35	-.091
PROX1	Close to 2 yr. school	.685	.466	0	1	.157
PROX2	Close to 4 yr. community college	.299	.459	0	1	.122
PROX3	Close to 4 yr. university	.372	.485	0	1	.037
REGION	Regional need for my skills	.730	.445	0	1	-.025
SUCCESS	Know of successful training programs	.279	.450	0	1	.088
AFFECTED	Know someone affected by economy	.301	.460	0	1	.226
STANDARD	Training would increase standard of living	.356	.480	0	1	.528
NEWJOB	Training interest depends on job	.422	.496	0	1	.463

Estimation and Results

The logistic regression model was estimated using PROC LOGIST in the SAS software package. The model was fitted to 676 observations. The data was checked for the presence of multicollinearity using a simple correlation matrix of independent variables. Several models were run using an additive approach. The first model only looked at demographic characteristics, the second with demographic characteristics and job characteristics, and so forth. A final model was run for only the variables that were significant in order to develop an odds ratio and probability

table. A chi-square test was conducted to establish the overall model significance, based on the null hypothesis that all coefficients, except the intercept, are zero. Chi-square tests were also performed for the individual coefficients in the model. A pseudo R-Square was also calculated as an indicator of the overall fit of the model.

Table 4 provides the statistics for the logistic regression models. The parameters estimate the log odds of interest in skills training. Coefficients that are negative indicate that the presence of this indicator, or an increase in the variable, is associated with a decrease in the odds of interest in skills training.

Table 4: Parameter Estimates for the Logistic Regression Models

VARIABLE	MODEL 1	MODEL 2	MODEL3	MODEL 4	REDUCED MODEL
Intercept	.7115	1.7045	.9292	-1.6948	-1.2385
BLACK	.6968**	.8113**	.8512**	.7620**	.8057**
FEMALE	.2279	.1940	.1797	.0393	
AGE	-.0437**	-.0447**	-.0441**	-.0206*	-.0209*
EDUC2	.6658**	.6271**	.5424*	.3384	
EDUC3	.6969**	.5993*	.5729*	.7578*	.4962*
LABORER		-.4371*	-.4355*	-.7721**	-.8606**
FULLTIME		.0536	.0330	.0228	
JOBOPP		-.0318**	-.0289*	.0020	
PROX1			.6267**	.6346**	.6884**
PROX2			.4035*	.1312	
PROX3			-.0160	.2081	
REGION			-.1056	-.0307	
SUCCESS			.1434	.1316	
AFFECTED			.7728**	.7427**	.7692**
STANDARD				2.0430**	2.0597**
NEWJOB				1.1198**	1.1126**
Model -2 LOG L	64.2 w 5 d.f.	73.6 w 8 d.f.	118.4 w 14 d.f.	294.3 w 16 d.f.	290.4 w 8 d.f.
R-Square	.0906	.1032	.1606		.3493
* coefficient significant at least at p=.05 level					
** coefficient significant at least at p=.01 level					

Model 1 has a modest fit and indicates the demographic variables have a weak association with interest in skills training. African Americans appear to have a higher likelihood of interest, as do females, although the latter variable is not statistically significant. As expected, older workers have less interest in skills training, while those with higher levels of education have a higher interest.

Model 2 adds the job characteristic variables, which only slightly improve the fit of the model. Of these variables, whether or not the respondent is a laborer, and the degree to which the respondent is satisfied with current job opportunities are significantly negatively related to interest in skills training.

Model 3 includes community characteristics with the other variables in the model. Of these variables, two stand out. First, proximity to a technical school or junior college is positively related to interest in skills training and

is significant at the p= .01 level. Converting to the odds ratio, a person within 1/2 hour drive of a technical school is nearly twice as likely to be interested in skills training. Proximity to a 4 year community college also shows a positive, but somewhat lower effect. The other significant community variable is whether or not a person knows someone in their household who has been negatively affected by the economy. For these people, an interest in skills training is more than twice as likely. Knowledge of successful training programs, or the perception that your skills are needed in the region, were not significantly related to interest in skills training.

Model 4 is the full model, which adds the two perceptions variables. Eight variables are significantly related to skills training and the R-Square for this model is .35. Both of the perception variables are significant and highly related to skills training. A person who feels that skills training would improve their quality of life

is nearly eight times more likely to express interest in skills training. Likewise, a person whose interest is tied to a new job is over three times more likely to be interested in skills training.

A final model was estimated including only the significant variables from the full model. These include BLACK, AGE, EDUC3 (post high school), LABORER, PROX1 (proximity to technical school), AFFECTED (know a householder affected by the economy), STANDARD (training would improve standard of living) and NEWJOB (interest in training depends upon a new job). The overall fit of this model is similar to the full model. The reduction in chi-square is 3.90 with 8 d.f. which is not significant. The signs of the coefficients do not change nor does the size of the coefficients, with the exception of EDUC3, which now is interpreted as the difference between those with a post high school degree and other others.

The reduced model allows for a simpler look at the key variables that influence interest in skills training. Table 5 is a prediction table based on the reduced model. It includes various combinations of the independent variables that predict the logit, the odds ratio, and a probability level associated with those combinations. The first combination reflects those with a high probability of interest in skills training. They are likely to be a worker in the rural South who is African American, age 25, with a post high school degree, not a laborer, who lives close to a technical school, knows someone who has been negatively affected by the economy, who feels that skills training would improve his/her life,

and who feels that his/her interest in skills training would depend upon a future job. The predicted odds ratio for this person is nearly 65, with an associated probability of .985. The model predicts that this person would be highly likely to seek skills training. In contrast, a white person, age 50, with no post high school degree, who is a laborer, who doesn't live close to a technical school, has not been adversely affected by the economy, and does not have positive perceptions of the value of skills training would have a probability level of seeking skills training of .041, or nearly zero.

Another comparison in table 6 shows the importance of the perception variables in the model. The values for the other variables are held at the modal categories (or the mean for age) and, if the perceptions are positive, the predicted probability is .909. If the worker doesn't feel as if skills training would be positive, or doesn't show an interest unless skill improvement is tied to a job, the probability drops to .295. The odds ratio for these two categories show that those holding positive perceptions are nearly 24 times as likely to express interest in skills training, as those who don't. The final contrast in the table looks at the effect of education and profession (skilled or unskilled laborer, or not). For this contrast, the perception that interest is tied to a new job was held at Yes. Those with a higher education and who are not laborers have a predicted probability of .561, while lower educated laborers have a predicted probability of .247. The odds ratio for this contrast is nearly four times more likely for educated non-laborers.

Table 5. Prediction Table from the Reduced Logistic Regression Model

VARIABLE	HIGH PROBABILITY	LOW PROBABILITY	IMPACT OF PERCEPTION VARIABLES		IMPACT OF EDUCATION AND PROFESSION	
African American	Yes	No	No	No	No	No
Age	25	50	39	39	39	39
Post high school degree	Yes	No	Yes	Yes	Yes	No
Skilled or unskilled laborer	No	Yes	No	No	No	Yes
Close to technical school	Yes	No	Yes	Yes	Yes	Yes
Affected by economy	Yes	No	No	No	No	No
Would improve standard of living	Yes	No	Yes	No	No	No
Interest tied to new job	Yes	No	Yes	No	Yes	Yes
Logit	4.171	-3.144	2.303	-.869	.244	-1.113
Odds	64.767	.043	10.007	.419	1.276	.329
Probability	0.985	0.041	.909	.295	.561	.247

CONCLUSIONS

It is a widely held belief that the nature of employment is changing in ways that increase the importance of formal and informal skills for workers. New technologies demand new skills. A second belief is that workers with lower levels of skill, especially workers in the rural South, are less willing to acquire skills. These two beliefs establish a situation that may limit future economic development, if employers believe that the rural labor force is unwilling to participate in skill development programs. We conclude that the second belief is at best only partially correct. Workers in the rural South are interested in acquiring new skills, if the circumstances are appropriate.

Data from a regional survey of households in the rural South show considerable interest in new skills training by those who are currently employed. Nearly 45 percent of workers expressed strong interest in new skills training, while interest was far lower for non-workers (27%). Results from the survey also indicated that workers recognize barriers to acquiring new training in terms of cost of training, loss of

income, time commitment, and travel time. The importance of these barriers were higher for those already working versus those not employed.

The second part of the analysis was to explore interest in skills training in a multivariate framework, and to move the discussion beyond classic human capital models to also include community aspects and attitudinal variables. Through logistic regression, we have shown that interest in skills training by the employed is highest for African Americans, those with higher education levels, workers who are not laborers, and younger workers. These findings were generally expected (with the exception of African Americans) and are consistent with popular perceptions. However, other factors, such as differences in sex, income level, and satisfaction with opportunities in the present job, were not significantly related to skills training interest.

At the community level, we found that proximity to a technical school increases the probability of interest in acquiring skills training, while proximity to community colleges and universities had less of an impact. Those living within a half hour of a technical school or junior

college were twice as likely to express interest in skills training. Surprisingly, knowledge of successful training programs in the region was not significantly associated with interest, nor was the respondent's perceptions for the needs of their skills within the region.

The two highest factors in this study are perceptions of the value of training in terms of quality of life and its potential contribution to finding a new job. Workers who felt new or improved skills would improve their quality of life were eight times more likely to be interested in skills training. Similarly, workers whose interest was tied to finding a new job were three times more likely to be interested in skills training. Perceptions of the value of skills training do matter and will influence the demand and participation in this type of training. Most of the rural workforce did not view skills training as leading to a better quality of life, or as a means toward a new job. This research suggests that increasing the recognition of personal benefits, while paying attention to such issues as distance to training, would increase interest in skills training in the rural South.

The implications for future development in the rural South are clear. If it is true that workforce skill requirements are increasing, then skill development will be a critical part of keeping

the rural South competitive in the new economy. Our results show that workers are more willing to participate in improving skills than is usually assumed. However, there are conditions that must be in place in order to make skill development programs successful. It is important to recognize that the costs of training, both in terms of time and lost earnings, are significant, so workers justifiably are skeptical of programs that do not promise results. The past experience of general purpose government training programs in attracting and placing workers makes them less likely to meet this condition. While employer based programs are often seen as addressing the concern with results, our analysis of the survey implies a problem with this approach. One of the strongest motivations for rural southerners is the potential for another job. If you couple this with other survey information that suggests that those with the lowest job satisfaction and with the least financial security have greater interest in training, then employers may wonder if their implementing skill development programs will result in workers leaving for other jobs. These results suggest that we still require considerable effort in developing effective training programs for the large number of workers who are interested in improving their capabilities.

Endnotes

1. An important step toward this direction was taken by Greenhalgh and Mavrotas (1994) by incorporating individuals' attitudes to career advancement into the analysis.

2. Greenhalgh and Mavrotas (1994) have found conflicting results.

3. Some studies have performed separate analysis for men and women in the labor force (see Booth 1990; Green, 1993). These studies have been based on the hypothesis that there is a sex discrimination over training access.

4. Income was also considered for the model. However, nearly 16 percent of the working sample had missing values for income resulting in a loss of these cases in the analysis. Preliminary work showed that income was not a significant explanatory variable in understanding skills training, contrary to expectations. Given these preliminary results and the importance of maximizing sample size, income was not included in the models.

Figures

Figure 1. Satisfaction Levels With Aspects of Current Employment

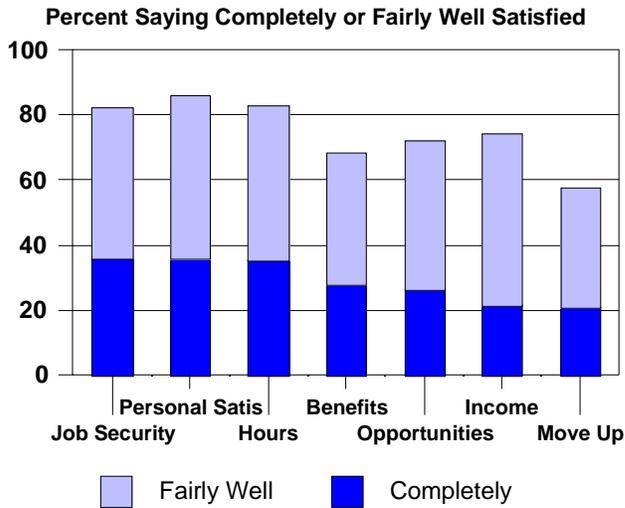


Figure 2. Percent Who Indicated Negative Job Changes

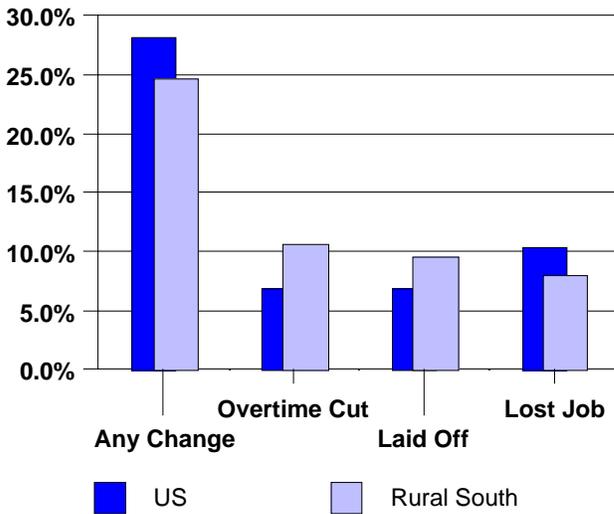


Figure 3. Comparison of Workers and Nonworkers on Aspects of Skills Training

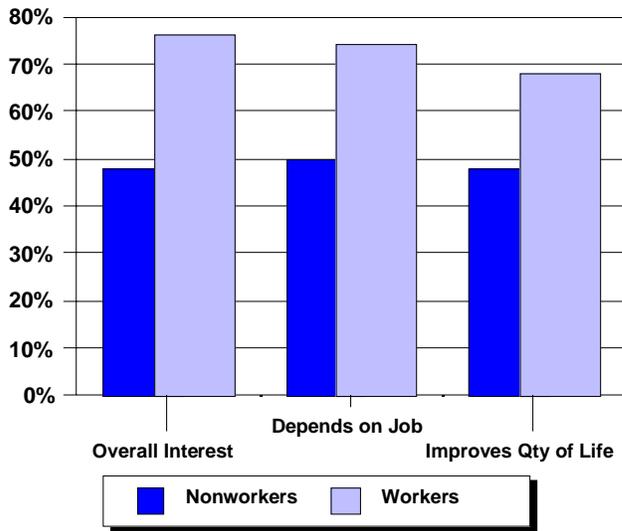
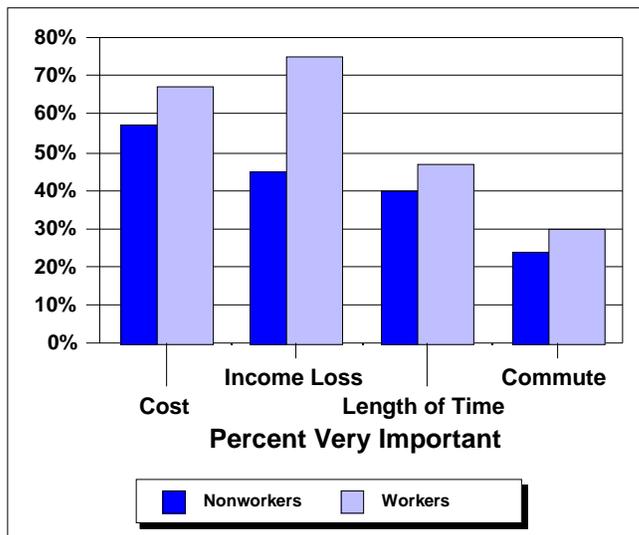


Figure 4. Comparison of Workers and Nonworkers on Obstacles to Skills Training



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