Migration and Job Satisfaction

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I. Abstract

Americans decide to move to a new place quite often. Some empirical research suggests that workers may be moving to improve their happiness at work (Perales, 2015). Further research into the consequences of relocation events is key to understanding how workers are affected when they decide to move. Utilizing the National Longitudinal Survey of Youth (1997), I estimate binary probit model to determine the effect of internal migration on job satisfaction. My results cannot support the hypothesis that internal migration has a positive and significant effect on job satisfaction, but reveal some further insights into what variables effect job satisfaction the most.

II. Introduction

Every year, tens of millions of Americans make the decision to move to a new place. Approximately 3.2 percent of Americans move to a new county and 2.3 percent move to a new state each year. One case study that is particularly intriguing is the net out-migration in California. Since 1990, California has seen upwards of 500,000 mostly low-income residents per year move out of the state and into states like Texas, Arizona, Nevada, and Oregon (Gomez, 2018). Of these, many of the out-migrants were relatively low educated. Simultaneously, there has been an in-migration of approximately 400,000 primarily wealthy people per year from states like Illinois, New York, New Jersey, and Michigan. Many migrants from New York and Illinois were people with bachelor's or master's degree. Millennials in particular are twice as likely to move as the average U.S. citizen (Comen, 2018). The problem is that when many of these millennials are moving away from home, mostly the rural regions of the United States, they may have a negative economic impact of the region left behind. According to the University of Pennsylvania Public Policy Initiative, 1,350 "non-metro" (rural and agricultural) counties have

lost population since 2010 (Kumar, 2018). Additionally since 1995, population growth in non-metro counties in the United States have steadily declined, reaching negative growth in 2010. The effects of these population changes causes decreased tax bases, deflated property values, and lowered intellectual capital. These consequences pose drastic problems for local infrastructure, small business, healthcare, and public schools.

Many researchers in various fields of study have attempted to analyze why young people are moving, and the effects of those moves. What these studies lack is an analysis of the consequences of migration, and whether the move results in increased utility for the person. Bartram (2013) analyzes the effects of migration on happiness, arguing that migration for the purpose of economic gain is "misguided." He found that migrants were generally happier than those who remained in a country of origin, but says that there is a greater tendency for migration among people with higher levels of happiness (thus, happiness not a result of migration). Further, Nowok, van Ham, Findlay and Gayle (2013) found that migration events are generally preceded by a period when individuals experience a significant decline in happiness (for a variety of reasons). Therefore, there is merit in studying if there are utility maximizing and particularly subjective returns that result from an internal migration. The aim of this study is to analyze the effects of internal (within the country) migration on job satisfaction and labor market outcomes among young people in the United States.

III. Review of Literature

The literature on the motivations behind and the consequences of the decision to migrate can be divided in two lines of research: papers aiming at analyzing the objective returns from migration and papers looking at subjective measures of utility. Among the former, Axelsson and Westerlund (1998) conducted a study of the effect of migration on household real income using a

panel dataset for multi-adult Swedish homes.   The contribution to previous research is the consideration of the effects of migration on total household income, rather than focusing on the income of only one member of the household. Additionally, no previous study had analyzed the effect on real income instead of nominal income. Empirical studies from the 1960s and 70s found higher income for migrants than for non-migrants, and this finding has since been corroborated by research based on micro data and more advanced econometric methods.   The authors state in the analytical framework that a household will migrate simply if the utility of moving is greater than the utility of staying in the current location. Empirical analysis finds that stable two-earner households in Sweden did not gain real disposable income from migration during the 1980s. The authors state that the findings are peculiar, as the explanatory variables used are standard in human capital and life cycle oriented models.

Blackburn (2009) contributes to this line of research with an analysis of internal migration and the earnings of married couples in the United States. He suggests that earnings gains are a necessary condition for individuals to decide to relocate. He poses that there is very little empirical study of the prevalence and size of earnings gains for individuals in the United States who migrate. Sandell (1977) and Mincer (1978) found that husbands gain and wives lose following relocation, and that "tied movers" (a spouse that relocates with their significant other and is subject to consequences of the relocation) may exist in relocations respectively. However, Blackburn notes that the data used in Sandell's 1977 study is outdated since women at that time were relatively unimportant to real household earnings, while women now have greatly increased earning power. The human capital model of migration predict that earnings of migrants should be expected to be higher in the new location.   Similarly, the decision of a married couple to migrate suggests that migration is rational when the benefits outweigh the costs of moving. For

his empirical analysis, Blackburn utilizes the Panel Study of Income Dynamics (1992-1998).

His findings are that internal migration had differential effects on annual earnings for each

spouse, where the earnings of wives tend to fall relative to the husband's following relocation.

He states that his results provide some evidence consistent with the human capital based tied-

mover hypothesis.

Beyond objective returns to migration events, several economists have analyzed

subjective returns of migration events, such as job satisfaction. The economic analysis of the

relationship between internal migrations and subjective labor market returns begin with Martin

and Lichter's 1983 study on geographic mobility and life satisfaction. The goal of this paper was

to analyze subjective returns from migration, because pecuniary effects had been studied at

length but research lacked analysis of life satisfaction. Utilizing a 1977 survey entitled the US

Quality of Employment Survey panel; Martin and Lichter used variables like job and life

satisfaction, extrinsic and intrinsic job rewards, and descriptive measures of income, age, and

education. Surprisingly, the results of the analysis showed no evidence to support the hypothesis

that migrations translated into subjective returns, even when the migration was used for social

mobility purposes.

An important contribution to the study of the behaviors of young people relative to

internal migrations comes from Switek (2014). In his analysis, Switek studies the relationship

between important life events of a young person [internal migrations] and life satisfaction. The

author notes the relevance of studying migration because, in 2009, about one third of all United

States residents were living in a different state from the one they were born in. The author

analyzes various issues that can be impacted by migration: first, does life satisfaction increase;

second, what aspects of life are underlying to life satisfaction; and third, does life satisfaction

depend on the reason for migration? A longitudinal survey of young adults in Sweden was utilized to conduct the study. The estimation finds that changes in life satisfaction following migration are generally positive, but whether or not those changes remain significant to the individual long-term depends on the reason for relocation (i.e. work motivated or long-distance).

The most important research paper for my analysis is Francisco Perales' study entitled *Dynamics of job satisfaction around internal migration: a panel analysis of young people in Britain and Australia*. In his analysis, Perales states that internal migration is a vehicle for social and economic mobility, particularly among young educated people. Previous literature on the topic has discovered favorable labor market outcomes as a result of migration, such as employment status, wages, and occupational standing. But Perales finds that there is a lack of literature analyzing the effects on subjective utility, such as job satisfaction, similar to Martin and Lichter. Perales uses data from two household panel surveys: the Household, Income and Labour Dynamics in Australia (HILDA) Survey and the British Household Panel Survey (BHPS). His results show that long-distance and work-motivated migrations have positive and significant effects on job satisfaction for young people. He also argues that trends in job dissatisfaction can trigger internal migration, and that internal migration can set long-term trends of job satisfaction. His findings seem to suggest that the results of Martin and Lichter's early study may be inaccurate or changed in the last forty years (though Perales did not make a direct comparison to the Martin and Lichter study), making a new analysis of Americans extremely relevant.

IV. Theoretical Model

This study will apply the methods used by Francisco Perales to examine the effects, if any, of internal migrations on job satisfaction among young people in the United States. Perales

utilizes a theoretical framework stemming from research on the consequences of relocation events. While many studies have analyzed the objective consequences of migration, such as changes in wages, property values, tax bases, etcetera, studies like Perales' and this one seek to analyze the subjective consequences of migration like job satisfaction. While many factors are likely to contribute to this consequence, Perales and others believe that a few variables have the largest and most significant impact. These variables include time-variant aspects like income, education, marital status, number of children, and health, as well as time-invariant conditions like gender, race, and ethnicity. With these in mind, let our theoretical model be:
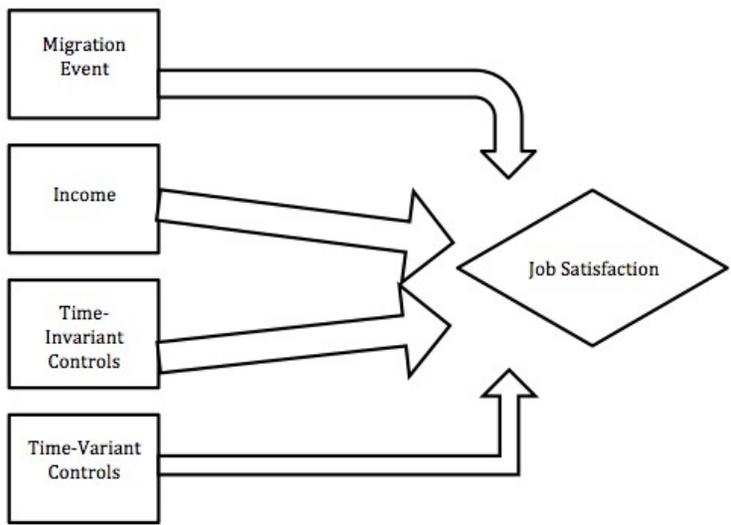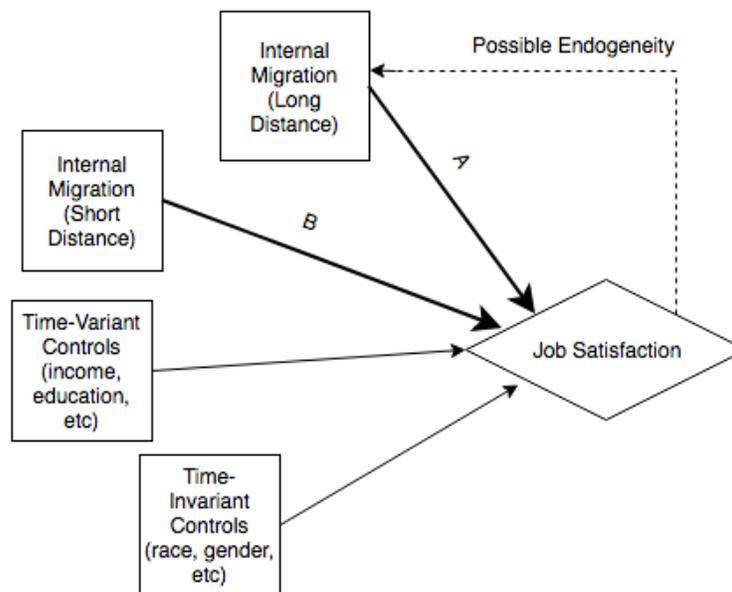
Where the relationship between internal migrations (both short and long distance) and job satisfaction is identified in Perales' (2015) paper and time-variant and invariant controls are known to effect job satisfaction based on previous economic theory. Lastly, there is the potential for endogeneity where job satisfaction may trigger an internal migration, instead of internal migration determining job satisfaction. However, estimating the presence of endogeneity is outside the scope of this research.

V. Empirical Examination

    a. Data

The data will be taken from the National Longitudinal Survey of Youth (1997). The NLSY97 is a longitudinal panel study that began in 1997 by surveying youth ages 12-16 years old (as of December 31, 1996). This survey is ideal for my analysis because it measures, in detail, the various aspects of youths' lives, such as a specific variable for job satisfaction, income levels, education levels, and comprehensive data for many more variables. The sample used in this study was taken from the year 2006, as an attempt to capture the status of the youth in their mid-20s, where previous literature has noted that the majority of major migration events occur.

Table 1 shows the description of the variables chosen for the model estimation, along with

descriptive statistics.

Table 1 Description, means and standard deviations for selected model variables, NLSY97

Variable	Description	Mean	Std. Deviation	N
jobsat_2006	Job satisfaction, scale 1-5 (1 being very satisfied)	1.67	1.19	6235
Dlondistance	Dummy variable for significant migration event (out of state or out of country)	0.07	0.255	7596
yinc_2005	Yearly income, year 2005	17433.86	12977.79	4558
lessthanhs	Dummy variable for education less than high school diploma	0.34	0.47	7596
highschool	Dummy variable for high school diploma only	0.47	0.49	7596
advanced	Dummy variable for advanced degrees (anything greater than Bachelor's)	0.005	0.07	7596
notmar	Dummy variable for single persons	0.78	0.41	7596
separate	Dummy variable for separated or divorced persons	0.02	0.15	7596
female	Dummy variable for gender	0.47	0.49	7596
nonwhite	Dummy variable for race and ethnicity	0.45	0.49	7596

Table 1 Description, means and standard deviations for selected model variables, NLSY97

Variable	Description	Mean	Std Dev	N
satisfied	Job satisfaction binary indicator (1 = "happy")	0.678	0.467	5814
shortdistance	Dummy variable for minor migration event (within state)	0.093	0.290	5814
longdistance	Dummy variable for significant migration event (out of state)	0.073	0.260	5814
logincome	Log yearly income, year 2006	9.677	0.951	4325
lessthanhs	Dummy variable for education less than high school diploma	0.197	0.398	5814
highschool	Dummy variable for high school diploma only	0.230	0.495	5814
advanced	Dummy variable for advanced degrees (anything greater than Bachelor's)	0.007	0.084	5814
married	Dummy variable for married persons	0.230	0.421	5814
separate	Dummy variable for separated or divorced persons	0.031	0.174	5814
female	Dummy variable for gender	0.489	0.499	5814
black	Dummy variable for race	0.244	0.429	5814
hispanic	Dummy variable for ethnicity	0.219	0.413	5814
children	Number of biological children in the HH	0.456	0.821	5814
goodhealth	Dummy variable for general health	0.641	0.480	5814
poorhealth	Dummy variable for general health	0.071	0.256	5814
selfemployed	Dummy variable for employment type	0.054	0.226	5814

The dependent variable for subjective returns will be job satisfaction (captured by a self reporting of an individual's happiness at their job). The independent variable will be previous migration events (in state or out of state). Other control independent variables included in the analysis will be gender, marital status, ethnicity, and education level. Based on the theory and findings of previous studies, I predict that well-educated young people will experience greater returns of wages and job satisfaction following a major migration event compared to those who do not migrate. This is based on the findings of Perales and Switek, who found that long distance migrations had a significant effect on an individual's job satisfaction.

I deploy a binary probit model to estimate the relationship of migration events with job satisfaction, using education, marital status, number of children, general health, employment type, gender, and ethnicity control variables. Let the model be:

Pr $(Y_i = 1)$ □ □ □ □ □ □ □ □ □ □ □ $+ \varepsilon$

Where Y_i is a binary classification of an individual's satisfaction with their current job; migration is a binary indicator of whether or not a significant (long distance, out of state) migration event occurred during the year studied; income is the individual's total salary income in the previous calendar year, education is a measure of either less than high school, high school, or greater than college; marital status is either single, married, or separated; the respondent's number of biological children; their general health (excellent, good, poor); employment type is a binary indicator for whether the respondent is self employed; ethnicity is either white, black, Hispanic, or mixed race and non-Hispanic.

b. Results

Table 2 shows the results of the regression estimation, where the dependent variable is job satisfaction. The intercept created through a series of dummy variables is a white, non-Hispanic, college educated, unmarried man with no children, in "excellent" health, and is not self-employed.

Table 2 Results of the regression

Variable	Coefficient	Std. Error	Marginal Effect
Intercept	0.494	0.229	
shortdistance	0.069	0.072	0.023
longdistance	-0.105	0.082	-0.035
logincome	0.029	0.022	0.010
lessthanhs	-0.235**	0.069	-0.080
highschool	-0.100	0.052	-0.034
advanced	0.356	0.271	0.120
married	0.173**	0.052	0.059
separate	-0.082	0.120	-0.028
female	0.061	0.043	0.020
black	-0.385**	0.052	-0.130
hispanic	-0.017	0.053	-0.006
children	-0.053	0.029	-0.018
goodhealth	-0.170**	0.046	-0.058
poorhealth	-0.343**	0.089	-0.116
selfemployed	0.586**	0.113	0.198

** denotes significance at the 99% level

Based on these results of the probit model with the added clarity of the marginal effect of each dependent variable on the probability of being satisfied, I conclude that the original hypothesis of long distance migration events having a positive and significant effect on job satisfaction must be rejected. The coefficient of *longdistance* (-0.105) is negative, it is not significant, and the extremely low marginal effect further supports rejection of the hypothesis. However, there are some other notable results from the regression. First, each of the education variables, while only one being significant, supports an objective theory that more education (and likely, a higher salary) is more likely to increase job satisfaction. Additionally, the results suggest that being married has a positive and significant effect on job satisfaction. Being in "good" or "poor" health has a significant and large negative effect on satisfaction (compared to the control group of no

children and "excellent" health). Lastly, the *selfemployed* variable has a large, positive, and significant effect on job satisfaction, suggesting that those who work for themselves are very likely to be satisfied, a rather intuitive result.

To test the model for robustness and consistency, the model is repeated using the same variables from the same sample, but approximately nine years later in 2015. The results are shown below in Table 3:

Table 3 Results of the robustness check

Variable	Coefficient	Std. Error	Marginal Effect
Intercept	-0.057	0.359446	
shortdistance	0.078	0.101525	0.024
longdistance	0.188	0.122073	0.058
logincome	0.070	0.032059	0.022
lessthanhs	-0.210	0.082192	-0.065
highschool	-0.012	0.065879	-0.004
advanced	0.208	0.108198	0.064
married	0.212**	0.06507	0.059
separate	0.058	0.088	0.018
female	0.067	0.057616	0.020
black	-0.269**	0.064837	-0.083
hispanic	0.049	0.06891	-0.015
children	-0.005	0.024426	-0.002
goodhealth	-0.114	0.066809	-0.035
poorhealth	-0.540**	0.09573	-0.167
selfemployed	0.685**	0.121665	0.212

*** denotes significance at the 99% level*

These results suggest that the model is accurate, where the signs and size of coefficients were similar for the relevant testable variables (*longdistance, shortdistance*) and key explanatory

variables (*married, poorhealth, selfemployed*) are again significant.

Table 2 Results of the regression

Variable	Parameter Estimate	P-value
Intercept	1.44	<0.001**
Dlongdistance	-0.24	0.0002*
yinc_2005	0.00000622	<0.001**
lessthanhs	-0.11	0.0521
highschool	0.06	0.1397
advanced	0.07	0.7144
notmar	0.12	0.0042
separate	0.13	0.2062
female	0.007	0.8312
nonwhite	0.06	0.0622
R-square		0.013

*denotes significance at the 95% level
**denotes significance at the 99% level

VI. Conclusions

The original hypothesis that a long distance migration event would have a positive and significant effect on job satisfaction must be rejected based on this model. The estimated coefficient was negative; with a marginal effect of -0.035 and lack of statistical significance, results suggest that the hypothesis cannot be supported. However, the regression still provides some insight into job satisfaction in the United States, and which factors likely play a role in an individual being happy with his or her work. For example, these results imply that education could play a large role in job satisfaction, where individuals attaining more human capital are likely to be more satisfied compared to those who drop out of high school or do not advance to a college degree or further. Black and Hispanic workers are more likely to be unsatisfied at work compared to white workers, and marriage (somewhat surprisingly) seems to positively effect job

satisfaction. Finally, it seems that the number of children, the general health, and whether or not an individual is self employed all play a pivotal role in the overall job satisfaction of a worker.

Limitations of this study include that the dependent variable of job satisfaction is an ordered variable on a 1-5 scale (1 being happiest), which led to the use of a binary indicator and the deployment of the probit model used here. In Perales' study, his job satisfaction variables were ordered 1-10, which allowed for a fixed-effect model to be used; ideally, this research should have used a logit fixed-effects model, but time constraints prohibited it. This would have controlled for the inability to track changes in job satisfaction over time, where satisfaction may change, for example, one year after a move occurs. Lastly, there could possibly be the presence of endogeneity where job satisfaction may affect internal migration. While controlling for endogeneity was outside the scope of this research, future researchers may be interested in investigating it.

VII.   References

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