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The Illinois Institute for Rural Affairs (IIRA) works to improve the quality of life for rural residents by partnering with public and private agencies on local development and enhancement efforts.



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Explaining Outmigration Intentions of Rural Population

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Abstract

This study uses data from a recent Ipsos survey, *Understanding Society: Wave 1 April 2021*², to explore the determinants of outmigration intentions of rural residents. Results of empirical analysis show that the odds of a person in the 18-24 age group liking to live in the city is 42 times higher than a person in the 25-34 age group, and 72,000 times higher than a person in the 50+ age category.

1.0 Introduction

More than two decades ago Thomas Malthus wrote in *An Essay on the Principle of Population* that few persons will leave their connections and friends to seek a settlement in places without the hope of some great advantage in the place to which they are going. Advantage is what rural residents see in cities; over the course of the twentieth century, outmigration from rural regions of the US was widespread; the 1920 Census was the first to highlight the US as a majority urban nation³. Historically, most rural counties have experienced chronic outmigration. By 1990, half of the country's residents lived in areas that had populations in excess of one million⁴; now, as at 2021, more than 80% of the nation's residents live in the metro region⁵.

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² See:

<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKewjQ4oeCm-PzAhVTVs0KHZMfDBwQFnoECAkQAQ&url=https%3A%2F%2Fropercenter.cornell.edu%2Fipoll%2Fstudy%2F31118527&usg=AOvVaw3tT6fusPfarGWLPD8Qusjl>

³ Deavers, K. (1992). What is Rural? *Policy Studies Journal*, 20(2), 183.

⁴ Danbom, D. B. (2017). *Born in the country: A history of rural America*. JHU Press.

⁵ See,

<https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural/u-a-facts.html>

The correlates of rural outmigration are many; for example, poverty rates have long been higher in rural regions⁶. Educational attainment is lower; Lichter et al posit that rural schools' increasing focus on vocational education steers young people into marginal jobs with little security⁷. Others disagree, they contend that technical education is an important approach to reducing outmigration among rural youth⁸. One way of settling this debate is to conceptualize rural outmigration at the individual level and model the determinants of outmigration.

This study, using data from a recent Ipsos survey, *Understanding Society: Wave 1 April 2021*⁹, explores the determinants of outmigration intentions of rural residents. A salient aspect of the study is the exploration of odds associated with outmigration for different age groups.

2.0. Conceptual Framework

Social psychologists have long recognized that one's behavioral intention is the single best predictor of behavior¹⁰. Economists do not theorize about habits, but they recognize that

individual factors such as human capital influence migration intentions. Human capital is the personal accumulation of investments in the ability to be productive; the most important of these is education. In general, rural regions lack high-paying jobs, hence compressed income distribution. Metro regions tend to have unequal income distribution. Given this, educated rural residents would intend to move to metro regions. Thus,

H₁: The higher the level of education, the greater the likelihood of migrating to the city.

Continuing with individual variables, gender and age have been shown to influence migration decisions. For example, research suggests that the likelihood of rural-urban migration is lower for women¹¹. Also, in general, working age men from low-income households tend to out-migrate from rural areas. Thus,

H₂: The likelihood of outmigration from rural areas is higher for men.

⁶ Jensen, L. (2006). At the razor's edge: Building hope for America's rural poor. *Rural Realities*, 1(1), online-online.

⁷ Lichter, D. T., Roscigno, V. J., & Condrón, D. J. (2003). Rural children and youth at risk. *Challenges for rural America in the twenty-first century*, 97-108.

⁸ Marrow, H. (2020). *New destination dreaming*. Stanford University Press.

⁹ See:

<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2a>

[hUKEwjQ4oeCm-PzAhVTVs0KHZMfDBwQFnoECAkQAQ&url=https%3A%2F%2Fropercenter.cornell.edu%2Fipoll%2Fstudy%2F31118527&usg=AOvVaw3tT6fusPfarGWLPD8Qusjl.](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2a)

¹⁰ Fishbein, M. (1963). A behavior therapy approach to the relations between beliefs about an object and attitude toward the object. *Human Relations*, 16, 233-239.

¹¹ See, for example, Plane, D. A. (1993). Demographic influences on migration. *Regional studies*, 27(4), 375-383.

H3: The likelihood of outmigration reduces with age.

H4: Lower the household income, higher the likelihood of outmigration.

The decision to migrate to the city is also influenced by social forces; strong ties to one's family, for example, could restrict one's intention to migrate. There is evidence in the literature that it is mostly people who do not have a partner that emigrate¹². This leads to the hypothesis:

H5: The larger the household, the lower the likelihood of outmigration.

Yet another source of social influence is party affiliation. Recent research suggests that conservative Republicans prefer to live in rural regions, whereas Liberal Democrats prefer to live in cities¹³. Hence,

H6: The likelihood of outmigration is higher for Liberal Democrats.

3.0. Model Development

Express the likelihood of rural resident n out-migrating to the city (choice i) as:

$P_n(i|C)$, where C is the choice set; stay at home is choice j . Expressed in utility,

$$P(U_{i,n} \geq U_{j,n})$$

Utility, restated as a combination of a deterministic and an error component, is:

$$U_{i,n} = V_{i,n} + \varepsilon_{i,n}$$

Therefore,

$$P(V_{i,n} + \varepsilon_{i,n} \geq V_{j,n} + \varepsilon_{j,n}), \text{ or}$$

$$P(\varepsilon_{i,n} - \varepsilon_{j,n} \geq V_{j,n} - V_{i,n}), \text{ or } P(\varepsilon_{j,n} - \varepsilon_{i,n} \leq V_{i,n} - V_{j,n})$$

The density function for $\varepsilon_{i,n} - \varepsilon_{j,n}$, is:

$$\int_{-\infty}^{V_{i,n} - V_{j,n}} \frac{1}{\sqrt{2\pi\sigma^2}} e^{-1/2(\frac{e}{\sigma})^2} de$$

$$V_{i,n} = \beta' X_{i,n}$$

The operational definitions of the X variables are shown in Table 1.

We calibrate the parameters using the likelihood function:

$$\prod_{n=1}^N P_{n,i}^{y_{i,n}} \times P_{n,j}^{y_{j,n}}$$

¹² Krieger, (2005). *Migration Trends in an Enlarged Europe*. Dublin: European Foundation for the Improvement of Living and Working Conditions.

¹³ Jokela, M. (2021). Urban–Rural Residential Mobility Associated with Political Party Affiliation:

The US National Longitudinal Surveys of Youth and Young Adults. *Social Psychological and Personality Science*, 1948550621994000.

Table 1. Variables and their Measures

Variable	Measure
Behavioral Intention	... most likely to live in the next year: In or near a city = 1; In a small town / rural area = 0.
Gender	Female = 1; Male = 2.
Age	18 – 24 = 1; 25 – 34 = 2; 35 – 49 = 3; 50 – 64 = 4; 65 + = 5.
Education	Less than high school = 1; High school diploma = 2; Some college = 3; Bachelor or higher = 4.
Political Affiliation	Republicans = 1; Democrats = 2; Other = 3.
Household Size	Six levels; 1 to 5 and 6 or more.
Household Income	\$10,000 - \$24,999 = 1; \$25,000 - \$49,999 = 2; \$50,000 - \$74,999 = 3; \$75,000 - \$99,999 = 4; \$100,000 - \$149,999 = 5; \$150,000 or more = 6.

4.0. Results

The behavioral intentions of 114 rural residents were available for empirical analysis. Of these, 57% were females, 61% were greater than or equal to 50 years of age, 18% were affiliated with

the Democratic Party, and two-in-five respondents reported less than \$50,000 household income. Table 2 shows the central tendencies of the observations, mode or median values are shown.

Table 2: Profile of the Rural Respondents

Variable	Average Response
Gender	Female
Age	50 - 64
Education	Some College
Income	\$50,000 - \$74,999
Size of household	2 Persons
Party Affiliation	Republican

4.1. Determinants of Rural Outmigration

The conceptual framework, Section 2, indicated the predictors of rural outmigration. To empirically examine the predictive capability of the *X* variables (see Table 1), the

mathematical model listed in Section 3 was calibrated. The response, behavioral intention of outmigration, had two response levels: intention to out-migrate to a city, and stay in the (rural) community. Table 3 lists the response profile.

Table 3: Response Profile

Response variable = Behavioral intention; Number of observations = 114; Response levels = 2

Ordered Value	Behavioral Intention	Count
1	Like to live in city	21
0	Like rural living	93

4.1.1. Model Fit

The model was formed using six predictors (Table 1). The hypothesis,

H_0 : The hypothesized model fits the data,

was tested using the $-2LogL$ statistic, the likelihood ratio. The $-2LogL$ value of -43.761 with 107 degrees of freedom for the model that includes the intercept and the six predictors was not significant at an alpha of .05, suggesting that the null model cannot be rejected (Appendix 1). Put another way, the independent variables do contribute to predicting city-living intentions of rural residents.

4.1.2. Parameter Estimates

The maximum likelihood estimates of the model parameters are shown in Table 4. Age of the respondent is the only predictor of the respondent's outmigration intention; the odds of a

person in the 18-24 age group liking to live in the city is 42 times higher than a person in the 25-34 age group, and 72,000 times higher than a person in the 50+ age category¹⁴. The model has a good predictive validity, it correctly predicts 95% of the cases (Appendix 1).

Table 4: Maximum Likelihood Estimates of Parameters

	Coef.	Std. Err.	z	P> z	CI: [0.025	0.975]
Intercept	0.2981	1.6781	0.1776	0.8590	-2.9909	3.5871
Education	0.1618	0.3137	0.5157	0.6061	-0.4531	0.7766
Income	-0.0199	0.1815	-0.1097	0.9126	-0.3756	0.3358
Age	-0.9610	0.2576	-3.7305	0.0002	-1.4659	-0.4561
Gender	0.3294	0.5618	0.5864	0.5576	-0.7716	1.4305
HH Size	0.1629	0.2270	0.7175	0.4730	-0.2820	0.6077
Political Affiliation	0.0020	0.3158	0.0064	0.9949	-0.6169	0.6209

5.0. Summary and Conclusion

This paper looked beyond the traditional economic analysis of migration in which economic benefits dominate the decision process. The role of both individual-level variables such as age and social variables such as number of persons living in the household were explored. A mathematical model linking rural outmigration intentions with predictors gender, age, education, income, size of the household, and political affiliation was calibrated with data from a national survey of adults 18 years of age and older.

Results of model estimation suggest that age is the primary predictor of rural outmigration. The odds of a person in the 18-24 age group moving to city is 70,000 times higher than a 50-year old.

Community economic developers in the nonmetro often see rural-to-urban migration among educated rural youth as a salient determinant of economic marginality and decline. It is time that schools in the rural regions educate the young to strengthen their community identity and teach them the skills needed in the communities.

¹⁴ It could be that most in this age group are planning to attend a college in the city.

Appendix 1: Model Fit Statistics

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Dep. Variable:          w_rural      No. Observations:          114
Model:                  Logit        Df Residuals:              107
Method:                 MLE          Df Model:                   6
Date:                  Sun, 24 Oct 2021  Pseudo R-squ.:            0.1965
Time:                  11:01:50       Log-Likelihood:           -43.761
converged:              True          LL-Null:                   -54.460
Covariance Type:       nonrobust      LLR p-value:               0.001555
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Model:                  Logit          Pseudo R-squared: 0.196
Dependent Variable:    w_rural        AIC:                     101.5211
Date:                  2021-10-24 11:01 BIC:                     120.6745
No. Observations:     114            Log-Likelihood:        -43.761
Df Model:              6              LL-Null:                -54.460
Df Residuals:         107            LLR p-value:           0.0015552
Converged:             1.0000         Scale:                   1.0000
No. Iterations:       7.0000
=====

```

Classification Table

Actual	Predicted	
	Intend to Move to City	Do Not Intend to Move to City
Intend to Move to City	17	4
Do Not Intend to Move to City	2	91

Note: Predictive accuracy of the model: 95%