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# **EMPLOYMENT MIGRATION AMONG GRADUATES OF SOUTHERN LAND-GRANT UNIVERSITIES**

**By John A. Ballweg and Li Li**

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## **ABSTRACT**

This research addresses the geographic mobility of 2,028 graduates of 15 Southern land-grant universities. Concern was directed toward those who accepted positions outside the state where they graduated compared with those who remained within the state. The study uses panel data involving a 1976-77 survey while students were enrolled in an agriculture curriculum at land-grant schools and a follow-up survey a decade later. Migration patterns were identified and both demographic characteristics and employment history were examined. Migrant graduates were compared with non-migrant graduates according to what they considered important in accepting a first job as well as actual job earnings. Although migrant graduates attributed more importance on work characteristics than economic reasons for accepting out-of-state jobs, higher starting salary and better benefits were found to be important factors associated with the move to another state. Differences were also detected for male and female graduates. Theoretical interpretation and policy implications are discussed.

## **INTRODUCTION**

Demographers who study occupational migration often pose two questions as a starting point: "Who migrates?" and "Why do people migrate?" Research shows that more than one half of households moved for job-related reasons (Lewis, 1982; Long, 1988). This study examines the migration patterns of graduates from Southern land-grant universities to determine which graduates are more likely to leave the state where their degree was received as well as their reasons for moving.

The economic perspective, a dominant approach to employment migration, suggests that people migrate in order to improve their economic well-being (Molho, 1986; Rohr-Zanker, 1990). Previous research in this area can be classified into two categories. One regresses

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migration rates against economic variables, such as unemployment rates, per capital income and cost of living differences, while the other uses data on individuals to explore the relationship between their characteristics and the decision to migrate (Bartel, 1979; Cebula, 1979; Mueller, 1982).

One assumption questioned by the economic perspective is that potential migrants are basically homogeneous in skills and knowledge (Fabricant, 1967). Levels of attained education are associated with income and accessibility of information about job opportunities. A study by Ferriss (1965) examined the migration pattern for persons seeking graduate education and reported that the prospect of job opportunities for professional and technical personnel was a motivating factor.

College graduates are regarded as an appropriate sample to study migration in order to minimize the differences on education and information accessibility (Greenwood, 1973). Studies of migration of college graduates based on individual characteristics are few, partly because of the difficulty of tracking those graduates after their graduation.

This paper attempts to provide some insights into employment migration by analyzing personal and work characteristics influencing the probability of college graduates' migration. The basic hypothesis is that graduates move out of state in response to economic incentives.

## METHODS

The data set for the analysis is the survey conducted in 1986-1987 on Occupational Career of Former Students in Southern Land-Grant Universities. In the 1976-77 academic year, a survey was conducted among agricultural students enrolled in 1862 land-grant universities in eleven Southern states. A decade later the original surveys, mail questionnaires were sent to persons who participated in the 1976-77 survey. A total of 73.1 percent of the former students were located for the follow-up survey and 91.6 percent of those located completed the survey. Foreign students with an address outside the United States were not included in the survey. A total of 2,028 students were included in the sample (Thomas and Dunkelberger, 1991).

Of the 2,028 persons in the original survey, career data were available for both first and current<sup>1</sup> jobs for 1,858 persons who graduated. These respondents were divided into four categories: (1) those whose first and current jobs were in the state where they received their degrees; (2) those

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<sup>1</sup>Since the data were collected in 1987, the term "current" job throughout this report refers to jobs in 1987.

who had both first and current jobs outside the state; (3) those whose first jobs were within the state but whose current jobs were outside the state; and (4) those whose first jobs were outside the state and current jobs were in the state. These data are presented in Table 1.

In order to determine what factors are most influential in decisions to accept the first jobs, either in the state or out of the state, graduates were asked to describe the relative importance of sixteen factors associated with employment. Analysis of Variance (ANOVA) was used to compare the mean score of each reason between migrant graduates and non-migrant graduates. Thompson and Brown (1991) grouped the sixteen factors into four categories in their study: Economic factors; work characteristics; environmental situation, and worker independence. Based on this classification, three indices ("Economic Factor," "Work Characteristic" and "Environmental Situation") were created, each showing Cronbach's Alpha at .60 or over for reliability test.<sup>2</sup> "Benefit" is a 13-item index, with Alpha of .80, and used to measure the degree of insurance and fringe benefits first job companies provide. In addition to these indices, AGE measures the age of a former student when he or she graduated. Gender is measured by 1 for male graduates and 0 for females.

The dependent variable (MOVE) is dichotomous, taking on a value of 1 if a graduate accepted a first job outside the state where he or she received the college degree. In order to estimate the effect of independent variables on a dichotomous dependent variable, logistic regression models were used (Black, 1983).

## RESULTS

Information in Table 1 shows the profile of the geographic locations of graduates. Of 1,858 graduates, 32.6 percent were employed both for their first and current job in the state where their degree was received; 27.6 percent had both first and current jobs outside the state in which they graduated. For 32.2 percent of the graduates, the first job was in the state where their degree was received followed by a move to another state for their current job. Those who accepted first job out of the state and returned to the state where they graduated represented only 7.6 percent of the graduates.

Cross tabulation was used to present the demographic characteristics of both in-state and out-of-state graduates; results are showed in Table 2.

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<sup>2</sup>Index for work independence was excluded because there are only two items in this category according to Thompson and Brown's classification (1991).

**Table 1. Percentage Distribution of Graduates According to Four Migration Patterns**

<u>Graduates</u>	<u>N</u>	<u>Percentage</u>
Both first and current job in-state	605	32.6
Both first and current job out-of-state	513	27.6
First job in-state and current job out-of-state	599	32.6
First job out-of-state and current job in-state	141	7.6
Total	1858	100

Generally speaking, male graduates were more likely than female graduates to accept jobs in the state where they graduated; younger and non-married graduates were more likely to work outside the state where they received their degree. Higher income was associated with those graduates who worked out of the state in both first and current jobs.

Data presented in Table 3 show differences between graduates who accepted their first jobs within and outside the state where they graduated in terms of factors which influenced their acceptance of the job. Responses to each factor ranged from 1 (not important) to 5 (very important). It is interesting to note that none of the three economic reasons show differences between in-state and out-state job acceptances. This finding was inconsistent with the expectation.

When first job locations were examined in relation to work characteristics, most factors were significantly different between graduates who accepted in-state jobs and those who accepted out-of-state jobs. Those graduates who accepted out-state jobs were more likely than those who stayed within the state to consider work characteristics such as challenges (4.08) of work, importance of work (3.82), chance for advancement (3.64), opportunity to use education (3.75), development of new skills (4.13), and travel (2.24) as more important reasons for their acceptance of the first job. With respect to environmental situation associated with the first job, locations of jobs were regarded more important among in-state job acceptant (3.52) than those who left the state for their first jobs (3.04).

No differences concerning pay, benefits and security on first jobs were found between in-state and out-of-state graduates in their self evaluations.

**Table 2. Percentage Distribution of Demographic Characteristics of Graduates With In-State or Out-of-State First or Current Jobs**

<u>Characteristic</u>	<u>First Job</u>		<u>Current Job</u>	
	<u>In-state</u>	<u>Out-state</u>	<u>In-state</u>	<u>Out-state</u>
Male	64.2 (893)	35.8 (498)	41.5* (577)	58.5* (814)
Female	66.5 (310)	33.5 (156)	36.3* (169)	63.7* (297)
Age (in 1986)				
27-28	59.5 (144)	40.5 (98)	33.9* (82)	66.1* (160)
29-30	63.5 (497)	36.5 (286)	38.2* (299)	61.8* (484)
31-32	67.6 (423)	32.4 (203)	43.6* (273)	56.4* (353)
33 or over	67.6 (140)	32.4 (67)	44.4* (92)	55.6* (115)
Marital Status				
Currently married	66.7*** (918)	33.3*** (459)	40.7 (561)	59.3 (816)
No longer married	63.6*** (199)	36.4*** (114)	41.9 (131)	58.1 (182)
Never married	51.2*** (85)	48.8*** (81)	32.5 (54)	67.5 (112)
Income				
\$15,000	67.9** (214)	32.1** (101)	29.5*** (93)	70.5*** (222)
\$25,000	68.9** (436)	31.1** (197)	46.4*** (294)	53.6*** (339)
\$35,000	61.4** (325)	38.6** (204)	37.8*** (200)	62.2*** (329)
\$50,000	61.6** (162)	38.4** (101)	43.0*** (113)	57.0*** (150)
\$50,000 or more	56.8** (67)	43.2** (51)	39.0*** (46)	61.0*** (72)
Total N	1204	654	746	1112

\* P &lt; .05

\*\* P &lt; .01

\*\*\* P &lt; .001

Table 3. Comparison of Mean Importance Scores Among Graduates in Accepting First Jobs In-State and Out-of-State

<u>Factors</u>	<u>In-state</u>	<u>Out-of-state</u>	<u>Grand Mean</u>	<u>F Significance</u>
<b><u>ECONOMIC FACTOR</u></b>				
Pay	2.69	2.76	2.72	.264
Fringe benefits	2.54	2.63	2.57	.202
Security of job	3.07	3.02	3.05	.448
<b><u>WORK CHARACTERISTIC</u></b>				
Challenges of work	3.76	4.08	3.87	.000
Importance of work	3.50	3.82	3.61	.000
Chance for advancement	3.29	3.64	3.41	.000
Opportunity to use my education	3.54	3.75	3.61	.004
Opportunity to develop new skills	3.83	4.13	3.94	.000
Respect people have for this kind of work	2.63	2.66	2.64	.642
Opportunity to travel	1.83	2.24	1.97	.000
<b><u>ENVIRONMENTAL SITUATION</u></b>				
Working conditions	3.23	3.32	3.26	.159
Good work associates	2.99	3.14	3.05	.039
Job as a whole	3.72	4.01	3.82	.000
Location of job	3.52	3.04	3.35	.000
<b><u>WORKER INDEPENDENCE</u></b>				
Chance to be boss	2.38	2.29	2.35	.194
Amounts of supervision	2.67	2.68	2.67	.970

When starting annual salary and benefits on their first job were examined, however, the differences were evident and statistically significant. As shown in Table 4, on average, those who accepted first jobs out of the state received a higher starting salary and better benefits (\$14,609 and 18.7, respectively) than their in-state counterparts (\$12,549 and 17.8, respectively). Also, among those who accepted jobs out of the state, the average in the first job was 58.4 months, which was significantly longer than those who remained in the state.

Zero-Order correlations are presented in Table 5. Consistent with previous findings, starting salary, benefits and work characteristics were significantly related to migration to another state for the first job. Also, age at graduation was positively associated with moving (.07). Stated differently, the older the graduates, the more likely they were to move to another state for their first jobs.

**Table 4. Comparison of Group Means in Starting Salary, Benefit and Months Employed in First Job Between In-State and Out-of-State Graduates**

<u>Factors</u>	<u>In-state</u>	<u>Out-of-state</u>	<u>Grand Mean</u>	<u>F Significance</u>
Starting salary	\$12,549	\$14,609	\$13,268	.000
Benefits	17.8	18.7	18.1	.000
Months employed	37.1	58.4	44.7	.000

**Table 5. Correlation Coefficients Among Selected Variables**

<u>Variable</u>	1	2	3	4	5	6	7
1. Move	1.00						
2. Age	.07**						
3. Gender	.02	.00					
4. Economic Factor	.01	.01	.09***				
5. Work Characteristic	.14***	.07*	.11***	.31***			
6. Environmental Situation	.01	.05*	.01	.30***	.53***		
7. Starting Salary	.18***	.19***	.15***	.26***	.21***	.12***	
8. Benefits	.13***	.04	.10***	.38***	.25***	.10***	.22***

\* p &lt; .05

\*\* p &lt; .01

\*\*\* p &lt; .001

Furthermore, gender was significantly associated with starting salary (.15) and benefits (.10), and economic and work characteristic reasons to move. Male graduates considered economic factors (.09) and work characteristics (.11) as more important reasons for accepting their first job than did female graduates. There is no significant difference between males and females in terms of environmental concern (.01).

Economic factors for accepting the first job were positively related to higher starting salary (.26) and better benefits (.38). Also, work characteristic and environmental factors were positively associated with actual economic gains from the jobs. All these relationships were found to be statistically significant.

Results from multiple regression are shown in Table 6. Since the



**Table 6. Logit Regression Coefficients of Migration By Starting Salary, Benefits and Job-Related Reasons Among Graduates**

	Model 1		Model 2	
	Regression Coeff. (Standard Error)	Coeff./S.E.	Regression Coeff. (Standard Error)	Coeff./S.E.
Economic Factor	-.00405 (.00823)	-0.492	-.02801 (.00968)	-2.893*
Work Characteristic	.03560 (.00508)	7.011*	.03013 (.00564)	5.344*
Environmental Situation	-.02225 (.00627)	-3.551*	-.01946 (.00684)	-2.847*
Starting Salary			.00003 (.00001)	6.358*
Benefits			.03225 (.00988)	3.263*

\* Statistically Significant

dependent variable (accepted the first job in or out of the state where a graduate received a degree) was dichotomous, logistic regression analyses were used. In Table 6, the "Coeff./S.E." can be interpreted as a t-test. In Model 1, work characteristics had a significantly positive impact on migration, while environmental concern was negatively related to the first job moving.

More specifically, graduates who regarded environmental condition of the first job as important were more likely to remain in the state where the degree was received, and those who were more concerned about work characteristics were more likely to leave. The results are consistent with what was reported with the previous analyses.

Model 2 in Table 6 presents a regression equation including starting salary and benefit on first job as a measure of actual economic earnings. After controlling these variables, it can be seen that the effects of work characteristics and environmental concern on migration remain significant. Both starting salary and benefits had significantly positive impact on migration; economic reasons for moving affected migration negatively.

It is clear that a major discrepancy exists between what graduates claimed and what they really earned in terms of economic reasons for migration. As shown in Table 7, this discrepancy exists among graduates aged 23 or older but disappears among those aged 22 or younger. The

**Table 7. Logit Regression Coefficients of Migration By Starting Salary, Benefits and Job-Related Reasons Among Graduates, Controlling Gender and Age**

<u>Factors</u>	Regression Coeff.		Regression Coeff.	
	(Standard Error)	Coeff./S.E.	(Standard Error)	Coeff./S.E.
	<u>Males</u>		<u>Females</u>	
Economic Factor	-.02272 (.01102)	-2.061*	-.05122 (.02104)	-2.434*
Work Characteristic	.03741 (.00666)	5.618*	.01438 (.01106)	1.300
Environmental Situation	-.02154 (.00785)	-2.742*	-.01414 (.01436)	-0.985
Starting Salary	.00004 (.00001)	6.038*	.00003 (.00001)	2.438*
Benefits	.04209 (.01133)	3.714*	-.00179 (.02115)	-0.085
	<u>Ages of 22 or younger</u>		<u>Ages of 23 or older</u>	
Economic Factor	-.00553 (.01793)	-0.309	-.04223 (.01542)	-2.738*
Work Characteristic	.03241 (.00969)	3.343*	.02468 (.00897)	2.753*
Environmental Situation	-.02393 (.01201)	-1.993	-.00489 (.01088)	-0.449
Starting Salary	.0003 (.0001)	2.618*	.00004 (.00001)	4.745*
Benefits	.02213 (.01739)	1.273	.03254 (.01593)	2.043*

\* Statistically Significant

rationale behind this age distinction might be that graduates aged 23 or older may have previous work experience.

Table 7 further shows the different effects of independent variables on migration for male and female graduates. Work characteristics and environmental condition, which have significant effects on migration among males, did not affect migration among female graduates. Likewise, the effect of benefits on migration become negligible for females.

## **SUMMARY AND DISCUSSION**

To summarize the results:

1. Consistent with previous studies, economic earnings were found to be the most important factor for predicting employment migration of graduates.

2. Work characteristics were claimed to be an important reason for accepting the first job by male graduates who moved out of the state where they received their degrees, while those who stayed within the state considered environmental conditions, such as location of first job, more important. These factors did not influence migration among female graduates.

3. Male graduates received higher salary and benefits than female graduates at the time they entered the work force.

It would be reasonable to assume that many states prefer to have their graduates remain within the state for employment. Land-grant universities receive a major portion of their support from taxes. Thus, when a student attends school in one state and moves to another state for employment, tax revenue from the employment does not benefit the state where the educational costs were incurred.

Since this study involves only graduates from land-grant universities in Southern states, it is not possible to determine whether or not the findings here are consistent with that of other geographic regions. It is evident, however, that graduates seek employment that draws upon their academic experience and seek the characteristics of the work environment that will provide personal and financial satisfaction. The economic vigor of a state or region thus plays a significant role in the ability to retain graduates.

To keep its graduates from leaving, a state must have employment opportunities that appear more attractive to graduates than jobs outside the state. Findings indicated that graduates who migrated received higher average starting salaries than those who remained within the state. This would tend to suggest that salary is the primary consideration in the decision to migrate. By using the four criteria proposed by Thompson and Brown (1991), it was found that the expectation of a higher starting salary was not the most significant factor reported by the graduates as the reason for deciding to migrate. Respondents indicated that work characteristics were a more important factor in their decision than were economic factors, the environment, or independence of the work assignment. Thus, there appears to be a discrepancy between what the graduate describes as the most important factor in a migration decision and the actual situation.

What may be the answer to this apparent discrepancy is that the

graduate seeks work characteristics which best fit skills, abilities and desires. The salary, while not described by the graduate as an important concern to the decision making, tends to be more important because it provides a better match with work related characteristics and the skills the new worker brings to the job.

The finding that female graduates failed to receive salary and benefits equal to male counterparts was expected. The finding supported earlier work by Thomas and Schiflett (1989: 87) who state "comparably trained women and men experience difference different occupations and employment benefits." Thomas and Schiflett (1989) suggest a number of explanations for the discrepancy, including forms of segmentation within labor markets. The present study demonstrated that migration patterns between states also differ according to gender.

While this report examines the movement out-of-state for employment, it is evident that some of the out migration is replaced by in migration of graduates from academic institutions in other states. This migrant flow is not included in the present report.

Another factor that was not examined by the present study was the possibility that over production of graduates might necessitate the out-migration of graduates from the state where they received their degree. In a study of students for Ph.D. degrees, Ferriss (1965) found that students seeking doctoral degrees tended to move from states with lesser educational development to states with higher educational development. When the student received the doctoral degree, migration tended to flow in the opposite direction. Following this logic, the greater the number of degrees granted in a state in relation to jobs, the lower the retention rate for that state. Whether the same was true for those who receive undergraduate degrees might prove to be an explanation for migration of college graduates.

The present study might be viewed as an extension of Ferriss' (1965) work. While the availability of job opportunities remains essential to the prediction of migration, individual characteristics of the job constitute a further dimension. An adequate theory of migration among college graduates requires the incorporation of both.

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