

AN EXAMINATION OF THE RELATIONSHIP OF SELECTED  
VARIABLES TO INTERSTATE GEOGRAPHIC MOBILITY  
OF TECHNICIAN GRADUATES OF THE ASSOCIATE  
DEGREE PROGRAMS IN OKLAHOMA

BY

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## CHAPTER I

### THE PROBLEM

#### Statement of the Problem

At a time when the economic growth of the nation and each state within the nation is dependent upon a well educated and highly skilled populace, a large proportion of the graduates of the institutions of higher learning in Oklahoma have been leaving the state for employment. The problem with which this study is concerned is that of out-migration of the highly educated members of Oklahoma's society--which is detrimental to the state's socioeconomic development.

#### Purpose of the Study

The purpose of this study was: (1) to describe the employment pattern and the interstate geographic mobility pattern of recent technician graduates of Oklahoma's junior college and technical institute associate degree programs, (2) to provide an understanding of the variables which tended to affect out-migration of the recent technician graduates who entered the labor market,

These variables were grouped as follows:

- A. Personal and socioeconomic background
- B. Attitude toward Oklahoma in general
- C. Attitude toward selected variables related to employment

- D. Selected employment practices of employers from Oklahoma and out of state
- E. Economic aspirations
- F. Personal, social or economic reasons given for remaining within Oklahoma or for leaving the state

(3) to provide baseline data for future follow-up studies, and (4) to provide a framework within which educators and others concerned with utilization of technician manpower in the socioeconomic growth of the state of Oklahoma can begin a fruitful dialogue.

#### Need for the Study

John J. Klein, et al, (1, pp. 121-122) described the problem of economic development in Oklahoma as follows:

Oklahoma as a State is behind the rest of the nation in its level of economic attainment, this possibly being attributable to Oklahoma's still recent agricultural origins. Yet, since 1939, the Oklahoma economy has acquired features more like those of the nation: increased industrialization, a rising urban population, decline in the rural economy, and growth of the service industries. A more efficient utilization of resources has occurred. As a result Oklahoma per capita personal income as a percentage of the United States averages has increased from 62.1 percent in 1939 to 83.1 percent in 1960.

The task of development in Oklahoma is to accelerate these trends, . . .

As stated above, a major goal of Oklahoma is to increase its rate of economic growth. The problem is to develop an overall plan which will efficiently accomplish this goal. A frequently mentioned policy to help accomplish this goal is to attract new industry and business to the state. There are many factors which affect the decision of executives in expanding facilities or in selecting new plant locations. These factors include not only access to materials and

markets; the cost of transportation, power, and labor; the effectiveness of the state's educational system; but also, the availability of trained manpower which is affected by geographic mobility. The Arkansas River Waterway, now nearing completion, will unveil a new transportation resource which enhances access to materials and markets. Oklahoma's natural resources such as coal, gas, oil, and water provide reserve power. Labor costs are within reason. Where deficiencies exist in the state's educational system, efforts are being made to correct them. Effort must now be made by Oklahoma to retain its trained manpower.

More and more investigations are demonstrating that availability of trained manpower is increasing in importance as a major factor in economic progress. For example, in A Policy for Skilled Manpower, (2, pp. 15, 17, and 19) published by the National Manpower Council, it was stated:

Only recently have we come to realize that the development and effective utilization of our human resources cannot be left to chance . . . .

. . . . .  
We are sometimes likely to forget that the rate of our economic progress depends in considerable measure on the quantity and quality of our available skilled manpower . . . .

. . . . .  
Our future progress and strength depend upon a conscious and deliberate concern with our manpower resources . . . .

Certainly, Oklahoma's industrial and business development during the next few years will be strongly related to the available supply of trained manpower, among which there now exists an acute need for technicians.

Oklahoma's need for technicians is illustrated in the following projections appearing in the Oklahoma Employment Security Commission's 1964 study, Manpower in Oklahoma, (3, p. 26):

Employment in technical occupations numbered 35,003 when this survey was made. Despite being the smallest in size, this group will increase at a rate exceeding other categories in the first two forecast years. More specifically, additional requirements for technicians will be 3,747; 11,662; and 18,830 in 1965, 1970, and 1975, respectively.

The Oklahoma Regents for Higher Education also acknowledge this in their publication, Higher Education Opportunities and Needs in Oklahoma, (4, p. 67) in which they declared:

The demands for technical and vocational education will skyrocket over the next decade, according to all available indexes; consequently, Oklahoma will need to expand its capabilities in these important areas at the post-high school level. The number of technical workers needed for Oklahoma in 1975 is projected to be approximately 50 to 60 percent greater than the 35,000 workers in the technical category who were counted in a 1963 manpower survey . . . .

This need for technicians is not unique to Oklahoma, for there exists a critical shortage of technicians in the United States. The Bureau of Labor Statistics (5, p. 16) estimated that 69,600 new technicians would be needed per year simply to maintain the ratio of about .7 to 1 of technical to scientific and engineering personnel during the decade of 1960 to 1970. However, other studies (6, p. 131) indicate that the minimum desirable ratio of technicians to scientists and engineers is 2 to 1, rather than .7 to 1. In the publication, Mobility and Workers Adaptation to Economic Change in the United States, (7, pp. 38-39) it was stated:

Technological changes have occurred with such rapidity in recent years that the supply of technical manpower has failed to meet the need for it. At present, the number of technicians employed as supporting personnel is approximately three-fourths the number of engineers and scientists. It has been estimated that within a few years, an average of two to three technicians will be needed for each engineer. . . . 800,000 additional technicians will be needed by 1970, not including replacement requirements.

Lloyd D. Briggs (8, p. 21) in A Study of the Graduates From Oklahoma's Post-High School Programs of Technical Education found for the years 1959 through 1964, that 49% of the technician graduates of the junior colleges and technical institutes in Oklahoma accepted their first employment out of state. Furthermore, Briggs (8, p. 22) found:  
" . . . a trend among junior college and technical institute graduates to move away from Oklahoma sometime after their initial employment upon graduation from the technical program."

The Oklahoma State University Placement Service's Sixth Annual Report, Report of Activities and Services, (9, p. 9) illustrates the interstate geographic mobility pattern for technician graduates of the technical institutes for the years 1962 through 1966. Their findings showed that 58% of the technician graduates accepted their initial employment out of state during that period.

Jack Ladinsky (10, p. 473) in alluding to one of the critical problems associated with geographic mobility declared:

Moving is very much a part of the "way of life" of a substantial proportion of American families. It is, perhaps, correct that in the earlier part of the century the emphasis in internal migration was on workers from rural areas moving to the growing industrial centers. But major economic and organizational transformations in both the private and public sectors have changed this. The migration of "elites" becomes a progressively more important characteristic of our society, and to judge by the recent attention given to the "brain drain", a matter of urgency . . . .

In the publication, The Strategy for Economic Development in Oklahoma, (11, p. 4) some of the deterrents affecting the economic growth of Oklahoma were set forth as follows:

In the past, many new activities and job opportunities have not been made available in Oklahoma. As a result of this situation, economic constraints have worked to retard the

economy of Oklahoma. This inadequate availability of job opportunities has produced a migration of people, resulting in real and significant losses of markets, incomes, and members of the Oklahoma labor force. This migration has been of an inter and intra-migration nature. Not only have Oklahomans moved from their state, they have increasingly moved from the rural to the urban areas. Oklahomans respond to opportunity. They move to where there are possibilities for personal gain, growth, and advancement.

. . . high migration rates has created a high welfare sector of much of Oklahoma's economy. Human resources are wasted. Depressed living and economy conditions are not producing to full potential, but require the public assistance of the other more productive sectors of the economy.

Symptoms and causes thus must not be confused. The varied host of economic symptoms including migration rates, low productivity, high welfare costs, and low personal and family incomes, must not be confused with real causes. . . symptoms can be thus eliminated by systematic correction of the basic causes.

In addition to Oklahoma's specific need for a study of this type there exists an expressed need for similar studies from many sources as becomes evident from the following expose:

Research of the literature for a similar study failed to divulge even one which pertained to the geographic mobility of technician graduates of junior colleges and technical institutes per se. Jack Ladinsky (10) appeared to be the only researcher who had considered the technician at all, and then, only as a rather small part of a study dealing primarily with the geographic mobility of professional and technical manpower.

Laure M. Sharp and Rebecca Krasnegor, supported by a grant from the U. S. Department of Health, Education, and Welfare, found similar conditions in their study - The Use of Follow-up Studies in the Evaluation of Vocational Education. (12) The purpose of their study

was to evaluate the types of studies completed or in process which relate to vocational education and to indicate where there tends to be a need for future studies. As a result of their evaluation, Sharp and Krasnegor (12, p. 18) implied the need for such a study when they stated:

Although many of the studies recently completed or now underway make substantive contributions to the problem of evaluating the occupational results of vocational training programs, there remain sizable gaps. The need for comprehensive geographic coverage is imperative, especially in order to obtain some baseline data on the results of vocational training . . . For the graduates themselves, we need to know more about long term career patterns as well as about the student's attitudes toward employment . . .

When Sharp and Krasnegor reviewed what studies had been done in vocational education, they became acutely aware that most past and current research involved vocational education at the high school level. At the post-high school level there had been very few studies. They (12, pp. 15-16) stated:

We know practically nothing about the students or graduates of post-high school vocational education . . . In general, follow-up studies of junior college students have been concerned with transfer to higher educational institutions rather than occupational outcome though many students are enrolled in occupational rather than academic curriculum.

Again Sharp and Krasnegor (12, p. v) expressed support for such a study when they summarized:

Follow-up studies of vocational program graduates were demonstrated to be useful tools . . . and were recommended for future program assessment. Follow-up efforts were found to be common . . . in specific areas of the country to the exclusion of other areas and to have included some programs and omitted others. The most serious gap is the lack of follow-up information at the post-high school level for those trained in technical institutes and junior colleges. . . .

At the research and development planning conference sponsored by

the Upper Midwest Regional Educational Laboratory and conducted by the Minnesota Research Coordinating Unit in November, 1966, participants from Iowa, Minnesota, North Dakota, South Dakota, and Wisconsin rated "what factors effect the geographic mobility of our graduates" as one of eighteen problems requiring top priority in areas needing research which relate to vocational-technical education. (13, p. 6)

Jack Ladinsky (10, p. 475) emphasized the need for this type of mobility study when he expressed:

There is a curious neglect in research on the geographic mobility of labor: Professional and technical manpower is the fastest growing segment of the U. S. labor force and probably has a greater proportion of job vacancies than any other occupation stratum. However, among both labor economists and sociologists the locus of mobility research has been in the industrial sector on movement among blue collar workers, non-whites, and the unemployed. Little work has been done on the mobility of white collar workers, and close to no work at all has been carried out on the mobility of professional and technical workers.

Gerald G. Sommers (14, p. 427) lends support to Ladinsky's comments when he stated:

The geographic mobility of labor presents a focus for manpower policy, depressed-area programs, and analysis of the investment in human resources. Although it provides a suitable basis for broad multi-disciplinary study in each of these foci, the field has been largely the domain of economists, concerned primarily with measurement of the gains of mobility; and, to a smaller extent, of sociologists who have placed major stress on the noneconomic costs of mobility.

Phillip M. Hauser (15, p. 46) expressed his concern when he commented:

It is perhaps in the study of the elements other than wages in the whole . . . that the greatest progress may be made in augmenting our understanding of labor mobility.  
 . . . . .  
 Better data are needed on labor force mobility. . . .

Herbert Parnes (16, p. 226) expressed support for this type of



study when he stated:

. . . there are socio-psychological impediments (about which we know little) to mobility. Here additional research would help; our inabilities arise not out of the inherent measurement difficulties of the problem but rather out of our lack of knowledge.

To tie all of these needs together in regard to this study, perhaps it can be summarized by quoting Charles A. Myers (17, p. 164) who said, "Much more research needs to be done on the 'why' of labor mobility."

It would appear that a study which identifies and provides an understanding of some of the variables which tended to affect interstate geographic mobility among the recent graduates of selected post-secondary technician training programs in Oklahoma could be of assistance to employers of technicians in Oklahoma and other agencies responsible for the socioeconomic growth of the state. In addition, data provided by the study could provide additional knowledge to that part of the labor mobility field often referred to as "interstate geographic mobility."

#### Research Objective

The objective of this study was to ascertain which of selected variables tended to affect interstate geographic mobility among recent technician graduates of the associate degree programs in Oklahoma's junior colleges and technical institutes.

#### Research Questions

The two sub-populations of the technician graduates of the associate degree programs in Oklahoma's junior colleges and technical

institutes include: (1) those technician graduates who accepted employment in Oklahoma, and (2) those technician graduates who accepted employment out of state.

Based upon a comparison of the members of the two sub-populations, the investigator proposed the following research questions:

1. Is there a difference in their personal and socioeconomic backgrounds which tends to affect interstate geographic mobility?
2. Is there a difference in their attitude toward Oklahoma in general which tends to affect interstate geographic mobility?
3. Is there a difference in their attitude toward selected variables related to employment which tends to affect interstate geographic mobility?
4. Is there a difference in their economic aspiration which tends to affect interstate geographic mobility?
5. Is there a difference in the personal, social, or economic reasons given by technician graduates for remaining within Oklahoma or for leaving the state which tends to affect interstate geographic mobility?
6. Is there a difference in the employment practices of employers from Oklahoma and out of state which tends to affect interstate geographic mobility?

#### Assumptions Basic to the Study

Three basic assumptions were incorporated in the study. It was assumed: (1) that the extent of out-migration of Oklahoma's recent

technician graduates is, in part, undesirable, (2) that recent technician graduates are motivated to accept employment within Oklahoma or out of state by a combination of factors rather than by a single factor, and (3) that a questionnaire completed by recent technician graduates could provide an effective method of obtaining valid and useful data for the study.

#### Limitations of the Study

The following limitations were established for the study. First, all data were limited to the May, 1967 technician graduates who completed the requirements for the associate degree during the second semester of the 1966-67 school year. Second, the technician graduates were further limited to those who secured full-time employment within the United States. Third, the types of institutions were limited to the community or junior colleges in Oklahoma which have technician education programs and the two technical institutes which are divisions of Oklahoma State University's College of Engineering, located at Stillwater and Oklahoma City. Fourth, the institutions were further limited to those which did graduate technicians with the associate degree in May, 1967. Fifth, all data were derived through the use of instruments designed to secure the specific data desired.

#### Definition of Terms

Active Manpower Policy. The process embracing those principles and programs which aim to assist the individual to become fully employed in productive work of his choosing consonant with his aptitudes, talents, and interests under fair standards; to help sustain and

rehabilitate the individual experiencing economic or personal hardship; and to help maintain the individual in as adaptable, flexible, and responsive a stance as possible to the changing requirements of the world of work. (18, p. 121)

Community. Structural relationship through which a localized population provides its daily requirements, i.e., a village, a city, a state.

Community College. A junior college operated by the board of education of a local basic administrative unit (including the independent local board for one or more community colleges). Instruction is adapted in content, level, and schedule to the needs of the local community. (19, p. 5)

Community of Orientation. The type of community in which a person lived most of his or her life, i.e., rural or urban.

Employed. Those persons working at an occupation at least thirty-six hours per week who receive a wage, salary, or fee.

Follow-up Study. A study of the experiences or status of former pupils. (20, p. 671)

Full-Time Student. A pupil who is carrying a full course load as determined by the state or the local school district. (20, p. 672)

Gainful Employment. Employment in a recognized occupation for which persons normally receive a wage, salary, fee, or profit. (20, p. 672)

Geographic Mobility. A movement from place to place. (21, p. 86)

Interstate Geographic Mobility. A movement from state to state.

Junior College. An institution of higher education which offers

the first two years of college instruction, frequently grants an associate degree, and does not grant a bachelor's degree. Offerings include transfer and/or terminal programs (with an immediate employment objective) at the post-secondary instructional level and also may include adult education programs. It is an independently organized institution (public or non-public) or an institution which is a part of the public school system or an independently organized system of junior colleges. The term does not refer to the lower division of a four-year institution, even if this lower division is located on a campus entirely different from the campus of the parent institution. (19, pp. 12-13)

Labor Mobility. The willingness or propensity to move. (22, p. 240)

Manpower Policy. See Active Manpower Policy.

Migration. The voluntary movement of individuals beyond and outside their interaction systems in the community of residence. (23, p. 75)

Mobility. A quality of flexibility, adjustability, and freedom of movement among labor markets. (21, p. 82)

Out-Migration. The voluntary movement of individuals beyond and outside their community of residence.

Post-High School Level. See Post-Secondary Instructional Level.

Post-Secondary Instructional Level. The general level of instruction provided for pupils in college programs, usually beginning with grade 13, and any instruction of a comparable nature and difficulty provided for adults and out-of-school youth. (20, p. 679)

Rural Community. A community not classified as urban (less

than 2500 inhabitants). (24, p. XV)

Technical Education. Education to earn a living in an occupation in which success is dependent largely upon technical information and understanding of the laws of science and principles of technology as applied to modern design, production, distribution, and service. (19, p. 20)

Technical Institute. A school at the post-high school level which offers technical education in one or more fields to prepare people for employment in positions which lie between the skilled workers and professional scientists or engineers. (19, p. 20)

Technology. The application of scientific principles in research, design, development, production, distribution, or service. It often is used to denote a segment of the applied sciences, i.e., electronic technology. (19, p. 20)

Unavailable. Those persons in the military service and full-time students. (12, p. 6)

Unemployed. Those persons not classified as gainfully employed or unavailable.

Urban Community. A community of 2,500 or more inhabitants. (24, p. XV)

## CHAPTER II

### REVIEW OF LITERATURE

#### Introduction

The objective of this study was to ascertain which of selected variables tended to affect interstate geographic mobility among recent technician graduates of the associate degree programs in Oklahoma's junior colleges and technical institutes. To effectively accomplish this objective, it became necessary to dichotomize the population of the study into: (1) those technician graduates who accepted employment in the state of Oklahoma, and (2) those technician graduates who accepted employment out of state.

The intent of this chapter is to set the framework whereby valid comparisons may be made. There are obviously factors which may affect results, yet are not controlled by the investigator. For example, educational backgrounds, (aptitudes), values, and goals may differ among the subjects. Other differences between the two groups may be noted, many of which result directly from or correlate highly with the subject's past experiences.

A review of the studies pertaining to the geographic mobility patterns of technicians reveals a dearth of literature. Actually; no studies were found pertaining specifically to the geographic mobility of technicians. However, studies were found that pertained to the

geographic mobility patterns of the populace of the United States. These studies were of considerable value in revealing the similarities and differences in problems, purposes, techniques, and procedures, and in identifying results that, to some degree, might be expected to serve as a basis for comparisons later in this study.

All of the studies reviewed are related in some aspect to the present study; yet none are duplicated in scope, organization, or presentation of data. The reviewing of literature pertinent to the background of this study is separated into the broad categories: (1) general characteristics of mobility, (2) characteristics of geographic mobility, and (3) the technician.

#### General Characteristics of Mobility

Mobility Identified -- Basic to any analysis of the extent and nature of interstate geographic mobility is the identification of mobility. Throughout the studies reviewed, the terms migration and geographic mobility were used interchangeably; therefore, they have been treated as the same throughout this study.

Lloyd G. Reynolds (22, p. 240) defined labor mobility as the "willingness or propensity to move." In regards to the propensity to move, Reynolds feels it is "a heterogeneous concept embracing a variety of motives and activities."

Propensity was differentiated into three types by Herbert S. Parnes (25, p. 16) as follows:

- a. Propensity to move to an apparently more attractive job, whose terms and whose permanence are now known with certainty.



- b. Propensity to quit a job which has proven satisfactory without having a new job in sight.
- c. Propensity of an unemployed worker to change his occupation, industry, or place of residence in order to secure employment.

Parnes, in the publication - Research on Labor Mobility, (25, p. 24) lists the following commonly recognized types of worker mobility:

1. Interfirm movement, from one occupation to another.
2. Occupational movement, from one occupation to another.
3. Industrial movement, from one industry to another.
4. Movement from an unemployed to an employed status.
5. Movement from an employed to an unemployed status.
6. Movement into and out of the labor market.

Clark Kerr (26, p. 104) when discussing the balkanization of labor workers stated that movement of workers is one of six types: (1) one occupation to another, (2) one employer to another, (3) one industry to another, (4) one area to another, (5) between employment and unemployment, and (6) into and out of the labor force.

In defining migration from a sociological point of view, J. Allen Beegle (23, p. 75) stated that:

Sociologically migration is to be regarded as the voluntary movement of individuals beyond and outside their interaction systems in the community of residence. Thus, in a sociological sense, migration does not occur unless day-to-day interaction with groups in the community of origin are terminated.

In his book entitled Rural Sociology, (27) Lowry Nelson indicated there are two types of mobility - horizontal and vertical. Usually migration or geographical movement is considered horizontal mobility while vertical mobility is movement of persons or groups from one

class or status to another; this can be upward or downward.

Dale Yoder (21, p. 86) provided a ranking of mobility classification when he stated:

Unquestionably the most popularly recognized mobility is that generally described as geographic or residential. It refers to a movement from place to place. Second in popular recognition is probably occupational mobility, involving change from one job or class of jobs to another usually involving a variety of skills. Shifts from one industry to another are also important and are usually described as industrial mobility.

With the above background, this study utilized the definition of mobility provided by Dale Yoder (21, p. 86) as follows:

Mobility - the term as here applied to manpower is used as approximately synonymous with adaptability and implies qualities of flexibility, adjustability, and freedom of movement among labor markets - is thus a major consideration in the process of equating demands for and supplies of manpower.

Charles A. Myers expressed in Manpower in the United States (17, p. 155) support for Yoder's definition when he commented:

The actual amount of movement which takes place . . . is the only measurement we have of mobility. Clearly, the amount of movement is a result not only of willingness to move but of the opportunity for movement . . . It thus reflects the interaction (and interdependence) of the supply of labor and the demand for labor.

Relationship of Mobility to Manpower Policy -- Gladys L. Palmer (28, p. 111) stated, "Mobility provides the necessary flexibility in a labor force to meet changes in labor requirements in a labor market, an industry, or a plant." Palmer was correct in her statement; however, the relationship of mobility to manpower policy should not be left without a better understanding of this relationship.

Rensis Likert and Stanley E. Seashore in Manpower in the United States: Problems and Policies (29, p. 23) stated that:

The problems of manpower are essentially of three kinds: (1) those concerned with the composition of the labor force as to sex, age, skills, and other critical characteristics, (2) those concerned with the availability of manpower in terms of numbers, geographic location, and mobility, and (3) those concerned with the effective utilization of manpower in the jobs to be done.

In the publication, Manpower Report of the President, (30, p. 143) prepared under the direction of W. Willard Wirtz, Secretary of Labor, reference to the goals of an active manpower policy was made as follows:

Matching workers and jobs is one of the chief goals of an active manpower policy. The progress we make toward this objective depends, in part, on achievements in the two other major areas of manpower policy - the creation of jobs and the development of workers' abilities. But the degree of worker mobility - between employers, industries, occupations, and geographic areas - is another determining factor.

Dale Yoder (21, p. 80) in establishing the relationship of mobility to efficient use of manpower resources emphasized:

. . . mobility is a quality of manpower that is of special significance in modern economies. The degree of such mobility is directly influential in its effects on the efficient use of manpower resources. Too little mobility can retard or prevent the effective allocation or distribution of manpower resources and thus occasion its under-utilization or waste. Too much mobility can have almost exactly the same detrimental influence on the application of manpower resources. Since human resources are scarce and valued above all others, their mobility thus becomes a matter of primary concern to all modern societies.

#### Characteristics of Geographic Mobility

Geographic Mobility Identified -- In general it was found that geographic mobility of a population is usually measured by comparing home residence at two points in time. The population was usually classified as nonmovers, or those residing in the same location in

both years, and movers, those residing in a different location at the later time. Movers were usually classified into local movers (those who move only within the same county) and migrants (those who move to a different county). Migrants were further classified into those who move to a different county within the same state and those who move to a different state. Finally, the migrants who move to a different state were broken down into those who move to a contiguous state and those who move to a noncontiguous state. Those migrants who move to a noncontiguous state were sometimes referred to as distant migrants. (10, p. 478)

A brief summary of the characteristics of geographic mobility found by Marvin J. Taves (31, pp. 112-113) indicated: (1) out-migration is selective in terms of age, sex, and occupation, (2) in-migration tends to be selective but for the most part in a distribution at variance with that of out-migrants, and (3) the different types of out-migration each tend to have a somewhat unique impact upon the community.

Donald J. Bogue (32, pp. 150-152) upon reviewing the studies by Freeman (33), Thompson (34), Bogue (35), Hawley (36), Bogue and Hagood (37) and Palmer and Brainerd (38) summarized the characteristics of geographic mobility as follows:

1. For each stream of in-migration to an area there is a counterstream of out-migration.
2. Streams of migration are highly selective of persons with particular characteristics.
3. At the present time, the preponderance of migration is short-distance. Longer-distance migrations are a small part of all mobility and accomplish a comparatively small part of the labor force change.

4. Migration is generally more frequent among the better educated, higher income, professional members of a society than among workers of the same age but lower in the socioeconomic scale.
5. Among the less mobile segments of a population are those lowest in the income scale.
6. Migration streams frequently flow from areas of apparently lower to apparently higher economic opportunity, or between areas of approximately equal economic opportunity. They also show selectivity with respect to a variety of traits other than economic characteristics. From this it may be inferred that a part of the distribution and redistribution of the labor force results from forces other than employment interests.

The Geographic Mobility Pattern for the Populace of the United States ---In the 1965 Manpower Report of the President (39, p. 147)

it was stated that:

About 1 out of 15 persons migrate each year - that is, move from one county to another. About half of them move to another state. Many of the migrants are young people whose mobility is associated with an attempt to find a job, a discharge from military service, completion of education, and personal considerations such as marriage.

The most extensive studies which relate to geographic mobility of the populace of the United States have all been done under the auspices of the U. S. Department of Labor. These studies include Manpower Report of the President, (39 and 40) Manpower Research and Training, (41) and Manpower Research: Mobility and Worker Adaptation to Economic Change in the United States. (7) It is in the last study in which a summary which could apply to the findings of all of the above four studies may be found. In that study (7, p. 22) it was stated:

The American worker's propensity for movement is dramatically illustrated by annual studies conducted by the Census Bureau. . . . Of those moving, more than two-thirds traveled relatively short distances, staying

within the same county of a State. The rest were equally divided between moves from one county to another (but within the same State) and migration among States. This overall mobility rate of 20 percent has remained relatively stable, ranging from 18.6 to 21 percent in the 14 successive Census surveys conducted since 1948. Rates of movement within counties and migration between counties show no marked trend over the 14-year period.

Thus, the geographic mobility pattern for the populace of the United States appears to be that approximately two-thirds of those who move remain within the same county of a state. Approximately one-sixth of those who move remain within the state, moving from one county to another. The approximate remaining one-sixth migrate to other states.

The Relationship of Mobility to Societal Gains and Costs ---

Gerald G. Sommers (14, p. 427) declared:

Policy-makers have a special interest in knowing the gains and costs, the return to personal and social investment in manpower relocation. . . . returns to the investment in mobility are crucially influenced by other investments in human beings. . . . Investments in training, education, and labor-market information are likely to further geographic mobility and to enhance the economic benefits derived from mobility.

In Labor Mobility and Economic Opportunity, (42, pp. 6-7) Paul Webbink expressed a concern for the relationship of mobility to societal gains when he said:

As economists and responsible citizens, therefore, we are faced with these facts:

1. Free movement of labor is an essential foundation stone for our kind of society.
2. The utilization of that principle of action has been an important, if not a controlling, factor in the development of our present economic, political, and social institutions, the opportunity for improvement of individual status and expression, in short, of our way of living.
3. Once established, that way of living engenders habits associated with, and stabilities in, career, family,

and community activity, and in thrift and foresight techniques, which restrict the spontaneous job movement and mobility of people, at the same time that they provide the certainties and security so essential to satisfactory and effective life and work.

4. Some degree of flexibility in the movement of labor is essential both to maintain the stability and effectiveness of economic operations, ways of living, and individual action, to make it possible for institutions and people to adapt to changing opportunities and problems, and to provide for growth and development of people and the social facilities essential to their living.
5. The necessity for maximum utilization of all our resources in recent years has forced us to ask more insistently than in the past whether our method of free movement of labor based on employer and worker choices directed toward individual advantage can be retained as a basic procedure for manpower allocation.
6. To this point in our history we have not had to answer that question with facts. On the whole we observed the results and found them satisfying. A categorical "yes," based on faith and evangelistic fervor, was enough.
7. In the interest of both long-range and immediate economic, political, and social effectiveness and growth, we turn with deepened concern to this question: Can we gather the facts about why, when, and how people move jobwise, under the circumstances of life in our society in our time, that will enable us to organize our human resources by persuasion rather than by compulsion, and to strengthen our economy without destroying the chief distinctive contribution that we have to make to a developing industrial and business civilization.
8. In short, can we undergird the economic and social strength of our nation by adequately and efficiently distributing our labor resources, without destroying, for the human units of those resources, both workers, and employers, the free choice and free movement which, as assumed rights, have encouraged them to loyalty to the American system?

Mobility was credited with another societal gain when considering the statement made in the 1963 Manpower Report of the President (30, p. 55) which stated: "Unwillingness or inability to move on the part

of many other workers has contributed greatly to the pools of unemployment which have economic activity."

Paul Webbink (42, p. 5) expressed:

Another fact of current American history which stimulates the interests of economists in the matter of labor mobility is this: Reliance on free movement of laboring individuals has costs as well as benefits.

Louis Levine (43, p. 69), Bureau of Employment Security, U. S.

Department of Labor, said:

It has frequently been argued that the labor market differs from other markets - such as the commodity markets - because of the unique character of labor supply and demand forces. The human element cannot be separated from the economic content of the manpower resources. Certain it is that labor market functioning cannot be explained in economic terms alone. Sociological and psychological factors must also be taken into account.

In The Journal of Human Resources, (14, pp. 428-429) Gerald G.

Sommers alluded to the costs to an area due to mobility when he stated:

It may be found that the only positive benefits of mobility are external to the area from which the movement originates, and yet relocation subsidies are frequently included as part of regional development programs. The area from which workers migrate is likely to suffer losses in potential production, consumption, and infrastructure. Although local welfare costs and unemployment may be reduced because of anti-migration, even these results are not assured, given the selective composition of the migrants and the impact of their departure on area income and consumption. On the other hand, receiving areas may benefit greatly from geographic mobility, in increased production and in the demand for goods, services, and facilities. Although some costs are also transferred from depressed areas along with the migrants, there are indications that an area's benefits from immigration greatly outweigh its costs.

Thus, there is a complex relationship between costs and benefits of geographic mobility, as they pertain to the individual, to area redevelopment policy, and to national economic welfare. Whereas, most analysis settle for returns to the individual, equally important (but less readily measurable) results are the effects on the



productive efficiency of particular regions and on the nation's gross national product.

Sommers (14, p. 428) also commented on the costs to the individual when he expressed:

Whereas the gains of mobility are found to be primarily economic, namely, improved employment and income, the costs are essentially noneconomic. Numerous studies have disclosed that mobility workers stress their loss of friends, relatives, and familiar surroundings; that the actual monetary costs of their move are of secondary importance.

The U. S. Department of Commerce in The Cost of Geographic Mobility (44) found that the economic costs of moving did not outweigh the economic gain of those who moved with the exception of the middle aged, who had a family and who had accumulated a number of possessions.

Glen R. Dey and Henry M. Reitan (45, p. 291) expressed, "One of the greatest resources contributing to economic growth in the United States is the facility of American workers to adjust to the changing demands of a dynamic system."

Jack Ladinsky (10, p. 493) supported this concept when he stated, "American affluence encourages mobility and mitigates its personal and social disruptions."

Other gains were alluded to when Gladys L. Palmer (28, p. 114) commented:

Generally high levels of mobility create more positive attitudes on the part of young people to the desirability of assuming risks in training for vocational careers and on the part of workers of all ages toward assuming risks in moving from one location to another . . . "

Gerald G. Sommers (14, p. 428) has said:

When sizeable economic benefits are set against the minor monetary costs of moving, while considerable socio-psychological costs are excluded, an explosive rate of economic return may be recorded.

Lowell E. Gallaway (46, pp. 469-470) found in his research that movers associated other variables with the distance variable when considering costs, for he stated:

Costs being measured are not simply the pure money cost of movement. In addition, they include the impact of subjective preferences for particular regions, the psychic cost involved in long-distance moves, the uncertainty which may be associated with moving large distances, . . . "

Marvin J. Taves developed a chart (See Appendix A) in which the consequences to the community due to out-migration are outlined. The community gains and costs due to out-migration were summarized by Taves (31, p. 120) as follows:

. . . migration as an adjustment device, has both detrimental and beneficial consequences for the community. If already in decline, migration may become the relief valve that reduces certain existing strains and stresses for the community's institutions. If not in decline the sheer fact of out-migration may hasten gaps in the community's social and economic organization and lead to retrenchment simply by failing to recruit new members.

According to some social scientists, migration is a reaction to a dissatisfactory situation in which the psychological, social, and economic costs of migration are weighed against the costs of remaining in their present situation. Gerald Leslie and Arthur H. Richardson (47) expounded that the individual's perception of existing opportunities in his home community is colored considerably by his attitude toward the community as a whole. Variables related to community satisfaction and perceived social cost have been fundamental in the theoretical framework of J. Allen Beegle's migration studies. (23)

Beegle (23, p. 75) referred to migration and the relationship to the above mentioned variables as follows:

Under conditions in which freedom of choice may be exercised, . . . migration is viewed as an on-going decision-making

process. In this decision-making process satisfactions with life in the community of residence are weighed against the social costs of moving to another area. The evaluation process takes place in relation to the level of aspirations derived from the value orientation, range of knowledge, and experience of groups and individuals. Satisfaction, the first dimension mentioned, is regarded as cohesiveness resulting from identification with groups and structures. Social cost, the second dimension, is regarded as rootlessness, or perceptions of rootlessness, attending migration. Finally, aspiration is considered the desired future condition or style of life sought. Each of the three dimensions is perceived to range from low to high, and each is viewed as interacting with the others.

Beegle (23, pp. 75-76) provided additional understanding of the above relationship when he explained:

Identification and cohesiveness, resulting from interaction with groups as well as structures, nourish residential stability. Cohesiveness arising from interaction and membership in such groups and structures forms the basis for the level of satisfactions. Through the act of migration, group ties and probably some ties derived from structures are severed, as some social cost to the migrant. In the decision-making process, perceptions of discomfort due to leaving friends and familiar groups and of discomforts at the area of destination are considered as generally inhibiting decisions to move. If aspirations are such that they may be fulfilled in the community of residence, they will reinforce satisfactions. If they cannot be fulfilled in the community of residence, they would be expected to weaken satisfactions and to reduce perceptions of social costs attending movement.

In evaluating the societal gains and costs associated with mobility, Gladys L. Palmer (28, p. 112) said:

I am not unmindful of the fact that there are social costs as well as social gains in mobility, but I believe that in a free labor market the social costs of "too much" mobility can be more readily absorbed than the costs of "too little" mobility, and that freedom of movement itself has social values of great importance.

#### Relationship of Selected Variables to Geographic Mobility ---

Previously, reference was made to the relationship of one's attitude toward the community and that person's perception of existing

opportunity in his home community. (47) Aspirations also were considered to enter into one's decisions when contemplating the possibility of migrating. (23) It appears then that one's attitude toward the community of residence and aspirations tends to affect geographic mobility.

In the publication, Manpower Research: Mobility and Worker Adaptation to Economic Change in the United States, (7, p. 23) it was stated:

There are many factors which impede or facilitate the movement of workers . . . The willingness and ability to move are affected by such personal characteristics as age, sex, race; by social factors such as level of education, marital status, or income level; by institutional and environmental factors such as employment practices, and home ownership; and individual needs such as the desire for security and for advancement opportunities.

Donald J. Bogue (35, p. 149) propounded that migration may be a response to a great variety of economic and social factors such as: (1) work preferences and interests, (2) values which attach to particular occupations, (3) differences in human abilities, (4) differences in amount of training and education acquired, and (5) differences in rates of pay among areas for the same type of work.

As previously mentioned Jack Ladinsky made a study of the geographic mobility of professional and technical manpower. Ladinsky (10, p. 475) summarized:

Professional, technical, and kindred workers are the fastest growing segment of the labor force; evidence from the 1960 Census reveals that they are close to twice as migrating as any other occupation stratum. An attempt is made to discover the major determinants of professional mobility, using the 1960 Census of Population one-in-a thousand sample. In a multiple regression analysis age accounts for most of the explained variance in mobility, followed by income, education, regional location, sex, family size, and marital

status. Factor analysis suggests that migration is linked primarily to occupational career mobility and family life cycle.

F. Theodore Malm (48, p. 479) supported Ladinsky's findings when he said, ". . . professional and technical workers are the most mobile segment of the labor force."

The relationship of age to mobility is referred to by the U. S. Department of Commerce, Bureau of the Census, in Mobility of the Population of the United States March 1963 to March 1964 (49) where it was shown that about 11 percent of the 18 and 19 year olds had moved across a county line. Furthermore, the migration rate for the 20 and 21 year olds was 15 percent and was up to 17 percent for those 22 to 24 years of age.

Perhaps an explanation of this trend was best offered in Manpower Research: Mobility and Worker Adaptation to Economic Change in the United States (7, p. 22) where it was stated: "Mobility rates are higher at the ages in which young people leave home to find jobs, marry, and set up their own households." The same publication continued:

The typical pattern of mobility when related to age tends to reflect the family cycle. . . . For married men 18 to 24 years of age living with their wives, the mobility rate was 63.3 percent compared with 19.6 percent for single men.  
 . . . . .  
 Just as family formation and growth affect United States mobility rates, so does family dissolution. Mobility rates for both men and women tend to run higher for those widowed, divorced, or separated. (7, p. 22)

Jack Ladinsky (10, p. 492) expressed, "Young married professionals move the most and the farthest; males move somewhat more than females." Ladinsky includes technicians in this classification as "marginal professionals. (See Appendix B)

Dale Yoder (28) found in a 1948-1949 study of mobility in Minneapolis similar characteristics to his 1941-1942 study of mobility in St. Paul. In reference to these studies, Yoder (21, p. 88) commented:

On the whole, males appeared to have a greater propensity to change residence than did females. Renters move more than do homeowners. Heads of families were less likely to move than were other family members in the labor force.

When mobility was considered for the populace of the United States as was done in Manpower Research: Mobility and Worker Adaptation to Economic Change in the United States, (7, p. 22) a slight difference was found when compared to the above statements about the mobility of the female versus the male. A summary of their findings appeared as follows:

Over a lifetime, mobility rates for men and women average the same (20 percent). Although the pattern of mobility between men and women differ appreciably at certain age groups . . . . Between the ages of 18 and 21, young women are distinctly more mobile than men: 35 percent of the women age 18 and 19 move, compared with 20 percent of the men; and at 20 and 21 years, women still tend to be more mobile, 45 versus 37 percent for men . . . . For both sexes in the 22 to 24 year age bracket, rates are about the same - 45 percent - but at 25 to 29 years, when rates for both sexes decline, men are more mobile than women (38 versus 31 percent).

It would appear that education tends to affect geographic mobility. In the 1965 publication, Manpower Research and Training, (41, p. 142) it was stated: "These studies confirm the belief that well educated young people are the most mobile . . ." In the 1965 Manpower Report of the President, (39, p. 147) reference to the same idea was expressed as follows: "It is apparent that geographic mobility drops off sharply with decreasing education." Ladinsky (10, p. 484) also related to this relationship when he expressed, ". . . low income and high education stimulate geographic mobility."

Jack Ladinsky (10, pp. 493-494) expounded the relationship of income to geographic mobility as follows: "Our data suggest that for all professional, technical and kindred workers income is second only to age as a determinant of geographic mobility."

This relationship of income to geographic mobility also tends to hold for the populace of the United States for in Manpower Research: Mobility and Worker Adaptation to Economic Change in the United States (7, p. 21) it was stated: "The practice of the American worker to change his residence apparently is strongly influenced and limited by the character of his income and employment status."

In the 1965 Manpower Report to the President, (39, p. 150) reference to geographic mobility and economic opportunity was made as follows: "The geographic pattern of migration in our country has been and continues to be one of movement to areas of better economic opportunity."

It was expressed by Charles A. Myers (17, p. 75) that there is the ". . . tendency of workers to be attracted to high-wage firms when job opportunities are expanding rapidly." Furthermore, he declared, ". . . unemployed workers value 'economic' factors highest when they make job comparison." In another publication, Labor Mobility and Economic Opportunity, (50, p. 75) Myers commented:

. . . the level of business activity and the structure of the particular labor market also affect the opportunity to move, and labor mobility is as much the result of changes in opportunity as it is of differences in intent or motive between individuals or groups.

Myers' statement seemed to be supported in the 1965 Manpower Research and Training (41, p. 142) where it was stated:

Migration patterns of American workers were analyzed, and findings were included in the 1965 Manpower Report of the

President. These indicate that worker movement often leads to an improvement of the worker's economic status. In general, workers have gravitated in recent years toward areas of better employment opportunities . . .

In Manpower Research: Mobility and Worker Adaptation to Economic Change in the United States, (7, p. 21) it was expressed: "States with the greatest expansion in employment during recent years attracted the greatest number of migrants from other States."

In the 1965 Manpower Report of the President, (39, p. 145) it was stated: "In general, professional and skilled workers have been in great demand . . . and many have been recruited from other localities."

E. Robert Livernash (51, p. 28) when alluding to recruitment practices said, "One dimension of intensified recruitment is extended geographic search and special efforts for labor."

F. Theodore Malm (48, p. 516) provided an explanation of why wide geographic areas are being covered in recruitment of personnel in the labor market when he declared:

Labor markets are balkanized by specialities; as labor requirements become more specialized the geographic area of recruitment expands to compensate for, among other things, the smaller number of workers available locally, and the difficulty and expense of training specialists internally.

Lowell E. Gallaway (46) used the data from a one percent sample of Social Security Administration records to determine the extent to which persons who change the geographic location of their work are influenced in their choice of a new job by differences in wage levels and the distance they must move. The basic conclusions from the study were: (1) that workers respond positively to earnings and negatively to distance, and (2) that the strength of the distance variables is indicative of its measuring more than just the pure costs of interregional movement.



In regards to impediments to mobility, S. Lebergott (52, p. 881) propounded that some of the factors inhibiting mobility are: (1) home ownership, (2) education, and (3) the search for security. Jack Ladinsky (10, pp. 484-485) declared, "Age dampens the pace and drastically reduces or reverses contrasts between single and married, large and small families, high and low incomes, little and much education . . ." Dale Yoder (21, p. 89) appeared to support Ladinsky when he said, "It appears clearly that mobility declines with increasing age . . ."

In summary, there are several variables which tend to affect geographic mobility. These variables appear to be: (1) age, (2) sex, (3) race, (4) level of education, (5) marital status, (6) income level, (7) institutional and environmental factors, (8) home ownership, (9) distance of move, (10) desire for security, (11) advancement opportunities, (12) work preferences and interests, (13) personal values, (14) human abilities, (15) rates of pay, (16) family size, (17) type of education, (18) employment status, (19) employment opportunities, and (20) employment practices.

#### The Technician

The Technician Identified --- A review of the literature readily points out the dilemma of trying to identify the technician. The foundation for this dilemma was provided by Herbert S. Wood in A Study of Technical Education in California (53) where he attempted to describe what the technician does. Wood (53, pp. 15-16) stated:

In recent years, much misunderstanding has developed concerning the use of the terms "technician," "technical," and "technology." There seems to be no consistency among

the positions referred to as technical. Industry, engineering, medicine and dentistry, education, public service, and other broad fields of endeavor use the word technician in connection with a variety of vastly different jobs. For example, individuals referred to as technicians may simply be draftsmen employed in jobs such as detailing for which sufficient skill may be developed in a vocational-industrial course in high school; or they may be estimators required to do complex calculating and estimating in a construction office; or they may be designers needing advanced technical skills and knowledge. A tool designer conceivably could be a technician or an engineer, depending upon the proportion of mechanical work and design theory required in his particular job. The so-called "troubleshooter" performs tasks varying from those of a good mechanic in certain employment to those of a highly skilled technician in a field such as electronics research and development.

Technicians may also be employed as superintendents, foremen, or inspectors. They are people who are trained in the technologies of their respective occupations but who usually are neither graduate professional engineers nor expert craftsmen, although they have competencies in both areas. Engineering has been called a "method of thinking." By implication then, a technician who is part engineer or scientist by nature and training, is also a thinking member of the team. He must possess adequate "know why" as well as plenty of "know how."

The duties of hundreds of jobs or occupations combine in varying degrees the skills of the craftsman with the skills and knowledges of the professional worker or scientist. This wide band of overlapping duties and activities constitutes the technician's field.

Attempts at identifying the technician have been made by various means. Some individuals have tried to define the technician while others have tried to provide an understanding of the technician by describing the technical abilities common to technician occupations. Yet, others have described the occupation in which the technician functions for additional understanding.

One definition of the technician was provided in Scientists, Engineers, and Technicians in the 1960's (5, p. 39) which stated:

Technicians. All persons engaged in work requiring knowledge

of physical, life, engineering, and mathematical sciences comparable to knowledge acquired through technical institute, junior college, or other formal post-high school training, or through equivalent on-the-job training or experience. Some typical job titles are: Laboratory assistants, physical science aides, and electronic technicians. All employees in positions requiring the indicated level of knowledge and training are included, regardless of job title and company department in which employed. Excludes craftsmen such as machinists and electricians.

Richard S. Nelson (54, p. 4), formerly a Program Specialist with the U. S. Department of Health, Education, and Welfare, has said:

As for a definition of this much wanted individual, one goes as follows: An individual who assists with technical details in a trade or profession. Uses tools, instruments, and special devices to design, illustrate, fabricate, maintain, operate, and test objects, materials, or equipment. Performs mathematical and scientific operations, reporting on and carrying out a prescribed action in relation to them; examines and evaluates plans, designs, and data; determines actions to be taken on the basis of analysis; assists in determining or interpreting work procedures and maintaining harmonious relations among workers.

The publication, Employment Outlook for Technicians, (55, p. 1) provided a descriptive statement of the technician as follows:

The term "technician" is used to describe a large and loosely defined group of occupations at many levels of skill and with a wide variety of training requirements. In general, technician jobs fall between those of the skilled craftsman and the professional engineer or scientists. The work is technical in nature but narrower in scope than that of the engineer or scientist and has a practical rather than a theoretical orientation. Frequently technician jobs require use of complex electronic and mechanical instruments, experimental laboratory apparatus, drafting instruments, tools, and machinery. Almost all technicians must be able to use engineering handbooks and computing devices such as the slide rule or calculating machines.

Technicians are utilized in virtually every activity where know-how is required. One of their largest and best known areas of employment is research, development and design work.

In the publication, Occupational Criteria and Preparatory Curriculum Patterns in Technical Education Programs, (56, p. 5) prepared

by Dr. Maurice W. Roney, now Professor and Head of Industrial Education at Oklahoma State University, five general abilities of the technician were listed:

1. Facility with mathematics; ability to use algebra and trigonometry as tools in the development of ideas that make use of scientific and engineering principles; an understanding of, though not necessarily facility with, higher mathematics through analytical geometry, calculus, and differential equations, according to the requirements of the technology.
2. Proficiency in the application of physical science principles, including the basic concepts the laws of physics and chemistry that are pertinent to the individual's field of technology.
3. An understanding of the materials and processes commonly used in the technology.
4. An extensive knowledge of a field of specialization with an understanding of the engineering and scientific activities that distinguish the technology of the field. The degree of competency and the depth of understanding should be sufficient to enable the individual to do such work as detail design using established design procedures.
5. Communication skills that include the ability to interpret, analyze, and transmit facts and ideas graphically, orally, and in writing.

The U. S. Office of Education in setting forth the regulations to govern the Area Vocational Education Programs established by the National Defense Education Act of 1958 described the characteristics of technical occupation as follows:

. . . The following characteristics of highly skilled technical occupations which require a scientific knowledge are suggested as basic minimum criteria:

- a. The occupation lies between that of the skilled crafts and the scientific professions.
- b. The occupation requires technical competency based upon specialized, intensive training in technical subjects involving the direct application of functional aspects of related sciences and mathematics.

- c. The occupation is one in which most of the person's work is concerned with the application of technical knowledge and technical understanding in contrast with manipulative skill.
- d. The occupation is one for which adequate technical training can usually be provided in vocational technical programs on the secondary level, extension programs for out-of-school youth and adults on a full-time or part-time basis or terminal technical courses at the post-high school level of not more than two years in length.  
(57, p. 9)

Maurice W. Roney in Occupational Criteria and Preparatory Curriculum Patterns in Technical Education Programs (56, pp. 6-8) provided twelve criteria for identifying occupations that require technical education with the caution: "The 12 criteria are not to be given equal weight in identifying occupations, and no single occupation would require all of them." These criteria were stated:

The Individual in the Occupation:

1. Applies knowledge of science and mathematics extensively in rendering direct technical assistance to scientists or engineers engaged in scientific research and experimentation.
2. Designs, develops, or plans modifications of new products and processes under the supervision of engineering personnel in applied engineering research, design, and development.
3. Plans and inspects the installation of complex equipment and control systems.
4. Advises regarding the maintenance and repair of complex equipment with extensive control systems.
5. Plans production as a member of the management unit responsible for efficient use of manpower, materials, and machines in mass production.
6. Advises, plans, and estimates costs as field representative of a manufacturer or distributor of technical equipment and/or products.
7. Is responsible for performance of environmental tests of mechanical, hydraulic, pneumatic, electrical, or

electronic components or systems and the preparation of appropriate technical reports covering the tests.

8. Prepares or interprets engineering drawings and sketches.
9. Selects, compiles, and uses technical information from references such as engineering standards, handbooks, and technical digests of research findings.
10. Analyzes and interprets information obtained from precision measuring and recording instruments and makes evaluation upon which technical decisions are based.
11. Analyzes and diagnoses technical problems that involve independent decisions.
12. Deals with a variety of technical problems involving many factors and variables which require an understanding of several technical fields.

No attempt was made by the investigator to define the "technician" since those who are considered to have more expertise in the areas dealing with technicians are unable to agree among themselves as to a definition. Through providing some definitions which have been advanced along with the technical abilities which a technician must possess and the type(s) of occupations in which he is employed, the investigator has tried to provide a means of reference when the term "technician" is used in this study.

The Technician's Education --- The technician may receive his training in any of a number of types of institutions, such as: (1) technical institutes, (2) junior colleges, (3) extension divisions of colleges and universities, (4) propriety schools, (5) industry operated schools or training divisions, (6) government operated schools, or (7) by correspondence schools. (62, p. 6)

The place of technician education in the junior college and the technical institute was perhaps best explained by a panel of consultants on vocational education appointed by the President of the United

States who said:

One of the most obvious deductions from any analysis of manpower needs is the urgency of the need for people with more extensive skills and greater theoretical knowledge. These skills and this knowledge can usually be acquired only by rather mature and better educated persons. The junior college and technical institute enrolling older youth and experienced persons have proved particularly effective in giving this type of training. Youth of this age, training, and experience are more flexible in adapting to newer processes in business and industry. (58, p. 258)

There have been several studies of the technical institutes.

William E. Wickenden and Robert H. Spahr (59) were the first to make such a study. Other studies which followed were completed by Leo F. Smith and Laurence Lipsett, (60) G. Ross Henninger, (6) and Maurice Graney (61). The pattern after which most technician education programs are modeled is based upon a description of the characteristics of the technical institute provided by Wickenden and Spahr (59, pp. 17-18) in 1931. These characteristics of the technical institute were described as follows:

1. It is a school of post-secondary character, but distinct in character from a college or university in the American sense of those terms. (European usage of the term "university" is far stricter than our own; that of the term "college" much more elastic).
2. Its purpose is to train men and women for callings and functions which occupy an area between the skilled crafts and the highly scientific professions. A fair proportion of those trained advance in time to a professional status.
3. It caters principally to persons who, either through previous or collateral experience in industry, have found their bearings and desire intensive preparation for chosen lines of progress.
4. It offers training for both technical pursuits, concerned with planning and control, and supervisory pursuits concerned with operation and maintenance. The engineering college more largely emphasizes the

former, the technical institute the latter group.

5. Being intensive in purpose, its courses are of shorter duration than those of the professional colleges. They are essentially terminal rather than preparatory courses, though in some cases they are organized in successive units or stages.
6. Being a school without academic standardization, its admission and graduation requirements are less formal than those of the colleges and stress capacity and experience more than credit units.
7. Its methods of teaching are relatively direct, with a strong emphasis on doing as distinct from book study; ordinarily a high proportion of the work is done on school premises.
8. Its teachers, while possessing adequate scholarly preparation, are chosen primarily on the basis of practical experience, personal sagacity, and ability to teach through programs of orderly experience.
9. Its entire scheme of instruction follows much more closely the actual usage of industry than that of professional engineering schools.

A system for accrediting technical institute curricula was established by a sub-committee of the Engineers' Council for Professional Development. The following characteristics were considered as defining education of the technical institute type:

1. The purpose is to prepare individuals for positions auxiliary to, but not in, the field of professional engineering.
2. High school education or the equivalent is required for admission.
3. The work is essentially technological in nature; it is based upon elementary principles of related physical science, requires the use of mathematics beyond high school level, and employs rational processes rather than rule of thumb methods of solving problems of design, construction, and operation.
4. Programs are briefer, more intensive, and more specific in purposes than are collegiate engineering practice. Their aim is to prepare for specific



technical jobs or lines of activity rather than for broad sectors of engineering. (62, p. 2)

In the study, Occupational Education Beyond the High School in Oklahoma, (63, p. 9) Maurice W. Roney and Paul V. Braden propounded the definition of technician education adopted by the Oklahoma Technical Education Council as follows:

The Oklahoma Technical Education Council has adopted the following definition of Technical Education:

Technical Education is a planned sequence of classroom and laboratory experiences, usually at the post-secondary level, designed to prepare men and women for a range of job opportunities in well-identified fields of technology. The program of instruction normally includes study in mathematics, the sciences inherent in a technology, and selected skills, materials, and processes commonly used in the technology. Complete technical education programs provide intensive training in a field of specialization, and include basic communication skills as well as general education studies. Instruction in technical programs gives major emphasis to principles rather than to specific techniques or skills. Industrial applications of these principles are used wherever possible in the instructional program.

The technical curriculum should prepare the graduate to:

(1) obtain a job, (2) be a productive employee with a minimum of additional on-the-job training, (3) advance with the developments in the technology, and (4) continue his education through extension or other supplementary training programs.

In terms of a continuum of technological occupations, technical education prepares for the area between the operator or special skill jobs and the established professions such as medicine, engineering, and science.

The technician is frequently employed in industrial activities in direct support of the professional employee, performing such duties as designing, developing, testing, or modifying products and processes; planning production; writing reports; preparing estimates; analyzing, diagnosing, and solving technical problems.

Technical personnel also are employed in the agricultural sciences, life sciences, and biological sciences in occupations which require preemployment technical education.

Within the same study, Roney and Braden (63, p. 8) described certain specifics which relate to a formal program of occupational studies at the associate degree level. These specifics were:

1. The program is usually two years in length.
2. The content is derived from technical skills and knowledge requirements of technical occupations.
3. Mathematics and the physical or biological sciences are integral parts of the program; technical study is mathematics and science-based at all levels of the program.
4. The technical specialization is within an occupational field; but is not confined to, or limited by, the requirements of any single occupation or industry. The emphasis in instruction is placed on technical skills and knowledge that have broad applications.
5. Instruction is laboratory-oriented and makes use of many applications of the technical principles being studied. The emphasis is placed on analytical, rational thought processes rather than on the development of specific procedural techniques or skills.

Since this study was related to the technician graduates of the associate degree programs in Oklahoma, the specifics previously mentioned and the definition of technician education as adopted by the Oklahoma Technical Education Council were considered as essential to the study.

## CHAPTER III

### DESIGN AND METHODOLOGY

#### Introduction

The purpose of this chapter is to describe the design of the study, the method by which the population for the study was determined, and the method of data collection and analysis.

#### Design

Basically, the design for this study is an ex post facto design in nature and conforms to Fred N. Kerlinger's (64, p. 360) definition:

Ex post facto research may be defined as that research in which the independent variable or variables have already occurred in which the researcher starts with the observation of a dependent variable or variables. He then studies the independent variables in retrospect for their possible relations to, and effects on, the dependent variable or variables.

When commenting on the limitations of ex post facto research interpretation, Kerlinger (64, p. 371) cautioned:

Ex post facto research has three major weaknesses:  
(1) the inability to manipulate independent variables,  
(2) the lack of power to randomize, and (3) the risk of improper interpretation.

With the above limitations set forth, the investigator is aware that an ex post facto design is, theoretically, less scientific than the true experimental design. Perhaps the greatest possibility of

bias introduced into the ex post facto design to which the investigator must be aware is the risk of improper interpretation due to the inability to manipulate the independent variables. However, Kerlinger (64, p. 372) in speaking of the value of ex post facto designs stated:

Despite its weakness, much ex post facto research must be done . . . simply because many research problems . . . do not lend themselves to experimental inquiry.

It can even be said that ex post facto research is more important than experimental research. This is, of course, not a methodological observation. It means, rather, that the most important social, scientific, and educational research problems do not lend themselves to experimentation, although many of them do lend themselves to controlled inquiry of the ex post facto design.

Ex post facto research by nature is usually involved with "follow-up" procedures. A review of the literature provided a dearth of material when seeking information on follow-up studies per se; however, Laure M. Sharp and Rebecca Krasnegor (12, p. 1) provided a description of follow-up studies:

Follow-up studies involve research designs which require a contact with individuals who have shared experience in the past and whom the researcher desires to study or re-study. The usual goal of such studies is to arrive at some measure of the impact of the experience on the subsequent behavior or status of these individuals.

Basically, follow-up studies can be divided into two main classifications: descriptive and explanatory studies. Of course, some studies combine the two techniques. The difference between the two classifications is primarily a conceptual one. The basic methodology involved in conducting both types of follow-up studies is fundamentally the same, although different research designs are used. The studies require that either the subjects of the research be located and questioned or

that persons who have had contact with them supply information about the actual subjects of the study. The extent to which the data collected through this follow-up method will yield meaningful findings depends on the quality of the data as well as the quality of the design.

Descriptive studies, in general, describe the characteristics of individuals, groups, or situations by drawing inference from data primarily with an informative rather than heuristic purpose. Vocational education follow-up studies of this kind usually include one-time descriptive studies, statistical placement reports, trend studies, and longitudinal studies.

A one-time descriptive study illustrates a situation or describes individuals at one particular moment in time and is more analytical than is the statistical placement report which involves the location and contacting of graduates and the gathering of data which provide the researcher with information about the graduate's placement status at the particular moment of contact. The trend study elaborates on the one-time descriptive study but is based on data collected from the same individuals at several different points in time.

Explanatory studies attempt to explain a situation, test a theory, or draw inferences of causality. There are two types, diagnostic, which search for possible causes in evaluating a situation, and experimental which try to create new situations by manipulating the environment and introducing experimental factors to gain an understanding of the actual operation of a system.

It would then appear that the design of this study could be considered as ex post facto of a diagnostic nature based upon a follow-up procedure.

## Selection of the Population

There are eight junior colleges and two technical institutes in the state of Oklahoma which provide technician education programs of the associate degree level. These institutions include: (1) Altus Junior College, (2) Cameron State College (recently changed to a four-year college), (3) Connors State College, (4) Eastern Oklahoma State College, (5) Murray State College, (6) Northeastern Oklahoma A&M College, (7) Northern Oklahoma College, (8) Oklahoma State University Technical Institute, Oklahoma City, (9) Oklahoma State University Technical Institute, Stillwater, and (10) Sayre Junior College.

There were no 1967 graduates of the associate degree technician education programs at Altus Junior College since programs of this level were only initiated during the 1966-67 school year. Four graduates of the associate degree level technician education programs in the junior colleges and technical institutes were from foreign countries and did not seek employment, but planned to continue their education and return to their home countries. Therefore, the foreign students were excluded from the study as they would not have an influence upon the manpower problems of Oklahoma. Table I represents, by institution, data pertaining to the remaining 175 technician graduates of the associate degree level technician education programs of the junior colleges and technical institutes in Oklahoma. Of these 175 technician graduates, 88 secured full-time employment - 38 in Oklahoma and 50 out of state. It is this group - the May, 1967 technician graduates of the associate degree level technician education programs in Oklahoma who secured full-time employment - which constitute the population of this study.

TABLE I  
POPULATION OF THE STUDY

Institution	Number of Technician Graduates	Number of Respondents	Number of Full-time Employed
<u>Junior Colleges</u>	(79)	(74)	(24)
Cameron State College	10	10	5
Connors State College	2	0	0
Eastern Oklahoma State College	15	15	3
Murray State College	3	3	1
Northeastern Oklahoma A&M College	36	33	12
Northern Oklahoma College	10	10	3
Sayre Junior College	3	3	0
<u>Technical Institutes</u>	(96)	(92)	(64)
OSU Technical Institute (Oklahoma City)	25	23	22
OSU Technical Institute (Stillwater)	71	69	42
TOTAL	175	166	88

#### Instrumentation and Data Collection

Instrumentation -- Research utilizing the follow-up procedure is usually carried out through personal interviews with the persons of whom information is desired, or through the use of self-administered or group-administered questionnaires. The method of gathering data for this study utilized a questionnaire. Design of the questionnaire

was based upon suggestions by A. N. Oppenheim in the publication -- Questionnaire Design and Attitude Measurement. (65)

A questionnaire was developed and pre-tested with the cooperation of technician graduate candidates of Eastern Oklahoma State College. Needed changes were made and a revised questionnaire was developed.

(See Appendix C)

Data Collection -- During the month of May, 1967, technician graduate candidates completed the questionnaire under the supervision of the heads of each technology in each institution. Each department head was personally contacted and carefully briefed by the investigator prior to completion of the questionnaire by the technician graduate candidates. For the technician graduates who did not complete a questionnaire at that time, follow-up by letter and telephone (intra-state and interstate) was made by the investigator. Likewise, the technician graduates who had not secured employment at the time of their completion of the questionnaire were followed up in the same manner. (See Appendix D) Ninety-five percent of all technician graduates provided completed questionnaires which were considered usable. Also, a follow-up by letter was made in September, 1967 to determine the plans of the technician graduates who had planned to reenter college in the fall. (See Appendix D) At the same time, the technician graduates who had planned to enter the military service or who had not previously secured employment were followed up by telephone to determine what changes, if any, had occurred in their situation.



## Data Analysis

The facilities of the Oklahoma State University Computer center were used to make the analysis of the data. Since the study involves a complete population, the method of analysis which could provide the understanding needed was determined to be a frequency and percentage analysis. A frequency and percentage analysis of data was completed through stratification of the technician graduates who secured employment within Oklahoma and the technician graduates who secured employment out of state as the two groups related to selected variables. The treatment of data in this manner permitted a comparison based upon interstate geographic mobility of the technician graduates who secured full-time employment.

## CHAPTER IV

### PRESENTATION AND ANALYSIS OF THE DATA

#### Introduction

The objective of this chapter is threefold: (1) to describe the employment pattern of all May, 1967 technician graduates initially included in the study, (2) to describe the interstate geographic mobility pattern of the technician graduates who accepted employment and (3) to present data analyses relating to the research questions generated by the design.

#### Description of Employment Pattern

There were 175 technician graduates who were surveyed in the study. Of the 175 technician graduates data were received from 95 percent of them. Data presented in Table II indicate the employment pattern for these 166 technician graduates. The findings show only 56 percent of them entered the labor market. The five technician graduates who were not employed constitute two females and three males from the junior colleges. Each had been seeking employment in Oklahoma; however, with the exception of one female, they had started looking for employment outside of Oklahoma by the latter part of September, 1967. The technician graduates who were considered unavailable include the sixty-two who planned to reenter college and the eleven who entered the military service.

TABLE II  
 FREQUENCY AND PERCENTAGE ANALYSIS OF  
 THE EMPLOYMENT PATTERN OF  
 RESPONDENTS TO SURVEY

Employment Status	Number	Percent
Employed	88	53.0
Unemployed	5	3.0
Unavailable	<u>73</u>	<u>43.9</u>
TOTAL	166	99.9*

\* Discrepancy due to rounding off to nearest tenth percent.

#### Description of the Interstate Geographic Mobility Pattern

The interstate geographic mobility pattern for the 88 technician graduates who had secured employment by the latter part of September, 1967 is shown in Table III. (See Appendix E for distribution by state)

TABLE III  
 FREQUENCY AND PERCENTAGE ANALYSIS OF  
 THE INTERSTATE GEOGRAPHIC MOBILITY  
 PATTERN OF TECHNICIAN GRADUATES  
 WHO SECURED EMPLOYMENT

Mobility (Interstate Geographic)	Number	Percent
Remained in Oklahoma	38	43.2
Migrated Out of State	<u>50</u>	<u>56.8</u>
TOTAL	88	100.0

## Testing of Questions Generated by the Design

Question 1: Is there a difference in the personal and socio-economic backgrounds of the technician graduates who remained within Oklahoma and the technician graduates who migrated out of state which tends to affect interstate geographic mobility?

Data indicating the relationship of age to interstate geographic mobility are presented in Table IV. Only 14 percent of the technician graduates who migrated out of state were over 24 years of age, whereas 21 percent of the technician graduates who remained in Oklahoma were over 24 years of age.

TABLE IV

FREQUENCY AND PERCENTAGE ANALYSIS OF THE RELATIONSHIP  
OF AGE TO INTERSTATE GEOGRAPHIC MOBILITY

Age Range	In - State		Out - of - State	
	Number	Percent	Number	Percent
18 - 19	4	10.5	9	18.0
20 - 24	26	68.4	34	68.0
25 - 29	5	13.2	5	10.0
30 - 65	<u>3</u>	<u>7.8</u>	<u>2</u>	<u>4.0</u>
TOTAL	38	100.0	50	100.0

The investigator had planned to use sex as one of the variables to test with the interstate geographic mobility of technician graduates. However, there were only seven female technician graduates. As can

be seen in Table V, the ratio of the number of females to males is very disproportionate. Due to this circumstance such a test was considered of little value; therefore, no comparison was made.

TABLE V  
FREQUENCY ANALYSIS OF THE RELATIONSHIP OF  
SEX TO INTERSTATE GEOGRAPHIC MOBILITY

Sex	In - State	Out - of - State
Male	36	47
Female	<u>2</u>	<u>3</u>
TOTAL	38	50

In Table VI, data showing the relationship of marital status to interstate geographic mobility indicate a larger percentage of the

TABLE VI  
FREQUENCY AND PERCENTAGE ANALYSIS OF THE RELATIONSHIP  
OF MARITAL STATUS TO INTERSTATE  
GEOGRAPHIC MOBILITY

Marital Status	In - State		Out - of - State	
	Number	Percent	Number	Percent
Single	24	63.2	29	58.0
Married	14	36.8	21	42.0
Other	<u>0</u>	<u>00.0</u>	<u>0</u>	<u>00.0</u>
TOTAL	38	100.0	50	100.0

technician graduates who migrated out of state were married than were the technician graduates who remained within Oklahoma.

The socioeconomic status of the technician graduates' parents is a variable which the investigator examined in relationship to interstate geographic mobility. Determination of the technician graduates' parents socioeconomic status was based upon the Warner (66) socioeconomic scale. (See Appendix F) This scale has been used by other researchers in this area including Braden. (67) The seven levels of socioeconomic scale were grouped in Class I (levels 1 and 2), Class II (levels 3, 4 and 5) and Class III (levels 6 and 7) for comparative purposes. Of the eighty-seven respondents, data in Table VII indicate 84 percent of the parents of the technician graduates who migrated out of state were classified in Classes I and II with 51 percent of them in Class I. On the other hand, nearly 90 percent of the parents of the technician graduates who remained in Oklahoma were classified in Classes II and III with as much as 26 percent of them in Class III.

In Table VIII, data identified as to the community of orientation and therefore classified as rural or urban indicate that the majority of the technician graduates from a rural area remained within Oklahoma, whereas the majority of the technician graduates from an urban area migrated out of state.

Data in Table IX indicate that up to 37 percent of the technician graduates who stayed within Oklahoma preferred to live in a rural setting. In contrast, 90 percent of the technician graduates who left the state preferred an urban community.

TABLE VII

FREQUENCY AND PERCENTAGE ANALYSIS OF THE RELATIONSHIP  
OF SOCIOECONOMIC STATUS OF PARENTS TO  
INTERSTATE GEOGRAPHIC MOBILITY

Socioeconomic Levels	In - State		Out - of - State	
	Number	Percent	Number	Percent
1	0	00.0	8	16.3
2	4	10.5	17	34.7
3	3	7.9	2	4.1
4	10	26.3	6	12.2
5	11	28.9	8	16.3
6	5	13.2	5	10.2
7	<u>5</u>	<u>13.2</u>	<u>3</u>	<u>6.1</u>
TOTAL	38	100.0	49	99.9*

\* Discrepancy due to rounding off to nearest tenth percent.

TABLE VIII

FREQUENCY AND PERCENTAGE ANALYSIS OF THE RELATIONSHIP  
OF COMMUNITY OF ORIENTATION (RURAL-URBAN) TO  
INTERSTATE GEOGRAPHIC MOBILITY

Community of Orientation	In - State		Out - of - State	
	Number	Percent	Number	Percent
Rural	17	44.7	14	28.0
Urban	<u>21</u>	<u>55.3</u>	<u>36</u>	<u>72.0</u>
TOTAL	38	100.0	50	100.0

TABLE IX  
 FREQUENCY AND PERCENTAGE ANALYSIS OF THE RELATIONSHIP  
 OF COMMUNITY PREFERENCE TO INTERSTATE  
 GEOGRAPHIC MOBILITY

Type of Community	In - State		Out - of - State	
	Number	Percent	Number	Percent
Metropolis (100,000 and over)	6	15.8	14	28.0
Large City (50,000-99,000)	3	7.9	8	16.0
Small City (10,000-49,999)	8	21.1	18	36.0
Town (2,500-9,999)	7	18.4	5	10.0
Village (Under 2,500)	0	00.0	0	00.0
Open Country (Small Acreage)	9	23.7	3	6.0
Farm or Ranch	<u>5</u>	<u>13.2</u>	<u>2</u>	<u>4.0</u>
TOTAL	38	100.1*	50	100.0

\* Discrepancy due to rounding off to nearest tenth percent.

The findings, as illustrated in Table X, show more technician graduates from out of state actually did migrate from Oklahoma. However, since the difference is so small, caution seems to be needed at this point.

A very distinct relationship between the type of institution attended by technician graduates and interstate geographic mobility appears in the data presented in Table XI. Although the technician graduates who chose to remain within Oklahoma are more evenly distributed as to the type of institution which they attended, this is not the case for the technician graduates who migrated out of state.



TABLE X

FREQUENCY AND PERCENTAGE ANALYSIS OF THE RELATIONSHIP  
OF COMMUNITY OF ORIENTATION (STATE RESIDENCE) TO  
INTERSTATE GEOGRAPHIC MOBILITY

Community of Orientation	In - State		Out - of - State	
	Number	Percent	Number	Percent
Oklahoma	35	92.1	45	90.0
Out-of-State	<u>3</u>	<u>7.9</u>	<u>5</u>	<u>10.0</u>
TOTAL	38	100.0	50	100.0

TABLE XI

FREQUENCY AND PERCENTAGE ANALYSIS OF THE RELATIONSHIP  
OF THE TYPE OF INSTITUTION ATTENDED TO  
INTERSTATE GEOGRAPHIC MOBILITY

Type of Institution	In - State		Out - of - State	
	Number	Percent	Number	Percent
Junior College	18	47.4	6	12.0
Technical Institute	<u>20</u>	<u>52.6</u>	<u>44</u>	<u>88.0</u>
TOTAL	38	100.0	50	100.0

Question 2: Is there a difference in their attitude toward Oklahoma in general between the technician graduates who remained within Oklahoma and the technician graduates who migrated out of state which tends to affect interstate geographic mobility?

Data in Table XII disclose 63 percent of the technician graduates who remained within Oklahoma viewed their future in Oklahoma as being

better or about the same as in another state. On the other hand, as many as 78 percent of the technician graduates who migrated out of state viewed their future as being better in another state.

TABLE XII

FREQUENCY AND PERCENTAGE ANALYSIS OF THE RELATIONSHIP  
OF HOW TECHNICIAN GRADUATES VIEW THEIR FUTURE IN  
OKLAHOMA COMPARED TO THEIR FUTURE IN ANOTHER  
STATE TO INTERSTATE GEOGRAPHIC MOBILITY

Attitude	In - State		Out - of - State	
	Number	Percent	Number	Percent
Better in Oklahoma	6	15.8	1	2.0
About the Same	18	47.4	10	20.0
Better in Another State	<u>14</u>	<u>36.8</u>	<u>39</u>	<u>78.0</u>
TOTAL	38	100.0	50	100.0

In addition to the attitude analyzed from the data presented in Table XII, each technician graduate was asked to respond to nineteen statements which indicate their attitude toward Oklahoma in general. (See Appendix G) The positive and negative attitudes of the technician graduates who remained within Oklahoma were compared to the attitudes of the technician graduates who migrated out of state. Data, as presented in Table XIII, indicate the degree of their positive or negative attitude toward Oklahoma.

There appear to be only five attitudes in which considerable disagreement exists. Attitude "D" (People generally agree on how things are to be run) drew a 55 percent positive response from the technician graduates who remained within the state, whereas only 40 percent of

TABLE XIII

FREQUENCY AND PERCENTAGE ANALYSIS OF THE RELATIONSHIP OF ATTITUDE TOWARD  
OKLAHOMA IN GENERAL TO INTERSTATE GEOGRAPHIC MOBILITY

Item	Strongly Agree				Agree				Disagree				Strongly Disagree				Undecided			
	In-State		Out-of-State		In-State		Out-of-State		In-State		Out-of-State		In-State		Out-of-State		In-State		Out-of-State	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
A	3	7.9	3	6.0	23	60.5	22	44.0	9	23.7	17	34.0	3	7.9	2	4.0	0	0.0	6	12.0
B	1	2.6	2	4.0	29	76.3	27	54.0	6	15.8	15	30.0	0	0.0	3	6.0	2	5.3	3	6.0
C	3	7.9	3	6.0	10	26.3	17	34.0	18	47.4	22	44.0	5	13.2	4	8.0	2	5.3	4	8.0
D	2	5.3	0	0.0	19	50.0	20	40.0	10	26.3	20	40.0	3	7.9	5	10.0	4	10.5	5	10.0
E	9	23.7	2	4.0	17	44.7	16	32.0	6	15.8	16	32.0	0	0.0	7	14.0	6	15.8	9	18.0
F	12	31.6	5	10.0	12	31.6	18	36.0	6	15.8	14	28.0	4	10.5	9	18.0	4	10.5	4	8.0
G	5	13.2	3	6.0	27	71.1	30	60.0	5	13.2	9	18.0	0	0.0	3	6.0	1	2.6	5	10.0
H	10	26.3	11	22.0	21	55.3	29	58.0	3	7.9	7	14.0	2	5.3	1	2.0	2	5.3	2	4.0
I	4	10.5	6	12.0	1	2.6	5	10.0	19	50.0	29	58.0	13	34.3	10	20.0	1	2.6	0	0.0
J	1	2.6	2	4.0	1	2.6	6	12.0	14	36.8	22	44.0	17	44.7	14	28.0	5	13.2	6	12.0
K	0	0.0	1	2.0	2	5.3	8	16.0	16	42.0	27	54.0	19	50.0	13	26.0	1	2.6	1	2.0
L	10	26.3	8	16.0	24	63.2	33	66.0	0	0.0	8	16.0	1	2.6	1	2.0	3	7.9	0	0.0
M	5	13.2	13	26.0	3	7.9	15	30.0	20	52.6	19	38.0	8	21.1	0	0.0	2	5.3	3	6.0
N	8	21.1	6	12.0	21	55.3	27	54.0	5	13.2	12	24.0	2	5.3	5	10.0	2	5.3	0	0.0
O	1	2.6	2	4.0	2	5.3	10	20.0	14	36.8	23	46.0	19	50.0	13	26.0	2	5.3	2	4.0
P	11	28.9	4	8.0	13	34.2	21	42.0	9	23.7	17	34.0	3	7.9	6	12.0	2	5.3	2	4.0
Q	5	13.2	3	6.0	10	26.3	12	24.0	11	28.9	17	34.0	4	10.5	14	28.0	8	21.1	4	8.0
R	2	5.3	1	2.0	17	44.7	12	24.0	12	31.6	19	38.0	6	15.8	12	24.0	1	2.6	6	12.0
S	1	2.6	2	4.0	16	42.1	22	44.0	13	34.2	21	42.0	4	10.5	2	4.0	4	10.5	3	6.0

the technician graduates who left the state gave a positive response. Sixty-eight percent of the technician graduates who stayed within the state gave a positive response to attitude "E" (The future of the state looks bright) as compared to the 36 percent positive response of the technician graduates who migrated out of state. This is consistent with the findings represented in Table IX. When attitude "M" (Good employment opportunities are practically nonexistent) was examined, only 21 percent of the technician graduates who stayed within the state agreed with the attitude statement, whereas 56 percent of the technician graduates who left the state were in agreement with the attitude statement. Sixty-two percent of the technician graduates who migrated out of state gave a negative response to attitude "Q" (Few, if any, of the neighboring states can surpass Oklahoma) when only 39 percent of the technician graduates who remained within Oklahoma responded in a like manner. At least 50 percent of the technician graduates who stayed within the state provided a positive response to attitude "R" (Salaries are usually fair and adequate), whereas 62 percent of the technician graduates who left the state gave a negative response.

Wherever disagreement exists in the remaining attitude statements, the technician graduates who remained within the state tend to have a more positive attitude toward Oklahoma than the technician graduates who migrated out of state.

Question 3: Is there a difference in their attitude toward selected variables related to employment between the technician graduates who remained within Oklahoma and the technician graduates who migrated out of state which tends to affect interstate geographic mobility?

Data, as presented in Table XIV, identify three differences in the type of agency or size of company which technician graduates prefer for employment. Thirteen percent of the technician graduates who stayed within Oklahoma preferred a governmental agency, whereas only 6 percent of the technician graduates who left the state preferred a governmental agency. The technician graduates who migrated out of state indicated 46 percent of them preferred a company of a thousand or more employees as compared to only 26 percent of the technician graduates who remained within the state. Up to 26 percent of the technician graduates who stayed within the state preferred to be self-employed, whereas only 12 percent of the technician graduates who moved from Oklahoma preferred to be self-employed.

TABLE XIV

FREQUENCY AND PERCENTAGE ANALYSIS OF THE RELATIONSHIP  
OF THE TYPE OF AGENCY OR SIZE OF COMPANY PREFERRED  
TO INTERSTATE GEOGRAPHIC MOBILITY

Type of Agency or Company Size	In - State		Out - of - State	
	Number	Percent	Number	Percent
Governmental Agency	5	13.2	3	6.0
Company (under 250 employees)	2	5.3	3	6.0
Company (250-999 employees)	11	28.9	15	30.0
Company (1,000+ employees)	10	26.3	23	46.0
Self-Employed	<u>10</u>	<u>26.3</u>	<u>6</u>	<u>12.0</u>
TOTAL	38	100.0	50	100.0

The inverse of the findings presented in Table XIV appear in the data represented in Table XV with the exception of a least preference for the small company. Technician graduates who remained within Oklahoma indicated 26 percent of them least preferred the small company, whereas only 17 percent of the technician graduates who migrated out of state had a similar attitude.

TABLE XV

FREQUENCY AND PERCENTAGE ANALYSIS OF THE RELATIONSHIP OF THE  
TYPE OF AGENCY OR SIZE OF COMPANY LEAST PREFERRED  
TO INTERSTATE GEOGRAPHIC MOBILITY

Type of Agency or Company Size	In - State		Out - of - State	
	Number	Percent	Number	Percent
Governmental Agency	15	39.5	24	51.1
Company (under 250 employees)	10	26.3	8	17.0
Company (250-999 employees)	1	2.6	0	00.0
Company (1,000+ employees)	7	18.4	4	8.5
Self-Employed	<u>5</u>	<u>13.2</u>	<u>11</u>	<u>23.4</u>
TOTAL	38	100.0	47	100.0

In Table XVI, the data indicate there is little difference in the kind of job preferred between the technician graduates who remained within Oklahoma and the technician graduates who left the state.

The analysis of selected factors which make a job attractive (See Appendix H) to the technician graduates will be made two ways. In the first method, the factors which were considered of little importance

are compared. The second method required a ranking of the first three most important factors as they were ranked by the technician graduates themselves.

TABLE XVI  
 FREQUENCY AND PERCENTAGE ANALYSIS OF THE RELATIONSHIP  
 OF THE KIND OF JOB PREFERRED TO  
 INTERSTATE GEOGRAPHIC MOBILITY

Kind of Job	In - State		Out - of - State	
	Number	Percent	Number	Percent
Moderate Income (sure of keeping)	18	47.4	23	46.0
Good Income (50-50 chance of losing)	10	26.3	16	32.0
High Income (could lose everything)	<u>10</u>	<u>26.3</u>	<u>11</u>	<u>22.0</u>
TOTAL	38	100.0	50	100.0

Data presented in Table XVII indicate the technician graduates who migrated from Oklahoma considered factor "C" (The job must give me an opportunity to be helpful to others) as less important than did the technician graduates who remained within the state. A similar attitude prevailed toward factor "G" (The job must enable me to gain a respected position in the community) and factor "I" (The job must provide an opportunity to continue my education). On the other hand, the technician graduates who remained within Oklahoma considered factor "E" (The job must provide a high starting salary) and factor "O" (The job must be within short commuting distance) as less important than did the technician graduates who moved out of

TABLE XVII  
 FREQUENCY AND PERCENTAGE ANALYSIS OF THE RELATIONSHIP OF SELECTED FACTORS  
 WHICH MAKE A JOB ATTRACTIVE TO INTERSTATE GEOGRAPHIC MOBILITY

Factor	Very Important				Important				Of Little Importance			
	In-State		Out-of-State		In-State		Out-of-State		In-State		Out-of-State	
	N	%	N	%	N	%	N	%	N	%	N	%
A	23	60.5	26	52.0	14	36.8	24	48.0	1	2.6	0	0.0
B	28	73.7	40	80.0	10	26.3	9	18.0	0	0.0	1	2.0
C	20	52.6	23	46.0	18	47.4	22	44.0	0	0.0	5	10.0
D	31	81.6	42	84.0	7	18.4	8	16.0	0	0.0	0	0.0
E	8	21.1	6	12.0	23	60.5	38	76.0	7	18.4	6	12.0
F	11	28.9	11	22.0	18	47.4	28	56.0	9	23.7	11	22.0
G	14	36.8	19	38.0	20	52.6	20	40.0	4	10.5	11	22.0
H	22	57.9	36	72.0	16	42.1	13	26.0	0	0.0	1	2.0
I	24	63.2	26	52.0	14	36.8	20	40.0	0	0.0	4	8.0
J	17	44.7	22	44.0	21	55.3	27	54.0	0	0.0	1	2.0
K	17	44.7	19	38.0	20	52.6	30	60.0	1	2.6	1	2.0
L	23	60.5	31	62.0	15	39.5	18	36.0	0	0.0	1	2.0
M	29	76.3	33	66.0	9	23.7	16	32.0	0	0.0	1	2.0
N	15	39.5	13	26.0	22	57.9	36	72.0	1	2.6	1	2.0
O	11	28.9	16	32.0	20	52.6	28	56.0	7	18.4	6	12.0
P	7	18.4	9	18.4	17	44.7	20	40.8	14	36.8	20	40.8



state. It is interesting to note how little importance was given to factor "P" (The job must be with a company which is better known) by both sub-populations.

When the technician graduates were asked to rank the most important, second most important, and third most important factors, both groups of technician graduates ranked the same factors in the same order of importance. The most important factor was "B" (The job must enable me to look forward to a stable and secure future). The second most important factor was "D" (The job must provide an opportunity to use my special abilities and aptitudes) and the third most important factor was "I" (The job must provide an opportunity to continue my education). This seems to indicate a contradiction to the difference previously observed for factor "I"; therefore, differences appear to exist only for factors "D", "E", "G", and "O".

Data, as shown in Table XVIII, indicate both groups of technician

TABLE XVIII

FREQUENCY AND PERCENTAGE ANALYSIS OF THE RELATIONSHIP  
OF A BETTER JOB POSSIBILITY TO INTERSTATE  
GEOGRAPHIC MOBILITY

Possible Location of Better Job Opportunity	Response	In - State		Out - of - State	
		Number	Percent	Number	Percent
In Oklahoma	Yes			41	82.0
	No			9	18.0
In Another State	Yes	29	76.3		
	No	<u>9</u>	<u>23.7</u>	—	—
TOTAL		38	100.0	50	100.0

graduates share a common attitude toward the propensity to move for a better job opportunity; however, nearly 24 percent of the technician graduates who remained in Oklahoma were not willing to leave the state.

Question 4: Is there a difference in the economic aspiration of the technician graduates who remained within Oklahoma and the technician graduates who migrated out of state which tends to affect interstate geographic mobility?

The findings shown in Table XIX indicate a difference in the economic aspirations between the two sub-populations. Although approximately 3 percent of the technician graduates who stayed within Oklahoma stated they expect to be earning an annual income of \$15,000 or more in five years, almost 84 percent of this group indicated an expected income in five years of less than \$10,000 per annum. On the other hand, as much as 34 percent of the technician graduates who migrated

TABLE XIX

FREQUENCY AND PERCENTAGE ANALYSIS OF THE RELATIONSHIP  
OF ECONOMIC ASPIRATION TO INTERSTATE  
GEOGRAPHIC MOBILITY

Expected Annual Income in 5 Years	In - State		Out - of - State	
	Number	Percent	Number	Percent
Less than \$7,500	8	21.6	4	8.5
\$7,500 - \$9,999	23	62.2	27	57.4
\$10,000 - \$14,999	5	13.5	16	34.0
\$15,000 or more	<u>1</u>	<u>2.7</u>	<u>0</u>	<u>00.0</u>
TOTAL	37	100.0	47	99.9*

\* Discrepancy due to rounding off to nearest tenth percent.

out of state indicated they expect an annual income in the range of \$10,000 to \$14,999, whereas only 14 percent of the technician graduates who remained within Oklahoma expected a similar income.

Question 5: Is there a difference in the personal, social, or economic reasons given for remaining within Oklahoma or for leaving the state between the technician graduates who remained within Oklahoma and the technician graduates who migrated out of state?

The data, as presented in Table XX, indicate factors "A" (where parents live), "B" (opportunity to continue education), "D" (where relatives live), "E" (where friends live), "G" (where fiance(e) lives), and "J" (community size) had considerably more influence on the decisions of the technician graduates who remained within Oklahoma than they did on the technician graduates who left the state. On the other hand, factors "K" (best job offer), "L" (better salaries), "N" (community atmosphere), and "O" (greater opportunity for success and achievement) had more influence on the decisions of the technician graduates who migrated out of state than on the technician graduates who stayed within Oklahoma.

The technician graduates who remained within Oklahoma ranked the most important, second most important, and third most important influencing factors in their decisions to remain within Oklahoma as "K" (best job offer), "A" (where parents live), and "E" (where friends live) respectively. The technician graduates who moved out of state ranked factors "K" (best job offer), "L" (better salaries), and "O" (greater opportunity for success and achievement) respectively as the most important, second most important, and third most important influencing factors in their decisions to leave Oklahoma.

TABLE XX  
 FREQUENCY AND PERCENTAGE ANALYSIS OF THE RELATIONSHIP OF INFLUENCING FACTORS  
 IN THE DECISION TO REMAIN IN OR LEAVE OKLAHOMA TO  
 INTERSTATE GEOGRAPHIC MOBILITY

ITEM	INFLUENCING FACTOR	In - State		Out - of - State	
		Number	Percent	Number	Percent
A	where parents live	25	65.8	2	4.0
B	opportunity to continue education	23	60.5	19	38.0
C	military service obligation	4	10.5	6	12.0
D	where relatives live	13	34.2	5	10.0
E	where friends live	19	50.0	5	10.0
F	desire of spouse	7	18.4	5	10.0
G	where fiance(e) lives	7	18.4	0	00.0
H	better opportunity to marry	0	00.0	2	4.0
I	climate	11	28.9	13	26.0
J	community size	12	31.6	9	18.0
K	best job offer	18	47.4	45	90.0
L	better salaries	2	5.3	37	74.0
M	greater freedom of behavior	9	23.7	8	16.0
N	community atmosphere	7	18.4	19	38.0
O	greater opportunity for success and achievement	5	13.2	33	66.0
P	improve self socially and culturally	9	23.7	9	18.0
Q	family conflict	0	00.0	3	6.0
R	other	6	15.8	3	6.0

Question 6: Is there a difference in the employment practices of employers from Oklahoma and out of state which tends to affect interstate geographic mobility among the technician graduates?

The findings represented in Table XXI indicate forty-nine of the fifty technician graduates who moved out of state responded to the question pertaining to receipt of recruitment literature from employers in Oklahoma and out of state. Thirty-seven of the thirty-eight technician graduates who stayed within Oklahoma responded to the question. The data indicate 84 percent of the technician graduates who migrated out of state had received recruitment literature from out-of-state employers. This corresponds with 76 percent of the technician graduates who remained within Oklahoma that received recruitment literature from in-state employers. Otherwise, data indicate a similar relationship existed in the distribution of the literature received by the technician graduates from in-state and out-of-state employers.

TABLE XXI

FREQUENCY AND PERCENTAGE ANALYSIS OF THE RELATIONSHIP  
OF THE RECEIPT OF RECRUITMENT LITERATURE TO  
INTERSTATE GEOGRAPHIC MOBILITY

Location of Company Forwarding Literature	Response	In - State		Out - of - State	
		Number	Percent	Number	Percent
In State	Yes	28	75.7	26	53.1
	No	9	24.3	23	46.9
Out of State	Yes	21	55.3	41	83.7
	No	17	44.7	8	16.3

Data illustrated in Table XXII indicate most technician graduates secured their job through either the placement office or the technical department of the institution which they attended. Data indicate out-of-state employers utilized the institution placement office more than the employers from Oklahoma for 33 percent of the technician graduates who migrated out of state secured their job through this source as compared to only 16 percent of the technician graduates who remained within Oklahoma. Also, the data indicate employers from Oklahoma depended upon all eight sources as means of recruitment for the

TABLE XXII

FREQUENCY AND PERCENTAGE ANALYSIS OF THE RELATIONSHIP  
OF PRIMARY SOURCE USED TO SECURE EMPLOYMENT TO  
INTERSTATE GEOGRAPHIC MOBILITY

Primary Source	In - State		Out - of - State	
	Number	Percent	Number	Percent
Institutions Placement Office	6	16.2	16	32.7
Institutions Technical Department	15	40.5	16	32.7
Employment Advertisement	1	2.7	1	2.0
Friends	2	5.4	0	0.0
Family (including relatives)	2	5.4	0	0.0
Employment Agencies (public and private)	2	5.4	0	0.0
Direct Contact from Employer	5	13.5	4	8.2
Direct Contact by Graduate	<u>4</u>	<u>10.8</u>	<u>12</u>	<u>24.5</u>
TOTAL	37	99.9*	47	100.1*

\* Discrepancy due to rounding off to nearest tenth percent.

technician graduates who remained within Oklahoma used all eight primary sources to secure employment, whereas the technician graduates who left the state utilized five of the sources--primarily only three sources.

The data illustrated in Table XXIII indicate that all but one of each of the two sub-populations responded to the question related to the technician graduates having interviewed with employers from Oklahoma and out-of-state. Of the technician graduates who remained within Oklahoma, out-of-state employers had interviewed with only 49 percent of them, whereas 67 percent of the technician graduates who left the state had been interviewed by employers from Oklahoma.

TABLE XXIII

FREQUENCY AND PERCENTAGE ANALYSIS OF THE RELATIONSHIP  
OF HAVING INTERVIEWED WITH IN-STATE AND OUT-OF-STATE  
EMPLOYERS TO INTERSTATE GEOGRAPHIC MOBILITY

Employer Location	In - State		Out - of - State	
	Number	Percent	Number	Percent
In State	37	100.0	33	67.3
Out of State	18	48.6	40	100.0

Forty-eight of the fifty technician graduates who migrated out of state and thirty-seven of the thirty-eight technician graduates who stayed within Oklahoma replied to the question pertaining to having interviewed with employers from Oklahoma and out of state at the institution from which each graduated. The findings shown in Table XXIV indicate employers from Oklahoma interviewed on campus 60

percent of the technician graduates who remained in Oklahoma. However, the employers from out of state interviewed on campus nearly 94 percent of the technician graduates who left the state. Furthermore, the data indicate out-of-state employers had interviewed on campus only 32 percent of the technician graduates who remained within the state, whereas in-state employers had interviewed on campus up to 54 percent of the technician graduates who migrated out of state.

TABLE XXIV

FREQUENCY AND PERCENTAGE ANALYSIS OF THE RELATIONSHIP OF HAVING INTERVIEWED ON CAMPUS WITH IN-STATE AND OUT-OF-STATE EMPLOYERS TO INTERSTATE GEOGRAPHIC MOBILITY

Employer Location	In - State		Out - of - State	
	Number	Percent	Number	Percent
In State	22	59.5	26	54.2
Out of State	12	32.4	45	93.7

The findings shown in Table XXV indicate the employers from

TABLE XXV

FREQUENCY AND PERCENTAGE ANALYSIS OF THE RELATIONSHIP OF JOB OFFERS TO INTERSTATE GEOGRAPHIC MOBILITY

Employer Location	In - State		Out - of - State	
	Number	Percent	Number	Percent
In State	38	100.0	10	20.0
Out of State	10	26.3	50	100.0



Oklahoma actually made job offers to only 20 percent of the technician graduates who left the state. Likewise, the employers from out-of-state offered a job to only 26 percent of the technician graduates who remained within Oklahoma.

Data in Table XXVI indicate the employers from out of state employed technician graduates at higher salaries than the employers from Oklahoma. The salary ranges, based upon salaries actually paid to technician graduates, indicate that out-of-state employers paid from 14 percent at the lower end of the range to 8 percent at the upper end of the range more in salaries than the in-state employers. The findings indicate out-of-state employers paid technician graduates who migrated out of Oklahoma, on the average, approximately 13 percent more in starting salaries than the in-state employers paid the technician graduates who remained within the state.

TABLE XXVI

PERCENTAGE ANALYSIS OF THE RELATIONSHIP OF THE  
MEDIAN AND RANGE OF ACTUAL STARTING SALARY  
TO INTERSTATE GEOGRAPHIC MOBILITY

Employer	Range		Range Mean	Median Salary
	Minimum	Maximum		
In-State	\$350	\$600	\$475	\$475
Out-of-State	<u>\$400</u>	<u>\$650</u>	<u>\$536</u>	<u>\$535</u>
Difference (\$)	\$ 50	\$ 50	\$ 61	\$ 60
Difference (%)	14.3	8.3	12.8	12.6

## CHAPTER V

### CONCLUSIONS AND RECOMMENDATIONS

#### Review of the Objective and Design of the Study

The primary objective of this study was to ascertain which of selected variables tended to affect interstate geographic mobility among recent technician graduates of the associate degree programs in Oklahoma's junior colleges and technical institutes. These variables were grouped as follows: (1) personal and socioeconomic background, (2) attitude toward Oklahoma in general, (3) attitude toward selected variables related to employment, (4) selected employment practices of employers from Oklahoma and out of state, (5) economic aspirations, and (6) personal, social or economic reasons given for remaining within Oklahoma or for leaving the state.

The basic design was ex post facto in nature in which the subjects who secured employment within the state of Oklahoma and the subjects who secured employment out of state were compared utilizing their responses to questions related to the above mentioned variables asked in a questionnaire designed for that specific purpose. Frequency and percentage analyses were used throughout the study.

#### Limitations

Certain limitations should be kept in mind while interpreting

results of this study. Since this study is based upon an ex post facto design, the investigator was unable to control or manipulate the independent variables nor was he able to randomize the subjects. Thus, the major risk which is undertaken to conduct research of this type is improper interpretation.

Due to the lack of control pointed out in the preceding paragraph, another limitation is the risk of generalizing the findings. Though the study involved a specific type of population--May, 1967 technician graduates of the associate degree programs in Oklahoma's junior colleges and technical institutes who secured full-time employment within the United States--no statistical evidence is available to indicate that this population is typical of any other group of technicians at this time nor in the future.

A third limitation has to do with the questionnaire method of collecting data. Regardless of the care in designing and administering a questionnaire, no guarantee can be given that the respondent's interpretation of the questions asked will be the same as intended by the designer of the questionnaire. Therefore, there is no absolute assurance that subjects will give valid responses. Thus, for an ex post facto design to be valid to the reader, he must accept the assumption that the investigator did not select subjects or make use of data that would intentionally bias results.

### Conclusions

Answers to six research questions were sought in this study. This section states each research question and conclusions based upon the findings.

First Research Question: Is there a difference in the personal and socioeconomic backgrounds of the technician graduates who remained within Oklahoma and the technician graduates who migrated out of state which tends to affect interstate geographic mobility?

Summary and Conclusion: The evidence from the analysis of data appears to be supportive of a general conclusion that variables related to the technician graduates' personal and socioeconomic backgrounds did tend to affect interstate geographic mobility. It was found that, as the technician graduates' ages increased, the less they tended to migrate from Oklahoma. Likewise, the findings indicate marital status tended to affect interstate geographic mobility for the ratio of the number of married technician graduates who left the state to the number of married technicians who remained within Oklahoma was three to two respectively. The socioeconomic status of the technician graduates' parents appeared to have a considerable influence upon the migration pattern. Eighty-four percent of the technician graduates who migrated out of state were from families of the upper and middle socioeconomic class, whereas nearly 90 percent of the technician graduates who stayed within Oklahoma were from the middle and lower socioeconomic class. The findings indicate the community of orientation (rural-urban) tended to affect interstate geographic mobility for the majority (72 percent) of the technician graduates who migrated out of state were raised in an urban setting, whereas nearly 45 percent of the technician graduates who stayed within Oklahoma were raised in a rural setting. Furthermore, as much as 37 percent of the technician graduates who remained within Oklahoma preferred a rural setting in contrast to the preference for

an urban setting expressed by 90 percent of the technician graduates who left the state. The type of institution attended by the technician graduates appeared to affect interstate geographic mobility among the technician graduates for 75 percent of the technician graduates of the junior colleges remained within Oklahoma, whereas nearly 69 percent of the technical institute graduates migrated out of state. This interstate geographic mobility pattern is similar to those patterns found for the years 1959 through 1966 in the studies completed by Briggs (19) and Buchanan (20). (It should be noted at this point that of the sixty-two technician graduates who reentered college, thirty-eight (61 percent) of them were from the junior colleges. Twenty-six (68 percent) of the junior college technician graduates who reentered college responded to a follow-up questionnaire. (See Appendix D) Fifty-eight percent of them replied that they felt additional training was needed to be successful as a technician. In comparison, 79 percent of the twenty-four technician graduates of the technical institutes who reentered college responded to the questionnaire. Of this group only 37 percent of them replied that they felt additional training was needed to be successful as a technician.) Although there was a slight indication that state residence may have had an affect on interstate geographic mobility, the number of technician graduates who were from out of state was too small to make such a conclusion. Thus, the investigator concludes that the variables: age, marital status, parent's socioeconomic status, community of orientation (rural-urban), community preference, and the type of institution attended did tend to affect interstate geographic mobility among the technician graduates of the associate degree programs in Oklahoma's junior

colleges and technical institutes.

Second Research Question: Is there a difference in their attitude toward Oklahoma in general between the technician graduates who remained within Oklahoma and the technician graduates who migrated out of state which tends to affect interstate geographic mobility?

Summary and Conclusion: As much as 78 percent of the technician graduates who migrated out of state felt their future would be better out of state rather than in Oklahoma. Only 16 percent of the technician graduates who remained within Oklahoma felt their future was better in Oklahoma; however, as much as 47 percent of them felt their future was about the same in Oklahoma as elsewhere. Likewise, there were other attitudes in which differences appeared. These differences were primarily related to the above mentioned attitude and others were related to such economic aspects as the "availability of employment opportunities" and "adequate salaries." The technician graduates who left the state appeared to be negative in their attitude toward Oklahoma in general wherever noticeable difference occurred between the two sub-populations. Since the technician graduates who left the state appeared to have some attitudes unfavorable toward Oklahoma and the technician graduates who remained within the state seemed to have favorable attitudes toward Oklahoma, the investigator concludes that their attitude toward Oklahoma in general did affect interstate geographic mobility among the technician graduates of the associate degree programs in Oklahoma's junior colleges and technical institutes.

Third Research Question: Is there a difference in their attitude toward selected variables related to employment between the technician graduates who remained within Oklahoma and the technician graduates

who migrated out of state which tends to affect interstate geographic mobility?

Summary and Conclusion: The technician graduates who migrated out of Oklahoma appeared to prefer employment with companies of a thousand or more employees and least prefer employment with a governmental agency or being self-employed. On the other hand, technician graduates who remained within the state seemed to be more evenly distributed as to the size of company based upon the number of company employees. The technician graduates who stayed within Oklahoma appeared to have a greater preference for employment with a governmental agency or being self-employed than did the technician graduates who left the state. However, both sub-populations expressed that they least preferred employment with a governmental agency. The greater preference for self-employment by the technician graduates who remained within Oklahoma would indicate less need for security on their part; however, both sub-populations expressed the need for a job which would provide for a "stable and a secure future" as the most important factor about the job which they desired. Where the two sub-populations differed in respect to what factors about a job makes it attractive, the differences appear to be divided into personal-social and economic categories. The technician graduates who stayed within the state indicated personal-social factors about a job as being more important, whereas the technician graduates who left the state emphasized the economic aspects about a job. There appears to be a slight difference as to the propensity to migrate between the two sub-populations. The technician graduates who remained within Oklahoma appeared to be slightly less inclined to migrate out of state

although 76 percent of them indicated they would have left Oklahoma for a better job offer. On the other hand, 82 percent of the technician graduates who migrated out of state indicated they would have remained within Oklahoma for a better job offer. The evidence from the analysis of data appears to indicate little difference exists between the two sub-populations as to their attitudes toward selected variables related to employment. However, two appreciable differences seem to exist. One of the differences is the indicated desire for employment with a large company by the technician graduates who left Oklahoma. (As a point of interest, the technician graduates who migrated out of state did tend to be employed by the large companies, whereas the technician graduates who stayed within the state were employed mostly by the small or medium sized companies and governmental agencies. None of the technician graduates of either sub-population were self-employed.) The other appreciable difference is that the technician graduates who moved out of state indicated the economic factors about a job as being the more important aspect in contrast to the emphasis placed upon the personal-social factors by the technician graduates who remained within Oklahoma. The investigator, fully recognizing the similarities between the two groups, concludes that the differences in their attitude toward the size of company by which they preferred to be employed and in the personal-social and economic factors which make a job attractive did tend to affect interstate geographic mobility among the technician graduates of the associate degree programs in Oklahoma's junior colleges and technical institutes.



Fourth Research Question: Is there a difference in the economic aspiration of the technician graduates who remained within Oklahoma and the technician graduates who migrated out of state which tends to affect interstate geographic mobility?

Summary and Conclusion: Of the technician graduates who expected an income of less than \$10,000 per annum in five years the relationship between the two sub-populations appears to be about the same. On the other hand, as much as 34 percent of the technician graduates who left Oklahoma stated they expect an annual income in excess of \$10,000 per annum in five years as compared to 16 percent of the technician graduates who stayed within the state with similar expectations. Put another way, of all of the technician graduates who expect an annual income of more than \$10,000 per annum in five years, approximately 74 percent are technician graduates who left the state, whereas the remaining 26 percent are technician graduates who remained within Oklahoma. The investigator, therefore, concludes that the difference in economic aspirations between the technician graduates who remained within Oklahoma and the technician graduates who migrated out of state did tend to affect interstate geographic mobility among the technician graduates of the associate degree programs in Oklahoma's junior colleges and technical institutes.

Fifth Research Question: Is there a difference in the personal, social, or economic reasons given for remaining within Oklahoma or for leaving the state between the technician graduates who remained within Oklahoma and the technician graduates who migrated out of state?

Summary and Conclusion: Again the division between the two groups appears to be split between personal-social reasons for the technician

graduates who remained within Oklahoma as contrasted with the economic reasons given by the technician graduates who migrated out of state. Both sub-populations emphasized the "best job offer" as being the most important reason for their decision to stay within the state or to leave Oklahoma. However, the technician graduates who remained within Oklahoma also expressed personal or social factors such as "where parents live," "where relatives live," "where friends live," "where fiance(e) lives," "community size," and "opportunity to continue education" as important reasons for not leaving Oklahoma. In contrast, the technician graduates who migrated out of state emphasized "better salaries," "community atmosphere," and "greater opportunity for success and achievement" as important reasons for leaving the state. Excluding the job offer, it would appear that the personal-social costs of out-migration were considered too great by the technician graduates who remained within Oklahoma, whereas the technician graduates who migrated out of state considered the economic cost of remaining within Oklahoma as being too great. It is the conclusion of the investigator that the reasons for choosing to migrate or not to migrate given by the technician graduates who remained within Oklahoma and by the technician graduates who migrated out of state did differ; therefore, different personal, social or economic influencing factors did tend to affect interstate geographic mobility among the technician graduates of the associate degree programs in Oklahoma's junior colleges and technical institutes.

Sixth Research Question: Is there a difference in the employment practices of employers from Oklahoma and out of state which tends to affect interstate geographic mobility among the technician graduates?

Summary and Conclusion: There appears to be a direct relationship between several variables related to employment practices and where the technician graduates secured their first job. For instance, nearly 76 percent of the technician graduates who remained within Oklahoma had received recruitment literature from in-state employers, whereas only 55 percent of them had received similar literature from out-of-state employers. Likewise, almost 84 percent of the technician graduates who migrated out of state had received recruitment literature from out-of-state employers as compared to 53 percent of them who had received similar literature from employers in Oklahoma. Employers in Oklahoma secured the services of the technician graduates who stayed within the state through at least eight sources. On the other hand, primarily only three sources were needed by out-of-state employers to secure the services of the technician graduates who migrated out of state. It appears that out-of-state employers utilized the services of the institutional placement office more than did the in-state employers. The findings indicate that in-state employers had interviewed at least 67 percent of the technician graduates who left the state, whereas the out-of-state employers had interviewed only 49 percent of the technician graduates who stayed within Oklahoma. This tends to indicate less effective recruitment on the part of the employers from Oklahoma. Again, the employers from out of state made use of "on campus" interviews much more than did the in-state employers. Nearly 94 percent of the technician graduates who moved out of Oklahoma were interviewed by out-of-state employers on their respective campuses. The employers from Oklahoma interviewed only 60 percent of the technician graduates who remained within the state

on their respective campuses. Also, the employers from in state interviewed 54 percent of the technician graduates who left the state on campus, whereas only 32 percent of the technician graduates who stayed within Oklahoma were interviewed on campus by out-of-state employers. This also tends to support the previous conclusion pertaining to effective recruitment by in-state employers. The number of job offers actually made to technician graduates who remained within Oklahoma by out-of-state employers and the number of job offers actually made to technician graduates who migrated out of state by employers from Oklahoma were equal. Certainly, there was a direct relationship of the number of job offers by in-state and out-of-state employers to where the technician graduates finally chose to live. The finding showed that out-of-state employers paid, on the average, approximately 13 percent more for the services of the technician graduates than did the employers from Oklahoma. Likewise, the employers from Oklahoma were able to secure the services of only thirty-eight technician graduates, whereas the employers from out-of-state were able to employ fifty of the technician graduates. The conclusion reached by the investigator is that the differences in employment practices which were demonstrated by the employers from Oklahoma and out of state did tend to affect interstate geographic mobility among the technician graduates of the associate degree programs in Oklahoma's junior colleges and technical institutes.

#### Recommendations

It appears there are several variables which tend to affect interstate geographic mobility among the technician graduates of the

associate degree programs in Oklahoma's junior colleges and technical institutes. Many of these variables can not or should not be controlled; however, several of the variables do lend themselves to control or modification.

Several questions related to the above possibility arise. For instance, is it not possible to improve the technical education programs in the junior colleges and technical institutes such that more technician graduates could confidently enter the labor market upon completion of their training? Is it not possible to change the attitude of technician graduates toward Oklahoma in general through the dynamic leadership of those concerned with the socioeconomic development of Oklahoma? Does a critical need for technician graduates actually exist in Oklahoma? If so, can not the potential and present employers of technician graduates from Oklahoma modify their employment posture and recruitment practices such that retention of this type of manpower within Oklahoma may be achieved? Is it possible that the educators and the employers of technician graduates in Oklahoma have not worked together as closely as perhaps they should? These questions suggest that perhaps certain actions should be undertaken.

It is, therefore, recommended that:

1. Employers of technician graduates in Oklahoma reconsider their recruitment practices toward this caliber of manpower, for example, include: more "on campus" interviewing, wider coverage with recruitment literature, salaries more competitive with the interstate labor market, more "on the spot" job offers, and closer

communication of manpower needs with the institutions which educate technicians.

2. Employers of technicians in Oklahoma and administrators in Oklahoma's junior colleges and technical institutes consider "work-experience" programs for the students enrolled in the technician education programs.
3. Many employers in Oklahoma reconsider their employment posture toward utilization of technician graduates of the associate degree programs in Oklahoma's junior colleges and technical institutes.
4. There be further research into the type of technician education programs in existence and the need for their technician graduates in the state of Oklahoma.
5. There be further research into the type of student served in the technical education programs in Oklahoma's junior colleges and technical institutes.
6. There be further research into "why" technician graduates of Oklahoma's junior colleges tend to stay in state, whereas technician graduates of Oklahoma's technical institutes tend to migrate out of state.
7. There be more dialogue pertaining to the problems associated with the education and employment of technicians between the institutions within Oklahoma responsible for educating technicians and Oklahoma's industry and governmental agencies.

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APPENDIX A

I. Degree of Separation: Temporary or Occasional

Population Category	Psychosocial Involvement in Community			Consequences to Community	
	Example	Participation	Loyalty	Social	Economic
Youth: individual	Seasonal job Army service Higher education Vocational training	Low, but occasionally heightened	Strong-latent	Loss of leadership and interruption in participation Return with potential for greater contribution and/or altered values	Reduced or some loss in consumption which may be more than replaced after return Burden when returning destitute; asset if better trained
Middle Years: fragmented family	Seasonal work Contracting jobbing Armed service	Decreased for all members especially loss of some involvement	Often times evaluation of community	Interest in possible subsequent migration Innovation of new ideas Abeyance of leadership: breaks in program continuity	Increased consumption and economic activity Vacationer takes money out of the community Reduces housing demands
Whole family	Extended vacation "Soil bank migrant" temporary job	Interrupted and reduced	Re-evaluation	Same as above but more pronounced	Reduced local consumption production and property values and credit losses
Older aged: whole or residual	Family tourism Hospitalization or institutionalization	Reduced	Re-evaluation or idealization	Loss of older leadership Decreased dependency Variations in demand for social services	Reduced local consumption and reallocation of savings

\* Source: (31, pp. 114-115)

II. Degree of Separation: Permanent

Psychosocial involvement in community			Consequences to Community		
Population Category	Examples	Partici- pation	Loyalty	Social	Economic
Youth: Individual	Job College and employment Marriage	At a minimum Curtailed Infrequent return to community	Gradual loss of identifi- cation Some idea- lization and/or disillu- sionment	Reduction of dependent age group Loss of youthful membership and po- tential leadership Reduced incentives, demands and restric- tion of service op- portunities Closure on social classes Status quoism - con- servatism	Loss of consumption Loss of labor force Reduction in com- petition for em- ployment opportu- nities
Middle Years: fragmented family	Employment Desertion Separation Institutional commitment	Curtailed Selective increase	Selective identifi- cation No strong view of total disaffec- tion	Selective exclusion Increase in dependency Greater welfare, legal, and religious demands for residual community	Reduced economic and productive contribu- tion to the community

\* Source: (31, pp. 114-115)

Psychosocial involvement in community			Consequences to Community		
Population Category	Examples	Partici- pation	Loyalty	Social	Economic
Whole family	Education Jobs Transfers	Effective partici- pation is eliminated	Re-di- rected to receiving community	Exchange of self-di- rection for external guidance Reduction of member- ship Reduction of incentives Loss of vigor Reductions in goals and services Increased occupancy of multiple roles Drift toward anomie Increased fatalism or indifference	Failure to develop re- sources to highest potential Removal of manpower and economic assets Selective reduction in demand for services Concentration of economic control Selectively reduced overhead
Older years: whole or residual family	Retirement Transfer for health, etc.	Minimum persistent	Strong, although reduced somewhat	Allows new occupancy in old positions, disperses conservatism, reduces dependent age group, loss experienced leadership	Takes financial reserve out and reduces tax base Reduces local consump- tion and need for special services Reduces economic conservation



APPENDIX B

PERCENTAGE OF MOBILE PROFESSIONAL, TECHNICAL AND KINDRED  
WORKERS, 1955-60, BY PROFESSION AND CLASS OF WORKER

Type of profession <sup>a</sup> and class of worker	Total N <sup>b</sup>	Different house in United States (movers)				
		Same county (local movers)	Different county (migrants)			Non- contig. state (distant mi- grants)
			Total <sup>c</sup>	Same state	Contig. state	
TOTAL	7309	28	28	13	5	10
Old established professions	1109	21	27	13	6	9
Salary	594	21	37	16	9	12
Self-employed	515	22	17	9	3	5
New professions	1212	26	32	12	6	15
Salary	1189	26	33	12	6	15
Self-employed	23	30	13	9	0	4
Semi-professions	3366	29	25	13	4	8
Salary	3146	29	26	14	4	8
Self-employed	220	28	13	5	3	6
Would-be professions	248	30	25	10	4	12
Salary	226	31	28	11	4	13
Self-employed	22	23	0	0	0	0
Marginal professions	1374	31	29	12	5	12
Salary	1282	31	30	12	5	12
Self-employed	92	29	22	5	3	13

a Old established professions include actors and actresses, architects, artists and art teachers, authors, clergymen, dancers and dancing teachers, dentists, lawyers and judges, musicians and music teachers, osteopaths, and physicians and surgeons.

New professions include chemists, college presidents, professors and instructors, engineers (except sales), natural scientists, and social scientists. Semi-professions include accountants and auditors, chiropractors, dieticians and nutritionists, editors and reporters, librarians, nurses, optometrists, pharmacists, recreation, group, religious, social and welfare workers, teachers, and veterinarians.

Would-be professions include farm and home management advisors, foresters and conservationists, funeral directors and embalmers, personnel and labor relations workers, public relations men and publicity writers. Marginal professions include airplane pilots and navigators, athletes, designers, draftsmen, entertainers (n.e.c.), photographers, radio operators, sports instructors and officials, surveyors, medical, dental, electrical, electronic and other technicians, therapists and healers, and professional, technical, and kindred workers (n.e.c.).

b Includes nonmovers plus persons abroad and movers whose place of residence was not reported.

c Detail may not add to total because of rounding.

\* Source: (10, p. 492)

APPENDIX C

State-wide Study of Technicians  
Industrial Education Department  
Oklahoma State University  
Stillwater, Oklahoma

Your cooperation in completing this questionnaire is greatly appreciated. SECTION I (white) should be completed by ALL GRADUATING TECHNICIANS. If you have already accepted employment for after graduation, complete SECTION II (blue) and SECTION III (gold) if employment will be in Oklahoma, or SECTION II (blue) and SECTION IV (green) if employment will not be in Oklahoma--PLEASE COMPLETE THE SECTION APPLYING TO YOU BASED UPON YOUR PRESENT EMPLOYMENT PLANS. If you have not yet accepted employment, please complete only SECTION I.

SECTION I

1. Name: \_\_\_\_\_  

Last	First	Middle Initial
------	-------	----------------
2. Marital Status: \_\_\_\_\_ Age: \_\_\_\_\_ Sex: \_\_\_\_\_
3. Name of institution presently attending: \_\_\_\_\_
4. Field of technology in which prepared: \_\_\_\_\_
5. Name and address of a person who will always know where to get in touch with you:  
Name: \_\_\_\_\_ Address: \_\_\_\_\_ Phone: \_\_\_\_\_
6. Where did you live immediately prior to beginning your technician education program?  
Community: \_\_\_\_\_ State: \_\_\_\_\_
7. Where were you raised most of your life?  
Community: \_\_\_\_\_ State: \_\_\_\_\_ Approx. Community Pop.: \_\_\_\_\_
8. Which represents where you lived most of your life? (Check one)  

<input type="checkbox"/> On a farm or ranch	<input type="checkbox"/> Town, 2,500-9,999
<input type="checkbox"/> In open country (small acreage)	<input type="checkbox"/> City, 10,000-49,999
<input type="checkbox"/> Village under 2,500 population	<input type="checkbox"/> City, 50,000-99,999
	<input type="checkbox"/> Metropolis, 100,000 & over
9. How old were you when you left there: (Check one)  

<input type="checkbox"/> 1- 9 yrs.	<input type="checkbox"/> 13-15 yrs.	<input type="checkbox"/> 19-21 yrs.
<input type="checkbox"/> 10-12 yrs.	<input type="checkbox"/> 16-18 yrs.	<input type="checkbox"/> Over 21 yrs.
10. Father's occupation (be specific): \_\_\_\_\_  
(If retired or deceased, indicate what his occupation was most of his life.)
11. Approximately what was the total income available to your parents last year? (Check one)  

<input type="checkbox"/> Less than \$3,000	<input type="checkbox"/> \$5,000-7,499	<input type="checkbox"/> \$10,000-15,000
<input type="checkbox"/> \$3,000-4,999	<input type="checkbox"/> \$7,500-9,999	<input type="checkbox"/> Over \$15,000
12. In what type of community would you like to live? (Check one)  

<input type="checkbox"/> A metropolis (100,000 & over)	<input type="checkbox"/> A medium-sized town (2,500-9,999)
<input type="checkbox"/> A large city (50,000-99,999)	<input type="checkbox"/> A village (Under 2,500)
<input type="checkbox"/> A small city (10,000-49,999)	<input type="checkbox"/> In open country (small acreage)
	<input type="checkbox"/> On a farm or ranch
13. How would you view your future in Oklahoma as compared to your future in another state?  
 Better in Oklahoma     About the same     Better in another state

SECTION I (cont.)

14. Please check the phrase to the right that most nearly represents your personal belief or attitude about Oklahoma in general. In each statement, think in terms of the majority rather than any single exception. Please respond to all statements--checking one category for each.

	<u>Strongly</u> <u>Agree</u>	<u>Agree</u>	<u>Dis-</u> <u>agree</u>	<u>Strongly</u> <u>Disagree</u>	<u>Unde-</u> <u>cided</u>
a. Anything of a progressive nature is generally approved . . . . .	_____	_____	_____	_____	_____
b. With a few exceptions the leaders are capable and ambitious . . . . .	_____	_____	_____	_____	_____
c. It is difficult for people to get together on anything . . . . .	_____	_____	_____	_____	_____
d. People generally agree on how things are to be run . . . . .	_____	_____	_____	_____	_____
e. The future of the state looks bright . . . . .	_____	_____	_____	_____	_____
f. The school teachers are equal to teachers anywhere . . . . .	_____	_____	_____	_____	_____
g. Persons with real ability are usually given recognition . . . . .	_____	_____	_____	_____	_____
h. The state is located in a very desirable region . . . . .	_____	_____	_____	_____	_____
i. A person has to leave the state in order to have a good time . . . . .	_____	_____	_____	_____	_____
j. There are not many families you would care to marry into . . . . .	_____	_____	_____	_____	_____
k. People generally have to do without adequate shopping facilities . . . . .	_____	_____	_____	_____	_____
l. The medical facilities are generally good and adequate . . . . .	_____	_____	_____	_____	_____
m. Good employment opportunities are practically nonexistent . . . . .	_____	_____	_____	_____	_____
n. Recreation facilities are abundant and varied . . . . .	_____	_____	_____	_____	_____
o. Not much can be said in favor of Oklahoma . . . . .	_____	_____	_____	_____	_____
p. The climate is as good as any other place in the United States . . . . .	_____	_____	_____	_____	_____
q. Few, if any, of the neighboring states can surpass Oklahoma . . . . .	_____	_____	_____	_____	_____
r. Salaries are usually fair and adequate . . . . .	_____	_____	_____	_____	_____
s. Cost of living is low . . . . .	_____	_____	_____	_____	_____

15. If you were asked to name the most important improvement that would make Oklahoma a better place in which to live, what would it be?

16. If you had your choice, which would you most prefer to work for: (Check one)  
 A governmental agency     A small company (under 250 employees)  
 A medium-sized company (250-999)     A large company (1000+)     For yourself

17. Why? \_\_\_\_\_

18. If you had your choice, which would you least prefer to work for: (Check one)  
 A governmental agency     A small company (under 250 employees)  
 A medium-sized company (250-999)     A large company (1000+)     For yourself

19. Why? \_\_\_\_\_

SECTION I (cont.)

20. Here are three different kinds of jobs. If you had your choice, which one would you pick?

- A job which pays quite a moderate income, but which you were sure of keeping.
- A job which pays a good income but which you have a 50-50 chance of losing.
- A job which pays an extremely high income if you make the grade but in which you lose almost everything if you don't make it.

21. Below are some of the things about a job that may make it more or less attractive. For each please check the column indicating how important it is to you personally.

The job must:	Most Impt.	Of Some Impt.	Of Little Impt.
a. Permit me to be creative and original . . . . .	_____	_____	_____
b. Enable me to look forward to a stable and secure future . . . . .	_____	_____	_____
c. Give me an opportunity to be helpful to others . . . . .	_____	_____	_____
d. Provide an opportunity to use my special abilities and aptitudes . . . . .	_____	_____	_____
e. Provide a high starting salary . . . . .	_____	_____	_____
f. Give me a chance to work with little or no supervision . . . . .	_____	_____	_____
g. Enable me to gain a respected position in the community . . . . .	_____	_____	_____
h. Give me an opportunity to work with friendly people . . . . .	_____	_____	_____
i. Provide an opportunity to continue my education . . . . .	_____	_____	_____
j. Provide fringe benefits such as: paid vacations, insurance, retirement, etc. . . . .	_____	_____	_____
k. Provide an opportunity for rapid promotions . . . . .	_____	_____	_____
l. Provide excellent working conditions such as: facilities, equipment, etc. . . . .	_____	_____	_____
m. Provide for good employer-employee relations . . . . .	_____	_____	_____
n. Provide for rapid salary increases . . . . .	_____	_____	_____
o. Be within short commuting distance . . . . .	_____	_____	_____
p. Be with a company which is better known . . . . .	_____	_____	_____

22. Indicate by letter which of the above items you consider most important. \_\_\_\_\_

Second in importance. \_\_\_\_\_ Third in importance. \_\_\_\_\_

23. How many opportunities for school-sponsored visits to industry were made available to you during your training program?

To Oklahoma companies: \_\_\_\_\_ To out-of-state companies: \_\_\_\_\_

24. Do you feel these visits were beneficial? (Check one)  Yes  No  Not appl.

25. Why, or why not? \_\_\_\_\_

26. During the past year, how many employer representatives have actually made any kind of personal appearance before groups of technician students at your institution from:

Oklahoma? \_\_\_\_\_ Out-of-state? \_\_\_\_\_

27. Estimate the total number of companies from which you have received literature concerning the benefits of working with each company:

Oklahoma companies: \_\_\_\_\_ Out-of-state companies \_\_\_\_\_

(Originally Blue Paper)

SECTION II  
(Have accepted employment)

1. How many job interviews have you had because of each of the following sources?
 

a. ___ School Placement Office	e. ___ Family (including relatives)
b. ___ School Technical Dept.	f. ___ Employment Agencies (Public & Private)
c. ___ Employment Advertisement	g. ___ Direct Contact from Employer to You
d. ___ Friends	h. ___ Direct Contact from You to Employer
2. Indicate by letter which of the above sources was the primary basis for securing your job. \_\_\_\_\_
3. During what month was your first interview held with: An Oklahoma employer? \_\_\_\_\_  
An out-of-state employer? \_\_\_\_\_
4. How many interviews have you had with: Oklahoma employers? \_\_\_\_\_  
Out-of-state employers? \_\_\_\_\_
5. How many interviews have you had on campus with: Okla. employer representatives? \_\_\_\_\_  
Out-of-state employer representatives? \_\_\_\_\_
6. How many actual job offers have you received from: Oklahoma employers? \_\_\_\_\_  
Out-of-state employers? \_\_\_\_\_
7. What was the amount of monthly salary actually offered by:
 

Oklahoma employers? Least amt. \$ _____	Max. amt. _____	None _____
Out-of-state employers? Least amt. \$ _____	Max. amt. _____	None _____
8. What will your actual monthly starting salary be? \$ \_\_\_\_\_
9. Realistically, what do you expect your annual income will be five years after you finish your technician education program? (Check one)
 

___ Less than \$7,500	___ \$10,000-14,999
___ \$7,500-9,999	___ \$15,000 or more
10. For what company are you going to work? \_\_\_\_\_
11. Company address: \_\_\_\_\_  
Community \_\_\_\_\_ State \_\_\_\_\_
12. Estimate total number of employees at the site where you will be employed: \_\_\_\_\_
13. As far as you know, what sort of work do you think you will be doing on your new job?  
Please be as specific as possible. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(Originally Gold Paper)

SECTION III  
(Accepted Employment in Oklahoma)

1. If you had an opportunity to obtain a better job, would you leave Oklahoma?  
(Check one)      Yes \_\_\_      No \_\_\_
2. Why, or why not? \_\_\_\_\_  
\_\_\_\_\_
3. Why did you choose to remain in Oklahoma? (Check as many as apply to you)
- a. \_\_\_ Parents live near the community where the job is located
  - b. \_\_\_ Opportunity to continue your education here
  - c. \_\_\_ Because of military service
  - d. \_\_\_ Have relatives here
  - e. \_\_\_ Have friends here
  - f. \_\_\_ Your spouse wanted to remain here
  - g. \_\_\_ Your finance(e) lives here
  - h. \_\_\_ Better chance to find someone to marry here
  - i. \_\_\_ Community has a better climate
  - j. \_\_\_ Community is the size you like
  - k. \_\_\_ Community had best job offer
  - l. \_\_\_ Salaries are better here
  - m. \_\_\_ You would have greater freedom of behavior here
  - n. \_\_\_ Community has pleasant scenery and is an exciting place
  - o. \_\_\_ Community has more avenues to success and achievement
  - p. \_\_\_ Can better yourself socially and culturally here
  - q. \_\_\_ Family conflict at home
  - r. \_\_\_ Other (explain) \_\_\_\_\_
4. Indicate by letter which of the above items you consider most important. \_\_\_\_\_  
       Second in importance \_\_\_\_\_      Third in importance \_\_\_\_\_
5. Which of the following statements seems to best describe your thoughts (feelings) about the possibility of continuing to live in Oklahoma? (Check one)
- \_\_\_ The thought never seriously entered my mind
  - \_\_\_ Under no circumstances would I always live in Oklahoma
  - \_\_\_ I wouldn't mind continuing to live in Oklahoma
  - \_\_\_ I definitely intend to continue living in Oklahoma

State-wide Study of Technicians  
Industrial Education Department  
Oklahoma State University  
Stillwater, Oklahoma



(Originally Green Paper)

SECTION IV  
(Accepted Employment Out of Oklahoma)

1. If you had an opportunity to obtain a better job would you remain in Oklahoma?  
(Check one)    Yes \_\_\_    No \_\_\_
2. Why or why not? \_\_\_\_\_  
\_\_\_\_\_
3. Why did you choose to leave Oklahoma? (Check as many as apply)
  - a. \_\_\_ Parents live near the community where the job is located
  - b. \_\_\_ Opportunity to continue your education there
  - c. \_\_\_ Because of military service
  - d. \_\_\_ Have relatives there
  - e. \_\_\_ Have friends there
  - f. \_\_\_ Spouse wanted to move
  - g. \_\_\_ Fiance(e) lives there
  - h. \_\_\_ Better chance to find someone to marry there
  - i. \_\_\_ Community has a better climate
  - j. \_\_\_ Community is the size you like
  - k. \_\_\_ Community had best job offer
  - l. \_\_\_ Salaries are better there
  - m. \_\_\_ You would have greater freedom of behavior there
  - n. \_\_\_ Community is a "change of scenery;" a new and exciting place
  - o. \_\_\_ Community has more avenues to success and achievement
  - p. \_\_\_ Can better yourself socially and culturally there
  - q. \_\_\_ Family conflict at home
  - r. \_\_\_ Other (explain) \_\_\_\_\_
4. Indicate by letter which of the above items you consider most important. \_\_\_  
 Second in importance \_\_\_      Third in importance \_\_\_
5. Which of the following statements seems to best describe your thoughts (feelings) about the possibility of someday returning to Oklahoma to live? (Check one)
  - \_\_\_ The thought never seriously entered my mind
  - \_\_\_ Under no circumstances would I again live in Oklahoma
  - \_\_\_ I wouldn't mind returning to Oklahoma to live
  - \_\_\_ I definitely intend to return to Oklahoma to live sometime

State-wide Study of Technicians  
Industrial Education Department  
Oklahoma State University  
Stillwater, Oklahoma

APPENDIX D



OKLAHOMA STATE UNIVERSITY • STILLWATER

Research Foundation  
FRontier 2-6211, Ext. 271

74075

You are aware that technical education is at the forefront in the State of Oklahoma. The Governor of Oklahoma has appointed various state leaders in technical education and the President of each college where technical education is a part of the curriculum, such as the college from which you recently graduated, to the newly formed Oklahoma Technical Advisory Committee. It is the purpose of this committee to determine how to improve all aspects of technical education in Oklahoma.

You, as a member of the most recently graduated class, are most important to the success or failure of improvement in technical education in Oklahoma. Why? You have just completed the type of program which is presently offered in the colleges of Oklahoma.

One aspect related to technical education which is being studied is the success of the graduated technician in securing employment. Last May the college you attended was to ask you to complete a questionnaire which asked about some of your personal background, how you view various aspects of Oklahoma, what you expect in a job, etc. For some reasons (s), a completed questionnaire from you was not received. Now we are in a bind. As previously mentioned we urgently need your views as expressed in the questionnaire and assure you that your views are kept in the strictest confidence. Please complete the enclosed questionnaire. An answer to each question, even if it is "none" or zero (0) is needed. This is most important as these data are needed to make the study valid and meaningful.

The completion of the enclosed forms will take a very few minutes. We have enclosed a self-addressed, stamped envelope to make it convenient for you to expedite this request. Remember your views are most important to this study and we are counting on you. Your immediate attention to this matter is urgent. Please take a few minutes now and complete these forms, then put all of them in the return mail in order that we may receive them by October 1st. Thanks!

Sincerely yours,

*Wilfred M. Bates*

Wilfred M. Bates

WMB:vb  
Enclosures



VOCATIONAL RESEARCH  
COORDINATING UNIT

Oklahoma State University  
Stillwater, Oklahoma 74074  
Gundersen Hall 302  
AC 405, FRontier 2-6211  
Extension 6204

Office of the Director

You are aware that technical education is at the forefront in the State of Oklahoma. The Governor of Oklahoma has appointed state and national leaders in technical education, such as Dr. Maurice Roney, and the President of each college where technical education is a part of the curriculum, such as the college from which you recently graduated, to the newly formed Oklahoma Technical Advisory Committee. It is the purpose of this committee to determine how to improve all aspects of technical education in Oklahoma, for example, placement (employment) of the graduating technician when he has completed his formal training.

You, as a member of the most recently graduated class, are most important to the success or failure of improvement in technical education in Oklahoma. Why? You have just completed the type of program which is presently offered in the colleges of Oklahoma and you also have been recently involved in the process of securing employment upon graduation. Because of this, we need your help and cooperation. In accepting the responsibility for part of the state-wide study which is being made at this time, we were assured, as had been proven during your training program, that we could definitely depend upon your cooperation as a responsible person. We need your cooperation at this time; and, we are depending upon you.

As previously mentioned, one aspect related to technical education is the success of the graduating technician in securing employment. You will recall that in May of this year, at your respective college or institution, you had an opportunity to complete a questionnaire which asked about some of your personal background, how you view various aspects of Oklahoma, what you expect in a job, etc., (which we assure you is held in strictest confidence and no data will be released which implicates any individual under any circumstances). At the time you completed the first section of this questionnaire, you had not secured employment or were planning to continue your education this fall. It often happens in life that the best of plans or intentions must be altered due to changes in circumstances. We are, therefore, making a follow-up survey at this time to find out if circumstances have altered your previous situation. If you now have secured permanent employment, that is, you plan to continue with it beyond the summer months, please complete Section II (blue) and Section III (gold) if you are employed

in Oklahoma or Section IV (green) if you are employed in a state other than Oklahoma. Please provide an answer to each question, even if it is "none" or zero (0). This is most important as this data are needed to make the study valid and meaningful.

If you have not secured employment or have secured only temporary employment, please check the appropriate block on the enclosed Statement I (white) only and return all of the printed forms to us.

The completion of the two sections of the questionnaire or the statement will take a very few minutes (approximately 15). We have enclosed a self-addressed, stamped envelope to make it convenient for you to expedite this request. Remember, you are most important to this study and we are counting on you. Your immediate attention to this matter is urgent. Please, take a few minutes now and complete the proper forms, then put all of them in the return mail. Thanks!

Sincerely yours,



Wilfred M. Bates

## STATEMENT I

Please check the appropriate statement(s).

I have not secured permanent employment since graduation because:

- I am attending college this summer.
- I plan to reenter college this fall.
- I plan to enter the military service soon.
- I am now on active duty with the military service.
- I have been unable to secure permanent employment as  
of this date.
- Other (Please state reason). \_\_\_\_\_  
\_\_\_\_\_

Name: \_\_\_\_\_ Date: \_\_\_\_\_



VOCATIONAL RESEARCH  
COORDINATING UNIT

Oklahoma State University  
Stillwater, Oklahoma 74074  
Gundersen Hall 302  
AC 405, FRontier 2-6211  
Extension 6204

*Office of the Director*

In our state-wide study of technicians we have found a large number of you, who completed your technician training last spring, plan to reenter college this fall. Since this is the case, certain basic questions related to educational planning arise. We would be most grateful if you would answer the five questions on the enclosed form and immediately return the form to us in the enclosed, self-addressed, stamped envelope.

Sincerely,

A handwritten signature in cursive script that reads "Wilfred M. Bates".

Wilfred M. Bates

## STATEMENT II

Your Name: \_\_\_\_\_

1. In what college are you enrolling this fall?

Name \_\_\_\_\_

Location \_\_\_\_\_  
(City) (State)

PLEASE CHECK ONE ANSWER FOR EACH OF THE FOLLOWING QUESTIONS

2. In what type of program are you enrolling?

Technical Education  
 Trade and Industry  
 Industrial Arts  
 Engineering  
 Other, please specify \_\_\_\_\_

3. Do you feel you need additional training at this time to be successful as a
- technician
- ?

Yes  No

4. To what extent do you feel this additional education will benefit you as a
- technician
- ?

To a great extent  To some extent  Very little

5. Several of you have indicated that the prospect of military service has been a detrimental influence as far as accepting employment is concerned. How would you rate the extent to which this situation influenced your decision to reenter college this fall?

Of considerable influence  Of some influence  Of little or no influence



APPENDIX E

TABLE XXVII  
 FREQUENCY AND PERCENTAGE ANALYSIS OF DISTRIBUTION OF  
 TECHNICIAN GRADUATES WHO SECURED  
 EMPLOYMENT BY STATE

State	Number	Percent
Arizona	1	1.1
Arkansas	1	1.1
California	6	6.8
Idaho	1	1.1
Illinois	1	1.1
Kansas	2	2.3
Louisiana	2	2.3
Maryland	1	1.1
Missouri	2	2.3
Nevada	1	1.1
New Mexico	1	1.1
Ohio	1	1.1
Oklahoma	38	43.2
Oregon	1	1.1
Pennsylvania	1	1.1
Texas	27	30.7
Washington	<u>1</u>	<u>1.1</u>
TOTAL	88	99.7*

\* Discrepancy due to rounding off to nearest tenth percent.

TABLE XXVIII

FREQUENCY AND PERCENTAGE ANALYSIS OF THE GEOGRAPHIC RELATIONSHIP  
 OF OKLAHOMA TO THE STATES WHICH TECHNICIAN GRADUATES  
 WHO SECURED EMPLOYMENT MIGRATED

Geographic Relationship of Oklahoma to States	Technician Graduates Who Migrated Out of State	
	Number	Percent
Contiguous	33	66.0
Non-Contiguous	<u>17</u>	<u>34.0</u>
TOTAL	50	100.0

APPENDIX F

REVISED SCALE FOR RATING OCCUPATION

<i>Rating Assigned to Occupation</i>	<i>Professionals</i>	<i>Proprietors and Managers</i>	<i>Business Men</i>	<i>Clerks and Kindred Workers, etc.</i>	<i>Manual Workers</i>	<i>Protective and Service Workers</i>	<i>Farmers</i>
1	Lawyers, doctors, dentists, engineers, judges, high-school superintendents, veterinarians, ministers (graduated from divinity school), chemists, etc., with postgraduate training, architects	Businesses valued at \$75,000 and over	Regional and divisional managers of large financial and industrial enterprises	Certified Public Accountants			Gentlemen farmers
2	High-school teachers, trained nurses, chiropodists, chiropractors, undertakers, ministers (some training), newspaper editors, librarians (graduate)	Businesses valued at \$20,000 to \$75,000	Assistant managers and office and department managers of large businesses, assistants to executives, etc.	Accountants, salesmen of real estate, of insurance, postmasters			Large farm owners, farm owners
3	Social workers, grade-school teachers, optometrists, librarians (not graduate), undertaker's assistants, ministers (no training)	Businesses valued at \$5,000 to \$20,000	All minor business officials	Auto salesmen, bank clerks, cashiers, postal clerks, secretaries to executives, supervisors of railroad, telephone, etc., justices of the peace	Contractors		
4		Businesses valued at \$2,000 to \$5,000		Stenographers, bookkeepers, rural mail clerks, railroad ticket agents, sales people in dry goods store, etc.	Factory foremen, electricians, plumbers, carpenters, watchmakers (own business)	Dry cleaners, butchers, sheriffs, railroad engineers, conductors	
5		Businesses valued at \$500 to \$2,000		Dime-store clerks, hardware salesmen, beauty operators, telephone operators	Carpenters, plumbers, electricians (apprentice), timekeepers, linemen, telephone or telegraph, radio repairmen, medium-skill workers	Barbers, firemen, butcher's apprentices, practical nurses, policemen, seamstresses, cooks in restaurants, bartenders	Tenant farmers
6		Businesses valued at less than \$500			Moulders, semi-skilled workers, assistants to carpenters, etc.	Baggage men, night policemen and watchmen, taxi and truck drivers, gas station attendants, waitresses in restaurants	Small tenant farmers
7					Heavy labor, migrant work, odd-job men, miners	Janitors, scrubwomen, newsboys	Migrant farm laborers

\* Source: (66, pp. 140-141)

APPENDIX G

TABLE XXIX

IDENTIFICATION OF SELECTED ATTITUDE STATEMENTS RELATED  
TO OKLAHOMA IN GENERAL BY LETTER

ITEM	SELECTED ATTITUDE STATEMENTS
A	Anything of a progressive nature is generally approved.
B	With a few exceptions the leaders are capable and ambitious.
C	It is difficult for people to get together on anything.
D	People generally agree on how things are to be run.
E	The future of the state looks bright.
F	The school teachers are equal to teachers anywhere.
G	Persons with real ability are usually given recognition.
H	The state is located in a very desirable region.
I	A person has to leave the state in order to have a good time.
J	There are not many families you would care to marry into.
K	People generally have to do without adequate shopping facilities.
L	The medical facilities are generally good and adequate.
M	Good employment opportunities are practically nonexistent.
N	Recreation facilities are abundant and varied.
O	Not much can be said in favor of Oklahoma.
P	The climate is as good as any other place in the United States.
Q	Few, if any, of the neighboring states can surpass Oklahoma.
R	Salaries are usually fair and adequate.
S	Cost of living is low.

APPENDIX H



TABLE XXX  
 IDENTIFICATION OF SELECTED FACTORS WHICH MAKE  
 A JOB ATTRACTIVE BY LETTER

ITEM	SELECTED FACTORS
A	The job must permit me to be creative and original.
B	The job must enable me to look forward to a stable and secure future.
C	The job must give me an opportunity to be helpful to others.
D	The job must provide an opportunity to use my special abilities and aptitudes.
E	The job must provide a high starting salary.
F	The job must give me a chance to work with little or no supervision.
G	The job must enable me to gain a respected position in the community.
H	The job must give me an opportunity to work with friendly people.
I	The job must provide an opportunity to continue my education.
J	The job must provide fringe benefits such as: paid vacations, insurance, retirement, etc.
K	The job must provide an opportunity for rapid promotions.
L	The job must provide excellent working conditions such as: facilities, equipment, etc.
M	The job must provide for good employer-employee relations.
N	The job must provide for rapid salary increases.
O	The job must be within short commuting distance.
P	The job must be with a company which is better known.

VITA

Wilfred Miles Bates

Candidate for the Degree of

Doctor of Education

**Thesis:** AN EXAMINATION OF THE RELATIONSHIP OF SELECTED VARIABLES TO INTERSTATE GEOGRAPHIC MOBILITY OF TECHNICIAN GRADUATES OF THE ASSOCIATE DEGREE PROGRAMS IN OKLAHOMA

**Biographical:**

**Personal Data:** Born in Pensacola, Florida, September 13, 1931, the son of George W. and Medora L. Bates.

**Education:** Attended grade school in Pensacola, Florida, Boise City, Oklahoma, and Alva, Oklahoma; graduated from Alva High School in 1949; received the Bachelor of Science degree from Northwestern State College, with a major in industrial arts, in May, 1954; received the Master of Arts degree from Colorado State College, with a major in industrial arts, in August, 1954; completed requirements for the Doctor of Education degree in May, 1968.

**Professional experience:** Employed as industrial arts and mathematics teacher in Tulsa Public Schools, Tulsa, Oklahoma from 1954 to 1956; employed as superintendent of schools in Kingsdown, Kansas from 1956 to 1957; employed as personnel manager in industry in Denver, Colorado from 1957 to 1960; employed as mathematics teacher and counselor in Denver Public Schools, Denver, Colorado from 1960 to 1966; employed at Oklahoma State University as graduate research assistant for the Vocational Research Coordinating Unit from 1967 to 1968. Served six years in U. S. Air Force Reserve: Active Duty from April, 1951 to July, 1952.

**Professional organizations:** Denver Classroom Teachers' Association, Colorado Education Association, National Education Association, American Vocational Association, Phi Delta Kappa.