

70-23,982

KELLEY, Robert Eugene, 1921-
DIFFERENCES BETWEEN TRANSFER AND NON-TRANSFER
STUDENTS AND THEIR ACADEMIC PERFORMANCE AT
THE UNIVERSITY OF OKLAHOMA.

The University of Oklahoma, Ph.D., 1970
Education, higher

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DIFFERENCES BETWEEN TRANSFER AND NON-TRANSFER
STUDENTS AND THEIR ACADEMIC PERFORMANCE
AT THE UNIVERSITY OF OKLAHOMA

A DISSERTATION
SUBMITTED TO THE GRADUATE FACULTY
in partial fulfillment of the requirements for the
degree of
DOCTOR OF PHILOSOPHY

BY
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Norman, Oklahoma

1970

A STUDY OF DIFFERENCES BETWEEN TRANSFER AND NON-TRANSFER
STUDENTS AND THEIR ACADEMIC PERFORMANCE
AT THE UNIVERSITY OF OKLAHOMA

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ACKNOWLEDGMENTS

The writer wishes to express his appreciation to all members of his dissertation committee for their generous use of time and counsel in helping him complete this dissertation - Dr. Herbert R. Hengst, Dr. Omer J. Rupiper, Dr. William C. Price, and Dr. Robert W. Culp. Dr. Robert L. Bailey and his staff were most helpful during the data collection phase of the study and the Computer Center in the tabulations.

Special acknowledgment is extended to Dr. C. Stanley Clifton, former director of the School of Social Work, for his early encouragement, and to Dr. Herbert R. Hengst for his sustained guidance through the entire course of the study.

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CHAPTER I

INTRODUCTION

Background and Need for the Study

Increased demands by the American people for higher education have created an unprecedented nationwide increase in the number of admissions to college from 3,580,000 in 1960 to 6,750,000 in 1969.¹ Accompanying this increase, there has been an increase in the number of studies done about the college student and his performance, mainly in the form of follow-up studies of college freshmen.² An applicant that has been studied less extensively has been the transfer student. Yet the transfer student may merit equal attention to that shown to the applicant from high school if we can assume the figures concerning his rate of increase as published by

¹Fact Book on American Higher Education. (Washington, D. C.: American Council on Education, 1969), p. 9005.

²"Admissions, Student, University and College," Datrix Reference Listing (Ann Arbor: University Micro Films, 1968).

the College Entrance Examination Board are correct. Willingham and Findikyan contend that the rate of increase of transfer students exceeded the rate of increase of direct admissions in 1968.³

While applicants for direct admission continued to exceed applications for admission by transfer by a substantial margin of 5 to 1 in the 1960's, some of the factors which generated the increase in transfer applications would appear to be equally applicable in the 1970's. In brief these were (1) increased academic specialization among institutions especially where statewide coordinating systems exist, (2) increased geographic mobility of students, (3) increased output of junior colleges.⁴

In addition to this increase in numbers, as found in the 1960's and as projected into the 1970's, note should be made of the greater variance in personality characteristics among transfer students as compared to non-transfer students. This could imply greater differences in academic performance. They are generally older, less likely to be at home on the larger university campus, and some studies have indicated they have a greater propensity for withdrawing than the non-transfer student.⁵

³Warren Willingham and Nurhan Findikyan, "Transfer Students: Who's Moving from Where to Where and What Determines Who is Admitted," College Board Review (Summer, 1969), p. 4

⁴Warren Willingham and Nurhan Findikyan, Patterns of Admission for Transfer Students (New York: College Entrance Examination Board, 1969), p. 1.

⁵J. Rouechek, Follow Up on Junior College Transfer Students (Los Angeles: Educational Research Information Center for Junior Colleges, 1968), p. 4 ED 013-069.

Hence, on the basis of national studies, the transfer student may require greater skill in evaluation than the student who is admitted directly from high school. While grade point averages and American College Testing or College Entrance Examination Board scores will probably continue to be primary criteria for admission, it may be important especially in borderline instances to have information available concerning differences in student performance according to type of original college and fields of study concentration if declared. Failure to use all the information on hand, imperfect though some of these guidelines may be, can result in (1) an inefficient use of college resources in terms of student turnover and (2) disappointment to the student unable to handle courses for which he has had insufficient preparation.⁶

Studies to date on the regional scene confirm much the same picture as the national studies. These will be discussed in more detail in the next chapter. It is sufficient to state at this point that most of the factors contributing to the increase in transfer students nationally operate also in the Southwest and in the State of Oklahoma. In addition to public junior colleges in Texas, Oklahoma, and Kansas, there has been a long tradition of church related colleges and small independent colleges existing side by side with larger state supported colleges. The range of specializations and offerings at these colleges have by financial necessity

⁶Op. Cit., p. ED 013-069.

been limited and interchange between them and the larger colleges in both directions has been going on for many years.⁷

The increasing importance of the transfer student within one state can also be observed. The University of Oklahoma, as one of the two largest tax supported universities in the state, can expect to receive an increasing number of applications from other tax supported junior and senior colleges whose course offerings have been coordinated by the Oklahoma State Regents for Higher Education. While the national and regional studies do not uniformly agree on their findings as to differences in academic performance of transfer students and non-transfer students, they do agree on the need for each college periodically to conduct their own transfer studies in order to improve service to students.⁸ The last such study done at the University of Oklahoma was the Mann study done in 1963.⁹ Since his data were based on a sample of students attending the university from 1959 to 1962, it seemed appropriate that these findings be updated and based upon the greater diversity found among the students enrolled in the late 1960's.

In summary, the need for the study developed because of increasing numbers of transfer students, their greater variability in personality characteristics, their propensity to withdraw prior to graduation with the

⁷John Coffelt and Dan Hobbs, In and Out of College (Oklahoma City: State Regents for Higher Education, 1964), p. 11.

⁸C. H. Holmes, "Transfer Student in the College of Liberal Arts," Junior College Review Board, XXXI (1961), p. 456.

⁹Mitchell Mann, "The Academic Achievement of Transfer Students at the University of Oklahoma" Unpublished doctoral dissertation, University of Oklahoma, 1963, p. 48.

mutual loss to the university and the student, and a lack of current information about transfer students and their performance compared to non-transfer students at the University of Oklahoma.

Statement of the Problem and
Purpose of the Study

The theoretical framework used in developing the statement of the problem was that developed by Getzell and others who viewed behavior in a social system such as a school or college as a function of interaction between two factors, the personality and the institution.¹⁰ In terms of this theory, the experiences that the students had at their original college could conceivably influence their performance behavior at the university to which they transferred as juniors. The experiences of the students who began their freshman year at the university could likewise influence their performance as juniors; however, in their case they had one consistent environment.

The general research hypothesis was developed consistent with the concepts of the Getzell's frame-of-reference. It can be stated as follows: that differences exist between transfer students and their academic performance and non-transfer students and their academic performance due in part to the experiences of the transfer students at their original college. The problem of the study, then, is expressed in the following question: What differences exist between transfer students and their academic

¹⁰Jacob Getzell, and others, Educational Administration as a Social Process (Evanston: Harper and Row, 1968), p. 78.

performance and non-transfer students and their academic performance as measured by individual cumulative grade point averages? The purpose of the study was to examine this problem by means of a comparative study, comparing the academic performance of a group of transfer students with the academic performance of a group of randomly selected non-transfer students. The major elements of the problem based upon a review of related studies were expressed in question form:

1. How do transfer students as a total group compare academically with non-transfer students as a total group?
2. How do out-of-state transfer students compare academically with in-state transfer students?
3. How do non-resident non-transfer students compare academically with resident non-transfer students?
4. How do transfer students compare academically with non-transfer students according to type and size of original college from which the students transferred?
5. How do transfer students compare academically with non-transfer students according to regional location of the original college from which they came?
6. How do transfer students compare academically with non-transfer students according to type of original college and by major field of study?
7. How do female transfer students compare academically with male transfer students?

Before proceeding to the discussion concerning the population from which the sample groups were drawn and the limitations of the study, it is

appropriate to define the various terms which will be used through the study.

Definition of Terms¹¹

The definition of terms includes both standard terms and those developed in connection with the type of college in order to take into consideration the factor of size. Since these terms will be used extensively in the study, an early clarification is appropriate.

Academic: A term in higher education pertaining to an instructional program of course work. Academic performance refers to performance in an instructional program.

Academic Mobility: Characterized by ease of movement in instructional programs and, for purposes of this study, between institutions of higher education.

Grade Point Average: A measure of scholastic performance over a set of courses obtained by dividing the sum of the grade points earned by the total number of hours of course work attempted in the set -- also seen as abbreviation, GPA.

Non-Transfer Students: Students enrolled at the University of Oklahoma since their freshman year. Also referred to as natives.

Transfer Students: Students who terminate enrollment in one institution and subsequently enroll in another, usually with transfer credits. For purpose of this study, a student with no less than twelve hours of transfer credit from his original college.

¹¹ Definitions of Student Personnel Terms in Higher Education (Washington: Department of Health, Education and Welfare, 1966), pp. 1-60.

Resident Students: Students enrolled at the University whose parent's legal residence is in Oklahoma, or who graduated from a high school in Oklahoma.

Non-Resident Students: Students enrolled at the University whose parent's legal residence is outside of Oklahoma.

The following definitions incorporate standard terms found in Definitions of Student Personnel Terms in Higher Education to which has been added the arbitrary factor of size in limiting the term University to an institution with a minimum enrollment size of 2,500 students or more for purposes of this study only.¹² The element of size was considered a significant factor influencing the environment at the original college.

College: An institution of higher education which offers educational programs above the level of the secondary school; includes four year and two year institutions, but for the purpose of this study is confined to four year colleges.

Junior College: A two year institution of higher education which offers Associate of Art Degree.

University: A complex institution of higher education which has as its purpose (1) instruction, (2) research, (3) service; confers advanced degrees as well as bachelor's degrees in a variety of disciplines and provides at least two degree granting professional schools.

Private College: An institution of higher education in which the principal emphasis is a program of liberal or general studies with the

¹²Op. Cit., p. 57.

undergraduate education leading to a Bachelor of Arts or Bachelor of Science Degree. Such colleges are predominately supported by private contributions, or fees, and governed by boards of trustees appointed by agencies other than instruments of a public governmental unit.

State College: An institution of higher education supported by the state.¹³ For purposes of this study, any state supported college other than a university or junior college. Also referred to as four year state colleges.

Graduation: The process of receiving formal recognition from a college or university, usually by the granting of a degree, for having completed a program of study. For purposes of this study, the completion of degree requirements for the Baccalaureate between September, 1966 and June, 1969.

Withdrawal: The termination of a student's attendance in a class or all classes before the end of the term. For purposes of this study, the withdrawal from classes before completion of degree requirements for the Baccalaureate anytime between September, 1966 and before June, 1969.

The Sample and Limitations of the Study

The population from which the samples were drawn for comparison was limited to students classified as "juniors" as of Fall, 1966 at the University of Oklahoma. The junior year was chosen because it is a common year for transition to the university for junior college and state college students and the one in which undergraduates, transfer and non-transfer

¹³Op. Cit., p. 38.

alike, tend to reaffirm or select their major field. The sample group consisted of an equal number (600 each) of transfer and non-transfer students randomly selected from the total population of juniors. The sample groups were in turn limited by the following exclusions:

- (1) Students whose permanent record card indicated they had already graduated but were enrolled for an additional degree. They had already demonstrated an acceptable degree of persistence. The most common example of this category was law students.
- (2) Students who had earned less than twelve acceptable transfer credits at their original college. Their experience was considered too brief to have had much effect upon their performance at the University of Oklahoma. The most common example of these students were those who attended one or more summer sessions elsewhere but otherwise were continuously in residence at the University.
- (3) Students who were still enrolled as of June, 1969, the cut off date set for the study. Their final cumulative grade point average had yet to be established and their persistence to graduation could not be determined.

Sources of Data and Preliminary Study Procedures

The sources of data for the study were to be found in two locations:

- (1) The Library Historical Collection for the Student Directory, 1966-67.
- (2) The Office of Admissions and Records for the original correspondence file and permanent record cards.

The permanent record cards served as the primary sources of data from which the student's name, identification number, date of birth, sex, name of original college, hours transferred, major field, graduation/withdrawal status, and credit hours were extracted. Individual cumulative grade point averages were not in the available records but were computed by dividing the grade points earned by the credit hours attempted. The cumulative grade point average from Fall, 1966 until graduation or withdrawal was the one used.

The decision was made to use a comparative study of cumulative grade point averages of transfer students and non-transfer students. In this study, the students would be the independent variable and the cumulative grade point averages of the students would be the dependent variable. The development of the hypotheses followed. The statement of the hypotheses and the plan for testing the hypotheses are discussed in detail in Chapter III. The decision of determining which statistical model would be most applicable to the data remained and the t test of difference between sample means was chosen as the primary test to be used in conjunction with the acceptance or rejection of the hypotheses.

Summary

In summary, the increased number of college applicants has created an unprecedented demand for college admissions. With increased numbers there has developed an increase in transfer applicants who pose more complex problems because of their diversity and attrition; yet the volume of research about them has been less than the research completed concerning direct admissions. Drawing upon the systems theory idea developed by

Getzell and others concerning the impact of an institution upon an individual and vice versa, the general hypothesis was developed that differences exist between transfer students and their performance and non-transfer students and their performance due in part to the previous college experiences of the transfer students. With the addition of the idea of measuring this difference by means of the cumulative grade point averages of the students, the problem was defined and preparation made for a comparative study in which the students, transfer and non-transfer, compared in various ways would be the independent variable and the grade point average the dependent variable. Data for such a study was found to be available in the office of Admissions and Records.

The final design of the study including the null hypotheses, the details of the collection plan, and the manner in which the study was carried out will be discussed in Chapter III after a review of related studies has been presented in Chapter II. Chapter IV will report the testing of the hypotheses and findings of the study in tabular and narrative form. Chapter V will summarize the findings, implications, and recommendations for further study.

CHAPTER II

REVIEW OF THE LITERATURE

Since the beginning of the junior college movement in the early 1900's, the transfer student has been a subject of special interest to junior colleges and those senior colleges with whom the junior college has had transfer arrangements. Since 1960, this interest has broadened within the field of higher education to include the studies of transfer students from all types of colleges. It is with this broader interest that this study is particularly concerned with special reference to the type and size of the college from which the transfer student came and their performance at their new college. The review of the literature has been divided into two main parts, the first dealing with the national transfer picture and the second with regional and statewide studies. The review concludes with an examination of recent studies done concerning transfer students in Oklahoma.

National Studies of Transfer Students

The student applying for admission to a college with a petition for advanced standing credit from another college became much more common during the decade of the 1960's than in the decade of the 1950's or earlier. However, they were not in the majority. Applications from freshmen still

outnumbered transfer applications by 5 to 1 according to the Willingham-Findikyan study; but the number of transfer applications increased both in absolute and proportional terms.¹⁴ Some writers have gone so far as to predict the transfer student will comprise one-third of the college population in the 1970's. According to the studies reviewed, this mobile student has been admitted to junior colleges, senior colleges, and universities without too much difficulty.

The most comprehensive studies of the transfer student and his performance have probably come from the Center for the Study of Higher Education at the University of California at Berkeley. The chairman of that center during the 1950's, T. E. McConnell, wrote a general publication entitled A General Pattern for American Public Education.¹⁵ In this publication, McConnell discussed in the chapter on "Distinctness, Differentiation, or Duplication" the success of the junior college transfer student. He quoted from studies done at the Berkeley campus of the University of California and studies done at the Los Angeles campus of the same university which arrived at different conclusions from their studies. In brief the transfer group at Berkeley performed essentially as well as the native students enrolled continuously at Berkeley since their freshman year; at the Los Angeles campus, the transfer students did not perform as well as the native students. Yet considering both studies together, McConnell believed that the transfer programs were operating successfully. He also discussed the California

¹⁴ Willingham and Findikyan, Op. Cit., p. 13.

¹⁵ T. E. McConnell, A General Pattern for American Public Education (New York: McGraw-Hill, 1962), p. 115.

Master Plan for Higher Education in the same review, indicating that the plan encouraged interchange between the junior colleges and the senior colleges and universities.

Few writers have been so extensive and productive in connection with studies of transfer students as Leland L. Medsker. In these studies, he frequently collaborated with Dorothy Knoell. Among his better known studies have been Factors Affecting Performance of Transfer Students from Two to Four Year Colleges, The Junior College: Progress and Prospect, and From Junior to Senior College: A National Study of the Transfer Student. The purpose of this latter study, From Junior to Senior College, was to obtain facts, figures, and opinions leading to a fairly comprehensive evaluation of the junior college transfer function as it was being performed in the early 1960's.¹⁶ The sample or core group, as the authors called their sample, consisted of 7,243 junior college students who entered four year institutions in the fall of 1960, primarily as full time students with junior standing. Four thousand twenty of these students graduated in 1962. The study originally considered comparing an entering group of transfer students such as 1960 juniors with an equivalent number of native students, but later shifted to a study of students who graduated regardless of the date of transfer. The advantage of the study was that no artificial time limit was set for graduation; the disadvantage was the lack of access to information about attrition especially among native students. The major findings of the study merit summarizing.¹⁷

¹⁶D. Knoell and L. L. Medsker, From Junior to Senior College, Washington, D. C., American Council on Education, 1965, p. 18-23.

¹⁷Op. Cit., p. 18-22.

1. Student Characteristics: There was not much variability in personal characteristics between transfer students and native students. Both groups were mostly white, protestant, of native born parentage, and under 21 years of age. There were more men than women. High school academic records of the men and the women were found to favor the women.

2. Academic Performance: Sixty-two per cent of the junior college students were granted their baccalaureate degrees within three years after transfer; nine per cent were still enrolled. Percentage of graduates among the native student group was not available.
 In comparison by broad fields of study, the transfer students had about the same probabilities of success as the native students. Engineering students took longer but attrition in engineering was no greater than in other fields.
 In the comparison of grade point averages, the native students participating in the study were found to improve more steadily in upper division grades and averages than their classmates who were transfer students. Differences between means of the cumulative grade point averages of the native students compared to the transfer students were significant at the .01 level.

3. Attrition After Transfer: At the beginning of the fourth year, twenty-nine per cent of the transfer students were no longer enrolled and had not graduated. The attrition rates for native students were not available. Economic reasons were given as main reason for attrition; only one-third were dismissed (among the transfer students who withdrew) because of poor grades.

4. Institutional Differences and State Differences: Vast differences were found in the success of the transfer students in the 43 participating colleges and universities to which the students transferred. Differences were also noted between the ten states in which the study was conducted. No clear pattern seemed to emerge as to the reason for these differences.

5. Policies and Practices and Articulation: Most students with at least a C average in their junior college program had a fairly wide range of four year

institutions to which they could transfer in 1960 and in 1964. The area in which the most significant changes occurred during the course of the study was that of articulation and coordination among the two year and four year colleges. It improved.

These findings of the Knoell and Medsker study gave a preview of some of the trends that might be expected in the current study of transfer students at the University of Oklahoma.

Addressing themselves to a wider range of transfers and non-transfer students than previously mentioned studies which dealt solely with junior college transfer students, a group of sociologists at the University of Washington at Seattle produced a study entitled Migration of College and University Students in the United States.¹⁸ The data for this study were obtained in 1963 and published in 1968. It should be noted that they included both freshmen and transfer students in their study without differentiating between the two. They did differentiate between the migration of undergraduate and graduate students. Their study also contained numerous flow charts tracing the main streams of migration - thus giving a visual picture of the transfer patterns. The purpose of their study was to identify and analyze migration patterns and secondly analyze social, economic, demographic and educational factors related to student migration in order to predict amount and direction of interstate college migration. Factor and regression analyses were employed to arrive at conclusions.

¹⁸Gossman and others, Migration of College and University Students in the United States (Seattle: University of Washington Press, 1966), pp. 31-64.

They found that each region had out-migrations and in-migrations. The total net flow charts showed a main source of out-migration consistently was in the Middle Atlantic states with a net outflow in 1963 of 20,000 students to the Northeast (New England), 33,000 to the Great Lakes, 16,000 to the Southeast, 7,000 to the Great Plains and beyond. The Great Lakes area in turn distributed a net out-migration of 13,700 students to the Southeast and Southwest. The Middle Atlantic states and New England were the only two geographic regions with a net loss. The above figures include all students -- graduate and undergraduate.

In terms of undergraduate migration flows -- the concern of the particular study of Oklahoma transfer students being undertaken -- the Middle Atlantic states were the main source of out-migration: 2,400 to the Northeast, 13,000 to the Great Lakes area, 12,000 to the Southeast, 2,900 to the Great Plains, and 3,200 to the Southwest. As with the total group of students, graduate and undergraduate, the Great Lakes region was the second largest source of undergraduate out-migration sending 12,000 students to the plains area and the Southwest.

The authors saw these concentrations of out-migration from the Middle Atlantic states continuing throughout the 1960's. They also saw a trend for net out-migration to go primarily to public institutions. Their factor analysis showed the highest positive loadings on such variables as relative stress on public education facilities, student aid, tuition, and fees in factors influencing out-migration.

In 1967, an Educational Research Information Center (ERIC) for junior colleges was set up at the University of California at Los Angeles.

Among the 46 studies listed at the end of 1968, two were particularly related to the subject of this study. The first of these studies was done from the vantage point of a junior college; the second a survey of twenty-four studies concerning transfer students recorded at the center.

Hall, at the College of the Sequoias at Visalia, California, explored the problem "Can a student of average academic aptitude aspire to a degree in a California state supported college?"¹⁹ He did this by securing information from the records of transfer students at the various senior colleges to which they transferred going back eleven years to 1953 and 1954. He found (1) less than one-third of the students received the AA degree or transferred, (2) among those who transferred one-half of them received their baccalaureate, and (3) perseverance appeared to be more important than grades.

Rouechek at the Center in Los Angeles surveyed twenty-four studies recorded at the clearing house dealing with success achieved by transfer students and found they led to the following conclusions:²⁰

- (1) Students typically experience a grade point drop during their first semester at the senior college.
- (2) In most cases recovery in marks is noted in later semesters.
- (3) The grade point average continues to improve with each semester.

¹⁹Lincoln H. Hall, "Performance of Average Students in a Junior College and in Four Year Institutions" (Sacramento: California State Department of Education Reports, 1967), p. 1

²⁰J. Rouechek, "Follow-Ups of the Junior College Transfer Student" (Los Angeles: Educational Research Information Center for Junior Colleges Reports, 1967), ED. 013-069.

- (4) Their grade point averages are lower than the native students.
- (5) The transfer student is less likely to graduate (than the native students).
- (6) The transfer student takes longer to graduate.

In regard to methodology, he found that for the most part the studies were based on GPA compilations and did not lend insight into reasons for failure or success; secondly that they did not draw inferences or recommendations for modifying the junior college offerings in the light of the findings.

The most recently published national study of the transfer was the study entitled Patterns of Admission for Transfer Students published by the College Entrance Examination Board and summarized in the summer, 1969 edition of College Board Review.²¹ In this study, Warren Willingham and N. Findikyan drew upon data obtained from 146 institutions, a representative sample of colleges and universities both public and private in all geographic regions of the country. The reason for the study was stated by the authors, "We were concerned with what type of students are transferring from where to where nationally and what seems to determine whether they are admitted."²² The procedure entailed sending out a questionnaire to representative institutions and asking them to fill this out and provide transcripts of a representative group of the students at the respective college.

These were their major findings: (1) the vast majority of applications and enrolled students went to public institutions, (2) the majority

²¹Willingham and Findikyan, Op. Cit., pp. 1-18.

²²Ibid., p. 2.

came from public colleges and were state residents: about one-third came from another state, (3) most transfers came from other four year colleges but the proportion from junior colleges is increasing to a substantial forty-three per cent (as of 1969), (4) by regions the Northeast has the smallest proportion of new students who are transfers (12 per cent) while the West Coast has the most (32 per cent), the national average is 22 per cent, (5) the interstate migrant is over represented at private colleges and under represented at the less affluent public colleges, (6) potential barriers to admission exist against transfer students including loss of credits, proportionately less financial aid than freshmen and lack of space. The study closed with statements and tables designed to show that newly enrolled transfer students increased over 50 per cent from 1961 to 1966 while new freshmen increased 25 per cent at these same institutions. They predicted that the ratio in the 1970's would be 1 to 3 or one-third of the typical large state universities' enrollment would be transfer students. The study did not attempt to measure or evaluate the performance of transfer students with non-transfer students nor measure the retention rate.

In its comprehensiveness and its prediction of increases in transfer students, the Willingham-Findikyan study was reminiscent of one done in 1962 based upon data collected in the 1950's by Darley.²³ He made a series of comparative studies of transfer students using a variety of measures seeking to measure performance for predictive purposes. His study implied there would be an increase which did develop in transfer students.

²³John Darley, Promise and Performance (Berkeley: Center for the Study of Higher Education, 1962), Appendix.

Although considering other measures, he uniformly used graduation and withdrawal rates as predictors - in contrast to the more common use of the cumulative grade point average. Although this review of the literature concerning national studies on the topic of transfer students has relied primarily on published monographs and books rather than articles, it would be appropriate to mention briefly two pertinent articles in the periodicals since the Medsker and Knoell 1965 study and exclusive of the Willingham study.

Kuhlman in the Junior College Journal of March, 1967, deplored the attrition of junior college students after transferring to a four year college.²⁴ He advanced the belief that the burden of the dichotomous nature of the junior college falls upon the transfer student. If he is to compete on the 3rd year college level, he should have the first two years of college equal to the four year college student's first two years. He particularly singled out the social sciences which he thought needed to be increased on the junior college level in terms of scope, size, purpose, and level of difficulty. Such steps he believed would reduce this attrition. Specific attrition figures were not given.

W. T. Perel and Vairo did a study on the community college and the college parallel program as reported in the Journal of Higher Education in 1969.²⁵ In this study they singled out mathematics and languages as subjects in which transfer students had difficulty. They found a wide variance between standards at the university and those at the junior college in the

²⁴J. Kuhlman, "Attrition of Junior College Students," Junior College Journal, Vol. 37m (march, 1967), p. 68.

²⁵W. T. Perel and Vairo, "Community College and College Parallel Programs," Journal of Higher Education (January, 1969), p. 47.

Midwest, South, and East. Their recommendation was for much more articulation between the two types of institutions wherever the subjects involved a vertical sequential structure.

In summary, starting with the earlier studies of transfer students which began with the advent of the junior college movement in the early 1900's and culminating in the studies of the 1960's, the national picture is one of a gradual increase in the number of transfer students up until 1960 and a rapid increase thereafter both in absolute and proportional terms. These national studies have been of particular value in pointing out the changes in transfer patterns quantitatively. In terms of evaluation of performance of transfer students compared to non-transfer students, a substantial body of additional relevant information was found in regional and statewide studies.

Regional Studies Of Transfer Students

Comments as to regional transfer patterns have been made in most of the national transfer student studies such as the tendency of students to transfer from colleges in the middle Atlantic states to state colleges and universities in the Midwest. However for studies seeking to explore transfer patterns and the performance of students following those transfer patterns within a limited geographical area, the best source appeared to be University Microfilms of Ann Arbor, Michigan. Accordingly a search was requested of this organization for all studies dealing with Transfer Students, University and College, and Performance Achievement Academic with qualifying conditions, years 1960 through 1969. The listings as prepared revealed a total of 25 studies concerning transfer students and their

performance had been done since 1960. Eleven of these studies had been done between 1967 and 1969. Nineteen of these 25 studies dealt solely with junior college students. Since the purpose of this study encompassed a broader range of transfers, the emphasis was placed upon those studies dealing with both junior college and senior college transfer students on the undergraduate level. By reviewing dissertation abstracts it was possible to identify those studies which appeared directly related to the one being undertaken. A summary of these follows.

Russell did an analysis of the academic performance of transfer students and native students and their major fields in the college of arts and sciences at the University of Georgia in 1963.²⁶ He found no particular statistically significant differences between the two groups of students there though the junior college transfer students experienced more of a drop in their grade point average than the four year college transfers.

Jones did a similar analysis of native and transfer students at the same university, the University of Georgia, in 1966.²⁷ He however used a more elaborate design and sought to establish relationships between the students in his sample and such variables as grades in senior year at high school, sex, scholastic aptitude test scores. His major findings of statistical significance were that the natives out-performed the transfer

²⁶James W. Russell, "An Analysis of the Academic Performance of Transfer and Native Students and their Major Fields in the College of Arts and Sciences at the University of Georgia," Unpublished doctoral dissertation, University of Georgia, 1963.

²⁷Franklin M. Jones, "A Controlled Comparison of the Academic Performance of Native and Transfer Students at the University of Georgia," Unpublished doctoral dissertation, University of Georgia, 1966.

students in terms of predictor variables and in actual performance in college and that the female students out-performed the male students.

Young made a study of the influence of certain factors related to the academic performance to transfer students admitted to Pennsylvania State University in 1962.²⁸ He was particularly interested in changes in academic performance of the advanced standing (transfer) student subsequent to admission to the University. He sought to investigate the importance of sex, age, type of former institution, fraternity-sorority status, residence, part time work, and marital status as these variables related to the cumulative grade point average of the student. His sample included 453 students. The criteria of "academic adjustment" was used to show the change in grade point average of the student after transfer. The t tests of significance were used along with analysis of variance for the comparisons between the larger groups. He found statistically significant differences in mean grade point averages according to sex, and age, in favor of the younger students. The type of former institution was significant only in the case of the junior college students in favor of the native students. He did not find fraternity-sorority status, residence or part time work or marital status to be significant. The comparison of the transfer students as a whole to the native students was an incidental comparison since he was concentrating on different types of transfer student comparisons. He concluded that the natives out-performed the transfer.

²⁸William Young, "Influence of Certain Factors Related to Academic Performance of Transfer Students Admitted to the Pennsylvania State University," Unpublished doctoral dissertation, Pennsylvania State University, 1962.

In some instances, researchers although emphasizing junior college transfers as compared to non-transfer students made an effort to routinely include comparisons between junior college students and transfer students from four year institutions. Mann whose study will be discussed in connection with studies done in the state of Oklahoma in the next section of the chapter made this effort in several of his comparisons; however, this was not uniformly done and the type of four year institution was rarely specified.²⁹ One such study that did seek to go beyond this limitation should be mentioned, namely the one by Johnson at the University of Missouri completed in 1965.³⁰ He built into the purpose of his study the comparison of the scholastic achievement of students who transferred from four year colleges to the University of Missouri with the scholastic achievement of students who completed all their work at the University as well as the junior college students comparisons. Using samples of 285 junior college students and 297 four year college students, and 1014 resident students, he found no difference in cumulative grade averages between the junior college and residence groups. Using a t test of differences between the means of the four year college transfers and the native group, he found a difference in favor of the four year transfer students over the native students. This was the only significant difference he found in that comparison.

²⁹Mitchell Mann, "The Academic Achievement of Transfer Students at the University of Oklahoma," Unpublished doctoral dissertation, University of Oklahoma, 1963.

³⁰Charles Eugene Johnson, "A Study of the Scholastic Achievement of Junior College Transfer Students at the University of Missouri," Unpublished doctoral dissertation, University of Missouri, 1965.

Hanson made a study of the Academic Performance of Undergraduate Transfer Students at the University of Oregon in 1968.³¹ The purpose of his study was to compare the academic performance of undergraduate transfer students with native students at the University of Oregon. His sample included 180 sophomore transfer students and 218 native students as of the Fall of 1962. The comparisons were for differences between total groups and by type of previous college, first year GPA, and by sex. He found, as evidenced by statistically significant differences, transfer students did not perform as well during their first year or any other year as the native students; that there was no difference between two year college and four year college transfers. He recommended revisions be considered in transfer policies, added research at each institution receiving transfers, and a special orientation program for transfer students.

Witter made a study of the Academic Performance of Transfer Students at New Mexico State University in 1969.³² He sought to compare transfers from the following sources with native students: four year college transfers; two year college transfers; and branch transfers. His sample was limited to students completing 48 semester hours at another college who graduated in 1966 or 1967 compared to an equivalent number of students who completed all their requirements at NMSU (New Mexico State University).

³¹John E. Hanson, "A Study of the Academic Performance of Undergraduate Transfer Students at the University of Oregon," Unpublished doctoral dissertation, University of Oregon, 1968.

³²William Curtis Witter, "Academic Performance of Transfer Students at New Mexico State University," Unpublished doctoral dissertation, New Mexico State University, 1969.

Specific comparisons were made according to type of original college and type of college attended at MSU. Data were analyzed by t test for differences between means and analysis of variance. He found (1) native students and 4 year transfers scored significantly higher in mean GPA's than junior college and branch transfers, (2) junior college transfers suffered from "transfer shock", (3) the 4 year college transfers and native students scored significantly higher in colleges of Arts and Sciences and College of Education.

In summarizing these regional studies made in the states of Pennsylvania, Georgia, Missouri, New Mexico, and Oregon, it appeared that they did not all come to the same conclusions although their purposes, design, and methodologies were quite similar. Jones, Young, and Witter found the native students did better than the transfer students while Johnson found no differences of statistical significance between his groups. Whether these variances in findings were due to regional differences or differences in the sizes of the samples studied or inherent differences between the particular groups under study was not clear. Hence these findings at large universities serving statewide and regional constituencies appeared less uniform than the conclusions and summaries in the national studies.

Two recent articles in the periodicals should be mentioned before moving to a review of studies done during the 1960's in the state of Oklahoma. These articles dealt primarily with transfer students and their problems in attrition, a point the national studies also emphasized; but giving some positive viewpoints in assessing the loss.

David Irving in his article found that attrition figures on transfer students may not take into account the fact that the same students may graduate at another college.³³ He did an eight-year follow-up study of students at the University of Georgia using a sample of 1,037 students. He found that within that time span that 46 per cent of the male students in his sample graduated and 42 per cent of the female students graduated. However, by adding transfer students to the male group that 51 per cent of the sample group graduated and the difference between the lower percentages and the 51 per cent were transfer students who graduated elsewhere.

Cope in the North Central Association Quarterly, Fall, 1969, reported on a study of drop-outs among transfer students at the University of Michigan.³⁴ He found that they could be classified in order of importance as: (1) academic drop-outs, (2) social drop-outs -- those who found no groups or friends at the large university, (3) social academic drop-outs who combined the first two classifications -- unable to maintain the standards and no friends, and (4) those whose religious ideas were challenged. He found they were not all lost to higher education as many went on to other colleges more to their liking during a ten-year span of time.

³³David Irving, "Graduation and Withdrawal: An Eight Year Follow-Up," College and University, 41 (Fall, 1965), pp. 32-37.

³⁴R. G. Cope, "Types of High Ability Drop-Outs," North Central Association Quarterly, XLIV (Fall, 1969), pp. 253-257.

Studies of Transfer Students Within Oklahoma

The most comprehensive study would appear to be that by Coffelt and Hobbs - the In and Out of College study.³⁵ This was a longitudinal study of 13,000 freshmen entering Oklahoma colleges in the Fall of 1962. The purpose was to study and identify significant characteristics associated with admission and retention. Chapter IV of the study includes a specific discussion of the students who transferred. They found that about 1 out of 6 freshmen who terminated during the first two semesters transferred to another Oklahoma college. A record was not kept of those who transferred out of state. Among the 902 such transfers, the state four year colleges were the net gainers while the state universities, private, and two year colleges were the net losers. Oklahoma State University exchanged the greatest number with other Oklahoma colleges with a net loss of 10 students. Central State College was the greatest gainer with a net gain of 97 students. Among private institutions the University of Tulsa had the greatest drawing power with a net gain of 29. Generally in terms of median grade point average, the universities and four year colleges upgraded their classes by transfers while the two year colleges absorbed some of the less able students.

The Mann study might be considered to be a contemporary study to the one done by Coffelt and Hobbs since it was completed in 1963.³⁵ However,

³⁵Coffelt and Hobbs, Op. Cit.

³⁶Mann, Op. Cit.

his sample group was taken from students who entered the University of Oklahoma with junior classifications during the fall semester of 1958-59 and 1959-60. Its title was The Academic Achievement of Transfer Students at the University of Oklahoma. The problem was to compare the academic success and persistency of junior college transfer students with transfers from Oklahoma four year colleges and with native students of the University of Oklahoma. In so doing he used three sample groups of 96 students each from the junior college group, four year college group, and the university natives. His hypotheses were that there would be no difference between students with respect to grade point average, source of student (original college), and college major. Using analysis of variance of mean grade point averages, he found significance in persistency, source of institution and college major. However, in his further analysis by chi square, he found little difference existed between the transfer students of junior colleges and the transfer students of the four year colleges as measured by grade point averages. His only other significant finding was that the transfer student did not do as well in the College of Engineering which was one of his four fields of study as in the other three fields.³⁷

The Hoemann study was completed in 1967 at Oklahoma State University.³⁸ This was a study comparing the academic performance and persistency

³⁷Mann, Op. Cit., p. 38.

³⁸Victor Harold Hoemann, "A Comparative Study of the Academic Achievement and Persistence to Graduate of Junior College Transfer Student and Native Students in the College of Arts and Sciences, Oklahoma State University," Unpublished doctoral dissertation, Oklahoma State University, 1967.

of junior college transfers in the College of Arts and Sciences at Oklahoma State University with Arts and Science majors who began their freshman year at the University. It further proposed to explore such factors as sex, choice of major, and occupational status of the student's father. Areas of study were defined as Biological Sciences, Language and Fine Arts, Physical Sciences, and Social Sciences. The population from which his sample was drawn was juniors in 1963 or 1964 with out-of-state transfers eliminated; only those with 60 or more hours transfer credit were retained; those with fathers in military service were eliminated; so that his total sample was reduced to 106 students. These were then matched with 106 native students. American College Testing (ACT) score matching was added for further control. The t test was used for testing between groups with the exception of type of college where analysis of variance was used. Hoemann found relatively few significant differences between his various matched groups which led him to the following conclusions:

Junior college transfer students cumulative GPA drops the first semester after transferring; but male transfer students had a significantly higher GPA at the end of eight semesters.

Both transfer students and native students appeared to have the same chance of success in the various majors in terms of grade point averages.

Comparing the students according to the student's father's occupation showed few significant differences.

There was no significant difference between the number who persisted and graduated from the four junior colleges in the comparison. Hoemann implied that students may attend any of the four junior colleges - Cameron, Eastern A & M, Northeastern A & M, and Northern Oklahoma - and may

expect to do equally well in academic performance and persistency to graduate after transferring to Oklahoma State University.³⁹

Zimmerman did a study of the academic achievements and persistence of Murray State Agricultural College (a two year college) students transferring to four year colleges and universities.⁴⁰ This was a follow-up study of 1223 students who completed from 30 to 60 hours in residence at Murray State from September 1946 to May 1958. The purpose was to provide evidence of the academic success and persistence of the Murray State students who transferred to four year colleges. Scholarship as reflected by GPA and persistency as measured by receiving one or more baccalaureate degrees were the criteria of measurement.

Zimmerman found the overall academic record for the 677 students who transferred after earning 60 hours at Murray was a GPA of 2.5; for those with 30 hours credit their GPA was 2.4 and for those with less than these hours it was 2.3. Home Economics majors and agricultural majors were most persistent. Although this study was completed recently (1967), its value would be primarily historical and less representative of the present day status of transfer students and their growth in numbers than the other studies discussed.

³⁹Hoemann, Op. Cit., Ch. V.

⁴⁰Beulah A. Zimmerman, "A Study of Academic Achievements and Persistence of Murray State Agricultural College Students Transferring to Four Year Colleges and Universities," Unpublished doctoral dissertation, Oklahoma State University, 1967.

Summary of Related Studies in the Literature

While acknowledging the presence of earlier studies, the review of the literature concentrated upon studies done during the decade of the 1960's. National, regional, and studies conducted within the confines of the state of Oklahoma were reviewed in that order. The findings nationwide could be summarized as follows: (1) the rate of increase in transfer students has accelerated during the 1960's, (2) there was evidence that this increase at an unspecified rate will continue during the 1970's, (3) the net out-migration of transfer students will probably continue to be from the Eastern seaboard especially the Middle Atlantic States to the West including the Southwest, (4) public institutions especially the large state tax supported universities will be most affected, (5) attrition has been a persistent problem among transfer students.

The findings in regional studies have been less consistent than those conducted on a national level. Generally the regional studies have compared the performance of junior college students with the performance of native students as measured by cumulative grade point averages. They have found little difference between the two groups in terms of statistical significance. Studies conducted within the confines of the state of Oklahoma have found few significant differences in performance between transfer students and non-transfer students regardless of the source of transfer; in attrition only in the field of engineering was there a noticeable difference between the transfer students and the native students in favor of the native students.

CHAPTER III

METHODOLOGY

The purpose of this chapter is to describe the methodology used in carrying out the study. This began with the defining of the problem, the decision to use a comparative study as a means of examining the problem, the determining of the major elements of the problem, the development of hypotheses, and the plans for testing of the hypotheses. The sources of the data and the collection procedures used are discussed including the development of the student personal data form as a collection instrument. The chapter closes with a discussion of the population and the sampling method used.

Study Design and Procedures

The study began with defining the problem as a concern for the academic performance of transfer students at the University of Oklahoma. As presented in more precise terms in Chapter I, the problem was to determine what differences exist between transfer students and their academic performance and non-transfer students and their academic performance as measured by cumulative grade point averages at the University of Oklahoma.

The problem was examined by means of a comparative study; the academic performance of a group of transfer students was compared with the

academic performance of a group of randomly selected non-transfer students. These categories of students, broken down into various sub-groupings, therefore comprised the independent variable for the study.

The major elements of the problem selected for comparison were based upon comparisons found to be significant in previous studies of transfer students as reported in the review of the literature in Chapter II. They included comparisons of differences between the transfer student group and the non-transfer student group according to location of the college of transfer, legal residency, type of original college, field of study, and sex.

The dependent variable selected for measuring differences between the two groups of students was the cumulative grade point average. This was chosen because it enjoys wide usage both nationally and in the Southwest region among colleges as a factor normally considered in evaluating transfer applications, and the information necessary to compute individual grade point averages was available in the registrar's permanent record cards. Kerlinger advocates the use of alternate dependent variables when possible in ex post facto studies as an additional control measure.⁴¹ The alternate dependent variable chosen for this study was the graduation/withdrawal rate. This measure was chosen because in addition to serving as a measure of performance, it permitted an evaluation of attrition - the gradual withdrawal of students before completing degree requirements.

Having determined the elements of the problem and designated the variables, the next step in the study design was to convert the elements of the problem into null hypotheses so they could be tested by probability

⁴¹Kerlinger, Op. Cit., pp. 368,373.

based statistical models. The hypotheses were developed in the order in which the elements of the problem were presented in Chapter I:

HO₁ There is no statistically significant difference between the cumulative grade point averages of the total transfer student sample and the total non-transfer student sample.

HO₂ There is no statistically significant difference between the cumulative grade point averages of the out-of-state transfer student sample and the in-state transfer student sample.

HO₃ There is no statistically significant difference between the cumulative grade point averages of the resident non-transfer student sample and the non-resident non-transfer student sample according to the legal definition of residency.

HO₄ There is no statistically significant difference between the cumulative grade point averages of the transfer student sample and the non-transfer student sample according to type of original college.

HO₅ There is no statistically significant difference between the cumulative grade point averages of the transfer student sample and the non-transfer student sample according to regional location of original college.

HO₆ There is no statistically significant difference between the cumulative grade point averages of the transfer student sample and the non-transfer student sample according to major field classifications of humanities, social sciences, natural sciences, and applied sciences.

HO₇ There is no statistically significant difference between the cumulative grade point averages of the male transfer student sample and the female transfer student sample according to major field classification.

HO₈ There is no statistically significant difference between the graduation/withdrawal rate of the total transfer student sample and the total non-transfer student sample.

HO₉ There is no statistically significant difference between the graduation/withdrawal rate of the out-of-state transfer student sample and the in-state transfer student sample.

HO₁₀ There is no statistically significant difference between the graduation/withdrawal rate of the resident non-transfer

student sample and the non-resident non-transfer student sample according to the legal definition of residency.

HO₁₁ There is no statistically significant difference between the graduation/withdrawal rate of the transfer student sample and the non-transfer student sample according to type of original college.

HO₁₂ There is no statistically significant difference between the graduation/withdrawal rate of the transfer student sample and the non-transfer student sample according to regional location of original college.

HO₁₃ There is no statistically significant difference between the graduation/withdrawal rate of the transfer student sample and the non-transfer student sample according to major field classifications of the humanities, social sciences, natural sciences, and applied sciences.

HO₁₄ There is no statistically significant difference between the graduation/withdrawal rate of the male transfer student sample and the female transfer student sample according to major field classifications.

Statistical Tests

The statistical model for testing these hypotheses as measured by the cumulative grade point average was the t test of differences between sample means. This test was chosen because the grade point average being normally distributed, homogeneous in variance, continuous and having equal intervals of measure met the assumptions underlying the application of a parametric statistical probability model.⁴² The t test is such a model, where a pooled variance feature is permitted for comparisons between groups with unequal numbers.

The statistical model chosen for testing the seven hypotheses of differences as measured by the graduation/withdrawal rate was chi square.

⁴²Kerlinger, Op. Cit., pp. 258-259.

The graduation/withdrawal rate, being a nominal measure, does not meet the assumptions underlying the use of a parametric statistic. Chi square can be used with nominal measure and is particularly suitable for problems involving discrete variables.⁴³ A reproduction of the statistical design can be found as Appendix C.

Sources of Data and Collection Procedures Used

The data were obtained from three basic sources:

- (1) The University of Oklahoma Student Directory, 1966-67
- (2) The University of Oklahoma Permanent Record Cards (Transcript of Grades)
- (3) The University of Oklahoma Admission File Folders (original application and related papers - also called correspondence file).

The Student Directory was obtained from the University Library Historical collection. The other two source documents were maintained in the Office of the Dean of Admissions and Registrar. The permanent record cards served as the source of data necessary to the testing of twelve of the fourteen null hypotheses. In connection with the two null hypotheses concerned with the legal residence of the students, two hundred randomly selected file folders were sampled, among the six hundred such folders in the native sample group, in order to obtain thirty or more non-resident native students. A total of forty-five such names were obtained which were then matched against an equal number of resident native students. The permanent record cards gave balance of data needed.

⁴³George H. Weinberg and John A. Shumaker, Statistics An Intuitive Approach (Belmont, California: Wadsworth Publishers, 1962), p. 193.

Initially, it was anticipated that only inactive record cards would be used; because a substantial number of students in the sample were still enrolled as of June, 1969, both active and inactive records were used in the final compilation of names for the population. These were then matched against those in the Student Directory.

The Student Personal Data Sheet was designed as the primary collection instrument. The instrument permitted uniform checking of all permanent record cards and served as a work sheet for computing individual grade point averages. It also proved useful as a source document for key punch cards which were used in tabulating, computing means of the cumulative mean grade point averages, and statistical variances. (See Appendix C for reproduction of Personal Data Sheet.)

Population and Sampling Method

The Student Directory published by the University Student Senate listed 2,503 students classified as Junior in its 1966-67 edition. The source for the directory listing was a computer printed list of registrations as of September, 1966, furnished to the Senate by the Office of Admissions and Records.

Students who had already received a degree in another field, such as law students, were eliminated from the population as the study sought original undergraduate comparisons. Those with three to eleven hours of transfer credit did not meet the limitations of the study and were eliminated, as their status regarding classification remained undetermined at the time the study was completed. Also eliminated were 86 students who either enrolled and did not attend or who changed their name after enrolling.

A population of 1,878 students remained. A rectangular graph of the population can be found on page 42.

The sampling procedure centered around the application of a list of random numbers to each student's personal data sheets. After eliminating the personal data sheets of students who did not meet study limitations, the personal data sheets were divided into two groups: the transfer student group and the non-transfer student group, in alphabetical order. The personal data sheets were then numbered serially within each group with a total of 604 transfer students and a total of 1,140 non-transfer students remaining.

At the same time the student's personal data sheets were being hand sorted, a computer generated list of random numbers was being prepared by the computer center.⁴⁴ The random deviates for the sample were taken from a normal distribution beginning with interger number 2 and expanding to number 995. Out of the 604 personal data sheets in the transfer group, four were withdrawn under the following procedure: four random numbers were taken from the list of random numbers and then personal data sheets bearing these same numbers were withdrawn from the pile of data sheets, leaving a sample group of 600 transfer students. Out of the 1,140 sheets in the non-transfer group, 600 were selected using the following procedure: 600 random numbers were taken from the list and the data sheets bearing those same numbers were withdrawn from the pile of data sheets, thus constituting a sample group of 600 non-transfer students.

⁴⁴Computer Sub-Routine RANDU, Scientific Sub-Routine Package 360-A-CM- 03 X, Version 3, International Business Machines Co., 1967.

One further sampling procedure was carried out when out of the non-transfer group, 100 student personal data sheets were withdrawn using the identical procedure described above in order to study certain demographic characteristics with a smaller sub-sample group in more depth than the original data sheets permitted. These actions completed the sampling procedures used. Technical support for the computations was obtained from the University computing center through the use of key punch cards prepared from the personal data sheets.

Population⁴⁵

Sample A	Sample B	Sample C
(Transfer Group)	(Native Group)	(Enrolled Group)
N 604	N 1140	N 13

← 1878 →

Third Year Undergraduates as of the Fall Semester, 1966 at
the University of Oklahoma Who Met Limitations of Study

⁴⁵Source of Names: Student Directory 1966-67, University of Oklahoma and University of Oklahoma Permanent Record Cards, Office of Dean of Admissions and Registrar.

Summary

In summary, the study began with defining the problem as a concern for the academic performance of transfer students at the University of Oklahoma. The problem was examined by a comparative study in which the major elements of the problem were identified, the students classifications were designated as the independent variable, and the cumulative grade point averages as the primary dependent variable. Data were found to be available for the study in the Office of the Dean of Admissions and Registrar. Juniors enrolled as of Fall, 1966, at the University of Oklahoma were sampled by a random sampling method. Null hypotheses were developed as a result of examining the parts of the problem. The testing of these hypotheses was accomplished through the use of a matrix design. The specific test used was the t test of differences between sample means for testing differences between the various sample groups of students as measured by the cumulative grade point averages. The testing of the hypotheses through the use of an alternate dependent variable, namely the graduation/withdrawal rate, was accomplished through the application of the chi square statistical model. The results of the application of these tests to the data leading to acceptance or rejection of the various hypotheses is presented in Chapter IV which follows. The .05 level of difference was the level set at which the null hypotheses could be rejected. Differences at the .01 or .001 level, if any, would be so noted.

CHAPTER IV

FINDINGS OF THE STUDY

The purpose of this chapter is to present the findings of the study with particular reference to the testing of the hypotheses developed in Chapter III. It is divided into three sections. The first is concerned with the demographic data comparison leading to a profile of the student whose academic performance was measured; the second with the testing of the hypotheses through an examination of differences between the mean of the cumulative grade point average of the transfer student sample group and the non-transfer student sample group; and the third with the testing of the hypotheses through an examination of the differences between the graduation/withdrawal rates of the transfer student sample group and the non-transfer student sample group.

A Demographic Picture of the Student Population

Despite the size of the University of Oklahoma with over 12,000 undergraduate students enrolled in the fall of 1966 in a diversity of course offerings, the junior class of 1966-67 appeared to be a rather homogeneous group. Mueller pointed out the similarity of interests, living routines, and age of college youth.⁴⁶ Her generalizations would appear to apply to

⁴⁶Kate Mueller, Student Personnel Work in Higher Education. (Boston: Houghton Mifflin Company, 1962), p. 97.

students at the University of Oklahoma as much as they applied to students at the University of Indiana where she did much of her research. The University of Oklahoma has an extensive dormitory system and the age range of the junior class was essentially the same as the limited age range found at the University of Indiana -- 20-23 years of age.

The majority of the students entered for the first time either in the fall of 1966 (the transfer group) or the fall of 1964 (the non-transfer group). Of the 1200 students, 1080 were between 19 and 24 years of age. Two out of three were males. Six out of ten attended and graduated from a high school in Oklahoma, rather evenly distributed between high schools in the large urban centers of Oklahoma City and Tulsa and graduates from high schools in smaller cities such as Altus, Lawton, or Norman. There were few from towns of less than 5,000 population. In the out-of-state group, students from high schools in the Dallas-Fort Worth area were frequently found as well as students from the Greater New York and Chicago areas. There were few students from the Mountain States or West Coast cities.

With but few exceptions, the transfer students had earned from 45 to 60 credit hours; some students had earned more, primarily those who had changed their majors several times. The transfer students' cumulative grade point average earned from fall of 1966 until graduation or withdrawal varied, but the majority were in the 2.00 to 3.00 range with an average grade point of 2.50 on a 4.00 point scale. In-state transfer students are required to have a cumulative grade point average of 1.6 on a 4.00 scale for admission, while out-of-state transfer students are required to have a cumulative grade

point average of 2.00 or higher.⁴⁷ The students were distributed among a wide range of courses with the women tending to concentrate in the humanities and the social sciences while the men outside of the applied sciences had no clear pattern of concentration by field. Most of the students graduated although a surprisingly large number, almost one-half of the transfer group, did not graduate as projected by the spring of 1968 but rather graduated by the spring of 1969. Differences by field and major changes in and out of such fields as pharmacy and engineering accounted for much of this delay. Some 134 students were still enrolled without having graduated or withdrawn at the time the study was terminated three years later at the end of spring 1969 semester.

While sharing many common characteristics, there were some demographic differences between the transfer and the non-transfer groups. These are presented in tabular form below.

TABLE 1

COMPARISON OF THE AGES OF THE TOTAL TRANSFER STUDENT GROUP AND THE AGES OF THE TOTAL NON-TRANSFER STUDENT GROUP.

Group	N	19-20	%	20-21	%	21-22	%	22-23	%	23-24	%	24/	%
												up	
Trans.	600	12	2	326	54	90	15	47	8	33	6	92	15
Non-trans.	600	34	6	427	71	82	14	14	2	15	2	28	5
Totals	1200	46	4	753	63	172	14	61	5	48	4	120	10

⁴⁷ "Information to Prospective Students", (Norman, Oklahoma, Office of Dean of Admissions and Registrar, University of Oklahoma, October, 1968).

As shown in Table 1, the transfer student group showed a greater variance in age compared to the non-transfer student group being somewhat older but having the same median age, 20, as the non-transfers.

TABLE 2

COMPARISON OF THE TRANSFER STUDENT GROUP AND
NON-TRANSFER STUDENT GROUP BY SEX

Group	N	Male	Per Cent	Female	Per Cent	Total Per Cent
Transfers	600	387	64.5	213	35.5	100
Non-transfers	600	375	62.5	225	37.5	100
Total	1200	762	63.5	438	36.5	100

The distribution of the two groups by sex was strikingly similar. As shown in Table 2, 64.5 per cent of the transfer students and 62.5 per cent of the non-transfer students were male; while 35.5 per cent and 37.5 per cent respectively of the two groups were female.

TABLE 3

COMPARISON OF TRANSFER STUDENT GROUP AND NON-TRANSFER
STUDENT GROUP BY TYPE OF ORIGINAL COLLEGE

Group	N	Uni- versity	Per Cent	State Coll.	Per Cent	Pri. Coll.	Per Cent	Jun. Coll.	Per Cent	Total Per Cent
Transfer	600	159	27	149	25	104	17	188	31	100

As indicated in Table 3, the students transferring to the University came from all four major classifications of institutions of higher education. The University of Oklahoma students selected as a control group were continuously in residence so no change was recorded for them as to type of college. Among the 600 transfer students, 159 came from universities; 149 from state colleges; 104 from private colleges; and 188 from junior colleges. The transfers came from prestige colleges such as California Institute of Technology to little known colleges such as Lindenwood College, Missouri. The state colleges were mostly from adjoining states or within the state of Oklahoma. Most of the private colleges were located in Missouri and Texas although students from all geographic areas in the United States were to be found, from Reed College in Oregon to Vassar College in New York. The junior colleges included both public and private.

TABLE 4
A COMPARISON OF TRANSFER STUDENT GROUP AND NON-TRANSFER
STUDENT GROUP BY FIELD OF STUDY

Group	N	Humanities		Soc. Sci.		Nat. Sci.		App. Sci.		Total
		No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent	Per Cent
Trans.	600	157	26	168	28	66	11	209	35	100
Non-trans.	600	145	24	202	33	75	12	178	31	100
Totals	1200	302	25	370	31	141	12	387	32	100

⁴⁸ See Appendix E for a full list of the colleges from which students transferred.

The distribution of the students by field of study as presented in Table 4 showed that both the transfer students and the non-transfer students were enrolled in a wide range of academic fields of study. Among the transfer students 209 out of 600 had major concentrations in the applied sciences. However there were representations in all major fields with men particularly choosing the applied sciences including the college of business while women tended to choose the humanities and social sciences. A minority of both groups chose the natural sciences.

In addition to the comparisons made between the two large sample groups of 600 each, a group of 100 transfer students and a group of 100 non-transfer students were randomly selected as outlined in Chapter III from their respective groups of 600 transfer students and 600 non-transfer students.⁴⁹ The additional information obtained from their correspondence file was their marital status, their legal residency status, and the name of the town or city in which they graduated from high school.

⁴⁹ A sample of 100 was considered adequate to constitute a normal distribution for which implications could be drawn. George H. Weinberg and John A. Schumaker, Statistics An Intuitive Approach (Belmont, California: Wadsworth Publishing Company, Inc., 1962), p. 203.

TABLE 5

A COMPARISON OF SAMPLES OF THE TRANSFER STUDENT GROUP
AND THE NON-TRANSFER STUDENT GROUP ACCORDING
TO MARITAL STATUS AT THE BEGINNING
OF THE JUNIOR YEAR

Group	N	Married	Not Married
Transfers	100	12	88
Non-transfers	100	16	84
Totals	200	28	172

As presented in Table 5, 12 out of the 100 transfer students in this sample were self reported as married; while 16 out of the 100 non-transfer students in the sample were self reported as married. It should be noted these data were from the original application form and were not necessarily representative of their marital status at graduation. The majority of the students in both groups were unmarried.

TABLE 6

A COMPARISON OF SAMPLES OF THE TRANSFER STUDENT GROUP AND
THE NON-TRANSFER STUDENT GROUP ACCORDING TO LEGAL
RESIDENCY AND NON-RESIDENCY STATUS

Group	N	Residents	Non-Residents
Transfers	100	57	43
Non-transfers	100	60	40
Totals	200	117	83

The legal residency status was less subject to self reporting errors as each case had to be adjudicated by the legal advisor to the President of the University. Fifty-seven of the transfer group were classified as residents while 60 of the non-transfer group were so classified.

TABLE 7

A COMPARISON OF SAMPLES OF THE TRANSFER STUDENT GROUP AND
THE NON-TRANSFER STUDENT GROUP ACCORDING TO THE
POPULATION OF THE TOWN OR CITY IN WHICH
THE STUDENTS GRADUATED FROM HIGH SCHOOL

Group	N	below 5,000	5,000 to 25,000	25,000 to 50,000	50,000 to 100,000	100,000 and over
Trans.	100	18	19	10	12	41
Non-trans.	100	9	17	16	11	47
Totals	200	27	36	26	23	88

As presented in Table 7, 47 out of the 100 transfer students in this particular sample came from cities or towns of less than 50,000 population while 53 came from towns of more than 50,000 population. In the comparison of the non-transfer group, 42 out of the 100 non-transfer students came from towns of less than 50,000 while 58 came from towns of more than 50,000. While there were more students in the transfer group from smaller cities and towns than with the non-transfer group, it appeared that the majority of transfer students also came from urban centers of 50,000 population or more.

In summary, the student whose academic performance was examined tended to be 20 or 21 years of age. He was unmarried and a legal resident

of the state of Oklahoma. He probably attended high school in a city of 50,000 residents or more; although if a transfer student, the probabilities were almost 50-50 that he may have come from a town of less than 50,000 residents. If the student were a young man, the probabilities were he was enrolled in the applied sciences including the business school although almost as many were enrolled in the humanities and the social sciences. If a young woman the probabilities were that she was enrolled in the humanities or social sciences especially education. How well the students proceeded toward their stated goal of graduation in their respective degree programs and what grades they received constitutes the balance of the study.

Tests Of The Hypotheses

The Findings From Tests of Differences Between Sample Means

This section is concerned with the testing of the hypotheses listed in Chapter III through an examination of the differences between the means of the cumulative grade point averages of the transfer student sample group and the non-transfer student sample group. In each of the comparisons, the null hypothesis is listed first, followed by the findings leading to acceptance or rejection of the hypothesis, and concluding with a presentation of the data in tabular form.

Null Hypothesis 1 - There is no statistically significant difference between the cumulative grade point averages of the total transfer student sample and the total non-transfer student sample.

As presented in Table 8, the cumulative grade point average for the transfer group was 2.43 with a standard deviation of .807. The cumulative grade point average for the non-transfer group was 2.57 with a standard

deviation of .701. The t value obtained was 3.36 which was statistically significant beyond the .001 level. Since the non-transfer students showed a significantly higher grade point average than the transfer students, null hypothesis one was rejected. There was a statistically significant difference between the two groups - in favor of the non-transfer group.

TABLE 8

A COMPARISON OF THE MEAN OF THE CUMULATIVE GRADE POINT AVERAGE OF THE TOTAL TRANSFER GROUP AND THE MEAN OF THE CUMULATIVE GRADE POINT AVERAGE OF THE TOTAL NON-TRANSFER GROUP

Group	N	Mean	Standard Deviation	S. E. of Diff.	t value
Transfers	600	2.43	.807		
Non-transfers	600	2.57	.701	.044	3.36*

*Significant at the .001 level.⁵⁰

Null Hypothesis 2 - There is no statistically significant difference between the cumulative grade point average of the out-of-state transfer sample and the in-state transfer student sample.

The data for this comparison concern solely the transfer group. Hence the total size of the two sub-groups of in-state transfers and out-of-state transfers totals 600 students rather than 1200 as presented in Table 8. As presented in Table 9, the cumulative grade point average for the in-state transfer groups was 2.33 with a standard deviation of .869

⁵⁰ Distribution of t probability: from Table III by R. A. Fisher and F. Yates, Statistical Tables for Biological, Agricultural, and Medical Research. Edinburg, Scotland: Oliver and Boyd Ltd. as reproduced in Downie and Heath, Basic Statistical Methods (London: Harper and Row, 1965).

while the cumulative grade point average for the out-of-state transfer group was 2.54 with a standard deviation of .720. The t score obtained, 3.11, was significant at the .01 level. Therefore, null hypothesis two was rejected. There was a statistically significant difference between the means of the two groups in favor of the out-of-state transfer students.

TABLE 9

A COMPARISON OF THE MEAN OF THE CUMULATIVE GRADE
POINT AVERAGE OF THE OUT-OF-STATE GROUP AND
THE MEAN OF THE CUMULATIVE GRADE POINT
AVERAGE OF THE IN-STATE TRANSFER GROUP

Group	N	Mean	Standard Deviation	S. E. of Diff.	t value
In-State Trans.	320	2.33	.869		
Out-Of-State Trans.	280	2.54	.720	.066	3.11*

*Significant at the .01 level.

Null Hypothesis 3 - There is no statistically significant difference between the mean of the cumulative grade point average of the resident non-transfer student sample and the non-resident non-transfer student sample according to the legal definition of residency.

As presented in Table 10, the resident sample group attained a cumulative grade point average of 2.43 with a standard deviation of .750; the non-transfer student sample group attained a cumulative GPA of 2.46 with a standard deviation of .660. The t value obtained was .616 which was not significant at the .05 level set for the study. Hence, null hypothesis three was unable to be rejected. There was no statistically significant difference between the mean of resident sample group and the mean of the non-resident sample group.

TABLE 10

A COMPARISON OF THE MEAN OF THE CUMULATIVE GRADE POINT
AVERAGE OF THE NON-TRANSFER RESIDENT STUDENT SAMPLE
WITH THE MEAN OF THE CUMULATIVE GRADE POINT AVERAGE
OF THE NON-TRANSFER NON-RESIDENT STUDENT SAMPLE
ACCORDING TO THE LEGAL DEFINITION
OF RESIDENCE

Group	N	Mean	Standard Deviation	S. E. of Diff.	<u>t</u> value
Residents	45	2.43	.750		
Non-Residents	45	2.46	.660	15	.616

No significant t value was obtained.

Null Hypothesis 4 - There is no statistically significant difference between the cumulative grade point averages of the transfer student sample and the non-transfer student sample - according to type of original college.

As presented in Table 11, the cumulative grade point average for the transfer group from other universities was 2.69 with a standard deviation of .823; the group from private colleges had a mean GPA of 2.57 with a standard deviation of .600; the group from junior colleges had a mean GPA of 2.16 with a standard deviation of .892. When compared to the previously established cumulative GPA of the non-transfer group of 2.57 with a standard deviation of .701, the application of the t test to the data produced t values of 1.88, -2.92, -.047, and -6.59 respectively. Two of these t values, namely those of the state college group and the junior college group, were statistically significant at the .01 level of difference or beyond, both of the values being in favor of the non-transfer group. Therefore, null hypothesis four was rejected. There was a statistically

significant difference between the cumulative grade point averages of the state college student sample group and the junior college student sample group respectively compared to the cumulative grade point averages of the non-transfer student sample group in both instances in favor of the non-transfer sample group.

TABLE 11

A COMPARISON OF THE MEAN OF THE CUMULATIVE MEAN GRADE POINT AVERAGE OF THE TRANSFER GROUP AND THE MEAN OF THE CUMULATIVE MEAN GRADE POINT AVERAGE OF THE NON-TRANSFER GROUP ACCORDING TO TYPE OF ORIGINAL COLLEGE

Transfer Group				Non-Transfer Group					
Type	N	Mean	S D	Type	N	Mean	S D	S E of Diff.	t value
Univ.	159	2.69	.698	Okla. Univ.	600	2.57	.701	.062	1.88
State College	149	2.37	.823	Okla. Univ.	600	2.57	.701	.067	-2.92*
Private College	104	2.57	.600	Okla. Univ.	600	2.57	.701	.073	- .047
Junior College	188	2.16	.892	Okla. Univ.	600	2.57	.701	.063	-6.57**

*Significant at .01 level.

**Significant at the .001 level.

Null Hypothesis 5 - There is no statistically significant difference between the cumulative grade point averages of the transfer student sample and the non-transfer student sample according to regional location of original college.

As presented in Table 12, the majority of the students in this particular series of sample transfer groups came from the Southeast and Southern

region and the North-Central-Midwest region rather than the Northeast-Mid-Atlantic or Western area. Students from the Northeast transfer group achieved the highest mean grade point average, 2.66, for the transfer groups as compared to the Oklahoma University student who were the non-transfer control group with a mean grade point average of 2.57. However, none of the transfer groups were found to differ statistically significantly from the non-transfer group, with the highest t value being .817 in the case of the Northeast student group. Hence null hypothesis five was unable to be rejected. There was no statistically significant difference between the means of the transfer student sample group and the non-transfer student sample group according to regional location of original college.

TABLE 12

A COMPARISON OF THE MEAN OF THE CUMULATIVE GRADE POINT
AVERAGE OF THE TRANSFER GROUP AND THE MEAN OF THE
CUMULATIVE GRADE POINT AVERAGE OF THE
NON-TRANSFER GROUP ACCORDING TO
REGIONAL LOCATION OF
ORIGINAL COLLEGE

Out-of-state Transfer Group				Non-transfer Group					
Region	N	Mean	S D	Region	N	Mean	S D	S E of Diff.	t value
NE and Mid-Atlantic	51	2.66	.681	Okla-homa	600	2.57	.701	.103	.817
SE and South	74	2.54	.680	Okla-homa	600	2.57	.701	.086	.445
N Central and Midwest	121	2.51	.687	Okla-homa	600	2.57	.701	.070	.983
NW and W Coast	34	2.50	.817	Okla-homa	600	2.57	.701	.127	.675

None of t values significant

Comparisons By Field Of Study

The University of Oklahoma offered 100 degree programs as listed in the various catalogues and bulletins and summarized in the pamphlet "Information for Prospective Students" issued by the Office of Admissions and Records, University of Oklahoma, 1967.

Bereiter and Freedman, in reviewing the literature pertaining to fields of study, concluded that most college undergraduate level courses could be grouped into four fields: humanities, social sciences, natural sciences, and applied sciences. The listed degree offerings at the University

of Oklahoma were then assigned to one of these classifications. Assistance in the classification process was provided by the research librarian, Bizzell Memorial Library, University of Oklahoma. The full listing of this assignment of the degree offerings is reported in Appendix D.⁵¹ A condensation of the major degree offerings included in the four fields of study categories is presented below:

Humanities: In the humanities the following disciplines can be found: Art, Drama, English, Music, languages, History, Philosophy, Russian Studies. Journalism is also included.

Social Sciences: In the social sciences, the following disciplines can be found: Anthropology, Economics, Education, Home Economics, Political Science, Sociology and Social Work, Library Science, plus some subjects not common to undergraduate curriculums such as Urban Studies.

Natural Sciences: In the natural sciences, the following disciplines can be found: Astronomy, Chemistry, Geology, Mathematics, Pharmacology, Pre-Medicine, and Zoology.

Applied Sciences: Accounting and related business subjects, Engineering with many sub-groupings, Medical Technology, Nursing, Physical Therapy and Sanitary Science.

Testing the hypotheses of differences between the mean of the cumulative mean grade point averages of transfer group and the mean of the

⁵¹ Bereiter and Freedman, "Field of Study and the People in Them", The American College, ed. Nevitt Sanford (New York: Wiley and Son, 1962), p. 571.

grade point averages of the non-transfer group according to fields of study will be the subject of the next four tabular presentations.

Null Hypothesis 6 - There is no statistically significant differences between the cumulative grade point averages of the transfer student sample and the non-transfer student sample according to major field classifications for the humanities, social sciences, natural sciences, and applied sciences.

In the humanities, according to the data shown in Table 13, the University sample group attained a cumulative GPA of 2.68 with a standard deviation of .863; the state college sample group attained a cumulative GPA of 2.61 with a standard deviation of .620; the private college transfer group attained a cumulative GPA of 2.59 with a standard deviation of .617; the junior college group attained a cumulative GPA of 2.28 with a standard deviation of .993. The non-transfer sample group attained a cumulative GPA of 2.66 with a standard deviation of .751.

The t values obtained for the university sample group, state college group and private college group of .218, .300, and .591 respectively were not found to be significant at the .05 level set for the study.⁵² Therefore the null hypothesis six was unable to be rejected for these comparisons; there was no statistically significant difference found between the cumulative GPA for these groups and the non-transfer group in the humanities.

The t value obtained for the junior college sample group compared to the non-transfer group was 2.73 and was found to be significant at the .01 level of difference. Therefore null hypothesis six was able to be

⁵² All groups being compared in Tables 13, 14, 15, and 16 have more than 60 degrees of freedom using formula $n_1 + n_2 - 2$ for noncorrelated data with unequal n's. Downie and Heath, *Op. Cit.*, p. 143. Hence any t value greater than 2.00 would be significant beyond the .05 level of difference.

rejected insofar as the junior college sample group was concerned. There was a statistically significant difference between the cumulative GPA of the junior college group and the non-transfer group in favor of the non-transfer group in the humanities.

TABLE 13

A COMPARISON OF THE MEAN OF THE CUMULATIVE GRADE POINT AVERAGE OF THE TRANSFER GROUP AND THE MEAN OF THE CUMULATIVE GRADE POINT AVERAGE OF THE NON-TRANSFER GROUP BY TYPE OF ORIGINAL COLLEGE IN THE HUMANITIES

Transfer Group				Non-transfer Group					
Type	N	Mean	S D	Type	N	Mean	S D	S E of Diff.	t value
University	46	2.58	.863	Okla. Univ.	145	2.66	.741	.131	.218
State College	25	2.61	.620	Okla. Univ.	145	2.66	.741	.157	-.300
Private College	40	2.59	.617	Okla. Univ.	145	2.66	.741	.128	-.591
Junior College	46	2.28	.993	Okla. Univ.	145	2.66	.741	.137	-2.73*

*Significant at the .01 level.

Null Hypothesis 6 - There is no statistically significant difference between the cumulative grade point averages of the transfer student sample and the non-transfer student sample according to type of original college in the social sciences.

In the social sciences, according to the data shown in Table 14, the university sample group attained a cumulative GPA of 2.82 with a

standard deviation of .583; the state college sample group attained a cumulative GPA of 2.38 with a standard deviation of .986; the private college sample group attained a cumulative GPA of 2.54 with a standard deviation of .633; the junior college sample group attained a cumulative GPA of 2.26 with a standard deviation of .741. The non-transfer sample group attained a cumulative GPA of 2.55 with a standard deviation of .678.

The t value obtained for the university sample group of 2.50 was significant at the .05 level set for the study. Therefore, null hypothesis six was able to be rejected for this comparison. There was a statistically significant difference found between the cumulative GPA's of the university transfer student sample group and the non-transfer sample group in favor of the university sample group.

The t value obtained for the state college sample group of -.139 was not found to be significant at the .05 level. Therefore, null hypothesis six was unable to be rejected for this comparison. There was not a statistically significant difference between the cumulative GPA's of the state college transfer student sample and the non-transfer student sample.

The t value obtained for the private college group of .088 was not significant at the .05 level. Therefore, null hypothesis six was unable to be rejected for this comparison. There was no statistically significant difference found between the cumulative GPA of the private college group and the non-transfer sample group.

The t value obtained for the junior college sample group of -2.17 was found to be significant at the .05 level. Therefore, null hypothesis six was able to be rejected for this comparison. There was a statistically

significant difference between the cumulative GPA of the junior college transfer student sample and the non-transfer student sample in favor of the non-transfer student sample group in the social sciences.

TABLE 14

A COMPARISON OF THE MEAN OF THE CUMULATIVE GRADE POINT AVERAGE OF THE TRANSFER GROUP AND THE MEAN OF THE CUMULATIVE GRADE POINT AVERAGE OF THE NON-TRANSFER GROUP BY TYPE OF ORIGINAL COLLEGE IN THE SOCIAL SCIENCES

Transfer Group				Non-transfer Group					
Type	N	Mean	S D	Type	N	Mean	S D	S E of Diff.	t value
University	47	2.82	.583	Okla. Univ.	202	2.55	.678	.107	2.50*
State College	40	2.38	.986	Okla. Univ.	202	2.55	.678	.128	-1.38
Private College	28	2.54	.633	Okla. Univ.	202	2.55	.678	.136	-0.088
Junior College	53	2.26	.741	Okla. Univ.	202	2.55	.678	.107	-2.17*

* Significant at the .05 level.

Null Hypothesis 6 .. There is no statistically significant difference between the cumulative grade point averages of the transfer student sample according to major field classifications in the natural sciences.

In the natural sciences, according to the data shown in Table 15, the university sample group attained a cumulative GPA of 2.58 with a standard deviation of .612; the state college sample group attained a cumulative GPA of 2.43 with a standard deviation of .982; the private college

sample group attained a cumulative GPA of 2.48 with a standard deviation of .708; the junior college transfer group attained a cumulative GPA of 2.25 with a standard deviation of .924. The non-transfer sample group attained a cumulative GPA of 2.61 with a standard deviation of .864.

The t values obtained for the university sample group, the state college sample group, the private college sample group, and the junior college sample group of -.073, -.774, -.412, and -1.726 respectively were not found to be significant at the .05 level set for the study. Therefore, null hypothesis six was unable to be rejected for these comparisons. There was no statistically significant difference found between the cumulative GPA of these transfer student sample groups and the non-transfer student sample group in the natural sciences.

TABLE 15

A COMPARISON OF THE MEAN OF THE CUMULATIVE GRADE POINT
AVERAGES OF THE TRANSFER GROUP AND THE MEAN OF THE
CUMULATIVE GRADE POINT AVERAGES OF THE
NON-TRANSFER GROUP ACCORDING TO TYPE
OF ORIGINAL COLLEGE IN THE
NATURAL SCIENCES

Transfer Group				Non-transfer Group					
Type	N	Mean	S D	Type	N	Mean	S D	S E of Diff.	t value
University	15	2.58	.612	Okla. Univ.	75	2.61	.864	.235	-.073
State College	18	2.43	.982	Okla. Univ.	75	2.61	.864	.233	-.774
Private College	9	2.48	.708	Okla. Univ.	75	2.61	.864	.300	-.412
Junior College	24	2.25	.924	Okla. Univ.	75	2.61	.864	.206	-1.726

Null Hypothesis 6 - There is no statistically significant difference between the cumulative grade point averages of the transfer student sample and the non-transfer student sample according to major field classifications of the applied sciences.

In the applied sciences, according to the data shown in Table 16, the university sample group attained a cumulative GPA of 2.60 with a standard deviation of .650; the state college sample group attained a cumulative GPA of 2.28 with a standard deviation of .730; the private college sample group attained a cumulative GPA of 2.58 with a standard deviation of .535; the junior college transfer sample group attained a cumulative GPA of 1.95

with a standard deviation of .910. The non-transfer control group attained a cumulative GPA of 2.51 with a standard deviation of .612.

The t values obtained for the university sample group and the private college sample group of .923 and .570 respectively were not found to be significant at the .05 level set for the study. Therefore null hypothesis six was unable to be rejected for these comparisons. There was no statistically significant difference found between the cumulative GPA's of these transfer student sample groups and the non-transfer student sample groups in the applied sciences.

The t value obtained for the state college sample group of -2.49 was found to be significant at the .05 level. Therefore, null hypothesis six was able to be rejected for this comparison. There was a statistically significant difference between the cumulative GPA's of the state college group and the non-transfer group in favor of the non-transfer student sample group in the applied sciences.

The t value obtained for the junior college sample group of -5.44 was found to be statistically significant at the .001 level. Therefore, null hypothesis six was able to be rejected for this comparison. There was a statistically significant difference between the cumulative GPA of the junior college transfer student sample and the non-transfer student sample in favor of the non-transfer student sample group in the applied sciences.

TABLE 16

A COMPARISON OF THE MEAN OF THE CUMULATIVE GRADE POINT AVERAGES OF THE TRANSFER GROUP WITH THE MEAN OF THE CUMULATIVE GRADE POINT AVERAGES OF THE NON-TRANSFER GROUP ACCORDING TO TYPE OF ORIGINAL COLLEGE IN THE APPLIED SCIENCES

Transfer Group				Non-transfer Group					
Type	N	Mean	S D	Type	N	Mean	S D	S E of Diff.	t value
University	51	2.60	.650	Okla. Univ.	178	2.51	.612	.099	.923
State College	66	2.28	.730	Okla. Univ.	178	2.51	.612	.093	-2.49*
Private College	26	2.58	.535	Okla. Univ.	178	2.51	.612	.126	.570
Junior College	64	1.95	.910	Okla. Univ.	178	2.51	.612	.103	-5.44**

*Significant at the .05 level.

**Significant at the .001 level.

Null Hypothesis 7 - There is no statistically significant difference between the cumulative grade point averages of the male transfer student sample and the female transfer student sample according to major field classification.

In the humanities, as shown in Table 17, the male sample group attained a cumulative GPA of 2.41 with a standard deviation of .902. The female sample group attained a cumulative GPA of 2.66 with a standard deviation of .718. The t value obtained was 1.50 which was not statistically significant at the .05 level. Hence, null hypothesis seven was unable to be rejected in the comparison of the means of the cumulative GPA of the male and female sample groups in the humanities.

In the social sciences the male sample group attained a cumulative GPA of 2.29 with a standard deviation of .737. The female transfer group attained a cumulative GPA of 2.63 and a standard deviation of .780. The t value obtained was 2.85 which was significant at the .05 level. Hence, null hypothesis seven was able to be rejected. There was a statistically significant difference between the male transfer group and the female transfer group in favor of the female group in the social sciences.

In the natural sciences, the male sample group attained a cumulative GPA of 2.42 with a standard deviation of .863; the female sample group attained a cumulative GPA of 2.35 with a standard deviation of .814. The t value obtained .318 was not significant at the .05 level of difference. Hence null hypothesis seven was not able to be rejected in the comparison of the two groups in the natural sciences.

In the applied sciences, the male sample group attained a cumulative GPA of 2.23 with a standard deviation of .796. The female transfer group attained a cumulative GPA of 2.82 with a standard deviation of .536. The t value obtained of 3.27 was significant at the .01 level of difference. Hence null hypothesis seven was able to be rejected. There was a statistically significant difference in the applied sciences between the mean of the cumulative GPA of the male transfer group and that of the female transfer group in favor of the female sample group.

TABLE 17

A COMPARISON OF THE MEANS OF THE CUMULATIVE
GRADE POINT AVERAGES OF TRANSFER
STUDENTS GROUPS BY SEX AND
FIELD OF STUDY

Group	N	Mean	Standard Deviation	S E of Diff.	t value
Humanities					
Male	81	2.41	.902		1.90
Female	76	2.66	.718	.131	
Social Sciences					
Male	70	2.29	.737		
Female	99	2.63	.780	.119	2.85*
Natural Sciences					
Male	49	2.42	.863		
Female	17	2.35	.814	.240	.318
Applied Sciences					
Male	186	2.23	.796		
Female	21	2.82	.536	.178	3.27*

*Significant at the .01 level.

Summary of Findings from Tests of Differences Between Sample Means

In summarizing the findings from tests of differences between sample means, the following facts emerge:

1. There were statistically significant differences found between the following sample groups:

- (a) The ^{NON}transfer student group had a significantly higher cumulative grade point average than the ~~non~~-transfer student group.
- (b) The out-of-state transfer student group had a significantly higher cumulative grade point average than the in-state transfer student group.

(c) The non-transfer student group had a significantly higher cumulative grade point average than the state college student group and the junior college student group respectively.

(d) The non-transfer student group had a significantly higher cumulative grade point average than the transfer student group in the major field classifications of the humanities, social sciences, and applied sciences.

(e) The female transfer student group had a significantly higher cumulative grade point average than the male transfer student group.

2. There were no statistically significant differences noted in the following comparisons between the sample groups:

(a) The transfer student group did not have any significantly different cumulative grade point average than the non-transfer student group according to regional location of their original college.

(b) The transfer student group did not have any significantly different cumulative grade point average than the non-transfer student according to the major field classification of natural sciences.

(c) The resident student group did not have any significantly different cumulative grade point average than the non-resident student group.

The Findings from Tests of Differences as Measured by the Graduation/Withdrawal Rate

The information presented in this portion of the study deals with the findings from the application of the graduation/withdrawal rate to the data. The graduation/withdrawal rate was chosen as an alternate dependent variable. In addition, the measure permitted an examination of the persistence of the transfer sample group as compared to the persistence of the non-transfer sample group. The data are presented in the order identical to the previous presentation: statement of the null hypothesis, the findings in narrative form, and closing with a tabular presentation of the findings.

Null Hypothesis 8 - There is no statistically significant difference between the graduation/withdrawal rate of the total transfer student sample and the total non-transfer student sample.

In the comparison of the graduation/withdrawal rate of transfer students as a total group to the graduation/withdrawal rate of non-transfer students as a total group, 333 out of 600 students in the transfer group graduated, 267 withdrew; 403 out of 600 non-transfer students graduated, 197 withdrew. In percentage terms, 56 per cent of the transfer student sample group graduated while 67 per cent of the non-transfer student sample group graduated. The chi square value obtained was 16.73 with one degree of freedom. This value was statistically significant at the .001 level of difference. Hence null hypothesis eight was able to be rejected. There was a statistically significant difference between the graduation/withdrawal rate of the total transfer student sample and the total non-transfer student sample in favor of the non-transfer sample.

TABLE 18

A COMPARISON OF THE GRADUATION/WITHDRAWAL RATE OF
TRANSFER STUDENTS AS A TOTAL GROUP TO THE
GRADUATION/WITHDRAWAL RATE OF
NON-TRANSFER STUDENTS AS A
TOTAL GROUP

Group	N	Graduated	Withdrew	χ^2 value
Transfer	600	333	267	
Non-transfer	600	403	197	16.73*
*Significant beyond the .001 level.				

All chi square values given in this chapter are with one degree of freedom unless otherwise indicated. Values taken from Distribution of Downie and Heath: Basic Statistical Methods. (New York: Harper and Row, 1965), p. 299.

Null Hypothesis 9 - There is no statistically significant difference between the graduation/withdrawal rate of the out-of-state transfer student sample and the in-state transfer student sample.

In the comparison of the graduation/withdrawal rate of in-state versus out-of-state transfer students, 162 out of the 320 students in the in-state group graduated, 158 withdrew. Out of 280 out-of-state transfer students, 170 graduated, 109 withdrew. The chi square value obtained was 6.18 which is significant at the .05 level of difference. Hence, null hypothesis nine was able to be rejected. There was a statistically significant difference between the graduation/withdrawal rate of in-state transfer students and the out-of-state transfer students. This difference was in favor of the out-of-state transfer student group.

TABLE 19

A COMPARISON OF THE GRADUATION/WITHDRAWAL RATE
OF IN-STATE TRANSFER STUDENTS AND THE
GRADUATION/WITHDRAWAL RATE OF
OUT-OF-STATE TRANSFER
STUDENTS

Group	N	Graduated	Withdrew	χ^2 value
In-State	320	162	158	
Out-Of-State	280	171	109	6.18*

*Significant at the .05 level.

Null Hypothesis 10 - There is no statistically significant difference between the graduation/withdrawal rate of the resident non-transfer student sample and the non-resident non-transfer student sample according to the legal definition of residency.

In the comparison of the graduation/withdrawal rate of resident versus non-resident students in the non-transfer student sample, 30 out of the 45 resident students graduated, 15 withdrew. Out of the 45 non-resident students, 33 graduated, 12 withdrew.

The chi square value obtained of .533 was not statistically significant at the .05 level set for the study. Hence, null hypothesis ten was not able to be rejected. There was no statistically significant difference between the graduation/withdrawal rate of the resident student sample group and the non-resident student sample group.

TABLE 20

A COMPARISON OF THE GRADUATION/WITHDRAWAL RATE OF THE
NON-TRANSFER RESIDENT STUDENTS TO THE
GRADUATION/WITHDRAWAL RATE OF THE
NON-TRANSFER NON-RESIDENT
STUDENTS

Group	N	Graduated	Withdrew	χ^2 value
Resident	45	30	15	
Non-resident	45	33	12	.533*

* χ^2 value not significant.

Null Hypothesis 11 - There is no statistically significant difference between the graduation/withdrawal rate of the transfer student sample and the non-transfer student sample according to type of original college.

In the comparison of the graduation/withdrawal rate of the student sample groups by type of original college, 94 out of 159 students in the university transfer group graduated, 65 withdrew; 403 out of 600 students in the non-transfer (native) group graduated, 197 withdrew. The chi square

value obtained 3.25, was not significant at the .05 level set for the study. Hence, null hypothesis eleven was unable to be rejected in the university transfer student comparison.

In the comparison of the graduation/withdrawal rate of the state college transfer group, 82 out of 149 students in the state college transfer group graduated, 67 withdrew; 403 out of 600 students in the non-transfer (native) group graduated, 197 withdrew. The chi square value obtained, 7.18, was significant at the .01 level or beyond. Hence, null hypothesis eleven was able to be rejected in the state college transfer group comparison in favor of the non-transfer student group.

In the comparison of the graduation/withdrawal rate of the private college transfer group, 65 out of 103 students in the private college transfer group graduated, 38 withdrew; 403 out of 600 students in the non-transfer (native) group graduated, 197 withdrew. The chi square value obtained, .481, was not significant at the .05 level set for the study. Hence, null hypothesis eleven was unable to be rejected in the private college comparison.

In the comparison of the graduation/withdrawal rate of junior college transfer group, 91 out of 188 students in the junior college transfer group graduated, 97 withdrew. Out of 600 students in the non-transfer (native) group, 403 graduated, 197 withdrew. The chi square value obtained, 20.75 was significant at the .001 level. Hence, null hypothesis eleven was able to be rejected. There was a statistically significant difference in the graduation/withdrawal rate between the junior college transfer sample group and the non-transfer sample group in favor of the non-transfer sample group.

TABLE 21

A COMPARISON OF THE GRADUATION/WITHDRAWAL RATE OF THE
TRANSFER STUDENTS COMPARED TO THE GRADUATION/
WITHDRAWAL RATE OF THE NON-TRANSFER STUDENTS
ACCORDING TO TYPE OF ORIGINAL COLLEGE

Group	N	Graduated	Withdrew	χ^2 value
University transfer	159	94	65	3.25
Non-transfer	600	403	197	
State College transfer	149	82	67	7.18*
Non-transfer	600	403	197	
Private College transfer	103	65	38	.481
Non-transfer	600	403	197	
Junior College transfer	188	91	97	20.75**
Non-transfer	600	403	197	

*Significant at the .01 level.

**Significant at the .001 level.

Null Hypothesis 12 - There is no statistically significant difference between the graduation/withdrawal rate of the transfer student sample and the non-transfer student sample according to regional location of the original college.

In the comparison of the graduation/withdrawal rate of the out-of-state transfer students to the graduation/withdrawal rate of the non-transfer students, the first comparison was between the transfer students from the Northeast and Middle Atlantic states to the native student sample group. Out of 51 students from the Northeast-Mid-Atlantic region, 36 graduated, 15 withdrew; 35 out of the 74 students from the South and Southwest region graduated, 39 withdrew; 75 out of the 117 students from the North Central-Midwest region graduated, 42 withdrew; 26 out of the 38 students from the Northwest and West Coast region graduated, 12 withdrew. These graduation/

withdrawal rates were compared to those of the native students. Out of the 600 students in the non-transfer (native) sample group, 403 graduated, 147 withdrew.

The chi square values obtained were .119, 10.57, .287, and .012 respectively. The comparison between the students from the Southern area and the Oklahoma native students was the only value significant. Hence, null hypothesis twelve was able to be rejected in the case of the Southern student group in favor of the native (non-transfer) sample group. In the other comparisons by geographic regions, there was no statistically significant difference between those groups and the native student sample group.

TABLE 22

A COMPARISON OF THE GRADUATION/WITHDRAWAL RATE OF THE
OUT-OF-STATE TRANSFER STUDENTS TO THE GRADUATION/
WITHDRAWAL RATE OF THE NATIVE STUDENTS ACCORDING
TO THE GEOGRAPHIC REGION OF THE
ORIGINAL COLLEGE

Group	N	Graduated	Withdrew	χ^2 value
NE and Mid-Atlantic Native (Oklahoma)	51 600	36 403	15 197	.119
South Native (Oklahoma)	74 600	35 403	39 197	10.57*
North Central-Midwest Native (Oklahoma)	117 600	75 403	42 197	.287
NW and West Coast Native (Oklahoma)	38 600	26 403	12 197	.012

*Significant at the .01 level.

Null Hypothesis 13 - There is no statistically significant difference between the graduation/withdrawal rate of the transfer student sample and the non-transfer student sample according to major field classifications of the humanities, social sciences, natural sciences, and applied sciences.

In the comparison of the graduation/withdrawal rates of students by fields of study in the humanities, 85 out of 157 students in the transfer student sample group graduated, 72 withdrew; 103 out of 145 students in the non-transfer group sample graduated, 42 withdrew. The chi square value obtained when comparing the frequencies obtained with the frequencies expected was 8.45 which was significant beyond the .01 level. Hence, in the humanities, null hypothesis thirteen was able to be rejected. There was a statistically significant difference between the transfer sample group and the non-transfer sample group as measured by the graduation/withdrawal rate in favor of the non-transfer group.

In the comparison of the graduation/withdrawal rates in the social sciences, the natural sciences, and the applied sciences, the chi square values obtained were 5.67, 2.37, and 1.90 respectively; out of these three values only 5.67 was significant beyond the .05 level. Hence in the social sciences, there was a statistical difference, and null hypothesis thirteen was able to be rejected in favor of the non-transfer students. In the natural sciences and applied sciences, the null hypotheses were unable to be rejected.

In summary, in the comparison of the graduation/withdrawal rates of the transfer sample groups to the graduation/withdrawal rates of the non-transfer sample groups by fields of study, null hypothesis thirteen was able to be rejected in the humanities and the social sciences in favor

of the native groups. But null hypothesis thirteen was unable to be rejected in the natural sciences and applied sciences fields of study.

TABLE 23

A COMPARISON OF THE GRADUATION/WITHDRAWAL RATE OF
TRANSFER STUDENTS TO THE GRADUATION/WITHDRAWAL
RATE OF THE NON-TRANSFER STUDENTS ACCORDING
TO THE FIELD OF STUDY

Group	N	Graduated	Withdrew	χ^2 value
Humanities				
Transfer	157	85	72	8.45**
Non-transfer	145	103	42	
Social Sciences				
Transfer	168	91	77	5.67*
Non-transfer	202	135	67	
Natural Sciences				
Transfer	66	31	35	2.37
Non-transfer	75	46	29	
Applied Sciences				
Transfer	209	126	83	1.90
	178	119	59	

*Significant at the .05 level.

**Significant at the .01 level.

Null Hypothesis 14 - There is no statistically significant difference between the graduation/withdrawal rate of the male transfer student sample and the female transfer student sample according to major field classifications.

In the comparison of the graduation/withdrawal rates by sex and field of study in the humanities, 42 out of the 81 students in the male transfer group sample graduated, 39 withdrew; 43 out of the 76 students in the female transfer group graduated, 33 withdrew. The chi square value

obtained, .188, was not statistically significant at the .05 level set for the study. Hence, null hypothesis fourteen was unable to be rejected in the comparison by sex and field of study in the humanities field of study.

In the comparison of the graduation/withdrawal rates in the social sciences, 36 out of the 70 students in the male transfer group sample graduated, 34 withdrew; 55 out of the 98 students in the female transfer group graduated, 43 withdrew. The chi square value obtained, .198, was not statistically significant at the .05 level. Hence, null hypothesis fourteen was unable to be rejected in the comparison by sex and field of study in the social sciences. There was no statistically significant difference obtained.

In the comparison of the graduation/withdrawal rates in the natural sciences, 23 out of the 49 students in the male transfer group graduated, 26 withdrew. Out of 17 students in the female transfer group, 8 graduated, 9 withdrew. The chi square value obtained, .075, was not significant at the .05 level. Hence null hypothesis fourteen was unable to be rejected in the comparisons by sex and field of study in the natural sciences.

In the comparison of the graduation/withdrawal rates in the applied sciences, 113 out of the 187 students in the male transfer group graduated, 74 withdrew. Out of 22 students in the female transfer group, 13 graduated, 9 withdrew. The chi square value obtained, .012, was not significant at the .05 level.

In summary, in the comparison of the graduation/withdrawal rates of the transfer students by sex and field of study, no statistically significant chi square values were obtained in any of the comparisons. Hence

null hypothesis fourteen was unable to be rejected. There was no statistically significant difference in the graduation/withdrawal rates between the male and female transfer students by field of study.

TABLE 24
A COMPARISON OF THE GRADUATION/WITHDRAWAL RATE
OF TRANSFER STUDENTS BY SEX AND
FIELD OF STUDY

Group	N	Graduated	Withdrew	χ^2 value
Humanities				
Male	81	42	39	0.188
Female	76	43	33	
Social Sciences				
Male	70	36	34	0.198
Female	98	55	43	
Natural Sciences				
Male	49	23	26	0.075
Female	17	8	9	
Applied Sciences				
Male	187	113	74	0.012
Female	22	13	9	

Summary of Tests of the Hypotheses

The purpose of Chapter IV was to present the findings of the study with special reference to testing the null hypotheses presented in Chapter III. Differences in performance between the various classification groups of students as measured by the cumulative grade point averages of the students were examined first by the t test. Differences in performance between the various classification groups of students as measured by the alternate

dependent variable, the graduation/withdrawal rate, were then examined by the chi square test.

The results of these examinations are presented in Table 25. Individual t values and chi square values are not included for purposes of the summary but can be found in the individual tables already presented including their degree of significance of differences, at the .05 level or beyond.

TABLE 25

SUMMARY OF TESTS OF THE NULL HYPOTHESES

Null Hypothesis	Type of Comparison	Type Test	Results*	Accept Null Hy.	Reject Null Hy.
HO 1	Total groups	$\frac{t}{x^2}$	Stat. Sig.		R
HO 8	Tr. vs. non-tr.	$\frac{t}{x^2}$	Stat. Sig.		R
HO 2	In-state vs.	$\frac{t}{x^2}$	Stat. Sig.		R
HO 9	Out-of-state	$\frac{t}{x^2}$	Stat. Sig.		R
HO 3	Residents vs.	$\frac{t}{x^2}$	Not Stat. Sig.	A	
HO 10	Non-residents	$\frac{t}{x^2}$	Not Stat. Sig.	A	
HO 4	Type of	$\frac{t}{x^2}$	Stat. Sig.		R
HO 11	Original Coll.	$\frac{t}{x^2}$	Stat. Sig.		R
HO 5	Regional vs.	$\frac{t}{x^2}$	Not Stat. Sig.	A	
HO 12	Oklahoma	$\frac{t}{x^2}$	Stat. Sig.		R
HO 6	Field of	$\frac{t}{x^2}$	Stat. Sig.		R
HO 13	Study	$\frac{t}{x^2}$	Stat. Sig.		R
HO 7	Male vs.	$\frac{t}{x^2}$	Stat. Sig.		R
HO 14	Female	$\frac{t}{x^2}$	Not. Stat. Sig.	A	

*Stat. Sig. - Statistically significant at the .05 level of difference set for the study.

Not Stat. Sig. - Not statistically significant at the .05 level of difference set for the study.

Summary of Findings

Statistically significant values were obtained in the application of the t test and the chi square test to the data in the following comparisons - hence the null hypotheses were able to be rejected in these comparisons:

(1) The total transfer student group differed from the total non-transfer student group in favor of the non-transfer group; (that is, the non-transfer student group had a significantly higher cumulative GPA and graduation rate than the total transfer student group).

(2) The out-of-state transfer student group differed from the in-state transfer student group (that is, the out-of-state student group had a significantly higher cumulative GPA and graduation rate than the in-state group).

(3) The non-transfer student group differed from the transfer student group according to type of original college in favor of the non-transfer group with the exception of the university transfers and private college transfers (that is, the non-transfer group had a significantly higher cumulative GPA and graduation rate than the transfer group from other colleges with the exception of transfers from universities and private colleges where there was no difference).

(4) In regard to differences by fields of studies:

(a) In the humanities, there were differences found between the non-transfer group and the junior college group

in favor of the non-transfer group (that is, the null hypothesis was able to be rejected in this comparison in the humanities).

(b) In the social sciences, there were differences between the non-transfer group and the university group in favor of the university group; secondly there were differences between the non-transfer group and the junior college group in favor of the non-transfer group (that is, the null hypotheses were able to be rejected in these comparisons in the social sciences).

(c) In the natural sciences there were no differences found between groups (that is, the null hypotheses were unable to be rejected in the natural sciences).

(d) In the applied sciences, there were differences between the junior college students and the non-transfer group in favor of the non-transfer group (that is, the null hypothesis was able to be rejected in the junior college comparison in the applied sciences). Similar differences were noted in the state college comparison in the applied sciences - again in favor of the non-transfer group (that is, the null hypothesis was able to be rejected in the state college comparison).

Statistically significant values were not obtained in the application of the t test and the chi square test to the data in the following comparisons (that is, the null hypotheses were not able to be rejected in these comparisons):

(1) The transfer student group and the non-transfer student group did not differ according to regional location of original college except in the case of the Southern regional comparisons-- (that is, the two groups did not have a significantly different cumulative GPA or graduation rate.)

(2) The non-transfer resident group and the non-transfer non-resident group did not differ according to the legal definition of residency --(that is, there was no statistically significant difference in their cumulative GPA or graduation rate.)

Statistically significant values were obtained in the application of t test to the data in the following comparisons, but not in the application of the chi square test to the data (that is, the null hypothesis was able to be rejected only as measured by cumulative GPA):

The female transfer student group differed from the male transfer group - in favor of the female group - that is, the female transfer group had a significantly higher cumulative GPA than the male transfer group.

Statistically significant differences were obtained in the application of the chi square test to the data in the following comparison but not in the application of the t test to the data (that is, the null hypothesis was able to be rejected only as measured by the graduation/withdrawal rate):

The out-of-state Southern regional group differed from the non-transfer group - in favor of the non-transfer group -(that is, the non-transfer group had a significantly higher graduation rate than transfer group from the southern accrediting region.)

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of the study was to determine if differences existed between transfer students and non-transfer students in academic performance at the University of Oklahoma. The design for examination of the problem was a comparative one in which the classifications of students were the independent variable while the cumulative grade point average was the dependent variable with the graduation/withdrawal rate serving as an alternate dependent variable. The major elements of the problem selected for examination were comparisons between the sample groups according to location of college of transfer, legal residency, type of original college, field of study, and sex. A series of null hypotheses was developed based upon the questions raised by the comparison.

Data necessary for the study were found to be available in the office of the Dean of Admissions and Records. The population from which the sample groups were selected was all students enrolled as juniors as of the Fall, 1966-67, who either graduated or withdrew by June, 1969. Out of this population, 600 transfer students and 600 non-transfer students were randomly chosen. Students with less than 12 semester hours at their previous college were eliminated as well as those who had already received a

baccalaureate degree. A student personal data sheet was designed for the study as a collection instrument and worksheet for each individual student's cumulative grade point averages. Needed items of information were secured from the registrar's permanent record cards and the file folders. The information from the personal data sheet was subsequently posted to punch cards. Given the information from the punch cards, the university computer center performed all the needed calculations for the tables designed to test the null hypotheses.

The statistical model chosen for testing the null hypotheses as measured by the cumulative grade point averages was the t test of differences between sample means. The statistical model chosen for testing the null hypotheses of no difference between sample groups as measured by the graduation/withdrawal rate was chi square.

Conclusions

The following conclusions are presented subject to the limitations of the study as to sample groups and the population from which the sample groups were drawn - students classified as juniors at the University of Oklahoma as of September, 1966, and continuing until either graduation or withdrawal with a cut-off date of June, 1969.

(1) Transfer students did not perform as well academically as the non-transfer students in so far as academic grades were concerned and persistency to graduation.

(2) Out-of-state transfer students out-performed in-state transfer students in academic grades and persistency to graduation; however, the University admission standards for these students was originally higher.

(3) Legal residency status appeared to have little or no influence upon academic grades or graduation.

(4) The type of original college from which the student transferred appeared to make a difference in his academic grades and persistency to graduation. Transfers from universities with enrollments in excess of 2,500 students and transfers from private colleges appeared to have the best chances of successfully completing course requirements. Restated, transfers from state colleges and particularly junior college transfers had considerable difficulty in making the transition and satisfactorily completing course requirements for graduation.

(5) The regional location of the transfer student's original college appeared to make little or no difference in either academic grades or persistency to graduation.

(6) The field of study into which the transfer student entered and the type of original college from which he entered appeared to influence his academic grades and his persistency to graduation. Students from state colleges and junior colleges in particular appeared to have real difficulty in the social sciences and the applied sciences fields of study. In the humanities and in the natural sciences, these students had less difficulty.

(7) Female transfer students appeared to out-perform male transfer students in academic grades but not necessarily in persistence to graduation.

Recommendations

(1) In view of the differences in the findings of transfer student studies within the span of less than ten years, periodic studies of transfer students seem indicated if information is to remain current and reflect the changing transfer student pattern in large universities such as the University of Oklahoma.

(2) A program of orientation for transfer students to be held early in the semester for interested applicants and those students who have already transferred may be indicated. It could be a brief one or two-day session under the direction of the vice-president of the university community. Its purpose would be to assist the transfer student in his transition by means of authoritative guidance, to make him feel welcome, and to possibly reduce the relatively high withdrawal rate of transfer students compared to native students at the university.

(3) Little attention should be paid to the geographic area of the country from which transfer students come and more attention to the type of college from which they transfer. The University of Oklahoma should be able to recruit students from any geographic area of the country without excessive concern for the out-of-state transfer student withdrawing - if other factors remained equal.

(4) Increased articulation with state colleges and particularly junior colleges as to difficulties some of their student's experience at the University of Oklahoma as well as the successes they experience seems indicated. Particular attention might be given to the field of study into which the transfer student plans to enter and his preparation for the field

at his original college - in order to reduce the withdrawal rate of such students especially in the social and applied sciences.

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APPENDICES

APPENDIX A
DERIVATION OF MAJOR ITEMS OF
INFORMATION USED

APPENDIX A

Derivation of Major Items of Information Used

The derivation of major items of information used:

Name of Student	Names were taken from the Student Directory. However, where differences existed such as the use of nicknames or initials, the name used was that recorded on the permanent record cards.
I. D. Number	Permanent Record Card
Date of Birth	Permanent Record Card and correspondence file
Sex	Permanent Record Card and correspondence file
Residency Code	Correspondence File
Name of College and type control	Permanent Record Card for Name; Educational Directory 1968-69 Part III for size and type control
Regional Location	Permanent Record Card
In-State/Out-of- State Location	Educational Directory*
Hours Transferred	Permanent Record Card
College at O. U.	Permanent Record Card and correspondence file
Major Field	Permanent Record Card and correspondence file

*Educational Directory, 1968-1969 Part III. National Center for Educational Statistics, Washington, D. C., U. S. Government Printing Office, 1968.

Derivation of Major Items of Information Used (continued)

Field of Study	Bereiter and Freedman's "Classifications of Fields of Study," Sanford Nevitt, ed., <u>The American College</u> , 1964. Winchell, Constance, <u>Guide to Reference Books</u> , American Library Association, 1962, used as check in classification of specific subjects offered at University of Oklahoma. See Appendix D.
Graduation Status	Permanent Record Card and Commencements Lists
Withdrawal Status	Permanent Record Card
Grade Point Average	Computed from credits earned on Permanent Record Card

APPENDIX B
PERSONAL DATA SHEET

**STUDENT INFORMATION SHEET
PERSONAL DATA**

Last Name	First	Middle	Student No.
Year of Birth	Student Residence Code	Sex Code	O.U. Native Code

TRANSFER DATA

Name of College				City				State			
Type College Code	In State Code	Out State Code	Hours Transfd.	Credit Points Received	G.P.A. Original College						

FOLLOW - UP DATA

Admitted to O.U. School or College Code				Major At Time of Graduation				Major At Time of Withdrawal				Field of Study at Graduation Code			
Graduated, Withdrew or Still Enrolled				Type of Degree Earned				G.P.A. at O.U.							

G.P.A. Worksheet

Grade	Hours	Weight	Points
A		4	
B		3	
C		2	
D		1	
F		0	
I		0	
U		0	
S		0	
Totals			

Remarks

Must Recheck Record Card	
Record Card out of File	
Date Record Card Examined	

CODE EXPLANATIONS FOR STUDENT INFORMATION SHEET

Native Students Residence Code

- 1 - Resident
- 2 - Non Resident

Sex Code

- 1 - Male
- 2 - Female

OU Native Code - 3

Type of College Code

- 1 - University
- 2 - State College
- 3 - Private College
- 4 - Junior College

Location of Original College Code

- 1 - In State
- 2 - Out of State
- 3 - Native (University of Oklahoma)

University of Oklahoma College Code

- 0 - Nursing
- 1 - Arts and Sciences
- 2 - Business
- 3 - Education
- 4 - Engineering
- 5 - Fine Arts
- 6 - Graduate
- 7 - Law
- 8 - Pharmacy
- 9 - University

Field of Study

- 1 - Humanities
- 2 - Social Sciences
- 3 - Natural Sciences
- 4 - Applied Sciences

Enrollment Status Code

- 1 - Graduated
- 2 - Withdrew
- 3 - Still Enrolled

Type of Degree Earned

- 1 - Bachelor of Arts
- 2 - Bachelor of Science
- 3 - None

APPENDIX C
STATISTICAL STUDY DESIGN

g r a d e p o i n t a v e r a g e s	Field of Study	Transfer Students						Non-Transfer Students at Univ of Okla.		Total	
		In State			Out of State						
		Univ.	State	Pvt.	Jr. Univ.	State	Pvt.	Jr.			
		Col.	Col.	Col.	Col.	Col.	Col.	Col.			
	Humanities	4									
		0									
	Social Sciences	4									
		0									
	Natural Sciences	4									
		0									
	Applied Sciences	4									
		0									
	Totals										

Basic design for exploring differences in grade point averages - one measure of academic performance - between non-transfer students at the University of Oklahoma and transfer students coming to the University of Oklahoma with 45 or more credits remaining for their BA or BS degree - by major field of study.

- Variables: (1) students stratified by type of original institution and
(2) cumulative grade point average from Fall 66 until their graduation or withdrawal

Upper limit of "n"; the number of transfer students among classified "juniors" as of Fall 66 plus an equal number of "n" chosen at random from the remaining non-transfer population of classified juniors.

Differences between main groupings to be tested by "t" test of differences between sample means.

APPENDIX D
FIELDS OF STUDY

APPENDIX D

Fields of Study

Major Code Breakdown

HUMANITIES	Code <u>1</u>
Art	Greek
Art Education	
Art History	History
Art History Education	
Design	Latin
Painting	
Sculpture	Latin American Studies
Dance	Letters
Ballet	
Ballet Pedagogy	Music
Modern Dance	
Modern Dance Pedagogy	Philosophy
Drama	Pre-Ministerial Studies
Acting and Directing	
Broadcasting	Radio and Television Broadcasting
Design and Technical	
Production	Russian
Speech Education	Russian Studies
English	Spanish
French	Speech
General Fine Arts	

Degree Programs: taken from pamphlet Information for Prospective Students issued by Office of Admissions and Records, University of Oklahoma, 1968.

Classifications from: Winchell, Constance, Guide to Reference Books, Chicago, American Library Association, 1962. - -
Bereiter and Freedman, "Fields of Study and the People in Them," The American College, ed. Nevitt Sanford, New York, Wiley and Sons, 1962.

SOCIAL SCIENCES Code 2

Anthropology

Citizenship/Public Affairs

Economics

Education Professions

Teaching Certificates

Art

Bookkeeping and Clerical Practice

Business

Early Childhood

Elementary Education

Foreign Language

Home Economics

Journalism

Language Arts

Mathematics

Music Instruments

Music, vocal

Music, combined

Physical Education

Reading Specialist

School Psychologist

School Psychometrist

Science

Social Studies

Speech and Drama

Special Education

Education, Physical

Education - School Service Certificates

Principal, elementary

Principal, secondary

Superintendent

Librarian

Guidance and Counseling

Education, General

Business Education

Education Psychology

Elementary Education

Secondary Education

Higher Education

Guidance and Counseling

History and Philosophy

General Administration

Mathematics Education

Special Education

Foreign Service

Geography

Home Economics

Early Childhood Education

Fashion Arts

General

Interior Design

Nutrition-Dietetics

Textiles and Clothing

Vocational Home Economics

Library Science

Political Science

Psychology

Public Administration

Regional and City Planning

Social Work

Sociology

Urban Studies

NATURAL SCIENCES Code 3

Anatomy

Astronomy

Bio Chemistry

Biological Phycology

Botany

Chemistry

Geology

Geophysics

Mathematics

Meterology

Microbiology

Natural Science

Pathology

Pharmacology

Physiology

Physics

Pre-Dentistry

Pre-Medicine

Statistics (Mathematical)

Zoology

APPLIED SCIENCES Code 4

Accounting	Management
Aero Space Engineering	Marketing
Applied Mathematics	Mechanical Engineering
Architecture	Medical Technology
Bio Medical Engineering	Medicine
Business Administration	Metallurgical Engineering
Chemical Engineering	Natural Gas Engineering
Civil Engineering	Nuclear Engineering
Computer Science Engineering	Nursing
Computer Science Mathematics	Petroleum Engineering
Economics and Business Statistics	Petroleum Land Management
Electrical Engineering	Pharmacy
Engineering	Physical Therapy
Engineering Physics	Sanitary Science and Public Health
Engineering Mechanics	Biostatistics and epidemiology
Finance	Environmental Health
General Business Administration	Health Administration
Geological Engineering	Human Ecology
Industrial Engineering	Laboratory Practice
Laboratory Technology	Systems Engineering

APPENDIX E
LISTING OF ORIGINAL COLLEGES FROM WHICH
STUDENTS TRANSFERRED

APPENDIX E

LISTING OF ORIGINAL COLLEGES FROM WHICH
STUDENTS TRANSFERRED

List of Colleges in New England Accrediting Region From
Which Students Transferred to University of Oklahoma

<u>State and Name of College</u>	<u>Number of Students Who Transferred to University of Oklahoma</u>
<u>Connecticut</u>	
Wesleyan University	1
<u>Massachusetts</u>	
Bradford Jr. College	1
Longmeadow Jr. College	1
Newton Jr. College	1
Pine Manor Jr. College	1
Wentworth Jr. College	2
<u>Rhode Island</u>	
Brown University	1

List of Colleges in Middle States Accrediting Region From
Which Students Transferred to University of Oklahoma

<u>State and Name of College</u>	<u>Number of Students Who Transferred to University of Oklahoma</u>
<u>Delaware</u>	
None	
<u>District of Columbia</u>	
Mount Vernon Jr. College	1
George Washington University	2
University of Maryland	10
<u>New Jersey</u>	
Mount Clair State College	1
Rutgers University	2
<u>New York</u>	
CUNY Brooklyn College	1
Mohawk Valley Jr. College	1
New York University at New York	2
Nassau County Jr. College	1
New York Institute of Technology	4
State University of New York at Buffalo	1
State University of New York at Albany	1
St. Bonaventure University	1
St. John University	1
Syracuse University	3
Union College	2
Vassar College	2
<u>Pennsylvania</u>	
Gettysburg College	1
Harrisburg Community College	2
University of Pittsburgh	1
University of Pennsylvania	1
Wilson College	1
<u>Out of United States</u>	
University of Paris	1

List of Colleges in Southern Accrediting Region from Which
Students Transferred to University of Oklahoma

<u>State and Name of College</u>	<u>Number of Students Who Transferred to University of Oklahoma</u>
<u>Alabama</u>	
None	
<u>Florida</u>	
None	
<u>Georgia</u>	
Georgia Technical Institute	2
<u>Kentucky</u>	
Eastern Kentucky University	1
Morehead State College	1
University of Kentucky	1
<u>Mississippi</u>	
Gulf Park Jr. College	4
<u>Louisiana</u>	
Centenary College	1
Louisiana Polytechnical Institute	1
McNeese State College	2
Tulane University	3
<u>North Carolina</u>	
Converse College	1
East Caroline State University	2
<u>Tennessee</u>	
Memphis State University	4
Vanderbilt University	1
<u>Texas</u>	
Abilene Christian College	2
Amarillo Jr. College	3
Austin College	2
Baylor University	5
Del Mar Jr. College	1
East Texas State University	2
Hardin Simmons University	3
Our Lady of the Lake College	2
North Texas State University	3
San Antonio Jr. College	1
Southern Methodist University	3
Texarkana Jr. College	1

List of Colleges in Southern Accrediting Region (continued)

<u>State and Name of College</u>	<u>Number of Students Who Transferred to University Of Oklahoma</u>
<u>Texas</u> (continued)	
Texas Christian College	4
Texas Technological College	4
University of Texas at El Paso	2
University of Texas at Arlington	3
Trinity College	1
Tyler Jr. College	2
Texas College	1
Victoria Jr. College	1
<u>Virginia</u>	
Bridgewater College	1
Randolph Macon College	1
University of Virginia	2

List of Colleges in North-Central Accrediting Region From
Which Students Transferred to University of Oklahoma

<u>State and Name of College</u>	<u>Number of Students Who Transferred to University of Oklahoma</u>
<u>Arizona</u>	
Arizona State University	1
<u>Arkansas</u>	
Conway College	1
Ft. Smith Jr. College	2
Harding College	2
Ozark College	1
University of Arkansas	5
<u>Colorado</u>	
Colorado College for Women	2
Colorado Springs College	1
Metropolitan State College	1
University of Colorado	5
<u>Illinois</u>	
Bradley University	1
De Paul University	1
Elgin Jr. College	1
Lincoln College	2
Roosevelt University	1
University of Illinois	3
Rockford College	1
Wright Jr. College	4
<u>Indiana</u>	
None	
<u>Iowa</u>	
Coe College	1
Drake University	1
Grinnell College	1
Parsons College	1
University of Iowa	4
<u>Kansas</u>	
Bethel College	1
Friends College	1
Coffeerville Community College	3
Kansas State University	3
Mount St. Scholastica College	1
St. Benedict's College	1

List of Colleges in North-Central Accrediting Region (continued)

<u>State and Name of College</u>	<u>Number of Students Who Transferred to University of Oklahoma</u>
<u>Kansas (continued)</u>	
St. John's College	1
Sacred Heart College	1
Wichita State University	2
University of Kansas	2
<u>Minnesota</u>	
None	
<u>Missouri</u>	
Christian College	7
Central Missouri College	3
Drury College	4
Metropolitan Jr. College	1
Lindenwood College	2
St. Louis University	1
Stephens College	3
Webster College	1
Wentworth Military Institute	3
William Wood College	3
Westminster College	7
University of Missouri	5
<u>Michigan</u>	
Grand Rapids College (Jr. College)	1
Hope College	1
<u>Nebraska</u>	
Grace Bible College	1
University of Nebraska	1
<u>North Dakota</u>	
None	
<u>South Dakota</u>	
South Dakota State University	1
<u>New Mexico</u>	
Eastern New Mexico University	2
University of New Mexico	1

List of Colleges in North-Central Accrediting Region (continued)

<u>State and Name of College</u>	<u>Number of Students Who Transferred to University of Oklahoma</u>
<u>Ohio</u>	
Oberlin College	1
Oxford State College	1
University of Ohio at Columbus	1
University of Ohio at Miami	1
University of Cincinnati	2
University of Toledo	1
<u>West Virginia</u>	
Marshall University	1
<u>Wyoming</u>	
Casper Jr. College	1
<u>Wisconsin</u>	
Beloit College	1
Marquette University	1
Mount Mary College	1
University of Wisconsin at Madison	2

List of Colleges in Northwest and Western Accrediting Region From Which
Students Transferred to University of Oklahoma

<u>State and Name of College</u>	<u>Number of Students Who Transferred to University of Oklahoma</u>
<u>Alaska</u>	
University of Alaska	1
<u>Alberta</u>	
Mount Royal Jr. College	6
<u>California</u>	
Chaffee Jr. College	2
California Institute of Technology	1
El Camino Jr. College	1
Marymount College	1
Menlo Park College	2
Northrop Institute of Technology	1
San Francisco State College	1
Santa Rosa Jr. College	1
San Jose State College	1
Stanford University	1
University of California at Santa Barbara	1
University of California at San Diego	1
University of California at Los Angeles	1
Yuba Jr. College	1
Vallejo Jr. College	1
<u>Idaho</u>	
None	
<u>Montana</u>	
Rocky Mountain Jr. College	1
<u>Nevada</u>	
University of Nevada	1
<u>Oregon</u>	
Northwestern Christian College	1
Portland State College	1
Reed College	1
University of Portland	1
<u>Washington</u>	
Washington State University	1
Whitman College	1
<u>Utah</u>	
Brigham Young University	1
<u>Phillipines</u>	
University of Phillipines	1

List of Colleges Within the State of Oklahoma According to Type
of College and Type of Control from Which Students
Transferred to University of Oklahoma

<u>Name of College and City Where Located</u>	<u>Number of Students Who Transferred to University of Oklahoma</u>
<u>Universities*</u>	
Oklahoma City University, Oklahoma City	12
Oklahoma State University, Stillwater	22
University of Oklahoma, Norman	not applicable
University of Tulsa, Tulsa	10
<u>State Colleges</u>	
Central State College, Edmond	41
East Central State College, Ada	15
Langston University, Guthrie	0
Northeastern State College, Tahlequah	20
Northwestern State College, Alva	6
Oklahoma College of Liberal Arts, Chickasha	7
Panhandle A & M College, Goodwell	1
Southeastern State College, Durant	12
Southwestern State College, Weatherford	15
<u>Private Colleges</u>	
Bethany Nazarene College, Bethany	1
Oklahoma Baptist University, Shawnee	10
Oklahoma Christian College, Oklahoma City	5
Phillips University, Enid	5
<u>Junior Colleges</u>	
Altus Jr. College, Altus	7
Bacone College, Muskogee	1
Cameron State A & M College, Lawton**	51
Connors State A & M College, Warner	3
Eastern State A & M College, Wilburton	16
El Reno Jr. College, El Reno	1
Murray State A & M College, Tishomingo	10
Northeastern State A & M College, Miami	22
Northern Oklahoma College, Tonkawa	16
Oklahoma Military Academy, Claremore	4
Poteau Jr. College, Poteau	2
St. Gregory's College, Shawnee	5
Sayre Jr. College, Sayre	0
Seminole Jr. College, Seminole	0
Southwestern College, Oklahoma City	1

* As defined in study - term university reserved for institutions of Higher Education with two or more graduate programs and enrollment in excess of 2500 students as of September, 1966.

**Became a four year state college effective Fall, 1968.