A STUDY OF SELECTED FACTORS RELATING TO COLLEGE ENROLLMENT OF PUBLIC HIGH SCHOOL GRADUATES WITHIN SIX MONTHS AFTER GRADUATION

> Thesis for the Degree of Ed. D. MICHIGAN STATE UNIVERSITY Ferris N. Crawford



This is to certify that the

thesis entitled A Study of Selected Factors Relating to College Enrollment of Public High School Graduates Within Six Months After Graduation

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A STUDY OF SELECTED FACTORS RELATING TO COLLEGE ENROLLMENT OF PUBLIC HIGH SCHOOL GRADUATES WITHIN SIX MONTHS AFTER GRADUATION

BY

Ferris N. Crawford

AN ABSTRACT

Submitted to the School of Advanced Graduate Studies of Michigan State University of Agriculture and Applied Science in partial fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

College of Education

1960

Approved_



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The problem of this study was to (a) determine certain factors that might be predictive, in a school district operating a community cellege, of the total number of boys and girls who could be expected to enrell initially in some college within six months after their graduation from the public high schools of the district and to (b) determine certain factors that might be predictive of the number and kinds of students who could be expected to enrell initially in each of the various available types of colleges, located within and outside the district.

Data for the study were obtained from questionnaires completed by twelfth grade students prior to graduation from high school, questionnaires completed by parents about the activities of the high school graduates within six menths after their graduation from high school, and records concerning the backgrounds of the graduates maintained by the School District of the City of Grand Rapids. Of a total graduating population of 1,220 students, 850 cases were used in the study. This sample was tested for representativeness to account for the pessibility of errors in the results due to bias.

Ten hypotheses were established for the study. These were expressed in terms of relationships between backgrounds, expressed intentions, plans for college and actual enrolling in college within six months after graduation from high school. Nine of the ten hypotheses were found to be valid.



The findings of the study indicate that there is a relationship between certain factors concerning high school graduates, from public high schools in a school district operating a community college, and the initial enrollment of these graduates in some college within six months following their graduation. These factors include sex, courses of study pursued in high school, greater educational attainment levels of parents, higher schelastic achievement ranking in high school, degrees of expressed certainty of attending college, plans made for college enrollment, and occupations of the heads of households.

Also, the findings indicate that a relationship exists between two of the aforementioned factors and the enrollment of these graduates in the several types of colleges. These factors include sex and scholastic attainment level in high school.

Results of this study should be of interest and use to high school counselors, planners of community colleges, and educators in general. а. С

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G15123 6/10/01

ACKNOWLEDGMENTS

The writer wishes to express his great appreciation and sincere thanks to Dr. Stanley Hecker, chairman of his guidance committee, for his time-consuming assistance and encouragement.

He is also greatly indebted to Dr. William Roe, Dr. Carl Gross, and Dr. John Useen, members of the committee, for their interest and helpful suggestions.

In addition, the writer also wishes to express his thanks to Dr. John Jamrich, Director of the Study of the Needs for a Four-year College in Grand Rapids, and the principals and other administrative personnel of the School District of the City of Grand Rapids, for furnishing a large share of the background data used in this study. Without these data, the study could not have been completed.

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CHAPTER I

INTRODUCTION

For almost a decade, the writer has been employed by the State of Michigan, as a part of his assignment, to assist the Superintendent of Public Instruction in the provision of advisory and consultative services to local communities for the establishment and development of collegiate level institutions. These institutions, besides those which are legally termed community colleges, have included state-controlled degree-granting institutions, privately-controlled junior and degreegranting colleges, privately-controlled professional institutions, and privately-controlled technical and semi-professional institutions.

In every instance, the planners of these institutions have been confronted with the problem of estimating the numbers and kinds of students that the institutions would eventually attract. They have realized that only with this knowledge can they proceed with the problems of planning educational programs, computing the costs of operation, and constructing physical facilities.

Since attendance in any college or university is voluntary for those in Michigan beyond sixteen years of age, the question of how many and what kinds of students will attend a particular institution has been a baffling one. Certainly the potential enrollees would seem to be influenced in their decisions by a number of factors. Some of these might

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include: (a) financial costs for fees, tuition, board, and travel; (b) distances of the institution from their homes; (c) admissions policies of the institution; (d) programs pursued in the secondary school; (e) reputation of the institution; (f) types of educational programs offered or to be offered by the institution; (g) attitudes of the parents and students toward college education.

The writer has been intrigued with the idea of exploring for predictive factors in initial college attendance when certain other potentially influencing factors are kept constant. This seems to be possible in a community in which a public community college is located. For a public community college provides collegiate level education at a low or nominal cost to the student. It is close to the students' homes and it is non-selective in its admission's policy. It usually offers a program to integrate with each of the four conventional high school programs and it usually enjoys accreditation status. Thus one could conclude that it might be possible to identify certain factors predictive of initial college attendance in a community which operates a public community college.

Statement of the Problem

The problem of this study is to (1) determine certain factors that may be predictive, in a community operating a community college, of the total numbers of boys and girls who could be expected to enroll initially in some college or university following their graduation from the public high schools and to (2) determine certain factors that may be predictive
of the number and backgrounds of students from that same community who could be expected to enroll initially in each of the various available types of colleges and universities.

Need for the Study

The writer has already stated some of his personal interests and concerns with the problem of this study. But there is little doubt that this interest has been stimulated and to a large extent created by the expressions of others.

Russell, in his report to the Michigan Legislative Study Committee on Higher Education, made several recommendations regarding the establishment of new collegiate level institutions in various locations throughout Michigan. Among these recommendations was one for the establishment of a total of thirty-seven community colleges, twenty-three of which were listed as being of first priority in urgency and fourteen of which were listed as being of second priority in importance.¹ In addition, Russell suggested that a study be made to determine the enrollment potential for a state-controlled four-year college to serve the Grand Rapids area and for a similar one to serve the Saginaw Valley area.²

Several local studies are already in progress to determine the

²Ibid., pp. 141-142.

¹John Dale Russell, <u>Final Report of the Survey of Higher Education</u> in <u>Michigan</u>, Lansing, Michigan, September, 1958, p. 99.

feasibility of Russell's suggestions. Most of these are for the purpose of determining the need for community colleges in certain localities. One of these studies has been completed and of this writing has resulted in action by the Michigan Legislature.³ The writer is serving in a consultative capacity to the former studies. He is indebted to the latter study for part of the preliminary data used in this thesis.

In 1953, the Michigan Council of State College Presidents initiated a series of studies concerning the institutions which it represented. One of these studies was an attempt to forecast the number of students in Michigan who would be seeking higher education by the end of each five-year interval up to the year 1970.⁴ This study was made for the purpose of bringing the attention of educational planners to the magnitude of the task with which they would be faced in the next decade and a half.

The Council made no attempt to predict enrollments or enrollment demands for college or university education in specific regions of Michigan. Nor did it attempt to predict future enrollments in any specific college or university. The Council stressed the importance and need for such predictions as well as the limitations in the methods

³John X. Jamrich, <u>A New College</u>, A Report of the Legislature and Citizens Committee on the Eight-County Study of Higher Education Needs in Allegan, Barry, Ionia, Kent, Montcalm, Muskegon, Newago, and Ottawa Counties, Center for the Study of Higher Education, Michigan State University, December, 1959.

⁴Population Study Group of Michigan Council of State College Presidents, <u>Future School and College Enrollments in Michigan</u>, Ann Arbor, Michigan: J. W. Edwards, Publishers, Inc., 1954, p. iii.

which it employed for predicting total state-wide enrollments. It

stated:

Intelligent planning for the institutions of higher education in Michigan involves use of forecasts of the number of students who will be enrolled in the schools at various levels in future years...

All population forecasts are based on particular assumptions about future social and economic trends. There is no certainty that these assumptions will continue to be valid. Unexpected events may reverse presently observed trends. It is certain that the next two decades will not be exact replicas of the past two, yet it is reasonable to project the discernible trends of the recent past, with some modification, into the immediate future as our best basis for intelligent action...²

Speaking from a nation-wide viewpoint, the Educational Policies Commission of the National Education Association has recognized certain forces influencing attendance as well as non-attendance in institutions of higher education. In a published report in 1957, the Commission stated:

American youth are pursuing higher education in greater numbers than ever before. Todays college student body embraces all economic and cultural levels, sexes, and ethnic groups, as well as many students from foreign lands. Yet barriers of finance, minority status, and motivation still prevent sizeable numbers of our able youth from attending college.

The Commission, in a series of statements preceding the summary statement quoted above, concluded as follows:

Able young people from all economic and cultural levels are

⁵<u>Ibid</u>., p. 1.

⁶Educational Policies Commission, <u>Higher Education in a Decade</u> of <u>Decision</u>, National Education Association of the United States and the American Association of School Administrators, Washington 6, D. C., 1957, p. 41. today attending colleges and universities. While high school graduates whose parents hold managerial or professional jobs are much more likely than other young people to go to college, college attendance is by no means restricted to high-income families. In fact, a great proportion of college students today come from homes of modest income...Young people who do not have above-average abilities or who have not experienced success in their earlier school work are ordinarily not interested in formal education beyond the high school...Enrollments of women students have reached an all-time high.⁷

Also, in July of 1957, the President's Committee on Education

Beyond the High School issued its Second Report to the President.

Among the six basic premises of the Report was the following:

The needs and demands of individuals and of society in the next 10 to 15 years will require great expansion of the overall capacity of existing colleges and universities and of other post-high school institutions, with improvement rather than sacrifice of quality. Greater diversity and accessibility of educational opportunities will also be needed.⁰

This latter Committee identified a number of blocks which inhibit students from continuing school beyond high school and brought attention to the fact that several studies have indicated that relationships exist between the occupation of the parents, minority group status, sex, and income of the family of twelfth grade graduates and their continuation of schooling beyond high school.⁹

Thus the aforementioned authorities have indicated that the demand for post-high school education is increasing, not only in Michigan,

7_{Ibid., pp. 22-24}.

⁸The President's Committee on Education Beyond the High School, <u>Second Report to the President</u>, Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., 1957, ix.

9<u>Ibid.</u>, pp. 42-44.

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but in the entire United States. They have also generalized about changing patterns in the aspirations of those in the various cultural, ethnic, and economic groups to seek post-high school education. But a quantitative measurement of this demand, expressed in statistical relationships between the various elements of our society, for specific geographical locations, and at specific times, is not available.

In the field of industry or business, the constructing and locating of an enterprise previous to a determination of probable "demand" for its services would be considered an indefensible gamble. To do the same for post-high school institutions would be considered equally irresponsible and foolhardy by most citizens. Furthermore, to build an educational program at a new institution without objectively measuring the probability of certain kinds of demands could result in a tremendous waste of human and material resources.

Obviously there are some by-products of a study of this type which should prove useful to the secondary schools. Insights concerning the numbers and kinds of students that could be expected to enroll in college should be invaluable to secondary teachers, curriculum planners, as well as to guidance and counseling personnel. Certainly better advisements to secondary school youths could result. To recognize these possible uses as supplementary needs for the study seems to be most proper.

Hypotheses

This study will be concerned with the testing of certain hypotheses which, if proven to be valid, should identify factors which might be

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predictive of initial college enrollments in a school district operating a community college and should be indicative of the number and kinds of students from that same district who could be expected to enroll initially in the several types or kinds of colleges or universities. These hypotheses are:

- 1. There is a relationship between the <u>sex</u> of twelfth grade graduates of the public schools of a school district operating a community college and the initial enrollment of these graduates in some college within six months following their graduation.
- 2. There is a relationship between the <u>course of study pursued</u>, while in high school, by twelfth grade graduates in the public schools of a school district operating a community college and the initial enrollment of these graduates in some college within six months following their graduation.
- 3. There is a relationship between the greater educational attainment level of the parents of twelfth grade graduates of the public schools of a school district operating a community college and the initial enrollment of these graduates in some college within six months after graduation.
- 4. There is a relationship between the <u>higher scholastic achieve-</u> <u>ment ranking, at the end of high school</u>, of twelfth grade graduates of the public schools of a school district operating a community college and the initial enrollment of these graduates in some college within six months after graduation.

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- 5. There is a relationship between the <u>degree of certainty of go-ing on to college</u>, as expressed prior to graduation by twelfth grade graduates of the public schools of a school district operating a community college, and the initial enrollment of these graduates in some college within six months after graduation.
- 6. There is a relationship between the <u>plans made for college</u> <u>enrollment</u>, by twelfth grade graduates of the public high schools of a school district operating a community college, and the initial enrollment of these graduates in some college within six months after graduation.
- 7. There is a relationship between the <u>occupations of the heads</u> of the households of twelfth grade graduates of the public high schools of a school district operating a community college and the initial enrollment of these graduates in some college within six months after graduation.
- 8. There is a relationship, on the basis of sex, between the graduates who enroll initially in a <u>community college</u>, between the graduates who enroll initially in <u>privately-controlled four-year colleges within the same district</u>, and between those who enroll initially in <u>resident colleges of various kinds outside the district</u>, within six months after graduation from the public high schools of a school district operating a community college.

9. There is a relationship, on the basis of scholastic attainment

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ranking in high school, between the graduates who enroll initially in a <u>community college</u>, between the graduates who enroll initially in <u>privately-controlled four-year colleges</u> <u>within the same district</u>, and between those who enroll initially in <u>resident colleges of various kinds outside the</u> <u>district</u>, within six months after graduation from the public high schools of a school district operating a community college.

10. There is a relationship, on the basis of courses of study pursued in high school, between the graduates who enroll initially in a <u>community college</u>, between the graduates who enroll initially in <u>privately-controlled four-year colleges</u> in the same district, and between those who enroll initially in <u>resident colleges of various kinds outside the district</u>, within six months after graduation from the public high schools of a school district operating a community college.

Assumptions

The following basic assumptions serve as theoretical foundations for the hypotheses established for this study:

- Twelfth graders in public schools will accurately report factual information about themselves and about their families.
- Twelfth graders in public high schools have conceived intentions and plans for college enrollment after graduation from high school and they will accurately report these intentions and plans.

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 Parents will accurately report the facts concerning the activities in which their children are engaged within six months after graduation from high school.

Delimitations

This study is limited to the City of Grand Rapids. It will include only the youth who were enrolled in the twelfth grade in the five public high schools of that school district in the Spring of 1959 and who were graduated with a high school diploma in June of that same year.

Grand Rapids was selected as the locale of this study for several reasons. First, it is the location of Grand Rapids Junior College, the oldest community college in Michigan. This institution was established in 1914. It is fairly representative of the sixteen Michigan community colleges and is fully accredited by the North Central Association of Colleges and Secondary Schools as well as the Michigan Commission on College Accreditation.

Secondly, Grand Rapids has two church-related four-year colleges located within its boundaries and these institutions also enjoy the same accreditation status that is enjoyed by Grand Rapids Junior College. Several proposed locations for new community colleges elsewhere in Michigan have this same combination of institutional offerings.

Thirdly, the total population of the City of Grand Rapids, 176,515 in 1950 and 175,741 in 1960, 10 seems to be representative of the total

¹⁰U. S. Census Reports, <u>Population Characteristics</u>, 1950, and Lansing State Journal, May 23, 1960.

population of the several geographical areas whose authorities are considering the establishment of community colleges. Also, the occupational distribution of those employed seems to be fairly representative of these same areas. (See Appendix, p.143, of this thesis for occupational distribution in 1950)

Lastly, the Michigan Legislature, through the provisions of Act No. 120, of the Public Acts of 1960, has provided for the establishment of Grand Valley College in Grand Rapids. This is to be a four-year state-controlled institution offering the baccalaureate degree. The results of this study might identify certain factors which could be predictive of the numbers that will enroll initially in that new institution. Also, these results might well be predictive of initial enrollments in potential colleges in similar communities under similar conditions or circumstances.

Definition of Terms

Several terms or phrases used in this study have been assigned meanings which may be different than those ascribed to them in other studies or in Good's Dictionary of Education.¹¹ The terms listed below shall have the following meanings:

<u>Relationship</u>. The probability of one element increasing or decreasing in proportion to the second element but the definition does not imply that this relationship is always quantitative.

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¹¹Carter V. Good, <u>Dictionary of Education</u>, New York: McGraw Book Co., Inc., 1959.

<u>College</u>. An institution, usually termed in its name as being a college or university and enpowered to confer degrees, or, in community or junior colleges, associate titles, and listed in the <u>Educational</u> <u>Directory</u> of the United States Office of Education. It usually, but not in all cases, requires high school graduation as a condition of admissibility.

Four-year colleges. A college offering a program leading, as a minimum, to the granting of the bachelor's degree and for which the aspirant is usually required to attend a minimum of four calendar years.

<u>Community college</u>. A college, in some states termed a public junior college, operated and controlled by a local board of trustees, as a part of local government, and empowered to offer collegiate level education up to two years in length.

<u>Private college</u>. A college controlled and operated by a nongovernmental body, either as a proprietory or a non-profit institution.

<u>Course of study</u>. A series of subject courses, usually but not always sequential in content and difficulty, which constitutes an educational program for an implied or specified purpose.

<u>College preparatory course</u>. A course of study designed primarily to prepare the high school student for meeting admission requirements established by some colleges and for successful college work in all colleges.

<u>General course</u>. A course of study, usually characterized by wide samplings from the various discipline and other educational fields, which, in most high schools in the United States, is designed for students



who plan to terminate their formal education at the end of high school graduation or for students who are undecided about pursuing formal education beyond the high school level.

<u>Commercial</u> or <u>business</u> course. A course of study designed to prepare the student for technical business occupations such as stenography and bookkeeping.

<u>Vocational course</u>. A course of study with special emphasis on preparing the student for entrance, upon its completion, into the various trades, industrial work, or agricultural occupations requiring less than professional skills.

<u>Plans made for college</u>. Some overt action taken by an individual which is a part of the usual procedure for obtaining acceptance by a college for admission to it.

<u>Percentile</u>. One of the values of a variable which divides the distribution of the variable into one hundred groups having equal frequency.

Educational attainment level. The level or degree of accomplishment acquired through formal educational processes at an institution of learning (either public, parochial, or private) and expressed in relationship to the grade system in American elementary and high schools and the degree granting system in American colleges and universities.

High school scholastic achievement rank. The relationship of an individual's scholastic achievement, usually expressed as an arithmetical mean of grades assigned by teachers to designate scholastic accomplishments in subjects pursued in high school, to the scholastic

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achievement of other members of the graduation class.

Summary

This chapter has set forth the problem of the study, the purposes and need for the study, the hypotheses to be tested, the basic assumptions, the delimitations, and the definition of terms used in the study. The ensuing chapters will deal with the review of related research, research and methodology of the study, tests for biases in the sampling, analyses of data and testing of hypotheses, conclusions, recommendations, and implications for further research.

Chapter II, which follows, describes several studies that have been made throughout the United States which are similar or related to the approach taken in this study.

CHAPTER II

REVIEW OF RELATED RESEARCH AND LITERATURE

A survey of the literature revealed several studies which were concerned, directly and indirectly, with factors similar to those of this study. Some of these studies were based on samplings of the entire population of the United States. Most dealt with samplings of the population of a specific region or college. But no published account of a study was discovered which was concerned with all of the elements or the geographical locale of this study.

Because the related research studies seem to differ in purpose and scope, they have been classified into four categories. These categories are: (1) relationships between background factors of high school graduates and the actual enrollment of these graduates in college, (2) relationships between background factors and aspirations end plans of high school seniors for further education, (3) parents' expectations for a college education for their children and their expectations concerning costs of such education, and (4) proportions of college age youth attending school and predictions of future college enrollments in Michigan.

Relationships Between Background Factors of High School Graduates and Their Actual Enrollment in College. The most recent of the four studies found in this category was made in 1958 by Wagner, Doyle, and Fisher.¹ Wagner and his colleagues studied the background of 532 Catholic and non-Catholic students who were enrolled, in the Fall of 1958, in a medium-sized university with a relatively balanced liberal arts and science program. This group of students included 222 Catholic students and 310 non-Catholic students. The primary purpose of this study was to determine if there were any significant differences between selected elements in the backgrounds of Catholic students and those of non-Catholic students. The following are summary statements of some of the findings of this study:

Two-thirds of the Catholic students represented a first college generation or, the parents of two-thirds of the Catholic students did not belong to that middle-aged Catholic minority who received a college degree. These backgrounds were approximately reversed for non-Catholic students.

Families of Catholic students were relative newcomers on the American scene, the majority of whom came from southern and eastern Europe between 1880 and 1920.

30 percent of the Catholic students were children of whitecollar and manual workers while only 14 percent of non-Catholic students were children of such workers in spite of the fact that they were attending a private university with rather high tuition charges.

54.5 percent of the Catholic students were children of fathers who were businessmen or professionals while 73 percent of the non-Catholic fathers were businessmen or professionals.

Catholic students attended the university for the same kinds of purposes as non-Catholic students of certainty of attending college.

¹Helmut R. Wagner, Kathryn Doyle, and Victor Fisher, "Religious Background and Higher Education," <u>American Sociological Review</u>, Vol. 24, December, 1959, pp. 852-856. In 1955, a study of background factors relating, not only to college plans, but to college enrollment among high school graduates was conducted by the Educational Testing Service. It was partially under the auspices of the College Entrance Examination Board and was supported financially by the National Science Foundation.² French and his colleagues, using a selected nation-wide sample of 35,000 twelfth grade students from 516 representative public high schools, analyzed the underlying factors that might pertain to a claim by many authorities that only half of the students who have the ability to perform college work actually enroll in college. A sub-sample of this original group, made up of 3,103 boys and 3,266 girls from 516 public high schools, was used to determine the extent to which the students carried out their intentions to enroll or to not enroll in college. Among the many findings of this study were the following conclusions:

The percentage of students planning to go to college decreases directly with ability level for students in all background and experience categories.

Professional occupation and the extent of formal education of the father is positively related to college plans.

Attendance in small schools is associated with a lower probability of college plans. Regions of the country, on the other hand, has little or no relationship to plans.

Good grades in high school have a particularily high relationship with plans for college.

²John W. French, M. Clemens Johnson, Wm. G. Mollenkopf, Glen Stice, "Background Factors Relating to College Plans and College Enrollment Among Public High School Students," Educational Testing Service, Princeton, New Jersey, April, 1957.

The high school programs in which the students are enrolled do not closely match plans to attend or to not attend college.

Thirty-six percent of the boys and twenty-seven percent of the girls enroll in college in the fall following their senior year in high school.

The number of "slips" between expressed intentions of enrolling in college and actual college attendance is considerable. Only sixty-five percent who plan to attend college actually enroll in college; seven percent of those who do not plan to enroll in college go to college anyway.

Factors that relate to college attendance more closely than expressed plans are: professional nature of father's occupation, extent of father's education, number of friends going to college, class standing, high school program, proportion of college expenses which the family is able to pay, professional aspirations, and academic reasons for college attendance.

Of the high school seniors with high grades, 7 to 10 deciles in scholastic achievement rank, only sixty-six percent of the boys and forty-three percent of the girls actually enroll in college during the following fall.

Over thirty percent of the high-scoring boys in non-college programs (commercial, vocational, or general courses in high school) actually enroll in college following their graduation.

A projection of the sample on the total nation-wide twelfth grade population (Spring of 1956) indicates that 150,000 high ability students will not attend college the following fall because of lack of adequate finances.

In 1951, Porter³ studied selected background information of 100

boys from two suburban high schools in Pennsylvania. Six months later,

he followed up 92 of the boys to determine the relationship between

vocational preferences and vocational plans prior to graduation and

³J. Richard Porter, "Vocational Plans and Preferences of High School Senior Boys in Relation to Mental Ability, Emotional Adjustment, and Prestige Level of Father's Occupation," Unpublished doctoral thesis, University of Pittsburg, Pittsburg, Pennsylvania, 1951.

their activities six months after graduation from high school. The

following seven conclusions are among those drawn by Porter:

Two variables, mental ability and father's occupation, are both significantly related to vocational plan, and the father's occupation has the greatest strength of relationship.

Emotional adjustment, measured by a single index, is not found to be significantly related to vocational plans.

There is a high consistency between what high school senior boys prefer to do, what they plan to do, and what they actually begin to do six months later.

A large proportion of high school senior boys make fairly definite vocational plans and actually follow those plans after they graduate.

Vocational plan is a more stable variable than vocational preference and provides a better indication of what the person will actually do.

As a group, high school senior boys select a wide range of occupations, their selection show considerable variation as to the prestige level of the occupations, and their planned occupations are not on a higher average prestige level than those of their fathers.

The results showed 53 percent of the boys planned occupations consistent with the prestige level of their fathers' occupations, 22 percent made plans at a higher prestige level, and 25 percent made plans at a lower prestige level than their fathers.

In 1950, White⁴ made a study of 1,053 high school students from

37 different high schools in Ohio. Using the methods developed by Professor W. Lloyd Warner⁵ and his associates to determine the social

⁴R. Clyde White, "Fature Demand for Admissions to College: How Many and Who?," <u>College and University</u>, Vol. 29, No. 1, October, 1953, pp. 5-13.

W. Lloyd Warner and Paul S. Lunt, <u>The Social Life of a Modern</u> <u>Community</u>, New Haven, Connecticut: Yale University Press, 1941, pp. 81-91.

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class position of a family in a community, the social position to which each of the graduates belonged was determined. During the following year, the high schools were again surveyed to determine who went to college and who did not go to college. The following is a summary of the significant findings of White's study:

Of the young people who graduate from high school, 92 percent of the Upper class enroll in college, 66 percent of those in the Upper Middle class enroll in college, 32 percent of those in the Lower Middle class enroll in college, 20 percent of those in the Upper Lower class enroll in college, and 14 percent of those in the Lower Lower class enroll in college. Ability is not equally distributed among the five social classes, but the differences are by no means as great as the differences in proportions who enroll in college.

<u>Relationships Between Background Factors and Aspirations and Plans</u> of <u>High School Seniors for Further Education</u>. In 1957, Sewell, Haller, and Strauss reported the results of a study made in the State of Wisconsin to determine "if levels of educational and occupational aspirations of boys and girls are related to social status of their families when the effects of intelligence are controlled." Using a random sampling of the high school seniors in the entire state, these researchers made the following observations:

It must be concluded that the apparent effects of social status on levels of educational and occupational aspiration are not simply due to the common relationship of these variables to intelligence, although intelligence is related to both types of aspirations. This conclusion is specific to non-farm families.

Because the sample was drawn randomly from a broad population of high school seriors from the entire State of Wisconsin, and because the effects of measured intelligence and sex were controlled, the present tests lend support to the pociological claim that values specific to different status positions are important influences on levels of educational and occupational aspiration. This does not deny the importance of intelligence to educational and occupational aspirations, but suggests that status makes an independent contribution to these aspirations.

In the early months of 1956, Grim⁷ studied the responses of 6,882 students of the tenth and twelfth grades in the public schools of Macomb and Oakland Counties of Michigan and the responses of the parents of these same students to a series of questions. The questions dealt with such matters as aspirations for college, vocational goals, degrees of expressed certainty of attending college, and family backgrounds of students including the fathers' occupations and educational attainment levels. In general, Grim found that there was a high probability of agreement between the:

students' expressed certainty of going on to college and their parents' educational aspirational levels for them,

students' expressed vocational goals and their parents' vocational aspirational levels for them,

educational attainment levels of the parents and the educational goals they hold for their children,

educational attainment levels of the parents and the students' expressed desires for education beyond the high school.

⁶William H. Sewell, Archie O. Haller, and Murray A. Strauss, **"Social Status** and Educational and Occupational Aspiration," <u>American</u> <u>Sociological Review</u>, Vol. 22, No. 1, February, 1957, pp. 72-73.

^{&#}x27;Edgar L. Grim, "A Study to Determine the Probability of Relationships Between the Educational and Vocational Goals of Tenth and Twelfth Grade Boys and Girls in Oakland and Macomb County Public High Schools and the Expressed Educational and Vocational Goals of the Parents of These Children," Unpublished doctoral thesis, Michigan State University, 1997.



In 1951, Samson and Stefflre⁸ found that children are not independent in making their vocational choices. Children, in selecting their vocational objectives, are influenced by their parents' occupations to an extent that these selections are related regardless of what classifications the parents' job falls into. In the instances of parents working at a professional or semi-professional level, this lack of independence is demonstrated by over-selection of professional objectives and underselection of "manual" objectives. In instances when parents are engaged in jobs which are classified as service or agriculture occupations, the children tend to over-select service and agriculture objectives and under-select professional objectives.

In 1954, Slocum⁹ studied the occupational and educational plans of high school seniors from farm and non-farm homes. Using a sample of 1,981 high school seniors in the State of Washington, his findings in regard to educational planning were:

There was a somewhat greater tendency for seniors from urban areas than for those from rural areas to plan on immediate college entrance; the proportions were 41 percent and 31 percent respectively.

The socio-economic level of the family evidently has considerable influence on students' evaluation of the desirability of higher education.

⁸Ruth Samson and Buford Stefflre, "Like Father...Like Son?", <u>The</u> <u>Personnel and Guidance Journal</u>, October, 1952, pp. 37-38.

⁹W. L. Slocum, "Occupational and Educational Plans of High School Seniors from Farm and Non-farm Homes," Pullman, Washington: State College of Washington, Bulletin 564, February, 1956.



Nearly all seniors planning to go to college considered themselves to be average students or above-average students.

Nearly eight out of each ten of those who expected to go to college the following year indicated that the most important reason for such plans was occupational preparation.

In 1951, Kahl¹⁰ studied the vocational educational aspirations of high school boys in relationship to intelligence and family status. He found that intelligence and family status are highly important factors in predicting such aspirations. However, Kahl found that boys of high intelligence in lower middle class homes varied considerable from the overall pattern. Using a sub-sample of the "working class" group and matching an equal number of those planning to go on to college and those not planning to go on, Kahl concluded:

The interviews disclosed that, although there was a general way of life which identified the 'common man' class, some members were content with that way of life while others were not. Parents who were discontented tended to train their sons from the earliest years of grammar school to take school seriously and use education as the means to climb into the middle class. Only sons who internalized such values were sufficiently motivated to overcome the obstacles which faced the common boys in school; only they saw a reason for good school performance and college aspirations.

<u>Parents' Expectations for a College Education for Their Children</u> and <u>Their Expectations Concerning Costs</u>. A very recent study and the only one found in this category was conducted by Elmo Roper and Associates for the Education Program of the Ford Foundation.¹¹ During the

¹⁰Joseph A. Kark, "Educational Occupational Aspirations of 'Common Man' Boys," <u>Harvard Educational Review</u>, Vol. 23, No. 3, Summer, 1953, pp. 186-203.

¹¹Elmo Roper and Associates, "Parents' College Plans Study," New York, 1959.

week of April 5, 1959, Roper made a cross sectional study of the expectations of 5,000 heads of households from all parts of the United States. He sampled parents' expectations of the costs of a college education for their family, and parents' plans to finance these costs. Among the major results of this study were the following ten findings:

Parents expect to send 68 percent of children under eighteen years of age to college. The percentage is about the same for girls as it is for boys. It is substantially higher among persons of above-average economic levels, in smaller families, and in the very far West as compared to the remainder of the country.

Lack of money creates doubts about children going to college but it is not the only problem. According to parents, a significant percentage of both boys and girls just "do not want to go to college" or "they haven't marks which are good enough, according to their teachers."

A majority of parents feel that going to college means embarking on a four-year course (bachelor's degree course). A majority of parents indicating a choice expect their children to go to a state college.

Two-thirds of the parents indicating a choice expect their children to live at college for a year at a cost of \$500 more than the cost of living at home.

The median expense expected per child per year of college attendance is \$1450.

The median total expected cost per family for all children for all years of college is \$10,050, of which the parents expect to contribute 70 percent or \$7,050. The children are expected to earn \$3,000 during their college years.

Parents expect college costs to remain fairly static even up to 1970.

Sixty-seven percent of the parents expect to use some form of savings, 41 percent hope for some type of scholarship, and 29 percent expect to use current income at the time of college attendance.

At the present time, 60 percent of the parents expecting to send a child to college have no savings plan specificially set up for college expenses. Of the remaining 40 percent who have a savings plan, 24 percent have such a plan in the form of insurance.

The median amount saved in 1958 by the 40 percent who have a savings plan specifically for college was \$150.

<u>Proportions of College Age Youth Attending School and Predictions</u> of <u>Future College Enrollments in Michigan</u>. In 1954, the Michigan Council of State College Presidents published the results of a study in which it made predictions concerning probable school and college enrollments in the State of Michigan for each five-year period from 1955 to 1970.¹² Although the projections of the Council are not based on factors in the backgrounds of high school students, the results of the study are reported here because it represents a particular method of predicting the numbers of students who will enroll in Michigan colleges and universities after completing their high school education. The Council made five varying predictions based on the following five assumptions:

- The ratio of total enrollment in Michigan colleges and universities to the number of 18-24 year old men and women in the total Michigan population will remain constant at the 1950 level until 1970 (12.5 percent).
- 2. The ratio of total enrollment in Michigan colleges and universities to the number of 18-24 year old men and women in the total Michigan population will remain constant at the

12 Michigan Council of State College Presidents, op. cit., p. 35.

1953 level until 1970 (15.0 percent).

- 3. The ratio of total enrollment in Michigan colleges and universities to the number of 18-24 year old men and women in the total Michigan population will increase linearly from 12.5 percent to the non-veteran ratio existing in New York California by 1970 (15.26 percent).
- 4. The ratio of total enrollment in Michigan colleges and universities to the number of 18-24 year old men and women in the total Michigan population will increase linearly from 12.5 percent to the non-veteran New York California ratio of 15.26 percent by 1965 and increase at the same rate until 1970.
- 5. The ratio of total enrollment in Michigan colleges and universities to the number of 18-24 year old men and women in the total Michigan population will increase linearly to 17.6 percent by 1970 (weighted assumed "normal" ratio for California and New York when one half of the veteran enrollment is included).

The Council found that the proportion of college enrollment to college age population (18-24 years of age) in Michigan rose from 2.8 percent in 1900 to 4.2 percent in 1910, to 4.6 percent in 1920, to 7.5 percent in 1930, to 9.8 percent in 1940, and to 10.8 percent in 1950 excluding Veterans or 12.5 percent in 1950 including 50 percent of the Veterans.¹³ In accordance with the aforementioned five assumptions,

^{13&}lt;sub>Ibid., p. 33</sub>.

the Council predicted that the total enrollments in Michigan's colleges and universities, public and private, would reach the amounts as indicated below:¹⁴

| | Prediction l | Prediction 2 | Prediction 3 | Prediction 4 | Prediction 5 |
|------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 1955 | 81,000 | 97,000 | 86,000 | 87,000 | 92,000 |
| 1960 | 89,000 | 106,000 | 98,000 | 102,000 | 113,000 |
| 1965 | 111,000 | 133,000 | 130,000 | 135,000 | 156,000 |
| 1970 | 139,000 | 167,000 | 170,000 | 180,000 | 215,000 |

In 1952, as a phase of a study designed to produce criteria appropriate for the establishment of community colleges in Michigan, Fink¹⁵ studied the college enrollments from each county in Michigan as well as college enrollments from each of the larger school districts in Michigan. Using the data from the U. S. Census of 1940 and the results of Self Survey Reports filed with the Michigan Superintendent of Public Instruction, Fink reported the following information which bears some relationship to the purpose of this study:

In 1940, 28.1 percent of the 18 to 20 year old youths of the City of Grand Rapids and 26.9 percent of the 18 to 20 year old youths of Kent County were attending school.

On October 15, 1950, 35.83 percent of the 1950 high school graduates of Kent County and 24.48 percent of the 1950 high school

14<u>Ibid.</u>, p. 35.

¹⁵Russell Foster Fink, "Some Criteria for the Establishment of Community Colleges, with Special Reference to Michigan," Unpublished doctoral thesis, Michigan State University, 1952.

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graduates of the entire State of Michigan were enrolled in college somewhere.

In addition to the research studies that have been described in the foregoing pages of this thesis, the literature contains several publications which seem to be pertinent to the problem of this study.

As early as 1925, Koos¹⁶ described the junior college movement and its probable effect on post-high school enrollments from a community in which a junior college might be located. Later, in 1946, Koos made some observations about the need for junior colleges in Maryland. In his report to the Maryland Commission on Higher Education, he stated:

The private four-year college in this community (Carroll County) drew only 11 of the 1940 graduates of this largest high school, and the total of this high school class who entered an institution of collegiate grade the following school year was only 12.9 percent--a proportion only about a fourth as large as the median shown...for high schools in communities with tuition free junior colleges.¹⁷

In 1948, Conant expressed his viewpoints concerning the changing attitudes in the American society toward secondary and higher education.

As public secondary education expanded in the last decades of the nineteenth century and in the first half of the twentieth, the colleges and universities likewise expanded. Not only were the applicants more numerous, they were much more heterogeneous as to backgrounds and ambitions. Furthermore, the

¹⁶Leonard V. Koos, <u>The Junior College Movement</u>, Boston: Ginn and Company, 1925, p. 135.

¹⁷John Dale Russell and Staff for the American Council on Education, <u>Higher</u> <u>Education</u> in <u>Maryland</u>, Washington, D. C., 1946, p. 292.
political, social, and economic development of the United States vastly altered the way in which the public regarded education. As the years went by, it became more and more evident that in our complex industrialized society mere ability to read and write, added to native wit, was not enough. With the passing of the frontier, the pioneer spirit was turned away from new lands toward new industries. And to manage modern industry requires more than a high school education--at least for all but the very exceptional man.¹⁸

In 1950, Bogue wrote the most comprehensive discussion of the community college movement that had been presented up to that time. In dealing with the functions of community colleges and their effects on community life. Bogue stated:

By examination of life situations, of identifiable problems that need solutions, on national, state, and local levels, we arrive at conclusions regarding the basic functions of community colleges. They are guidence and counseling for all students and for the people of the community; general education for all students regardless of vocational training, and that on a continuing basis, for students who will not advance to upper division collegiate studies; the further democratization of higher education by surmounting barriers of geography and family financial difficulties; the popularization of higher education by breaking down family traditions and creating greater personal interest and motivation; adult education and university-parallel studies for those students who should continue formal education.¹⁹

In 1952, Williams made this observation:

Universal public education had decreased the role of the family in training the child, in occupational and technological requirements have emplasized formal training; changes in the economic structure have increased the importance of education as a means of social mobility. Consequently, we find increased

18 James Bryant Concert, <u>Education in a Divided</u> World, Cambridge, Massachusetts: Harvard University Press, 1948, pp. 153-154.

¹⁹Jessie Parker Bogue, <u>The Community College</u>, New York: McGraw-Hill Book Company, 1950, p. 76. pressure to graduate all students from high school, to admit all high school graduates into college, and to permit college students to continue in college as long as they wish.²⁰

Summary. This survey of related research and literature seems to indicate that, since 1950, there has been a considerable amount of interest in the family, social, economic, and educational backgrounds of those enrolling or seeking to enroll in college following their graduation from high school. Interest in these matters undoubtedly existed during the previous two or three decades but the literature surveyed fails to reveal it. Possibly the world war during the 1940's and the economic crisis during the 1930's prevented research analysts from attempting to develop any conclusions during those decades. But, it is highly probable that the seemingly sudden upsurge in the demands for college admissions has made it imperative that educational planners, secondary and college level alike, know the source of these demands and thus develop some bases for predicting the direction of these in the future.

The ensuing Chapter III describes the research design and methodology used in this study.

²⁰Robin M. Williams, Jr., <u>American Society</u>. <u>A Social</u> <u>Interpretation</u>, New York: Alfred A. Knopf, 1952, p. 282.

CHAPTER III

RESEARCH DESIGN AND METHODOLOGY USED IN STUDY

Source of Data

Three primary sources of data were used in this study. These sources included (a) the twelfth grade graduates in 1959 of the public high schools of the City of Grand Rapids, (b) the parente of these graduates, and (c) the records of the School District of the City of Grand Rapids.

The data from the twelfth grade graduates were obtained during the months of April and May of 1959. Data were obtained through the use of questionnaires administered with the cooperation of Dr. John X. Jamrich, Director of the Legislative Committee to Study the Needs of a Four-Year State-Supported College in the Grand Rapids Area, the administrative staff of the public school system in Grand Rapids, and the teachers of the graduates.¹ The questionnaires submitted to the students were designed to provide information concerning the student's sex, course of study, expressed certainty of going to college, plans for college or other activities, vocational aspirations, parents' occupation and formal elecutional level, and attendance or non-attendance of older brothers or sisters in college.

¹Jamrich, <u>op</u>. <u>cit</u>.

Data from parents of the graduates were obtained in December, 1959, through the use of questionnaires mailed directly to them. These parent questionnaires were designed to provide information concerning the graduates' attendance or non-attendance in college, the name and location of the college attended, and the activities of the graduates if they were not attending college.

Data from the School District of the City of Grand Rapids were obtained in the late Fall of 1959. These included the name and address of each graduate by high school of graduation and the academic achievement rank of each graduate.

Student Questionnaires. The questionnaires distributed to the students were adapted, with some revisions, from similar questionnaires tested and employed by Michigan State University in Oakland and Macomb Counties in 1957, prior to the opening of Michigan State University of Oakland. Grim describes the development, testing, and refinement of the questionnaire used in the aforementioned counties as follows:

The items for each of the questionnaires were taken from a list of items submitted by local superintendents of schools, elementary and secondary school principals in the two counties, and from items submitted by Michigan State University staff members.

The preliminary questionnaires were developed from these items by a committee composed of the Oakland and Macomb County Superintendents of Schools, and the superintendents of schools of Pontiac and Marren, Michigan, a Michigan State University staff specialist in community college work, a specialist in evaluation and test construction, a specialist in public informational services, and three persons from the Department of Administration and Educational Services, all the latter from Michigan State University.

The questionnaires were reviewed and modified by the Oakland and Macomb County association of superintendents, secondary

school principals, and elementary school principals. These refined questionnaires were pro-tested with parents and interested citizens at a P. T. A. meeting in the Washington School, Romeo, Michigan. Ninety-two citizens and parents participated in this particular pre-testing.

The student questionnaires were pre-tested by 35 and 27 respectively students in grades 10 and 12 in Fontiac High School.

Final refinement and revision before printing were completed by the Michigan State University study team.²

The revised student questionnaires were pre-tested with a group of 25 students in Grand Rapids Central High School. It was found that no additional refinements were necessary for use in the Grand Rapids Area. The student questionnaires were administered to the students by their respective teachers and collected by the teachers.

Parent Questionnaires. In December, 1959, a questionnaire of the self-addressed post-card type was developed and mailed to the parents of the boys and girls of the five public high schools of the City of Grand Rapids who were graduated in June, 1959. Home addresses of the parents were obtained from the lists of names and addresses of the graduates which were provided by the Superintendent of Schools. The parent questionnaire was pre-tested with a group of 25 parents selected at random from the list provided by the Superintendent of Schools of Grand Rapids. Minor refinements in the parent questionnaires were made as a result of this pre-testing.

The parent questionnaire was developed in light of several considerations set forth by Good, Barr, and Scates. These considerations

²Grim, op. <u>cit</u>., Doctoral Thesis, 1957.



were:

First, one must have a clear purpose, with definite limitations, so that he does not ask for everything in "blunderbuss" fashion; he must see how each item of information fits into a pattern of essential knowledge about his problem.

Second, each question must be absolutely clear--not only to the maker but to the receiver. It is surprising how many questionnaires are sent out that are scarcely interpretable.

Third, one should seek responses of such character that they can be summarized in some form.

Fourth, one should refrain from asking questions of opinion unless he is certain that opinion is what he is seeking, and that it will be worth getting.

Fifth, one should consider the desirability of pre-coding his questionnaire. This is frequently done when the results are to be punched on tabulating machine cards for summarization.²

The pre-testing of the questionnaire was performed as a practical

precaution against misunderstood questions which could lead to incom-

plete or inaccurate answers. Parten expresses the following viewpoint

regarding pretesting questionnaires:

Before deciding definitely upon given procedures, the surveyor should pretest every plan. He should not assume that his own reaction or that of his colleagues is "typical" of the response of the man on the street or the average housewife...So, before finally adopting a technique, the surveyor should try to test it in a situation comparable to that used. While the various steps may be tested individually and improved upon during the preliminary planning stage, the plans for the different operations should be combined into a unified plan and given a complete test before a large-scale survey is undertaken. This final trial, often referred to as a "pilot study", "test-tube survey", or

³Carter V. Cood, A. S. Barr, and Douglas E. Scates, <u>The</u> <u>Methodology of Educational Research</u>, New York: D. Appleton-Century Company, 1941, pp. 338-339.



and carried out.4

<u>Responses</u>. Of the student questionnaires administered in April and May of 1959, 1,015 or 81.6 percent of the total (1,256) were completed and returned. Later, it was determined that not all of the twelfth grade students graduated in June. Of the total of 1,220 who graduated, 985 or 80.7 percent of the questionnaires were completed and returned.

TABLE I

| Public High School | 12th Grade Students | | | Parents of 12th Grade Graduates | | |
|-----------------------|------------------------|---------------------|--------------|------------------------------------|---------------------|--------------|
| | Number Queried | Number Responses | Per- cent | Number Queried | Number Responses | Per- cent |
| Central | 181 | 131 | 75.1 | 174 | 145 | 83.3 |
| Creston | 289 | 237 | 82.0 | 281 | 254 | 90.4 |
| Ottawa | 224 | 183 | 83.8 | 219 | 204 | 93.1 |
| South | 223 | 180 | 81.1 | 216 | 192 | 88.9 |
| Union | 339 | 279 | 82.3 | 330 | 269 | 81.5 |
| Total | 1,256 | 1,015 | 81.6 | 1,220 | 1,064 | 87.2 |

SUMMARY OF RESPONSES TO QUESTIONNAIRES IN THE CITY OF GRAND RAPIDS

The first mailing of the parent questionnaires brought responses

⁴Mildred B. Parten, <u>Surveys</u>, <u>Polls</u>, <u>and Samples</u>: Practical Procedures, New York: Harper and Brothers, 1950, p. 56. from the parents of 721 graduates. This number was increased to a total of 1,064 or 87.2 percent of the total graduates after a series of two follow-up letters. In addition to the follow-up letters, the radio and television outlets in Grand Rapids advertised, as a public service, the importance of completing and returning the questionnaires.

When the students' responses of April, 1959 were compared with the parents' responses of December, 1960, it was found that 853 were matched, students to parents. This represented 69.1 percent of the total graduates of June, 1959.

Methodology

Data Classification and Tabulation. All possible responses from the student questionnaires, as well as the parent questionnaires, were coded for use on International Business Machine (IBM) cards. The actual responses were punched on such cards along with additional coded data obtained from the records of the School District of the City of Grand Rapids. A total of 35 columns were used, some in pairs to employ sequential code numbers ranging from 01 to 99.

The use of IBM cards permitted the classification and grouping of the recorded data in many different ways. In addition, it permitted cross tabulations with reference to such items as high school of graduation, sex, intention to go to college, intention not to go to college, high school academic achievement rank, college of attendance, etc.

<u>Matched Sample</u>. Since the statistical "universe" for this study constitutes all the twelfth grade graduates of the five public high schools of Grand Rapids and since only 853 matched responses (student responses matched with parental responses) were obtained, the number of matched responses must be considered to be a sample of that universe.

One must recognize that a more defensible procedure for this study might have been to draw a random sampling of the universe to be studied and to have made certain that responses were obtained from all members of this sample. Dixon and Massey points this out in the following statement:

Many populations are so scattered as to be inaccessible as a whole. For example, in studying some characteristic of all students graduated from a university it might be impracticable to contact every graduate but quite reasonable to contact a sample...⁵

However, it seemed improbable that a random sampling procedure could be fulfilled in view of the necessity for student cooperation at a different time than needed parent cooperation in completing questionnaires.

• Also, one must recognize that the procedure used in this study might produce a considerable degree of bias in the sampling. Bias in the sampling, in turn, could produce unreliable results when attempts were made to project them on the entire universe from which the sampling was drawn. Dixon and Massey caution about biased samples as follows:

The method of choosing a sample is an important factor in determining what use can be made of the sample. If some individuals

⁵Wilfrid J. Dixon and Frank J. Massey, Jr., <u>Introduction to</u> <u>Statistical Analysis</u>, New York: McGraw-Hill Book Company, Inc., 1951, p. 32.

in the universe are more likely to be chosen than others, the sample is said to be biased. It has been found that subjective methods of picking individuals for a sample often (perhaps "usually" is a better word) lead to biased samples, apparently due primarily to subconscious or conscious preferences of the person making the selections...⁰

Walker and Lev, in a discussion concerning the design of samples in surveys, also caution about random errors and errors due to bias.

The first requirement of any sampling procedure is the avoidance of bias. The error which causes a statistic to differ from its parameter may arise partly from random errors in the selection of individuals and partly from bias in their selection. The total of the random errors decreases as sample size increases but the total of errors due to bias does not so decrease. It forms a constant error which on the average is about the same for large as for a small sample.⁷

Examination and Tests for Random and Bias Errors. Since the matched responses of this study constitutes a rather large proportion (69.9%) of the total universe, as suggested by Walker and Lev, one may logically conclude that the random error is relatively small. This conclusion was supported by a visual inspection of the student lists which indicated "responses" and "no responses."

The matched responses were also examined for biases which could produce error in the results. The following conditions, if existing, could be the source of bias in the results of this study.

1. The parameter of responses in terms of "going on to college" and "not going on to college" in sample varies from the parameter of those "going on to college" and those "not going on to

⁷Helen M. Walker and Joseph Lev, <u>Statistical Inference</u>, New York: Henry Holt and Company, 1953, p. 171.

⁶<u>Ibid</u>., pp. 33-34.

college" in the universe.

- The parameter of responses by sex in sample varies from the parameter of possible responses by sex in the universe.
- The parameter of responses from those in individual high schools in sample varies from the parameter of total possible responses by high school in the universe.
- 4. The parameter of responses in terms of academic achievement rank in sample varies from the parameter of total possible responses from the universe in this same regard.
- 5. The parameter of responses in terms of degrees of certainty of "going on to college" in sample varies from the parameter of total possible responses regarding "going on to college" in the universe.
- 6. The parameter of responses in terms of plans for college attendance in sample varies from the total possible responses from those having made plans for college attendance in the universe.

It was obvious that tests for bias could be made only in those instances where information about the total universe or about the unsampled portion of the universe were known or could be obtained. Information about the total universe in this study was known in respect to conditions 2, 3, and 4 listed ubove. It was also possible to obtain information is respect to the first condition listed. Dut it was impossible to obtain information about the universe as far as the last two conditions were concerned because the student questionnaires were

incompletely returned.

In testing for bias from the first source listed above. "going" or "not going" to college, attention was given to the non-respondents in the universe. The names of the non-respondents were listed on cards and divided in accordance with schools. These sub-divisions were again divided by male and female. A 10 percent random sampling was then drawn from each of the resulting ten groups. The parents of these 37 graduates were subsequently contacted by telephone to determine the activities of these graduates during the period for which the original parental questionnaires were mailed. Table II of this report. included on p. 48 of Chapter IV, shows the results of this telephoned inquiry and compares the results with the responses of the original sample in terms of "going" and "not going to college." Chapter IV also includes the results of the chi-square statistical measurement, described in the next section of this Chapter, which was used to determine if the null hypotheses might be accepted that the telephoned sample and the matched sample were drawn from the same universe. If this latter condition is true, the conclusion may be drawn that the matched sample (853 cases) are unbiased in respect to "going" and "not going" to college.

Attention was also directed to the other sources for possible bias in the matched sample. Acting upon Yates⁸ suggestion, the "frame" or universe was divided into sub-units in accordance with information

⁸Frank Yates, <u>Sampling Methods for Censuses and Surveys</u>, London: Charles Griffin and Co. Ltd., 1949, pp. 20-21. available concerning sex of graduates, high schools of graduation, and academic achievement ranks. Tables III, IV, and V in Chapter IV show the results of these groupings.

Each of the sub-units were tested by the chi-square statistical measurement to determine if the null hypotheses might be accepted that the subgroup samples and the matched sample were drawn from the same universe. If these hypotheses are accepted, the conclusion may be drawn that the matched sample is unbiased in respect to sex of graduates, high schools of graduation, and academic achievement ranks. Chapter IV shows the results of these tests.

<u>Statistical Method of Testing Hypotheses</u>. Each of the hypotheses listed in Chapter I was tested in accordance with the following model: Step 1. Statement of the hypothesis.

- Step 2. Statement of the conditions that must exist if the hypothesis is valid. Such conditions will include the following:
 - a. Any differences among elements stated in the hypothesis must be attributable to factors other than chance.
 - b. An apparent relationship must exist between the extreme elements of the hypothesis.
 - c. The extreme elements of the hypothesis must differ significantly from chance.
- Step 3. Tests to determine existence of conditions. The tests will include the following:
 - a. The chi-square (x^2) test to indicate differences among the elements of the hypothesis.

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b. Inspection of real differences among the percentages
 to determine relationships and real differences among
 the extremes.

Step 4. Conclusions followed directly from the data.

The chi-square statistical measurement used in testing the hypotheses of this study, as well as the probability of bias errors as indicated earlier in this chapter, is based on the theoretical assumption that two characteristics are independent if the proportion of the population having one characteristic is not significantly different than the proportion of the population having the second characteristic. These proportions are theoretical and are in the population, not the sample.

The formula used for chi-square is that of Dixon and Massey.⁹ The formula is

Chi-square =
$$\sum_{i=1}^{k} \frac{(f_i - F_i)^2}{F_i}$$
 where
 $\sum_{i=1}^{k} = \text{summation of}$
 $f_i = \text{observed frequency}$
 $F_i = \text{expected or theoretical frequency}$

The contingency table, Table 6a page 308, was used in determining the statistical significance of the computed cha-squares.

⁹Dixon and Massey, <u>op</u>. <u>cit</u>., pp. 185 and 188.

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The apparent relationships between the extreme elements of the hypotheses were determined by visual inspection since a relatively large matched sample of 853 cases, representing almost 70 percent of the entire population or universe, were used. Visual inspection was also used as a method to determine the significance of the variations of the extremes from chance.

Summary

The data for this study were drawn from responses to student questionnaires, responses from parent questionnaires, and records of the School District of the City of Grand Rapids. The student questionnaires were distributed to all twelfth grade students in the five public high schools of the City of Grand Rapids in April and May of 1959. The parent questionnaires were distributed in December, 1959 to the parents of all of the students who were graduated in the Spring of 1959. Information from the questionnaires, student and parent, as well as information from the records of the School District were coded and recorded on IEM cards. IEM equipment was used to group and tabulate the data.

The methodology used included the testing of the matched sample of 853 cases for the probable existence of biases and the testing of the hypotheses of the study by a model with four defined steps. These steps included (1) the statement of the hypothesis, (2) the statement of conditions which must exist if the hypothesis is to be valid, (3) the testing of the conditions, and (4) the conclusions.

Chapter IV will present the analysis of data and the testing of the hypotheses.

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CHAPTER IV

TESTS FOR BIASES IN SAMPLE

Introduction

This chapter presents data which were used to test the probability of biases in the sample which could, as a consequence, produce errors in the results of the study. Five hypotheses were developed to test for the lack of biases. Each of these hypotheses is presented in accordance with the following model: (1) the statement of the hypothesis, (2) the statement of conditions that must exist if the hypothesis is to be valid, (3) the testing of the conditions, and (4) the conclusions.

The chi-square statistical measurement, described in Chapter III, was used to test the significance of any differences existing among the elements of the hypotheses.

Presentation of Data Concerning Sample and Testing of Hypotheses

Testing for Lack of Biases in Sample. The first hypothesis used to test for the lack of bias in the sample is:

There is a direct relationship between the number of total graduates in the sample from each public high school and the number of graduates from each public high school in the total graduate population from which the sample is drawn.

If this hypothesis is valid, there must be no statistically significant

difference between the proportion of those selected from each public high school in the sample and the proportion of individuals from each public high school in the total population (all public high schools in Grand Rapids of June, 1959). In addition, the conditions must indicate that (1) the greater the number of individuals of both sexes from a given high school in the population, the greater the number of individuals of both sexes which must be included in the sample from that high school and conversely (2) the lesser the number of individuals of both sexes from a given high school in the population, the lesser the number of individuals of both sexes which must exist in the sample from that high school.

Table II shows the total number and percentage of both sexes of the individuals who were graduated from each public high school in the City of Grand Rapids. It also indicates the total number of both sexes and percentage of these from each public high school in that city who were included in the sample.

The chi-square measurement of the data in Table II $(x^2 = 1.86)$ indicates that, at the 99.0 percent level, there is no statistically significant difference between the proportion of those of both sexes in the sample constituting matched responses and the proportion of those of both sexes in the population from which the sample is drawn. Table II also indicates that the greatest number of matched responses (26.7 percent of the total response) were made about the graduates of the high school which had the greatest number of graduates (27.1 percent of the total graduates). Also, Table II indicates that the least

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number of matched responses (12.4 percent of the total response) were made concerning the graduates of the high schools with the least number of students (14.3 percent of the total graduates).

TABLE II

DISTRIBUTION, BY TOTAL OF BOTH SEXES, OF THE NUMBER OF GRADUATES FROM EACH PUBLIC HIGH SCHOOL AND THE NUMBER OF MATCHED RESPONSES CONCERNING THESE GRADUATES

| | Gi | Graduates and Matched Responses | | | | |
|--------------------------|-----------------|---------------------------------|----------------------|--|--|--|
| Public High School | Total G Both | raduates Sexes | Matched I Student | Matched Responses Student and Parents | | |
| | Number | Я | Number | Ŗ | | |
| Central | 174 | 14.3 | 106 | 12.4 | | |
| Creston | 281 | 23.0 | 188 | 22.0 | | |
| Ottawa | 219 | 17.9 | 162 | 18.9 | | |
| South | 216 | 17.7 | 171 | 20.0 | | |
| Union | 330 | 27.1 | 226 | 26.7 | | |
| Total | 1,220 | 100.0 | 853 | 100.0 | | |

Thus one may conclude, within the limits of the chi-square measurement, that the first hypothesis concerning lack of bias in the sample is valid. That is, there is a direct relationship between the number of total individuals in the sample from each public high school and the total graduate population from which the sample is drawn.

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The second hypothesis used to test for the lack of bias in the sample is:

There is a direct relationship between the number of male graduates from each public high school in the sample and the number of male graduates from each high school in the total graduate population from which the sample is drawn.

If this hypothesis is valid, there must be no statistically significant difference between the proportion of male graduates in those drawn from each public high school in the sample and the proportion of male graduates from each public high school in the total population (all public high school graduates in Grand Rapids of June, 1959). In addition, the data must indicate that (1) the greater the number of male graduates from a given high school in the graduate population, the greater the number of male graduates which must be included in the sample from that high school and conversely, (2) the lesser the number of male graduates from a given high school in the graduate population, the lesser the number of male graduates which must be included in the sample from that high school.

Table II M indicates the total number and percentage of male individuals who were graduated from each public high school in the City of Grand Rapids. This table also indicates the total number of male graduates and the percentage of these from each public high school in that city who were included in the sample.

The chi-square measurement of the data in Table II M ($x^2 = 1.02$) indicates that, at the 95.0 percent level, there is no statistically significant difference between the proportion of male graduates from each high school in the sample (matched responses) and the number of

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male graduates from each high school in the graduate population from which the sample is drawn. Table II M also shows that the greatest number of matched responses (28.7 percent of the total matched responses) were made about the male graduates of the public high school which had the greatest number of male graduates (25.9 percent of the total male graduates). Also, Table II M indicates that the least number of matched responses (13.3 percent of total matched responses) were made concerning the male graduates of the public high school which had the least number of male graduates (14.8 percent of the total male graduates).

TABLE II M

DISTRIBUTION, BY MALE SEX, OF THE NUMBER OF MALE GRADUATES FROM EACH PUBLIC HIGH SCHOOL AND THE NUMBER OF MATCHED RESPONSES, GRADUATES AND THEIR PARENTS, CONCERNING THESE GRADUATES

| | Public High School | Gr | Graduates and Matched Responses | | | | |
|---------|--------------------------|------|---------------------------------|-----------------|---------------------------------|--|--|
| | | Male | Graduates | Matched Conc | Matched Responses Concerning | | |
| | | Numb | er Z | Number | e e | | |
| Central | | 87 | 14.8 | 55 | 13.3 | | |
| Creston | | 143 | 24.4 | 93 | 22.5 | | |
| Ottawa | | 110 | 18.7 | 75 | 18.1 | | |
| South | | 95 | 16.2 | 72 | 17.4 | | |
| Union | | 152 | 25.9 | 119 | 28.7 | | |
| Total | | 587 | 100.0 | 414 | 100.0 | | |

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Thus one may conclude, within the limits of the chi-square statistical measurement, that the second hypothesis concerning the lack of bias in the sample is valid. That is, there is a direct relationship between the number of male graduates from each public high school in the sample and the number of males from each high school in the total graduate population from which the sample is drawn.

The third hypothesis used to test for the lack of bias in the sample is:

There is a direct relationship between the number of female graduates from each public high school in the sample and the number of female graduates from each high school in the total graduate population from which the sample is drawn.

If this hypothesis is valid, there must be no statistically significant difference between the proportion of female graduates in those drawn from each public high school in the sample and the proportion of female graduates from each public high school in the total population (all public high school graduates in Grand Rapids of June, 1959). In addition, the data must indicate that (1) the greater the number of female graduates from a given high school in the total graduate population, the greater the number of female graduates which must be included in the sample from that high school and conversely, (2) the lesser the number of female graduates from a given high school in the graduate population, the lesser the number of female graduates which must be included in the sample from that high school.

Table II F indicates the total number and percentage of female graduates who were graduated from each public high school in the City

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of Grand Rapids. This table also indicates the total number of female graduates and the percentage of these from each public high school who were included in the sample.

TABLE IT F

DISTRIBUTION, BY FEMALE SEX, OF THE NUMBER OF GRADUATES FROM EACH PUBLIC HIGH SCHOOL AND THE NUMBER OF FEMALES FROM EACH PUBLIC HIGH SCHOOL ABOUT WHOM MATCHED RESPONSES WERE RECEIVED

| | Grad | Graduates and Matched Responses | | | | |
|--------------------------|----------|---------------------------------|---------------------------------|-------|--|--|
| Public High School | Female (| Fraduates | Matched Responses Concerning | | | |
| | Number | Ŗ | Number | Ŗ | | |
| Central | 87 | 13.7 | 51 | 11.7 | | |
| Creston | 138 | 21.8 | 95 | 21.4 | | |
| Ottawa | 1.09 | 17.2 | 87 | 19.8 | | |
| South | 121 | 19.1 | 99 | 22.5 | | |
| Union | 178 | 28.2 | 107 | 24.6 | | |
| Total | 633 | 100.0 | 439 | 100.0 | | |

The chi-square statistical measurement of the data in Table II F $(x^2 = 2.63)$ indicates that, at the 75.0 percent level, there is no statistically significant difference between the proportion of female graduates from each high school in the sample (matched responses) and

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the number of female graduates from each high school in the graduate population from which the sample is drawn. Table II F also shows that the greatest number of matched responses (24.6 percent of the total matched responses) were made about the female graduates of the public high school which had the greatest number of female graduates (28.2 percent of the total female graduates). Also, Table II F indicates that the least number of matched responses (11.7 percent of the total matched responses) were made about the female graduates of the public high schools which had the least number of female graduates (13.7 percent of the total graduates).

Thus one may conclude, within the limits of the aforementioned chi-square measurement, that the third hypothesis concerning the lack of bias in the sample is valid. That is, there is a direct relationship between the number of female graduates from each public high school in the sample and the number of females from each high school in the total graduate population from which the sample is drawn.

The fourth hypothesis used to test for lack of bias in the sample is:

There is a direct relationship between the number of graduates, by sex, in the matched sample who were attending college within six months after graduation from high schools and the number of graduates, by sex, in the remaining part of the total graduate population who were attending college within six months after graduation from high school.

If this hypothesis is valid, there must be no statistically significant difference between the proportion of male and female graduates in the matched sample who were attending college within six months after graduation from the public high schools and the proportion of

male and female graduates in the remaining part of the total graduate population who were attending college within six months after graduation from the public high schools. In addition, the data must indicate that (1) the greater the number of male or females included in the matched sample who were attending college, the greater the number of male or females which must exist in the remaining part of the total graduate population that were attending college and conversely, (2) the lesser the number of male or females included in the matched sample who were attending college, the lesser the number of male or females which must exist in the remaining part of the total graduate population.

TABLE III M

DISTRIBUTION, BY MALE SEX, OF MATCHED SAMPLE AND TELEPHONED SAMPLE IN TERMS OF ATTENDING AND NOT ATTENDING COLLEGE WITHIN SIX MONTHS AFTER GRADUATION FROM HIGH SCHOOL

| Activity of Male Graduates Six Months After Graduation | Matched | | Sample | (10%) Telephoned Samp of Remaining Population | | |
|--|---------|-------|--------|--|-------|--|
| | Number | 2 | | Number | Ŗ | |
| Attending College | 249 | 60.1 | | 10 | 58.8 | |
| Not Attending College | 165 | 39.9 | | 7 | 41.2 | |
| Total | 414 | 100.0 | | 17 | 100.0 | |

Table III M shows the number and percentage, by male sex, of the graduates in the matched sample who were attending college within six
months after graduation from high school and the number and percentage, by male sex, of the remaining part of the total graduate population (10 percent telephoned sample) who were attending college within six months after graduation from high school.

The chi-square statistical measurement of the data in Table III M $(x^2 = .01)$ indicates that, at the 95.0 percent level, there is no statistically significant difference between the proportion of male graduates in the sample (matched responses) who were attending college within six months after graduation from the public high schools and the proportion of graduates in the remaining part of the total graduate population who were attending college within six months after graduation from high school. Table III M also shows that the greatest number of matched responses (60.1 percent of the total responses) were made concerning those attending college and the greatest number of the remaining part of the population (telephoned sample of whom 58.8 percent were attending college) were also attending college. Also, Table III M shows that the lesser number of males (39.9 percent of the total males) were not attending college and the lesser number of males in the remaining part of the population (telephoned sample of whom 41.2 percent were not attending college) were not attending college.

Table III F shows the number and percentage, by female sex, of the graduates in the matched sample who were attending college within six months after graduation from high school and the number and percentage, by female sex, of the remaining part of the total graduate population (10 percent telephoned sample) who were attending college

TABLE III F

DISTRIBUTION, BY FEMALE SEX, OF MATCHED SAMPLE AND TELEPHONED SAMPLE IN TERMS OF ATTENDING AND NOT ATTENDING COLLEGE WITHIN SIX MONTHS AFTER GRADUATION FROM HIGH SCHOOL

| | Sample | | | | | |
|--|--------|-------|--|-------|--|--|
| Activity of Female Graduates Six Months After Graduation | Mato | hed | (10%) Telephoned Sample of Remaining Population | | | |
| | Number | R | Number | Ŗ | | |
| Attending College | 199 | 45.3 | 8 | 40.0 | | |
| Not Attending College | 240 | 54.7 | 12 | 60.0 | | |
| Total | 439 | 100.0 | 20 | 100.0 | | |

The chi-square statistical measurement of the data in Table III F $(x^2 = .22)$ indicates that, at the 90.0 percent level, there is no statistically significant difference between the proportion of female graduates in the sample (matched responses) who were attending college within six months after graduation from the public high schools and the proportion of female graduates in the remaining part of the total graduate population (telephonod sample) who were attending college within six months after graduation from the public high schools. Table III F also shows that the least number of matched responses (45.3 vercent of

the total matched responses) were made concerning those attending college and the least number of the remaining part of the population (40 percent of the 10 percent telephoned sample) were attending college.

Thus one may conclude, within the limits of the aforementioned chi-square statistical measurement, that the fourth hypothesis concerning the lack of bias in the sample is valid. That is, there is a direct relationship between the number of graduates, by sex, in the matched sample who were attending college within six months after graduation from high school and the number of graduates, by sex, in the remaining part of the total graduate population who were attending college within six months after graduation from high school.

. The fifth hypothesis used to test for the lack of bias in the matched sample is:

There is a direct relationship between the number of graduates, by sex, in the sample who had achieved each of the ten scholastic achievement rankings by the end of high school and the number of graduates, by sex, in the total graduate population who had achieved each of the ten scholastic achievement rankings by the end of high school.

If this hypothesis is valid, there must be no statistically significant difference between the proportion of graduates, by sex, in the matched sample who achieved each of the scholastic achievement rankings and the proportion of graduates, by sex, in the total graduate population receiving these respective scholastic achievement rankings. In addition, it must be established by inspection that the number and percentage of those in the matched sample, by sex, having each of the scholastic achievement ranks must not favor one end or the other end of the ranking system when compared to the number and percentage of those in the

total graduate population, by sex, having these same scholastic achievement ranks.

Table IV M shows the number and percentage of males in the total graduate population who had achieved each of the ten scholastic achievement rankings by the end of high school and the number and percentage of male graduates in the matched sample who had achieved each of the ten scholastic achievement rankings by the end of high school.

TABLE IV M

DISTRIBUTION, BY MALE SEX, OF THE NUMBER AND PERCENTAGE OF GRADUATES OF THE FUBLIC HIGH SCHOOLS OF THE CITY OF GRAND RAPIDS WHO HAD ACHIEVED EACH OF THE TEN SCHOLASTIC ACHIEVEMENT RANKINGS AND THE NUMBER AND PERCENTAGE OF THESE SAME GRADUATES IN THE MATCHED SAMILE WHO ACHIEVED EACH OF THESE SAME RANKINGS

| | | M | ales | |
|--|----------|---------|----------|--------|
| Scholastic Achievement Rank in Deciles | All Gr | aduates | Matched | Sample |
| | Number | % | Number | Ķ |
| 1 | 81 | 13.8 | 45 | 10.9 |
| 2 | 72 74 | 12.3 | 44 52 | 10.6 |
| 4 | 74 | 12.6 | 53 | 12.8 |
| 5 | 67 | 11.4 | 44 | 10.6 |
| 7 | 53 | 9.0 | 42 | 10.1 |
| 8 | 142 | 7.2 | 36 | 8.7 |
| 9 | 39 | 6.6 | 29 | 7.0 |
| 10 | 32 | 5.5 | 31 | 7.5 |
| Total | 587 | 100.0 | 414 | 100.0 |

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The chi-square statistical measurement of the data in Table IV M $(x^2 = 5.07)$ indicates that, at the 75.0 percent level, there is no statistically significant difference between the proportion of male graduates in the matched sample and the males in the total graduate population who had achieved each of the ten scholastic achievement ranking by the end of their high school work. However, an inspection of the data in Table IV M leads to the conclusion that (1) there is an observed tendency for the percentage of males included in the matched sample with lower scholastic achievement rankings to be slightly less than the percentage of males found in the total graduate population with these lower scholastic achievement rankings and (2) there is an observed tendency for the percentage of males included in the matched sample with higher scholastic achievement rankings to be slightly more than the percentage of males in the total graduate population with these higher scholastic achievement rankings to be slightly more than the percentage of males in the total graduate population with these higher scholastic achievement rankings to be slightly more than the percentage of males in the total graduate population with these higher scholastic achievement rankings to be slightly more than the percentage of males in the total graduate population with these higher scholastic rankings.

Table IV F shows the number and percentage of female graduates of the total graduate population and the number and percentage of female graduates of the matched sample who had achieved each of the ten scholastic achievement rankings by the end of their high school work.

The chi-square statistical measurement of the data in Table IV F $(x^2 = 7.75)$ indicates that, at the 75.0 percent level, there is no statistically significant difference between the proportion of female graduates in the matched sample and the proportion of female graduates in the total female graduate population who had achieved each of the



The chi-square statistical measurement of the data in Table IV M $(x^2 = 5.07)$ indicates that, at the 75.0 percent level, there is no statistically significant difference between the proportion of male graduates in the matched sample and the males in the total graduate population who had achieved each of the ten scholastic achievement ranking by the end of their high school work. However, an inspection of the data in Table IV M leads to the conclusion that (1) there is an observed tendency for the percentage of males included in the matched sample with lower scholastic achievement rankings to be slightly less than the percentage of males found in the total graduate population with these lower scholastic achievement rankings and (2) there is an observed tendency for the percentage of males included in the matched sample with higher scholastic achievement rankings to be slightly more than the percentage of males included in the matched is an observed tendency for the percentage of males included in the matched is an observed tendency for the percentage of males included in the matched is an observed tendency for the percentage of males included in the matched is an observed tendency for the percentage of males included in the matched is an observed tendency for the percentage of males included in the matched is an observed tendency for the percentage of males included in the matched is an observed tendency for the percentage of males included in the matched is an observed tendency for the percentage of males included in the matched is an observed tendency for the percentage of males included in the matched is an observed tendency for the percentage of males included in the matched is an observed tendency for the percentage of males included in the matched is an observed tendency for the percentage of males included in the matched is an observed tendency for the percentage of males included in the matched is an observed tendency for the percentage of males included in the matched is an observed tendency for the

Table IV F shows the number and percentage of female graduates of the total graduate population and the number and percentage of female graduates of the matched sample who had achieved each of the ten scholastic achievement rankings by the end of their high school work.

The chi-square statistical measurement of the data in Table IV F $(x^2 = 7.75)$ indicates that, at the 75.0 percent level, there is no statistically significant difference between the proportion of female graduates in the matched sample and the proportion of female graduates in the total female graduate population who had achieved each of the

ten achievement rankings while in high school. However, as pointed out in the same respect for male graduates, an inspection of the data in Table IV F leads to the conclusion that (1) there is an observed tendency for the percentage of females included in the matched sample with lower scholastic achievement rankings to be slightly less than the percentage of females found in the total graduate population with these lower scholastic achievement rankings and (2) there is an observed tendency for the percentage of females included in the matched sample with higher scholastic achievement rankings and (2) there is an observed tendency for the percentage of females included in the matched sample with higher scholastic achievement rankings to be slightly more than the percentage of females in the total graduate population with these higher scholastic rankings.

TABLE IV F

DISTRIBUTION, BY FEMALE SEX, OF THE NUMBER AND PERCENTAGE OF GRADUATES OF THE PUBLIC HIGH SCHOOLS OF THE CITY OF GRAND RAPIDS WHO HAD ACHIEVED EACH OF THE TEN SCHOLASTIC ACHIEVEMENT RANKINGS AND THE NUMBER AND PERCENTAGE OF THESE SAME GRADUATES IN THE MATCHED SAMPLE WHO ACHIEVED EACH OF THESE SAME RANKINGS

| Scholactic Achievement Rank in Deciles | All Gr | aduates | Matched S | ample | | |
|--|--------|---------|----------------|-------|--|--|
| | Number | 10 | Number | Þ | | |
| 1 | 41 | 6.5 | 26 | 5.9 | | |
| 2 | 50 | 7.9 | 23 | 5.2 | | |
| 3 | 48 | 7.6 | 26 | 5.9 | | |
| 4 | 48 | 7.6 | 27 | 6.2 | | |
| 5 | 55 | 8.7 | 39 | 8.9 | | |
| 6 | 69 | 10.9 | 47 | 10.7 | | |
| 7 | 69 | 10.9 | 51 | 11.6 | | |
| 8 | 80 | 12.6 | 56 | 12.8 | | |
| 9 | 83 | 13.1 | , ¹ | 16.9 | | |
| 10 | 90 | 14.2 | 70 | 15.9 | | |
| Total | 633 | 100.0 | 439 1 | .00.0 | | |

Females

Thus one must conclude that the fifth and last hypothesis used to test for the lack of bias in the matched sample is not valid. The second condition for establishing this validity did not entirely support the hypothesis that there is a direct relationship between the number of graduates, by sex, in the matched sample who had achieved each of the ten scholastic achievement rankings by the end of high school and the number of graduates, by sex, in the total graduate population who had achieved each of the ten scholastic achievement rankings by the end of high school.

Since no data exists at this time and no data can be derived at this time to test for the existence of bias in the sample regarding either the expressed degrees of certainty of going to college or expressed plans for college attendance, no tests were made to determine the existence or non-existence of these biases.

<u>Summary Conclusions Concerning Biases in Sample</u>. As stated in Chapter III, p. 39, six conditions, if found, in the matched sample, could produce errors in the conclusions drawn from this study.

The proven validity of the foregoing hypotheses numbered 1, 2, 3, and 4 seems to indicate that the following three conditions do not exist:

1. The parameter of responses in terms of "going on to college" and "not going on to college," by sex, in sample varies from the parameter of those "going on to college" and those "not going on to college" in the universe (total graduate population by sex).

- 2. The parameter of responses, by sex, in the sample varies from the parameter of possible responses, by sex, in the universe (total graduate population).
- 3. The parameter of responses, by sex, from those in individual high schools in sample varies from the parameter of total possible responses by high school in the universe (total graduate population).

The non-validity of hypothesis number 5 seems to indicate that the fourth condition listed in Chapter III, p. 40, does exist. That condition is, manely:

4. The parameter of responses in terms of scholustic schievement rank in sample varies from the parameter of total possible responses from the universe (total graduate population) in this same regard.

Since it was not possible to test for the conditions numbered 5 and 6 in Chapter III, p. 40, the probable existence or non-existence of these conditions in the sample might be determined by intuitive reasoning. Through intuitive reasoning and the knowledge that the source of this data case enclusively from the graduates, not the parents, one may conclude that the graduate did not find their answers concerning their degrees of certainty of attending college and the extent of their plans for attending college a condition for returning or not returning their questionnaires.

In summary, one say conclude that the only proven or known existence of a condition in the sample which could produce bias errors in the conclusion of this study is that the sample contains a slightly



- The parameter of responses, by sex, in the sample varies from the parameter of possible responses, by sex, in the universe (total graduate population).
- 3. The parameter of responses, by sex, from those in individual high schools in sample varies from the parameter of total possible responses by high school in the universe (total graduate population).

The non-validity of hypothesis number 5 seems to indicate that the fourth condition listed in Chapter III, p. 40 does exist. That condition is, namely:

4. The parameter of responses in terms of scholastic achievement rank in sample varies from the parameter of total possible responses from the universe (total graduate population) in this same regard.

Since it was not possible to test for the conditions numbered 5 and 6 in Chapter III, p. 40, the probable existence or non-existence of these conditions in the sample might be determined by intuitive reasoning. Through intuitive reasoning and the knowledge that the source of this data came exclusively from the graduates, not the parents, one may conclude that the graduate did not find their answers concerning their degrees of certainty of attending college and the extent of their plans for attending college a condition for returning or not returning their questionnaires.

In summary, one may conclude that the only proven or known existence of a condition in the sample which could produce bias errors in the conclusion of this study is that the sample contains a slightly

higher percentage of those with hower scholastic achievement rankings than the percentages of the total graduate population with these same rankings.

Chapter V presents analyses of data and tracks of the upptheses of the study.



CHAPTER V

ANALYSES OF DATA AND TESTING OF INFOTHESES

This chapter presents analyses of data and tests used to determine the validity of the hypotheses of the study. These hypotheses will be tested in the order presented on p. 8. Chapter I.

Hypothesis 1. The first hypothesis of this study is:

There is a relationship between the sex of twelfth grade graduates of the public schools of a school district operating a community college and the initial enrollment of these graduated in some college within dismonths following their graduation.

If this hypothesis is valid, that is, if there is a relationship between the sex of the graduates and the enrollment of the graduates in college, the condition suct prevail that the proportions of male graduates who enroll in college and who do not enroll in college must vary significantly from the proportions of female graduates who enroll in college and who do not enroll in college.

Table V shows the number and percentage of the male graduates and the number and percentage of the female graduates who enrolled in college and who did not enroll in college within six months after graduation from high school. This table indicates that 60.1 percent of the male graduates enrolled in college within six months after graduation from high school and only 45.3 percent of the female graduates were enrolled in college within six months after graduates ·* ·

school. The chi-square statistical measurement, when applied to these proportions ($x^2 = 13.76$) indicates that, at the 99.9 percent level, these proportions are significantly different.

TABLE V

COMPARISON, EY SEX, OF THE GRADUATES OF THE PUBLIC HIGH SCHOOLS OF THE CITY OF GRAND RAFIDS IN TERMS OF ENROLLING AND NOT ENROLLING IN COLLEGE WITHIN SIX MONTHS AFTER GRADUATION IN JUNE, 1959

| | Total | Activity W | Athin Six Mont | ths After Gradu | ation | |
|--------------------|-------|---------------------|----------------|-------------------|----------------------------|--|
| Sex of Graduate | | Enrollad in College | | Not Enr in Col | Not Enrolled in College | |
| | | Number | ₽¢ | Number | 1p | |
| Male | 414 | 249 | 60.1 | 165 | 39.9 | |
| Female | 439 | 199 | 45.3 | 240 | 54.7 | |
| Total | 853 | 448 | 52.5 | 405 | 47.5 | |

Thus one may conclude that the first hypothesis of the study is valid. That is, there is a relationship between the sex of twelfth grade graduates of the public schools of a school district operating a community college and the enrollment of these graduates in college within six months following their graduation.

Hypothesis 2. The second hypothesis of the study is:

There is a relationship between the course of study pursued, while in high school, by twelfth grade graduates in the public schools of a school district operating a community college and the initial enrollment of these graduates in some college within six months following their graduation.



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If this hypothesis is valid, the conditions must prevail that (1) the proportions of male graduates enrolling in college after having pursued the several courses of study in high school must vary significantly in respect to these courses of study, (2) the proportions of female graduates enrolling in college after having pursued the several courses of study must vary significantly in respect to these courses of study and (3) the proportion of all graduates, male and female combined, enrolling in college after having pursued the several courses of study in high school must vary significantly in respect to these courses of study.

Table VI indicates that 80.3 percent of the males who pursued the "college preparatory" course of study while in high school enrolled in college within six months after graduation from high school. On the other hand, of the males who pursued the "general" course of study while in high school, only 16.3 percent of these enrolled in college within six months after graduation.

In applying the chi-square statistical measurement to the data in Table VI, the males who pursued the course of study labeled "other" were combined with those who pursued the course of study labeled "general." This combination was made because the number of males enrolled in college in this category was less than 5. Also, for the same purpose, the mules who pursued the course labeled "vocational" were combined with those who pursued the course of study labeled "commercial." The chi-square statistical measurement of the resulting matrix ($x^2 = 141.25$) indicates that, at the 99.9 percent level, the

proportions are significantly different. Thus one may conclude that the first condition exists which is necessary to prove the validity of the second hypothesis of the study.

TABLE VI

COMPARISON, ON THE BASES OF THE COURSES OF STUDY PURSUED WHILE IN HIGH SCHOOL, OF THE NUMBER AND PERCENTAGE OF MALE GRADUATES WHO ENROLLED AND WHO DID NOT ENROLL IN COLLEGE WITHIN SIX MONTHS FOLLOWING THEIR GRADUATION IN JUNE, 1959 FROM THE PUBLIC HIGH SCHOOLS OF THE CITY OF GRAND RAPIDS

| | _ | | | | |
|--|----------------|------------------------------------|------|----------------------------|------|
| Course of Study Pursued in High School | Total Males | Enrolled in College No. Males & | | Not Enrolled in College | |
| | | | | No. Males | ħ |
| College Preparatory | 274 | 220 | 80.3 | 54 | 19.7 |
| General | 104 | 27 | 16.3 | 87 | 83.7 |
| Commercial (Business) | 13 | e | 61.5 | 5 | 38.5 |
| Vocational | -7 | 9 | 17.6 | 14 | 82.4 |
| Other | 6 | 1 | 16.7 | 5 | 83.3 |
| Total | 414 | 249 | 60.1 | 165 | 39.9 |

Activity Within Six Months After Graduation

Table VII indicates that 73.7 percent of the females who pursued the college preparatory course of study while in high school enrolled in college within six months after graduation. Also, as in the case of the



male graduates, of those who pursued the general course of study while in high school, only 10.4 percent enrolled in college within six months after graduation.

TABLE VII

COMPARISON, ON THE BASES OF THE COURSES OF STUDY PURSUED WHILE IN HIGH SCHOOL, OF THE NUMBER AND PERCENTAGE OF FEMALE GRADUATES WHO ENROLLED AND WHO DID NOT ENROLL IN COLLEGG WITHIN SIX MONTHS FOLLOWING THEIR GRADUATION IN JUNE, 1959 FROM THE PUBLIC HIGH SCHOOLS OF THE CITY OF GRAND RAFIDS

| | | Activity Within Six Months After Graduation | | | | | |
|--|------------------|---|-------------------------|----------------------------|------|--|--|
| Course of Study Pursued in High School | Total Females | Enrolled in C | Not Enroll in Colleg | Not Enrolled in College | | | |
| | | No. Females | Ħ. | No. Females | \$p | | |
| College Preparatory | 224 | 165 | 73.7 | 59 | 26.3 | | |
| General | 48 | 5 | 10.4 | 43 | 89.6 | | |
| Commercial (Business) | 1.59 | 27 | 17.0 | 132 | 83.0 | | |
| Vocational | 4 | 1 | 25.0 | Э | 75.0 | | |
| Other | 4 | 1 | 25.0 | 3 | 75.0 | | |
| Total | 400 | 199 | 45.3 | 240 | 54.7 | | |

In applying the c.i.square statistical measurement to the data in Table VII, the females who pursued the course of study labeled "other" were combined with those who pursued the course of study labeled "general" and the females who pursued the course of study labeled "vocational"

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male graduates, of those who pursued the general course of study while in high school, only 10.4 percent enrolled in college within six months after graduation.

TABLE VII

COMPARISON, ON THE BASES OF THE COURSES OF STUDY PURSUED WHILE IN HIGH SCHOOL, OF THE NUMBER AND FERCENTAGE OF FEMALE GRADUATES WHO ENROLLED AND WHO DID NOT ENROLL IN COLLEGE WITHIN SIX MONTHS FOLLOWING THEIR GRADUATION IN JUNE, 1959 FROM THE PUBLIC HIGH SCHOOLS OF THE CITY OF GRAND RAFIDS

| | | Activity within Six Months After Graduation | | | | | |
|--|------------------|---|--------|-------------------------|---------|--|--|
| Course of Study Pursued in High School | Total Females | Enrolled in C | ollege | Not Enroll in Colleg | ed e | | |
| | | No. Females | ħ | No. Females | ħ | | |
| College Preparatory | 224 | 165 | 73.7 | 59 | 26.3 | | |
| General | 48 | 5 | 10.4 | 43 | 89.6 | | |
| Commercial (Business) | 159 | 27 | 17.0 | 132 | 83.0 | | |
| Vocational | 4 | 1 | 25.0 | 3 | 75.0 | | |
| Other | 4 | 1 | 25.0 | 3 | 75.0 | | |
| Total | 439 | 199 | 45.3 | 240 | 54.7 | | |

In applying the chi-square statistical measurement to the data in Table VII, the females who pursued the course of study labeled "other" were combined with those who pursued the course of study labeled "general" and the females who pursued the course of study labeled "vocational"

were combined with those who parsued the course of study labeled "commercial." These combinations were made because the numbers in these categories were less than 5. The chi-square statistical measurement of the resulting matrix ($x^2 = 148.64$) indicates that at the 99.9 percent level the proportions are significantly different. Thus one may conclude that the second condition exists which is necessary to prove the validity of the second hypothesis of the study.

Table VIII indicates that 77.3 percent of the total graduates, both males and females, who pursued the "college preparatory" course of study while in high school enrolled in college within six months after graduation. Also, the same table indicates that only 14.5 percent of the total graduates, males and females combined, who pursued the "general" course of study while in high school enrolled in college within six months after graduation.

In applying the chi-square statistical measurement to the data in Table VIII, the graduated who pursued the course of study labeled "other" were combined with those who pursued the course of study labeled "general" and the graduated who pursued the course of study labeled "vocational" were combined with the graduates who pursued the course of study labeled "commercial." The chi-square statistical measurement of the resulting matrix ($x^2 = 296.02$) indicates that, at the 99.9 percent level, the proportions are significantly different. Thus one may conclude U = 1 the third and final condition exists which is necessary to prove the validity of the second hypethosis of the study.

TABLE VIII

COMPARISON, ON THE BASES OF THE COURSES OF STUDY PURSUED WHILE IN HIGH SCHOOL, OF THE NUMBER AND TERCENTAGE OF ALL GRADUATES, BOTH MALES AND FEMALES, WHO ENROLLED AND WHO DID NOT ENROLL IN COLLEGE WITHIN SIX MONTHS FOLLOWING THEIR GRADUATION IN JUME, 1959 FROM THE FUBLIC HIGH SCHOOLS OF THE SITY OF GRAND RAPIDS

| Course of Study Pursued in High School | Total Graduates Both Sexes | Enrolled in College | | Not Enrolled in College | | |
|--|-------------------------------------|------------------------|---------|----------------------------|------|--|
| | | Number | 1 10 | Number | 1 | |
| College Preparatory | 103 | 385 | 77.3 | 113 | 22.7 | |
| General | 152 | 22 | 3.4.5 | 130 | 85.5 | |
| Conmercial (Business) | 200 | 35 | 29.3 | 197 | 72.7 | |
| Vocational | | 8., 1., | 19.0 | 17 | 31.0 | |
| Other | 10 | 2 | 20.0 | 8 | 80.0 | |
| Total | 853 | 1418 | 52.5 | 403 | 47.5 | |

Activity Within Six Months After Graduation

Inasmuch as the three conditions prevail which were identified as being necessary to determine the validity of the second hypothesis of this study, one may conclude that there is a relationship between the course of study pursued, while in high school, by twolfth grade graduates in the public schools of a school district operating a community college and the enrollment of these graduates in college within six months following their graduation.

Hypothesis 3. The third hypothesis of the study is:

There is a relationship between the greater educational attainment level of the parents of twelfth grade graduates of the public schools of a school district operating a community college and the initial enrollment of these graduates in some college within six months after graduation.

If this hypothesis is valid, the conditions must prevail that (1) the proportion of male graduates whose mothers or whose fathers attained the several education attainment levels and who enrolled in college must vary significantly in respect to these educational attainment levels and the greater the educational attainment level of the mothers or the fathers, the greater must be the proportion of male graduates who enrolled in college and (2) the proportion of female graduates whose mothers or Sathers attained the several educational attainment levels and who enrolled in college must vary significantly in respect to these educational attainment levels and the greater the educational attainment level of the mothers or fathers, the greater must be the proportion of female graduates who enrolled in college and finally, (3) the proportion of all graduates, males and females combined, whose mothers or fathers attained the several educational attainment levels and who enrolled in college must vary significantly in respect to these educational attainment levels and the greater the educational attainment level of the mothers or fathers, the greater must be the proportion of all graduates who enrolled in college.

Table IX indicates that, while 45.6 percent of male graduates whose mothers or fathers completed only eight graded or less of education enrolled in college, 75.4 percent of the male graduates whose mothers or fathers completed at least four years of college also enrolled in college. The proportions going to college increase steadily with each educational attainment level reached by either of the parents.

TABLE IX

COMPARISON, ON THE BASES OF THE HIGHEST EDUCATIONAL ATTAINMENT LEVEL OF EITHER PARENT, OF THE NUMBER AND PERCENTAGE OF MALE GRADUATES WHO ENROLLED IN COLLEGE WITHIN SIX MONTHS FOLLOWING THEIR GRADUATION IN JUNE, 1959 FROM THE FUBLIC HIGH SCHOOLS OF THE CITY OF GRAND RAPIDS

| Highest Educational Attainment Level of Either Parent | Total M ales | Earoll Coll | led in lega | Not Enr in Col | olled lege |
|--|------------------------|----------------|----------------|-------------------|---------------|
| | | No. Males % | | No. Mal | es % |
| Eight Grades or Less | 79 | 36 | 45.6 | 43 | 54.4 |
| Some High School | 84 | 45 | 53.6 | 37 | 46.4 |
| Completed High School | 137 | 87 | 63.5 | 50 | 36.5 |
| Some College | 42 | 92 | 75.2 | 10 | 24.8 |
| Completed at Least 4-yrs. of College | 61 | 46 | 75.4 | 15 | 24.6 |
| Not Reported | 11 | 3 | 27.3 | 8 | 72.7 |
| Total | 414 | 243 | 60.1 | 165 | 39.9 |

Activity Within Six Months After Graduation

In applying the chi-square statistical measurement to the data in Table IX, the numbers of males "not reported" were combined with the

number of males in the category of "completed high school" (mode). The chi-square statistical measurement of the resulting matrix $(x^2 = 19.12)$ indicates that, at the 99.0 percent level, the proportions are significantly different. Thus one will conclude that the first condition for proving the validity of the third hypothesis of the study prevails.

TABLE X

COMPARISON, ON THE BASES OF THE HIGHEST EDUCATIONAL ATTAINMENT LEVEL OF EITHER PARENT, OF THE NUBBER AND PERCENTAGE OF DEMALE GRADUATES MHO ENROLLED IN COLLEGE WITHIN SIX MONTHS FOLLOWING THEIR GRADUATION IN JUNE, 1959 FROM THE PUBLIC HIGH SCHOOLS OF THE CITY OF GRAND RAPIDS

| Highest Educational Attainment Level of Either Parent | Total Females | Enrolla in Colla | ed age | Not Enro in Coll | olled Lege |
|--|------------------|---------------------|-----------|---------------------|---------------|
| | | No. Fema | les % | No. Femal | Les 🖇 |
| Eight Grades or Less | 80 | 19 | 24.7 | 61 | 75.3 |
| Some High School | 105 | 33 | 31.4 | 72 | 68.6 |
| Completed High School | 156 | 79 | 50.6 | 77 | 49.4 |
| Some College | 34 | 23 | 67.6 | 11 | 32.4 |
| Completed at Least 4-yrs. of College | 55 | 42 | 76.4 | 13 | 23.6 |
| Not Reported | 9 | 3 | 33.3 | 6 | 66.7 |
| Total | 439 | 199 | 45.3 | 240 | 54.7 |

Activity Within Six Months After Graduation

Table X indicates that, while 24.7 percent of the female graduates whose mothers or fathers completed less than eight grades of education enrolled in college, 76.4 percent of the finale graduates whose mothers or fathers completed at least four years of college also enrolled in college. The proportions going to college increase steadily with each educational attainment level reached by either of the parents.

In applying the chi-square statistical measurement to the data in Table X, the number of females "not reported" were combined with the number of Semalue in the category of "completed high school" (mode). The chi-square statistical measurement of the resulting matrix $(x^2 = 50.19)$ indicates that, at the 90.0 percent, the proportions are significantly different. This was will conclude that the second condition for proving the calibrity of the third hypothesis provails.

Table XI indicates that, while 34.6 percent of the total graduates, males and femaler combined, whose mothers or fathers completed eight grades or less of education encolled in college, 75.9 percent of the total graduates whose mothers or fathers completed at least four years of college also enrolled in college.

In applying the chl-square statistical measurement to the data in Table XI, the number of total graduates "not reported" were combined with those whose patients "completed high school" (mode). The chi-square statistical measurement of the reculting matrix ($x^2 = 68.76$) indicates that, at the 99.9 percent level, the proportions for the various educational attainment levels are significantly different. Thus, one may conclude that the third and final condition for proving the validity of the third hypothesis prevails.

TABLE XI

COMPARISON, ON THE BASES OF THE HIGHEST EDUCATIONAL ATTAINMENT LEVEL OF EITHER PARENT, OF THE NUBER AND PERCENTAGE OF THOSE OF BOTH SEXES WHO ENROLLED IN COLLEGE WITHIN SIX KONTHS FOLLOWING THEIR GRADUATION IN JUNE, 1959, FROM THE PUBLIC HIGH SCHOOLS OF THE CITY OF GRAND RAPIDS

Activity Within Six Months After Graduation

| Highest Educational Attainment Level of | Total Grad- uates | l Enrolled s in College | | Not Enrolled in College | |
|--|-------------------------|----------------------------|------|----------------------------|------|
| Either Parent | | Both Sexes | \$¢ | Both Sexes | Ŗ |
| Eight Grades or Less | 159 | 55 | 34.6 | 104 | 65.4 |
| Some High School | 189 | 78 | 41.3 | 111 | 58.7 |
| Completed High School | 293 | 166 | 56.7 | 127 | 43.3 |
| Some College | 76 | 55 | 72.4 | 21 | 27.6 |
| Completed at Least 4 yrs. of College | 116 | 88 | 75.9 | 28 | 24.1 |
| Not Reported | 20 | 6 | 30.0 | 14 | 70.0 |
| Total | 853 | 448 | 52.5 | 405 | 47.5 |

Inasmuch as the three conditions prevail which were identified as being necessary to determine the validity of the third hypothesis of this study, one may conclude that there is a relationship between the higher of the educational attainment levels of either of the parents of twelfth grade graduates of the public schools of a school district operating a community college and the enrollment of these graduates in college within six months after graduation.

Hypothesis 4. The fourth hypothesis of this study is:

There is a relationship between the higher scholastic achievement ranking, at the end of high school, of twelfth grade graduates of the public schools of a school district operating a community college and the initial enrollment of these graduates in some college within six months after graduation.

If this hypothesis is valid, the conditions must prevail that (1) the proportions of male graduates who achieved the respective ten scholastic achievement rankings must vary significantly in respect to such rankings and the greater these rankings, the greater must be the proportion of male graduates who enrolled in college and, (2) the proportion of female graduates who achieved the respective ten scholastic achievement rankings must vary significantly in respect to such rankings and the greater these rankings, the greater must be the proportion of male graduates who enrolled in college and finally (3) the proportion of all graduates, males and females combined, who achieved the respective ten scholastic achievement rankings must vary significantly in respect to such rankings and the greater these rankings, the greater must be the proportion of all graduates who enrolled in college.

Table XII shows that only 28.1 percent of the males who achieved a scholastic achievement ranking less than that of 80 percent (1 - 20

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percentile rank) of the other graduates enrolled in college. Also, of the males achieving a scholastic achievement rank of more than 80 percent (81 - 100 percentile rank) of the other graduates, 96.7 percent enrolled in college. The proportions of male graduates going on to college range progressively upward in accordance with the scholastic achievement rankings of these males.

TABLE XII

COMPARISON, ON THE DATES OF THEIR SCHOLASTIC ACHIEVEMENT RANKS AT THE END OF THEIR FROGRAM IN HIGH SCHOOL, OF THE NUMBER AND FER-CENTACE OF MALES IN EACH RANK WHO ENROLLED IN COLLEGE WITHIN SIX MONTHS FOLLOWING THEIR GRADUATION IN JUNE, 1959 FROM THE FUBLIC HIGH BCHOOLS OF THE CITY OF GRAND RAPIDS

| Scholastic Achievement Rank in Percentiles | Total Males | Durolled In Tollege | | Not Enrolled in Coll-se | |
|---|----------------|------------------------|-------|----------------------------|---------|
| | | lo. Males | 10 | No. Males | A 12 |
| 1 - 20 | 89 | 25 | 28.1 | 64 | 71.9 |
| 21 - 40 | 105 | <u>5</u> 5 | 53.3 | 49 | 46.7 |
| 41 - 60 | 32 | 52 | 69.4 | 3 0 | 36.6 |
| 61 - 80 | 78 | 58 | 74.1; | 20 | 25.6 |
| 81 -100 | 60 | 58 | 96.7 | 2 | 3.) |
| Total | 414 | 243 | 60.1 | 165 | 39.9 |

Activity Within Sim Months After Craduation

In applying the chlasquare statistical measurement to the data in Table XII, the numbers of males in scholastic achievement rank 81 - 100 percentiles were combined with those in rank 61 - 80 percentiles because the number not going to college in that former rank was less than 5. The chi-square statistical measurement $(x^2 = 80.51)$ indicates that, at the level of 99.1 percent, the proportions in each rank are significantly different in respect to going and not going to college. Thus one may conclude that the first condition for proving the validity of the fourth hypothesis of this study prevails.

TABLE XIII

COMPARISON, ON THE BASES OF THEIR SCHOLASTIC ACHTEVEMENT RANKS AT THE END OF THEIR PROGRAM IN HICH SCHOOL, OF THE NUMBER AND FERCENTAGE OF FEWALES IN EACH RANK WHO ENROLLED IN COLLEGE WITHIN SIX MONTHS FOLLOWING THEIR GRADUATION IN JUNE, 1959 FROM THE PUBLIC HIGH SCHOOLS OF THE CITY OF GRAND RAPIDS

| Scholastic Achievement Rank in Percentiles | Total Females | Enrolled in College | | Not Enrolled | | |
|---|------------------|------------------------|------|--------------|---------|------|
| | | No. Female | s 10 | No. | Females | 23 |
| 1 - 20 | 49 | 7 | 14.3 | | 42 | 85.7 |
| 21 - 40 | 53 | 12 | 22.6 | | 41 | 77.4 |
| 41 - 60 | 86 | 33 | 38.4 | | 53 | 61.6 |
| 61 - 80 | 107 | 51 | 47.7 | | 56 | 52.3 |
| 81 -100 | 1/14 | 96 | 66.7 | | 48 | 33.3 |
| Total | 439 | 199 | 45.0 | : | 240 | 54.7 |

Activity Within Six Months After Graduation

Table XIII shows that only 14.3 percent of the females who achieved

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a scholastic achievement ranking less than that of 80 percent (1 - 20 percentile rank) of the other graduates enrolled in college. Also, of the females achieving a scholastic achievement rank greater than 80 percent (81 - 100 percentile rank) of the other graduates, 66.7 percent enrolled in college. Similarly to the sale graduates, the proportions of female graduates going on to college range progressively upward in accordance with the scholastic achievement rankings of these females.

The chi-square statistical measurement ($x^2 = 58.43$) of the data in Table XIII indicates that, at the level of 99.9 percent, the proportions in each rank are significantly different in respect to going and not going to college. Thus one may conclude that the second condition for proving the validity of the fourth hypothesis of this study prevails.

Table XIV shows that only 23.2 percent of the total graduates who achieved a conclastic achievement ranking less than that of 80 percent (1 - 20 percentile rank) of the other graduates enrolled in college. Also, of the total graduates achieving a scholastic achievement rank greater than 80 percent (S1 - 100 percentile rank) of the other graduates, 66.7 percent enrolled in collage.

The chi-square statistical measurement $(x^2 = 99.77)$ indicates that, at the level of 99.9 percent, the proportions in each rank are significantly different in respect to going and not going to college. Thus one may conclude that the third and final condition for proving the validity of the fourth hypothesis prevails.
TABLE XIV

COMPARISON, ON THE BASES OF THEIR SCHOLAGTIC ACHIEVEMENT RANKS AT THE END OF THEIR FROGRAM IN HIGH SCHOOL, OF THE NUMBER AND PRECENTACE OF GRADUATES IN EACH RANK WHO ENROLLED IN COLLEGE WITHIN SIX MONTHS FOLLOWING THEIR GRADUATION IN JUNE, 1959 FROM THE PUBLIC HIGH SCHOOLS OF THE CITY OF GRAND RAPIDS

| Scholastic Achievement Rank | Total Graduates | Enrolled In College | | Not Enre in Coll | Not Enrolled in College | | |
|-----------------------------------|--------------------|------------------------|---------|---------------------|----------------------------|--|--|
| in Percentiles | | A manager | A 12 | Rusher | A 12 | | |
| 1 - 20 | 138 | 32 | 23.2 | 106 | 76.8 | | |
| 21 - 40 | 158 | 68 | 40.0 | 90 | 57.0 | | |
| 41 - 60 | 168 | 35 | 50.6 | 83 | 49.4 | | |
| 61 - 80 | 185 | 109 | 58.2 | 76 | 41.3 | | |
| 91 -1 00 | 2014 | 4ر1 | 75.5 | 50 | 24.5 | | |
| Total | 050 | 448 | J~ • J | <u>ز</u> ن؛' | 19.5 | | |

Activity Within Six Months After Graduation

Inasmuch as the three conditions provid which were identified as being necessary to prove the validity of the fourth hypothesis of this study, one may conclude that there is a relationship between the higher scholastic achievement ranking, at the end of high school, of twelfth grade graduates of the public high schools of a school district operating a community college and the enrollment of these graduates in college within six months after graduation.

Hypothesic J. the fifth hypothesis of this study is:

There is a relationship between the degree of certainty of going on to college, as expressed prior to graduation by twelfth grade graduates of the public schools of a school district operating a community college, and the initial enrollment of these graduates in some college within six months after graduation.

If this hypothesis is would, the conditions must prevail that (1) the proportion of male graduates who expressed the several degrees of cortainty of attending college prior to graduation from high school and who enrolled in college must vary significantly in respect to these expressions and the greater the degree of expressed certainty of attending college, the greater must be the proportion of male graduates who enrolled in college and (2) the proportion of famule graduates who axpressed the several degrees of containty of attending college prior to graduation from high school and who enrolled in college must vary significantly in respect to these expressions and the greater the degree of expressed containty of attending college, the greater must be the proportion of female graduates who encolled in college and (3) the proportion of all graduates of both sexes who expressed the several degrees of certainty of attending college prior to graduation from high school and who enrolled in college must vary significantly in respect to these expressions and the greater the degree of expressed certainty of attending college, the greater must be the proportion of all graduates of both sexes who enrolled in college.

Table XV shows that only 4.5 percent of the males who expressed "no intention of going to college" actually enrolled in college. Also, the table shows that 86.6 percent of the males who stated that they



were "very certain of going to college" actually enrolled in college. The proportions of male graduates going on to college range progressively upward in accordance with the higher degrees of expressed certainty of attending college.

TABLE IN

COMPARISON, ON THE BASES OF THE DEGREES OF CERTAINTY OF ATTENDING COLLEGE AS EXPRESSED FRIOR TO GRAPUATION BY TWELFTH GRADE STUDENTS OF THE PUBLIC SCHOOLS OF THE CITY OF GRAND NAFIDS, OF THE NUMBER AND PERCENTAGE OF MALE GRADUATES IN EACH CATEGORY WHO DEROLLED IN COLLECT WITH THE NUMBER AND PERCENTAGE OF MALE GRADUATES IN EACH CATEGORY WHO DID NOT ENROLL IN COLLEGE WITHIN SIX MONTHS AFTER GRADUATION

| Degrees of Expressed Certainty of Enrolling in | Total Males | Entolles in Colleg | l | Not Enrolled in College | | |
|---|----------------|-----------------------|-------|----------------------------|------|--|
| College | - | No. Males | ħ | No. Males | K | |
| Very Certain | 209 | 181 | 86.6 | 28 | 13.3 | |
| Fairly Certain | 20 | 51 | 56.7 | 39 | 43.3 | |
| Don't Know | 71 | 15 | 21.1 | 56 | 78.9 | |
| No Intention | 1.1. | 2 | 4.5 | 42 | 95.5 | |
| Total 414 | | 249 | 60.1 | 165 | 39.9 | |

Activity Within Six Months After Graduation

In applying the chi-square statistical measurement to the data in Table XV, the numbers of males in the category of "No Intention" were

combined with the numbers of numbers in the category of "Don't Know" because one of the cells in the former category was less than 5. The chi-square statistical measurement ($x^2 = 160.23$) indicates that, at the level of 99.9 percent, the proportions in each category are significantly different in respect to going and not going to college. Thus one may conclude that the first condition for proving the validity of the fifth hypothesis proveils.

TADLE XVI

COMTATION, ON THE DAGES OF THE DEGREES OF CERTAINTY OF ATTENDING COLLEGE AS EXPRECISED PRICE TO GRADUATION BY TWELFTH GRADE STUDENTS OF THE PUBLIC SCHOOLE OF THE CITY OF GRAND RAPIDS, OF THE NUMBER AND PERCENTAGE OF FEMALE GRADUATES IN EACH CATEGORY MAD ENROLLED IN COLLEGE WITH THE NUMBER AND FERCENTAGE OF FEMALE GRADUATES IN EACH CATEGORY WHO DID NOT ENROLL IN COLLEGE WITHIN SIX MONTHS ATTER GRADUATION

| Degrees of Expressed Certainty of Enrolling in | Total Fomales | Enrolled in Colleg | Enrolled in College | | ollel less |
|---|------------------|-----------------------|------------------------|------------|---------------|
| College | | No. Fenales | Ą. | No. Foma | lec I |
| Very Certain | 23.5 | 163 | 75.8 | <u>5</u> 2 | 24.2 |
| Fairly Certain | | 27 | 36.5 | 47 | 63.5 |
| Don't Know | 63 | 7 | 11.1 | 56 | 6 8°0 |
| No Intention | C7 | 2 | 2.3 | S5 | 97.7 |
| Total. | 439 | 199 | 45.3 | 2140 | 54.7 |

Addivity Mithin Six Months After Graduation

Table XVI shows that only 2.3 percent of the females who expressed "no intention of going to college" actually enrolled in college. Also, the table indicates that 75.9 percent of the females who stated that they were "very certain of going to college" actually enrolled in college. The proportions of finale graduates going on to college range progressively upword in accordance with the higher degrees of expressed certainty of uttending college.

In applying the chi-square statistical seasurement to the data in Table XVI, the numbers of females in the category of "No Intention" were combined with the mashers of females in the category of "Don't Know" because one of the cells is the former category was less than 5. The chi-square statistical measurement ($x^2 = 1.76.59$) indicates that, at the level of 99.2 percent, the proportions is each category are significantly different in respect to going and not going to college. Thus one may conclude that the second condition for proving the validity of the fifth hypothecic prevails.

Table XVII shows that only 3.1 percent of all of the graduates who expressed "no intention of going to college" actually enrolled in college. Also, the table indicator that 32.1 percent of all of the graduates she stated that they were "very certain of going to college" actually enrolled in college. The propertiens of all graduates going on to college range progress leady appared in accordance with the higher degrees of expressed actionaty of attending college.

In applying the chi-square statistical measurement to the data in Table XVII, the numbers of graduates in the category of "No Intention" were combined with the numbers of graduates in the category of

"Don't Know" because one of the cells in the former sategory was less than 5. The chi-square statistical measurement ($x^2 = 334.65$) indicated that, at the level of 99.9 percent, the proportions in each category are significantly different in respect to going and not going to college. Thus one may conclude that the third and final condition for proving the validity of the fifth hypothesis prevails.

TABLE NVII

COMPARISON, ON THE BAGES OF THE DEGREES OF GERTAINTY OF CONTINUING MICH SFECIALIZED TRAINING OR COLLEGE WORK AS EXPRESSED PRIOR TO GRADUATION BY TWELFTH GRADE STUDENTS OF THE PUBLIC HIGH SCHOOLS OF THE CITY OF GRAND RAFIDS, OF THE NUMBER AND FERGENTACE OF BOTH SEXES IN EACH CATEGORY WHO ENROLLED IN COLLEGE WITH THE NUMBER AND PERCENTAGE OF BOTH SEXES IN EACH CATEGORY WHO DID NOT ENROLL IN COLLEGE WITHIN SIX MONTHS AFTER GRADUATION

| Degrees of Expressed Certainty of Enrolling 1. College | . | NUMER by T | luin Six No | nthe After Grad | Buchium |
|--|---------------|------------------------|-------------|---------------------|----------------|
| | Duth Cutos | D.Tollet 1. College | | Not Enro In Cull | olled Lugo |
| | | Y and sm | 1 | Nullsor | 4 [: |
| Very Certal. | 424 | <u> 314</u> | 01.2 | 00 | 13.9 |
| Fairly Certain | 1.64 | 79 | 47.0 | 86 | 52.4 |
| Don't Know | 134 | 22 | 16.h | 112 | 83.6 |
| No Intention | 131 | L; | 3.1 | 127 | 96 . 9 |
| Total | 253 | 443 | 52.5 | 405 | 47.5 |

Inasmuch as the three conditions prevail which were identified as

being necessary to determine the validity of the fifth hypothesis of this study, one may conclude that there is a relationship between the greater degrees of certainty of going on to college, as expressed prior to graduation by twelfth grade graduates of the public high schools of a school district operating a community college, and the enrollment of these graduates in college within six months after graduation.

<u>Hypothesis</u> $\underline{6}$. The sixth hypothesis of this study is: There is a relationship between the plans made for college enrollment, by twelfth grade graduates of the public high schools of a school district operating a community college, and the initial enrolment of these graduates in some college within six months after graduation.

If this hypothesis is valid, the conditions must prevail that (1) the proportion of male graduates who made plans prior to graduation from high school for enrolling in college and who ustually shrolled in college must vary significantly in respect to these plans and the greater the level of these plans, the greater must be the proportion of male graduates who enrolled in college and (2) the proportion of female graduates who made plans prior to graduation from high school for enrolling in college and who actually enrolled in college must vary significantly in respect to these plans and the greater the level of the plans, the greater must be the proportion of female graduates who enrolled in college and (3) the proportion of female graduates of both sexes who made the several levels of plans prior to graduation from high school for enrolling in college and who actually enrolled in college must vary significantly in respect to these plans prior to graduation from high school for enrolling in college and who actually enrolled in college must vary significantly in respect to these plans plans plans and the greater the level of the plans, the greater must be the proportion of the total graduates who enrolled in college.

TABLE XVIII

COMPARISON, ON THE BASES OF THE EXTENT TO WHICH FLANS HAD BEEN MADE PRIOR TO HIGH SCHOOL GRADUATION FOR ENROLLING IN COLLEGE, OF THE NUMEER AND PERCENTAGE OF MALE GRADUATED WHO ENROLLED IN COLLEGE WITH THE NUMBER AND FERCENTAGE OF MALE GRADUATES WHO DID NOT ENROLL IN COLLEGE WITHIN SIX MONTHS FOLLOWING THEIR GRADUATION FROM THE PUELIC HIGH SCHOOLS OF THE CITY OF GRAND RAFIDS IN JUNE, 1959

| Protont of | Tatal | Activity With | ia Sir No. | Months After Graduation | | | |
|--|------------|--------------------|-----------------|--|--------------|--|--|
| Plans Made for College Enrollment | Malos | Eurolle in Olle | d ૨૦૧ | Not Enrolled in College | | | |
| | | L. Milds | T. | , αποτοδούται, με μεταλούτατα το | A. | | |
| Had Applied to College and Had bean Accepted | 1 | 11.2 | 32.9 | 10 | 8.1 | | |
| Had Applied to College but Not Yet Accepted | t 110 | <u> 23</u> | 89.1 | 12 | 10.9 | | |
| Had Contacted a College Repre- sentative | ç | C | 95 A • J ● V | 2 | 25.0 | | |
| Had Written for Information | 21 | 12 | 57.1 | ó | 42,9 | | |
| Might Go but Had Made No Plana | 8 <u>)</u> | 16 | 19.3 | 67 | 80 .7 | | |
| Had No Intertions of Going to College | е 30 | 3 | 4.5 | 63 | 95.5 | | |
| No Response | 3 | | 22.3 | 2. | 66.7 | | |
| Total | | 249 | 60.1 | 165 | 39.9 | | |

Table XVIII shows that, of the males who had made no plans although believing that they might go to college, only 13.7 percent actually enrolled in college. Also, the same table indicates that, of the males who had applied to a college for admission and had been accepted, 38.2 percent actually enrolled in college. The proportions of male graduates going on to college increase steadily in accordance with the levels of plans made.

In applying the chi-square statistical measurement to the data in Table XVIII, the numbers of graduates in the category of "No Response" were included in the category of "Had Applied to College and Had been Accepted" (Mode) because one of the cells in the former category was less than 5. The chi-square statistical measurement ($\pi^2 = 465.38$) indicates that, at the level of 99.9 percent, the propertions in each category are significantly different in respect to going and not going to college. Thus one may conclude that the first condition for proving the validity of the sixth hypothesis prevails.

Table XIX shows that, of the females who believed that they might go to college but who had made no plans for enrolling in college, only 4.5 percent actually enrolled in college. Also, the same table indicates that, of the females who had applied to a college and who had been accepted for enrollment in a college, 95.0 percent actually enrolled in college. The proportions of females who enrolled in college increases steadily with each level of plans made for enrollment in college prior to graduation from high school.

TADLE XIX

| FRICE TO HIG THE NULBER IN JOLL GRAD CI | N BOHO AND FE LOE MI UATED X X MONT THE FU | OL GRADUATION ROENTAGE OF FE TH THE NUMBER MHO DID NOT EN HIC FOLLOWING T CLIC HISH JOHO GRAND HAFIDD T | FOR ENROLLI MALE ORADU AND FERCENC ROLL IN CON MULE ORADU OLD OF THE N JUNE, 101 | ING IN COLLEGE, O NTIS WHO ENROLLED INGE OF FEMALE LIEGE WITHIN TTION TEOM CITY OF 12 | F | |
|--|---|---|--|---|---------------|--|
| Entent of Total Plano Made Fendlos for College | | Activity Wit | hin Six Mor at uge | the After Graduation Not Enrolled In College | | |
| | | No. Femiles | ₹ 0 | No. Females | 1 | |
| Had Applied to College and Had Been Accorded | | | 02.0 | ri n In de | 15.0 | |
| Nad Applied to College but Not Yet Accepted | 27 | • 2 • . | | 20 | | |
| Nad Contested a Collego Repues Sentative | - | Ĵ | 5. | 2 | 30. 0 | |
| Had Written for Information | 2? | 2 | 31.0 | 23 | 69.0 | |
| Might Co but Had Made No Flans | ĊĴ | ! } | 6.3 | 52 | 99 . 7 | |
| Had No Intentions of Going to College No Responde | 11'. 5 | С Э | 1.0 0 | 222 5 | 98.2 166.9 | |
| Total | 1 | 100 | '15 . 3 | 240 | 54.7 | |

COMPARTSON, ON THE BASES OF THE EXTENT TO WHICH PLANS HAD BEEN MADE

In applying the chi-square statictical measurement to the data in Table XIX, it was noted that all cells in the matrix were loss than 5. Before computing the chi-square index, the cells in the category of "No Response" were combined with the cells in the category of "Had Applied to College and Had Dech Accepted" (Mode). Also, the cells in the categories of "Had Meitten for Information," "Might Go but Had Made No Flens," and "Had No Intention of Going to College" were combined. The chi-square measurement of the resulting matrix ($n^2 = 232.75$) indicates that, at the 99.9 percent level, the properties in each category of Landfleitlently different in respect to college and not going to college. Thus one way touchube that the Second condition for proving the validity of the cinth hypothesis provaile.

Table XX shows that, of all of the graduates who believed that they night go to college believe had node no plans, only 13.7 percent actually enrolled in college. Also, this same table indicates that, of all of the graduates of both nodes who had applied to a college for admission and who had been nearpied, 89.7 percent neturally involved. The propertions of all of the graduates who enrolled in college hacreased steadily with each lovel of plans made for enrollment in college prior to graduation from high school.

In applying the chi-equare statistical measurement to the data in Table XX, it was observed that one of the cells in the category of "No Response" was less than 5. Consequently, the data in this category were combined with the data in the category of "Had Applied to and Had Been Accepted by a College." The chi-square statistical measurement of the resulting matrix ($x^2 = 465.08$) indicates that, at the

99.9 percent level, the proportions in the various categories are significantly different in respect to going to college and not going to college. Thus one may conclude that the third and final condition necessary for proving the validity of the sixth hypothesis of this study prevails.

TABLE XX

COMPARISON, ON THE BASES OF THE EXTENT TO WHICH FLANS HAD BEEN MADE PRIOR TO HIGH SCHOOL GRADUATION FOR ENROLLING IN COLLEGE, OF THE NUMBER AND FERCENTAGE OF BOTH SEXES WHO ENROLLED IN COLLEGE WITH THE NUMBER AND FERCENTAGE OF BOTH SEXES WHO DID NOT ENROLL IN COLLEGE WITHIN SIX MONTHS FOLLOWING THEIR GRADUATION FROM THE FUBLIC HIGH SCHOOLS OF THE CITY OF GRAND RAFIDS N 1959

| Extent of | Total | Activity Wi | thin Six Mor | ths After Gra | duation |
|--|---------------|------------------|------------------------|---------------|---------------|
| Plans Made 1 for College | Both Sexes | Enroll in Col | Enrolled in College | | olled lege |
| BILLOTTINGUL | | Number | % | Number | × |
| Had Applied to College and Had Been Accepted 263 | | 232 | 88.2 | 31 | 11.8 |
| Had Applied to College but No Yet Accepted | t 192 | 160 | 83.3 | 32 | 16.7 |
| Had Contacted a College Repre- sentative | 14 | 9 | 64.3 | 5 | 35.7 |
| Had Written for Information | 50 | 21 | 42.0 | 29 | 58.0 |
| Might Go but Had Made No Plans | 146 | 20 | 13.7 | 126 | 86.3 |
| Had No Intention of Going to College | 130 | 5 | 2.8 | 175 | 97.2 |
| No Response | 8 | 1 | 12.5 | 7 | 87.5 |
| Total | 853 | 448 | 52.5 | 405 | 47.5 |

Inasmuch as the three conditions prevail which were identified as being necessary to prove the validity of the sixth hypothesis of this study, one may conclude that there is a relationship between the extent of plans made for college enrollment prior to graduation by twelfth grade graduates of the public high schools of a school district operating a community college and the enrollment of these graduates in college within six months after graduation.

<u>Hypothesis</u> 7. The seventh hypothasis of this study is: There is a relationship between the occupations of the heads of the households of twelfth grade graduates of the public high schools of a school district operating a community college, and the initial envolument of these graduates in some college within six months after graduation.

If this hypothesis is valid, the conditions must provail that (1) the propertions of a degraduated, prior to graduation from high school, whose household heads were engaged in the several categories of occupations and who actually enrolled in college must very significantly in respect to these categories and (2) the propertions of feasile graduates, prior to graduation from high school, whose household heads were engaged in the several categories of occupations and who actually enroled in college must very significantly in respect to these categories and (2) the proportions of all-of the graduated of both sexes, prior to graduation from high school, whose household heads were engaged in the several categories of occupations and who actually enroled in college must very significantly in respect to these categories and (2) the proportions of all-of the graduated of both sexes, prior to graduation from high school, whose household heads were engaged in the seconal categories of occupations and who actually enrolled in coll ge must very significantly in respect to these categories.



TABLE XXI

COMPARISON, ON THE BASES OF THE OCCUPATIONS OF THE HEADS OF THE HOUSEHCILLS, OF THE NUMBER AND FERCENTAGE OF MALE GRADUATES WHO ENROLLED IN COLLEGE WITH THE NUMBER AND FERCENTAGE OF MALE GRADUATES WHO DID NOT ENROLL IN COLLEGE WITHIN SIX MONTHS AFTER GRADUATION FROM THE PUBLIC HIGH SCHOOLS OF THE CITY OF GRAND RAPIDS IN JUNE, 1959

| | | Activity V | Vithin Six Mo | nths After Grad | uation |
|---|----------------------|-----------------|------------------------|-----------------|----------------|
| Occupation of Head of Household* | Total Nales | Errol In Col | Eurolled In Colloge | | lled ege |
| | | No. Mel. | 3 7 | No. Males | P. |
| Professional, Technical and Kindred Work | 75 | 49 | 65.0 | 26 | 24•7 |
| Managerial, Official and Proprietary | 21 | 15 | 72.14 | S | 28.6 |
| Clerical and Sales | 0 0 | 59 | | 21. | 26.0 |
| Craftsmanshi _r , Foremanship and Kindrad | ?? | :) | 35.9 | 34 | 44 . 2 |
| Operative and Kindred | 97 | 54 | 55.6 | 43 | 44. . 4 |
| Service Work | 1.0 | 5 | 50.0 | L.A. | 50.0 |
| Farm Work | 1 | 1 | 100.0 | 0 | 0.0 |
| Labor, Except F and Mining | ໂພກມ ຄ ີ ໄ | 11 | 52.1 | 10 | 47.6 |
| Unemployed and Retired | 17 | 9 | 52.9 | ę | 47.1 |
| Unreported | 15 | Э | 20.0 | 12 | 80.0 |
| Total | 414 | 249 | 60.1 | 165 | 39.9 |

*Occupational categories taken from <u>Population Characteristics</u>, U. S. Census Reports, 1950. Table XXI shows that the proportions of male graduates going on to college varied from 50.0 percent in the sategory of "Service Workero" to a high of 100 percent in the sategory of "Fam Work." Discounting that only one student has found in the sategory of "Fama Work" and the possibilities are only 100 percent or 0 percent, the next highest of the proportions was 73.9 percent in the sategory of "Clerical and Sales." Of interast to the observer is the small differences in the proportions for the categories of "Craftsmanchip, Foremanship, and Kindred," "Operative and Kindred," "Jervice Work," "Lebus, Excepting Mining," and "Unemployed and Detired." The proportions in these sategories varied only from 50.0 percent in 55.9 percent.

In applying the dif-square statistical measurement to the data in Table XXI, the late is the subsport of "Farm Work" and "Unreported" were condited with the category of "Operative and Kindred" (mode) because the colle contained come numbers 2 of the f. The chi-square obstictical measurement of the resulting metric (of a 12.7%) indicates that, at the level of 30.9 percent, the proportions in the second categories are significantly different in respect to collige and not poing to college. Thus one may conclude that the first condition for proving the validity of the seventh hypothesis of the long provails.

Table XXII indicates that the propertions of famale graduates going on to college varied from a less of 7.7 percent in the category of "Farm Mork" to a high of 62.1 percent in the category of "Managorial, Official, and Proprietery." Like the male graduates, the highest percentages occurred in the shift-coller eccupational categories with the

т.

.

exception that the percentages in "Labor" exceeded those in "Clerical. and Sales" with the female graduates.

with the second

COMPARISON, ON THE BASES OF THE OCCUPATIONS OF THE HEADS OF THE HOUSEHOLDS, OF THE NUMBER AND PERCENTAGE OF FEMALE GRADUATES WHO ENROLLED IN COLLEGE WITH THE NUMBER AND PERCENTAGE OF FEMALE GRADUATES WHO DID NOT ENROLL IN COLLEGE WITHIN SIX MONTHS AFTER GRADUATION FROM THE PUBLIC HIGH SCHOOLS OF THE CITY OF GRAND RAPIDS IN JUNE, 1959

| | | Activity Wi | thin Cix Mo | aths After Grad | uation |
|--|------------------|------------------------|----------------|---------------------|--------------|
| Occupation of Head of I Household | Tutal Fomales | Enroll in Coll | .ಂಡೆ ಸ್ಕ್ರೈ | Nut Enro An Coll | 11.80 egn |
| | | | es A | NU. Pundat | Ą. |
| Frofessional, Technical, an Kindred Mark | .व (१ | 1.0 | (1.8 | 26 | 38.2 |
| Managerial, Official, and Proprietory | 1. 22 | 20 | <u>.</u> | 11 | 27.2 |
| Clorical and Sales | 62 | 52 | 50 . 8 | ٥٥ | 49.0 |
| Craftsmanship, Foremanship, and Kindred | 82 | 27 4 i | <u> </u> | 55 | 67.1 |
| Operative and Kindred | 316 | $\mathfrak{h}\epsilon$ | 39.0 | 70 | 61.0 |
| Service Work | بين مع | () ~ | 40.0 | 9 | 60.0 |
| Farm Work | 13 | 1 | 7.7 | 12 | 32.3 |
| Labor, Except Farm and Mini | ing 23 | 13 | I.5 | 10 | 43.5 |
| Unemployed and Retired | 12 | 5 | 41.7 | 7 | 58.3 |
| Unreported | 28 | 14 | 50.0 | 14 | 50.0 |
| Total | 439 | 199 | 45.3 | 240 | 54.7 |

In applying the chi-square statistical measurement to the data in Table XXII, the data in the category "Unreported," the data in the category of "Service Work" and the data in the category of "Farm Work" were combined with the data in "Operative and Kindred" (mode). The chisquare measurement of the resulting matrix ($x^2 = 20.91$) indicates that the proportions in the several categories are significantly different in respect to going and not going to college. Thus one may conclude that the second condition for proving the validity of the reventh hypothecis prevails.

Table XIIII indicates that the proportions of all graduates of both sexes going on to college varied from a low of 14.3 percent in the category of "Farm Work" to a high of 65.0 percent in the category of "Managerial, Official, and Proprietory." The highest percentages were in the categories of "Professional, Technical and Kindred," "Managerial, Official, and Proprietory," and "Clerical and Kindred," "Managerial, Official, and Proprietory," and "Clerical and Sales" with percentages of 62.6 percent, 56.0 percent, and 63.8 percent respectively. There were considerable variations in the percentages of those going on to college in the octagories of "Creftemanship, Foremanship, and Kindred" (32.4 percent), "Operative and Kindred" (46.5 percent), "Service" (46.7 percent), "Farm Work" (14.9 percent), "Labor, Except Farm and Kindred" (56.5 percent), "Unemploy?" and Deticed" (48.3 percent).

In applying the enlargement statistic. Researchest to Table XXIII, the data in the outsport of "Norm Work" and "Unreported" were included in the category of "Operative and Kindred" (mode). The chi-square

statistical measurement of the resulting matrix $(x^2 = 31.45)$ indicates that, at the level of 99.9 percent, the proportions in the several categories are significantly different in respect to going on to college and not going on to college. Thus one may conclude that the third and final condition for proving the volidity of the seventh hypothesis prevails.

TABLE XXIII

COMPARISON, C" THE PACES OF THE OCCUPATIONS OF THE HEADS OF THE HOUSEHOLDS, OF THE NUMBER AND PERCENTAGE OF ALL GRADUATES MHO ENROLLED IN COLLEGE WITH THE NUMBER AND PERCENTAGE OF ALL GRADUATES WHO DID NOT ENROLL IN COLLEGE WITHIN SIX MONTHS AFTER GRADUATION FROM THE FUBLIC HIGH SCHOOLS OF THE CITY OF GRAND RAFIDS IN JUNE, 1919

| | | Activity | Within S | lix Months | After Gr | aduation |
|--|------------------------|---|---------------|------------|-----------------|-----------------|
| Occupation of Head of Household | Total Buth Seves | Eistol in Col | .1e) .105e | | Not En in Co | rollod llege |
| nouscholu | | ی سرور میکند کرد. 1 س میراند میکند کرد | A , ? | | يو روسه ا | 10 |
| Professional, Technical, an Kindred Mork | u 143 | <i></i> 91 | 62.6 | | 52 | 26.4 |
| Managerial, Official, and Froprietory | 50 | 22 | 65.0 | | 17 | <u>94.</u> 0 |
| Clerical and Sales | 1.7 | 90 | (). C | | | 36.2 |
| Craftsmanship, Foremanship, and Kindred | 159 | 70 | 31.4 | | eç, | 63.2 |
| Operative and Kindred | 21.5 | 100 | 46.5 | | 115 | 53.5 |
| Service Nork | 15 | 7 | 46.7 | | 8 | 53.3 |
| Farm Work | 14 | 2 | 14.3 | | 12 | 85.7 |
| Labor, Except Farm and Minip | ng 44 | 24 | 54.5 | | 20 | 45.5 |
| Unemployed and Retired | 29 | 14 | 48.3 | | 15 | 51.7 |
| Unreported | 43 | 17 | 39.5 | | 26 | 50.5 |
| Total | 853 | 448 | 52.5 | | 405 | 47.5 |

Inasmuch as the three conditions prevail which were identified as being necessary to determine the validity of the seventh hypothesis of this study, one may conclude that there is a relationship between the occupations of the heads of households of twelfth grade graduates of the public high schools of a school district operating a community college and the initial enrollment of these graduates in some college within six months after graduation.

Hypothesis 8. The eighth hypothesis of this study is:

There is a relationship, on the basis of sex, between the graduates who enroll initially in a community college, between the graduates who enroll initially in privatelycontrolled four-year colleges in the same district, and between the graduates who enroll initially in resident colleges of various kinds or types outside the district, within six months after graduation from the public high schools of a school district operating a community college.

If this hypothesis is valid, the condition must prevail that the proportions of male graduates who enroll initially in a community college, who enroll initially in some privately-controlled four-year college in the same district, and who enroll initially in resident colleges of various kinds or types outside the district within six months after graduation from the public high schools, sust vary significantly from the proportions of female graduates who enroll initially in these same institutions within six months after graduation from the public high schools of the school district.

Table XXIV shows the number and percentage of male graduates and the number and percentage of female graduates who enrolled initially in the several kinds of colleges within six months after graduation from high school. This table indicates that, of the total graduates

who enrolled initially in some college, 65.2 percent of the makes and 58.8 percent of the finales enrolled in a community college. Also, of the total graduates who enrolled initially in some college, 1.6 percent of the makes and 1.0 percent of the females enrolled in a privately-op rated four-year college. Finally, of the total graduates enrolling initially is some college, 30.0 percent of the makes and 40.2 percent of the females enrolled in a college of some type located outside the school district.

Actual reasons

COMPARICON, ON THE BASIS OF CEX, OF THE NUMBER AND PERCENTAGE OF GRADUATES WHO ENHOLISED IN THE LOCAL COMMUNITY COLLECE, WHO ENROLLED IN EITHER OF THE TWO LOCAL UNIVATE FOUR-YEAR COLLECED, AND WHO ENROLLED IN COLLECED ELSEMPERE WITHIN SIX MONTHE AFTER CRADUATION FROM THE FUELIC HIGH SCHOOLS OF THE CUTY OF GRAND RAFIES IN JUNE, 1959

| Sex of High Schocl Graduate | Total Craduatea En r olloi | Total Craduates Local Consumity Local P Enrollo: College H-yr. C | | Private College | Culle Elses | Colleges Elsechere | |
|--------------------------------------|---|--|------|--------------------|----------------|-----------------------|------|
| | | No. | 4 | N. | 1 1 | No. | A. |
| Male | Shè | 162 | 65.1 | 4 | 1.6 | 83 | 33.2 |
| Female | 199 | 117 | 59.9 | 2 | 1.0 | 80 | 40.2 |
| Total | 448 | 279 | 62.3 | 6 | 1.0 | 163 | 36.4 |

Type of Institution in Which Enrolled

The chi-square statistical measurement, when applied to the aforementioned proportions ($x^2 = 1.85$) indicated that, at the 75.0

percent level, these proportions are significantly different. Thus one may conclude that the eighth hypothesis of this study is valid. That is, there is a relationship, on the basic of sex, between the graduates who enroll initially in a companity college, between the graduates who enroll initially in privately-controlled four-year colleges in the same district, and between the graduates who enroll initially in resident colleges of various kinds or types outside the district, within six months after graduation from the public high schools of a school district operating a community college.

Hypothesis 2. The minth hypothesis of this study is:

There is a relationship, on the basis of scholastic attainment levels in high school, between the graduates who caroll initially in a community college located within the school district, between the graduates who enroll initially in privately-controlled four-year colleges within the same district, and between these and supplies within the same colleges of various kinds outside the district, within six months after graduation from the public high schools of a school district operating a community college.

If this hypothesis is valid, the conditions must prevail that (1) the proportions of male high school graduates enrolling initially in some college and who achieved the several coholastic attainment rankings in high school must vary significantly in respect to enrolling initially in a community college in the district, to enrolling initially in a privately-controlled four-year college within the district, and to enrolling initially in the various types of colleges located outside the school district within six months after graduation and, (2) the proportions of female high school graduates enrolling initially in some college and who achieved the several scholastic attainment rankings in high school must vary significantly in respect to enrolling initially in a community college in the district, to enrolling initially in a privately-controlled four-year college located within the districts, and to enrolling initially in the various types of colleges located cutside the school district within six months after graduation and finally, (3) the proportion of all high school graduates, males and females combined, enrolling initially in some college and who achieved the several scholastic attainment rankings in high school must vary significantly in respect to enrolling initially in a community college in the district, to enrolling initially in a privatelycontrolled four-year college located within the district, and to enrolling initially in the various types of colleges located outside the school district within six months after graduation.

Table XXV indicates that, of the males who enrolled initially in some college to 4 the runbed in the oppor 30 percent of their high school graduating alasses in calciautic attainment, 35.6 percent enrelled initially in a community college situan the district, 2.4 percent enrolled in a privately-controlled four-year college located within the district, and 60.6 percent enrolled initially in same type of college located outside the school district within the mode after graduation. Also, the same table indicates that, of the nulse who enrolled initially in some college and who ranked in the middle 30 percent of the high school graduating of college within the district, 2.5 percent enrolled initially in a privately-controlled four-year college located within the district, and 29.2 percent

enrolled initially in some type of college located outside the school district within six months after graduation. Finally, the table indicates that, of the cales who enrolled initially in some college and who ranked in the lower 40 percent of their high ochool graduating classes, 71.4 percent unrolled in a community college within the district, none encolled in a privately-controlled four-year college located within the district, and 25.0 percent enrolled in some type of college located outside the school district.

TABLE XW

COMPARISON, ON THE DASIS OF TIME SCHOLASTIC ATTAINENT SROUPINGS OF THE MALES EVHOLLING IN COME COLLEGE, OF THE NUMBER AND PERCENTAGE OF THOSE MUC DUROLLED IN THE SEVERAL KINDS OF COLLECES MITHIN CIM MONTHS AFTER GRADUATION FROM THE PUBLIC HICH SCHOOLS OF THE CITY OF GRAND RAFIDS IN JUNE, 1959

| High School | | Type of Acchication in Which Durolled | | | | | |
|---|---------------------------|---------------------------------------|-----------------|--------------------|--------------------|----------------|----------------------|
| Scholastic Achievement Gr in 2 Percentiles | Mala adaptes mollad | Local C Col | omunity 1958 | Local I "-,r. (| Private Celloge | Colle Disew | ges hore |
| | | No. | 1 | No. | 1 | No. | .4 1 ⁰ |
| 70 - 100 (upper 30%) | 85 | '÷5 | 509 | 2 | 2.1: | ევ | 44.7 |
| 40 - 69 (middle 20%) | 82 | 56 | 68.2 | C | | 24 | 29.2 |
| 0 - 39 (lowest 40%) | 82 | 61 | 74.4 | 0 | 0 | 21 | 25.6 |
| Total | 249 | 162 | 65.1 | 4 | 1.6 | 83 | 33 •3 |

In applying the chi-square statistical measurement to Table XXV, because the numbers in the cells under "Local Frivate Four-year College" were less than 5, the data under this heading were combined with the appropriate groupings under the heading "Colleges Elsewhere." The chi-square statistical measurement of the matrix of Table XXV $(x^2 = 9.01)$ indicates that it the level of 98.0 percent, the proportion in each high school scholastic attainment group varies significantly in respect to the type of college in which the unles initially enrolled. Thus one may conclude that the first condition prevails for proving the validity of the minth hypothecis of this stady.

Table XXVI indicates that, of the familed who enveloed initially in some college and the ranked in the upper 30 percent of their high school graduating there in scholastic attainment, 52 percent enrolled initially in community college located within the district, 0.8 percent enrolled initially in a privately-controlled four-year college located within the district, and 57.8 percent zero corolled initially in some type of college located outcide the school district within six months after projunties. Also, the same table indicated that, of the females who enrolled initially in some college and who ranked in the middle 30 percent of the high school graduating classes in coholastic attainment, 67.2 percent enrolled initially in a community college within the district, 1.8 percent enrolled in a privately-controlled four-year college, and 50.5 percent enrolled in a privately-controlled four-year college, and 50.5 percent enrolled in a privately-controlled four-year college, and 50.5 percent enrolled in a privately-controlled four-year college, and 50.5 percent enrolled in a privately-controlled four-year college, and 50.5 percent enrolled in a privately-controlled four-year college, who enrolled initially in come college of some type

ranked in the lower 40 percent of the high school graduating class, 77.5 percent enrolled in a community college within the district, none enrolled in a privitely-controlled four-year scillege located within the district, and 22.5 percent enrolled in come type of college located outside the school district.

MARTIN INCOM

COMPARISON, ON THE DADES OF THESE SCHOLASTIC ATTAINENT GROUPINGS OF THE FEMALES ENROLLING IN COLE COLLEGE, OF THE NUTOR AND PERCENTATE OF THOSE AND ENLOLLED IN THE SEVERAL KINDS OF COLLEGED WITHIN OTH MINIPUL AFTER CRADUATION ERCH THE HIGHER HIGH STUDOUS OF THE CITE OF ORAME RADIES IN JUNE, 1939

| High Gebool Scholistic Achievement In Percentiles | Fanals Condustes Chrolysd | Loal Constants Curt Se | | Lyant Frivate hyr. College | | Celloges Elsekhere | |
|---|---------------------------------|---------------------------|-----------------------|-------------------------------|---------------------|-----------------------|---------|
| | | NT | بر | 16. | » - | • | 1 1- |
| 70 - 107 (upper 20%) | 125 | 65 | 52.0 | د ش | ∵ ,3 | 50 | 17.0 |
| 40 - 69 (Marte 207) | | ევ | (n. 0) (n. 0) | 1 3. | • ⊙ ∞ ● • | 3 20 | |
| 0 - 22 (Iuwast 407) |) 19 | 14 | 1900 - 20 8-8-9-20 | ç | Ĵ | 24 | 22.5 |
| Total | 1.79 | 117 | <u>7</u> 0.9 | Ç. | ⊐n ∧ - ♦ -: | °0 | h0.2 |

Syp of T. Mithin & Mich Institute

In applying the shi-square statistical measurement to Table XXVI, because the maskers in the colle ander "Local Private Four-year College" wore less than J, the data and a Mild heading deve combined with the appropriate groupings under the heading "Colleges Elsewhere." The chi-square statistical measurement of the matrix of Table XXVI ($x^2 - 5.39$) indicates that, at the level of 95.2 percent, the properties in each high balance conclustion of 95.2 percent, the properties in each high balance conclustion of each of 95.4 percent, the properties in each to the type of college in which the females initially enrolled. Thus one may conclude that the second condition provails for proving the validity of the which the potencies of this study.

Table XIVII ledission in t, 10 -12 graduates, cales and fundior conduced, the encoded initially for one college and the ranked in the upper 36 percent of their high school graduating cluss in achievedic attainment, 32.1 percent omultud i fuicily in a secondly college, 1.% percent include initially in a privately -controlled four-year institution located within the district, and MC.2 percent enrolled initially in cone type of college located calende the school district. Also, the same balle indicator what, of all or function of both sex t she enrolled initially is now wold to and she conduct in the shear of porcent of the high school graduabing classes in similarite attainant, 62.1 percent involved heltially in a community college within the district, 2.2 percent carolled in a privately-controlled four-year college and 29.7 percent chrolled in a college of come type located outside the school district. Finally, the table indicates that, of all graduates of 1.55 sector who unrolled initially in some college and who ranked in V . lower 40 percent of the high menool graduating elaco, 75.0 percent anothed in a community college will in the district, some enrolled in a privately-controlled four-year college located within

the district, and 25 percent anrolled in some type of college located outside the school district.

TADLE XAVII

COMPARISON, ON THE BASES OF THREE SCHOLASTIC ATTAINMENT GROUPINGS OF ALL OF THE GRADUATES ENROLLING IN SOME COLLEGE, OF THE NUMBER AND DERSENTAGE OF THOSE WHO ENROLLED IN THE GEVERAL KINDS OF SCLLEGES WITHIN SIX MONTHS AFTER GRADUATION FROM THE FUBLIC HIGH SCHOOLS OF THE SITU OF GRAND RAFIDS IN JUNE, 1959

| High School Scholastic Achievement In Percentiles | Total Gradaatee Darollad | | | | | | | |
|---|--------------------------------|----------------------------|---------|---------------------------------|-----|-----------------------|---------|--|
| | | Loral Cossanity Cullege | | Local Private A-yet. Jullage | | Colleges Elsewhere | | |
| | | No. | A 2 | M 2. | 1 | | A 10 | |
| 70 - 100 (upper 30%) | 27.0 | 110 | 52.4 | 3 | | 97 | 46.2 | |
| 40 - 69 (mildle 20% |) <u>)</u> | 94 | | | | | 29.7 | |
| 0 - 39 (lowest 40% |) 100 | 75 | 75.0 | 2 | ſ | 25 | 25.0 | |
| Total | 449 | 279 | 62.3 | Ç | 1.3 | 163 | 36.4 | |

Type of The Albadian in Which Envelled

In applying the oni-square statistical measurement to Table XXVII, because the numbers in the cells under "Local Filvate Four-year College" were less that 5, the data under this heading were combined with the appropriate groupings under the heading "Colleges Elsewhere." The chi-square statistical measurement of the matrix of Table XXVII $(x^2 = 17.64)$ indicates that, at the level of 99.9 percent, the proportions in each high school scholastic attainment group varies significantly in respect to the type of college in which the females initially enrolled within six months following graduation. Thus one may conclude that the third and final condition prevails for proving the validity of the ninth hypothesis.

Instance at the three conditions prevail which more identified as being necessary to determine the validity of the minth hypothesis of this study, one may conclude that there is a relationship, on the basis of scholastic thalament levels in high school, between the graduates who enroll initially in a constantly college derated within the school district, between the graduates who enroll initially in privately-controlled four-year colleges in the same school district, and between those who enroll initially in resident colleges of various kinds outside the school district, within six months after graduation from the public high schools of a school district operating a constannity college.

Hypothesis 10. The tenth hypothesis of this study is:

There is a relationship, on the basis of courses of study partaed in high theory, both sen the graduates the enrold initially in a community college, between the graduates who enrold initially in privately-controlled four-year colleges in the same district, and between those who enroll initially in resident colleges of values kinds outside the district, within six months after graduation from the public high colored of a cohool district operating a community college.

If this hypothesis is valid, the conditions must prevail that (1) the proportions of self high school grade tes enrolling initially in scars college and who partiand the several reases of study while in high school must vary significantly in respect to enrolling initially in a community college in the district, to enrolling initially in a



privately-controlled four-year college within the district, and to enrolling initially in the various types of colleges located outside the school district, within six months after graduation, and (2) the proportion of lemale high school graduate, enrolling initially in some college and who partued the several courses of study while in high school and very significantly in respect to enrolling initially in a computer college in the listrict, to emplying initially in a privately-controlled four-year college althin the district, and to enrolling initially in the various type: of colleges located outside the school district, within six months after graduation, and (3) the proportion of all high tensol graduates enrolling initially in come college and who purposed the coveral sources of study while in high school must van, significantly is respect to enrolling initially in a companity college in the district, to encolling initially in a privately-controlled four-year college within the district, and to modeling initially in the various types of colleges located outside the school district, within six souths after graduation.

Table XIVIII indicates that, of the sale graduates who enrolled initially in cose college and who pursued the "college proparatory" course of study while in high school, 55.2 percent enrolled in a community college located within the school district, 1.9 percent enrolled in a privately-controlled four-year college last located within the school district, and 90.9 percent enrolled in a coll ge of some type located outside the school district. Table XXVIII also shows that, of the male graduated who enrolled initially in some college and do pursued the "general" course of study while in high school, 72.6 percent

enrolled in a community sollage located within the school district, none enrolled in a privately-controlled college located within the school district also, and 26.8 percent enrolled in a college of some type located outside the school district. The table also laticates that of the sale graduates who enrolled initially in scale college and who pursued the "polareroial" course in high school, 66.7 percent enrolled in a cosma by college in the valued district, and simplified in a privately-controlled four-gran college also located within the school district, and 13.0 percent encollege also located within the school district, and 13.0 percent encollege also located within the school district, and 13.0 percent encollege also located within the school district, and 13.0 percent encollege also located within the school district, and 13.0 percent encollege also located within the school district, and 13.0 percent encollege also located within the school district, and 13.0 percent encolled in "vocational" course while in high school, contained districts. The first we callege of some type located outside the school district is scheduly college or a privately controlled four-years coll of located within the district bot 100 percent of the very small makes in this schedury encolled in composition of the very small makes in the district bot

In spilling the diffequence claticalized measurement to the data in Table MAVIII, the data in the "second shell and "vectorized" conseccategories were combined herause the numbers in second of the collowere less the f. The chi-equare of the function measurement of the resulting matrix ($f^2 = 1.17$) indicates that only at the 25 percent level do the propertient in each group representing courses pursued in high school very significantly in support to the type of college in which the males initially enrolled within all measures following graduation. Elles this level is less than a 50 percent chance and cannot be considered statistically significant, one must conclude


that the first condition for proving the velidity of the tenth hypothesis does not seem to provail.

TABLE XIVIII

COMPARISON, ON THE LASED OF CONTROL OF STUDY FURCUED IN HIGH SCHOOL DY MALES EXAMPLENCE IN CONTRICCLEDE, OF THE MUNDER AND PERCENTACE OF THOCH THE DIROLLED IN THE JEVERAL LENDS OF COLLEGES WITHIN SIX MONTHS AFTER GRADUATION FROM THE PUBLIC HIGH SCHOOLS OF THE CITY OF GRADUE RAFIDS IN JUNE, 1959

| Sourse of Study Paroued in High School | Male Græduater 2 Saffard _ | | | | | | | |
|---|----------------------------------|---|---------|-----------------------------|---------------|-----------------------|--|--|
| | | Const Constants Constants Constants | | Luci Irlade Ngra Gjilage | | Cullogue Thau-Acre | | |
| | | | A 12 | | A 2 | 12 . | | |
| Collego Preparatory | 61 G | 110 | 64.9 | ŀ, | 3.0 | 72 - 22-3 | | |
| Coneral | | و ہ ج بر | 73.6 | 0 | Ç | 5 20 1 | | |
| Comercial | 8 | | 66.7 | 2 | 2 | 2 30.0 | | |
| Vocational |) | 2 | 0 | 0 | | 0 100.0 | | |
| Total | 242 | 162 | 65.1 | 4 | 1.6 | <u>%</u>)).) | | |

Type of Institution in Mildh Eraulied

Tuble XMIN indicated that, of the functe graduates who enrolled

initially in come college and whe purched the "college proparatory" course of a budy while in bight school, 51.8 percent incolled in a community college located within the school district, 1.9, meent enrolled in a privately-controlled four-year college also located in the school district, and 46.9 percent enrolled in tome other type of college

•

located outside the school district. Table XXIX size shows that, of the female graduates who convolted initially in some college and who pursued the "general" course shill in high school, 100 percent enrolled in a consumity college located within the school district. The same table indicates that, of the females enrolled initially in a "consercial" bourse while is high school, 92.5 percent enrolled in a community beliege located within the school histrict, none enrolled in a privately-controlled four-year college located catelies the school district, and 7.5 percent enrolled in school district. The famile data the school district. Fin 11, Table XXIX indicates that, of the female graduate, our field initially in some officies and she pursued the "vectional" course in high school, 100 percent enrolled in a community college located within the school, 100 percent enrolled in a community college located within the school, 100 percent enrolled in a

In spyling the cul-equare controlledies' sets attact to the matrix of Table XXIX, the cells in the estegories of "commercial" and "toostional" were continue. The theory assourcement of the resulting metric ($a^2 = 20.27$) holds to that, at the 99.9 percent level, the propertions in each group representing courses pursued in high school varies significantly in respect to the type of colloge in which the femalec initially enveloped within six membres following graduation. Thus the second condition for proving the validity of the tenth hypothesis space to prevail.

Table XXX of a blat, of all of the graduates of 'the scars who enrolled initially in ame college and who pursued the "college preparatory" course of study while in high school, 59.2 percent enrolled

TABLE XXIX

COMPARISON, ON THE BASES OF COURSED OF STUDY FURSUED IN HIGH SCHOOL BY FEMALED DAROLLEVO IN DOME COLLECT, OF THE NUMBER AND PERCENTAGE OF THOSE MAC ENROLLED IN THE SEVERAL KINDS OF COLLEGES WITHIN SIX MONTHS AFTER CRADUATION FROM THE PUBLIC USER COUPOLD OF THE CITY OF GRAUD RAPIDS IN JUNE, 1950

| Course of Study Parcaid In High School | Tenalo Chulaoteo Euro1203 | • | | | | | | |
|---|---------------------------------|-------------|------------------------|----------------|--------------------|-----------------------|---------------|--|
| | | Lucal Co | ರಿಂಜಾಮಾಗಿದ್ರೆ 22.ಪಂ | Lepsi N-yr. | Frivate College | Colleges Elsowhere | | |
| | | بال | 1 | N∪. | A 11 | وي الي الم | <u>م</u> ن | |
| College Preparatory | 166 | 26 | <u>ج، رو</u> | C 2 | 1.0 | 70 | 46.9 | |
| General | 5 | | 100.0 | 0 | 2 | 0 | 0 | |
| Commerci 1 | 2 7 | 25 | 92.5 | 0 | С | 2 | 7.5 | |
| Vocational | 1 | 1 | 200.0 | 0 | Ċ. | Э | 0 | |
| Total | 199 | 117 | 58.9 | 2 | 1.0 | ଓପ | 40.2 | |

Type of Institution in Which Enrolled

in a community college located within the cohool district, 1.6 percent enrolled in a privately-controlled four-year college located within the same school district, and 29.2 percent curolled in some type of college located outside the school district. Also, Table XXX shows that, of all of the graduates of both sexes who enrolled initially in the "general" course of study while in high school, 79.2 percent enrolled in a community college located within the school district, none enrolled in a privately-controlled four-year college located within the same school district, and 20.9 percent corolled in some type of college located outside the school district. The same table also indicates that, of all graduates who enrolled initially in some college and who pursued the "commercial" course while attending high school, 98.6 percent enrolled in a community college located within the school district, and the romaining 11.4 percent enrolled in some type of college located outside the school district. Finally, Table XXX indicates that, of all of the graduates of both sexes who involted initially in some college within six months after high school graduation and who were enrolled in the "vocational" course, 25.0 percent enrolled in a community college located within the romaining 75 percent enrolled in some type of college located outside the district.

In applying the chi-square statistical assarchment to the matrix of Table XXX, the pulle in the "converse of and the "vocational" entegories were evaluated to produce a cell number of 5 or more in size. The chi-square obstictical measurement of the resulting matrix $(x^2 = 12.9\ell)$ indicates that, at the 99.5 percent level, the proportions in each group representing courses pursued in high school veries significantly in respect to the type of college in which all graduates of both seves initially envolved within six months after graduation from high school. Thus one may conclude that the third and final condition provails for proving the validity of the tenth hypothesis of this study.

Insomuch as a by two of the three conditions prevail which were identified as being necessary to prove the validity of the tenth



hypothesis of this study, one may conclude that there is not a relationship excepting for fearle graduates on the basis of courses of study pursued in high school, between the graduates who enroll initially in a community college located within the district, between the graduates who enroll initially in privately construlied four-year colleges in the same district, and between those who enroll initially in resident colleges of various tinde located cutside the district, within six months after graduation from the public high schools of a school district operating a community college.

TADLE XXX

COMPARISON, ON THE EASES OF COURSES OF STUDY PURSUED IN HIGH SCHOOL BY ALL GRADUATES DUROLLING IN DON'T COLLEGE, OF THE NUMBER AND FER-CENTAGE OF THOSE MIC EMMOLLED IN THE SEVERAL KINDS OF COLLEGES WITHIN SIX MONTHS AFTER GRADUATION FROM THE PUBLIC MICH CONCOLS OF THE SETURIATION GRAND RAFIDS, IN JUNE, 1959

| Source of Study Parsaed In High Soles? | Tutal Gradustes Durollod | | | | | | | | |
|---|--------------------------------|----------------------------|------|--------------------------------|--------|-----------------------|------|--|--|
| | | Local Community College | | Local Triv to 5-yr. Colloge | | Collegas Disochere | | | |
| | | Ne. | 4 | No. | A 1 | No. | 1 | | |
| College Propuratory | 205 | 223 | £9.2 | 1 | 3.6 | 151 | 09.0 | | |
| General | 24 | 20 | 72.0 | 0 | 2 | 5 | 00.8 | | |
| Commercial (Business) | 35 | 31 | 88.6 | .** ** | C | <u>.</u> | 11.4 | | |
| Vocational | 4 | 3 | 25.0 | 0 | 2 | 3 | 75.0 | | |
| Total | 44Q | 272 | 62.2 | ć | 3.0 | 163 | 40.0 | | |

Type of The Mitation of Milds Barchick



<u>Guardi</u>. This deploy is presented the ordiness of detained the testing of the the hypotheses of this study. Min. of the teshypotheres, and the sindliftims bet forth for determining their validity, serve found to be added. The careneding and final simptor of this thesis products a canady of this study and the constants whit may be dream from it. The final shapler size presents the welter's boliefs about the implications and herels for further receased in the field opened up by this oftend.

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<u>Buissey</u>. This chapter has presented the enalyses of data and the testing of the tem hypotheses of this study. Nine of the tem hypotheses, under the conditions set forth for determining their validity, were found to be valid. The succeeding and final chapter of this thesis presents a sussary of this study and the conclusions that may be dream from it. The final chapter also presents the uniter's beliefs about the implications and needs for further research in the field opened up by this study.

CHAPTER VI

SUMMARY, CONCLUSIONS, AND IMPLICATIONS FOR FURTHER RESEARCH

Summary

The Problem. The problem of this study was to determine certain factors that may be predictive, in a school district operating a community college, of the total number of boys and girls who could be expected to enroll initially in some college following their graduation from the public high schools of the district and to determine certain factors that may be predictive of the number and kinds of students who could be expected to enroll initially in each of the various available types of colleges, located within and outside the district.

The Need for the Study. The writer has a personal need for the information provided in the study because of his role, as a consultant on the staff of the Superintendent of Public Instruction, to assist local groups in the planning of post-high school educational institutions known as community colleges. One may also assume that this study could provide useful insights for educational guidance and counselor personnel, in the high schools as well as in the community colleges in school districts operating a community college. In addition, the information provided by this study should be valuable to curriculum planners, not only in community colleges and other colleges which high



school graduates attend, but in the secondary schools of the school district.

<u>Source of Data</u>. The data for this study were obtained from (1) questionnaires completed by twelfth grade students prior to graduation from high school, (2) questionnaires completed by parents about the activities of the high school graduates within six months after their graduation from high school, and (3) records concerning the backgrounds of the graduates maintained by the School District of the City of Grand Rapids.

Questiennaires returned by 1,015 of the total 1,220 twelfth grade students of the public high schools of the City of Grand Rapids were compared with questionnaires from 1,064 parents. The number of matching responses, students to parents, were drawn as a sample of the graduating class of June, 1959. This 853 case sample was tested for the existence of four conditions which could produce biases in the conclusions drawn about the total graduate population.

<u>Methodolegy</u>. The procedure used in the study was to analyze certain factors in the backgrounds, expressed intentions, and plans of twelfth grade students in terms of their enrolling or not enrolling initially in some college within six months after graduation from high school. In addition, three of these factors were analyzed in terms of the kinds or types of colleges and the location of these colleges in which these graduates enrolled.

Ten hypotheses were established for the study. Each of these were tested in accordance with the following procedural model: (1) statement of the hypothesis, (2) statement of the conditions which must exist if the hypothesis is to be considered valid, (3) testing to determine the existence of the stated conditions, and (4) statement of conclusions regarding the validity of the hypothesis.

<u>Assumptions</u>. Certain basic foundations were recognized as theoretical foundations for the hypotheses established for this study. These were:

- 1. Twelfth graders in public high schools will accurately report factual information about themselves and about their families.
- 2. Twelfth graders in public high schools have conceived intentions and plans for college enrollment after graduation from high school and they will accurately report these intentions and plans.
- 3. Parents will accurately report the facts concerning the activities in which their children are engaged within six months after graduation from high school.

<u>Delimitations</u>. The hypotheses of this study and the conclusions drawn from them are limited to the information about boys and girls whe were enrelled in the twelfth grade in the five public high schools of the School District of the City of Grand Rapids in the Spring of 1959 and who were graduated with a high school diploma in June, 1959.

Conclusions

Nine of the ten hypotheses established for this study were found to be valid in accordance with the conditions set forth for determining their validity. The following statements represent the findings of the

study and some of the conclusions that may be drawn from them.

1. There is a relationship between the sex of twelfth grade graduates of the public high schools of a school district operating a community college and the initial enrollment of these graduates in some college within six months following their graduation. The proportion of male graduates going on to college in such a district is significantly higher than the proportion of female graduates going on to college.

This finding should not be surprising to those who have studied the trends in college enrollments, as reported in the compiled authoritative reports by states and for the nation as a whole. But the exact degree of the variation in the proportions of high school graduates, by sex, who enroll in college from a given community should be of interest and use to those planning the establishment of community colleges.

2. There is a relationship between the courses of study pursued, while in high school, by twelfth grade graduates of the public high schools of a school district operating a community college and the initial enrollment of these graduates in some college within six months following their graduation. As one would expect from the names of the courses of study, the ratios of those of both sexes who enrolled in college and who pursued the "college preparatory course" are significantly higher than the ratios of those of both sexes enrelled in

college and whe pursued the several other courses of study in high school. But the fact that from 14.5 percent to 20.3 percent of the graduates taking courses of study other than "college preparatory" is significant in that it is indicative of flexible admissions pelicies and curriculums in the colleges in which graduates enroll.

Secondary curriculum planners and secondary guidance personnel should find it significant that approximately one-fifth of the male graduates and one-fourth of the female graduates who pursued the "college preparatory" course of study did net enrell initially in college within six months after high school graduation. Of equal significance to these same workers is the fact that approximately three-fifths of the boys and one-fourth of the girls who pursued the "commercial" course of study in high school went on to college within six months after graduation.

3. There is a relationship between the greater educational attainment levels of the parents of twelfth grade graduates of the public high schools of a school district operating a community college and the initial enrollments of these graduates in some college within six months fellowing their graduation. The raties of those enrelling in college whose mothers or their fathers were college graduates are significantly higher than the raties of those enrolling in college whose mothers or fathers had received ne more than eight grades of education.

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The ratios of those enrolling in college increased significantly with each of the respective educational attainment levels of the mothers and fathers.

From one viewpoint, this finding indicates that children tend to adopt the educational attainment goals that were accepted by their fathers or mothers for themselves. But from another viewpoint, this finding indicates that high scheel graduates in sizeable numbers, at least in those communities operating community colleges, seek an educational goal higher than that achieved by either their father or mother. For, of the graduates whose fathers or mothers had achieved no more than a high school education, 46.6 percent enrolled initially in some college within six months following their graduation.

4. There is a relationship between the higher scholastic achievement ranking, at the end of high school, of twelfth grade graduates of the public high schools of a school district operating a community college and the initial enrollment of these graduates in some college within six months after graduation. Over 23 percent of those in the lowest scholastic achievement ranking enrolled initially in some college, but the proportions increased significantly with each ranking established for this study.

Again, this finding should not be surprising to anyone who is acquainted with the admission policies of most colleges in Michigan and elsewhere. For many colleges will not admit a graduate for enrollment whose scholastic ranking is less

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than the ranking of the upper 30 percent of his or her graduating class. Most colleges, excepting community college and some special colleges with comprehensive programs, will not accept any students for enrollment whose scholastic ranking is less than that of the upper 60 percent of their graduating class. But the findings of this study should provide some comfort to many citizens who have expressed their apprehensions about the possibility that the highest scholastic achievers in high school are not enrolling in college. This study indicates that, in a school district operating a community college, that only 3.3 percent of the boys who ranked scholastically in the upper 20 percent of their graduating class did not enroll in college within six months after graduation. However, this study also indicates that one-third of the girls who ranked scholastically in the upper 20 percent of their graduating class did not enroll in college.

Some solace may be found in the results of this study for citizens who believe that scholastic achievement ranking in high school is an indefensible single criterion for public college admissions in America. The results of this study indicate that more than one-fourth of the males and one-seventh of the females ranking scholastically in the lowest 20 percent of their high school graduating class enrolled in college within six months after graduation.

5. There is a relationship between the degree of certainty of going on to college, as expressed prior to graduation by twelfth

grade graduates of the public high schools of a school district operating a community college, and the initial enrollment of these graduates in some college within six months after graduation. While 86.6 percent of the male graduates in such a district who expressed certainty of going on to college actually enrolled in college within six months after graduation, only 4.5 percent of those expressing no intention of going on to college actually enrolled by the end of the same period. Also, while 75.8 percent of the female graduates of such a district who expressed certainty of going on to college actually went, only 2.3 percent of those expressing no intention of attending college actually enrolled in college. Apparently a large propertion of high school seniers of either sex, at least in a school district operating a community college, tend to carry out their intentions to enrell or to not enroll in cellege following their graduation.

6. There is a relationship between the plans made for college enrollment, by twelfth grade graduates of the public high schools of a school district operating a community college, and the initial enrollment of these graduates in some college within six months following their graduation. While 91.9 percent of the male graduates in such a district who had applied for admission and had been accepted by a college actually enrolled in some college within six months after graduation, only 19.3 percent of these who stated that they might go to college but had made no plans actually enrolled in college. Of the female graduates of high schools of such a district, 85.0 percent of these who had been accepted by a college actually enrolled in one while only 6.3 percent of the female graduates who stated some desire but no plans for enrolling in college actually enrolled in some college within six months after graduation.

These findings indicate that, in a school district operating a community college, there is a considerable proportion of graduates of both sexes who do not enroll in some college within six months after graduation in spite of having been accepted for admission by one or more colleges. On the other hand, in the same type of school district, there seems to be a very small propertion of graduates who enroll in college unless they have taken some overt action in contacting a college prior to their graduation from high school.

7. There is a relationship between the occupations of the heads of the households of twelfth grade graduates of the public high schools of a school district operating a community college and the initial enrollment of these graduates in some college within six months after graduation. There is a significantly higher ratie of high school graduates enrolling initially in college within six months after graduation when the heads of their households are in professional and "white-collar" occupations. However, of the female graduates, almost as many enrolled in cellege when the heads of the households were in the "bluecellar" occupations as when the heads of the households were

in the professional and "white-collar" occupations.

The raties in all categories indicating the occupations of the heads of households of the graduates who enrolled in college lend support to the contention of many socielogists and anthropologists that American citizens aspire to upward social mobility through education. For in a school district operating a community college, a substantial propertion of graduates in each of the categories enrolled in college within six months after graduation from high school, and thence, in many instances, indicate an educational goal substantially higher than that required for the eccupations of the heads of their households.

8. There is a relationship, on the basis of sex, between the graduates whe enroll initially in a community college, between the graduates whe enroll initially in a privately-controlled fouryear college within the same district, and between these who enroll initially in resident colleges of various kinds outside the district, within six months after graduation from the public high scheels of a school district operating a community college. Although the number and percentage of those of both sexes whe enrolled in a local privately-controlled four-year cellege are so low that they appear to be insignificant, the differences between the proportions of both sexes enrolling in a local community college and enrelling in some college elsewhere are significantly great. Almost two-thirds of the male graduates enrolling in some college enrolled in a community

college and 58.8 percent of the female graduates enrelling in some college enrelled in a community college.

9. There is a relationship, on the bases of scholastic attainment levels in high school, between the graduates who enroll initially in a community college located within the school district, between the graduates who enroll initially in some privately-controlled four-year college within the district, and between those who enroll initially in resident colleges of various kinds outside the district within six months after graduation from the public high schools of a school district operating a community college. This finding, as well as the succeeding finding, indicates that the community colleges are fulfilling one of the roles that their exponents have held for them. For, although a significantly greater number of both male and female graduates who ranked scholastically in the upper 30 percent of their high school graduating class enrelled in a community college, the ratio was 68.3 percent to 29.2 percent for those ranking in the middle 30 percent, and 74.4 percent to 25.6 percent for those ranking in the lowest 40 percent of their graduating class. Thus the community college is providing, among other services, a "second chance" or a "right to fail opportunity" for those who wish te continue beyond high school into collegiate level education.

10. On the bases of courses of study pursued in high school, there

is a relationship between the female graduates only who enroll initially in a community college, between the female graduates who enroll initially in privately-controlled four-year colleges in the same district, and between the female graduates who enroll initially in resident colleges of various kinds located outside the district, within six months after graduation from the public high schools of a school district operating a community college. A statistically significant relationship between the male graduates and these same items does not exist.

However, for both male and female graduates, the findings of this study illustrates another one of the roles commonly prescribed for community colleges--that of providing an opportunity for high school graduates to continue into collegiate level work even though they pursued courses of study other than "college preparatory" while in high school. While over 64 percent of the graduates who continued on to college and who pursued the "cellege preparatory" course of study in high school enrelled in a community college, over 73 percent and 66 percent of those continuing on to college and who pursued the "general" and "commercial" courses of study respectively while in high school enrolled in a community college.

11. Predictions of totals of graduates, of the public high schools of a school district that operates a community college, who will enroll in some college within six months following their graduation may be based on proportions found in this study

concerning certain characteristics and backgrounds of the graduates. These characteristics and backgrounds include (a) sex, (b) courses of study pursued while in high school, (c) educational attainment levels of the parents, (d) schelastic achievement ranking in high school, (e) degree of certainty of attending college expressed prior to graduation, (f) plans made for college enrollment prior to graduation, and (g) occupations of the heads of the households of graduates. However, in using these proportions, the predictor must accept the basic assumptions and limitations identified as underlying this study and he must assume further that these and other relationships will remain constant with these of the high school graduating classes of the School District of the City of Grand Rapids of June, 1959.

12. Predictions of the total numbers of resident public high school graduates who will enroll, within six months after graduation, in a community college in a school district operating such an institution may be based on preportions found in this study concerning the sex of the graduates and the high school scholastic attainment levels of the graduates. However, in using these proportions, again the predictor must accept the basic assumptions and limitations identified as underlying this study and he must assume further that these and other relationships will remain constant with those of the high school graduating classes of the School District of the City of Grand Repids of June, 1959.

Implications For Further Research

The results of this study, as well as these reported in the survey of the literature related to this study, indicates that further research is needed in this area. The following statements represent some of the issues and questions that should be resolved through further research in the field of this study.

- 1. There is a need to know, for planning collegiate level institutions of all kinds including community colleges, the probable numbers and types of students from a school district operating a community college who will succeed and continue in such institutions of all kinds including community colleges, the probable numbers and types of students from a school district operating a community college who will succeed and continue in such institutions after initial enrollege and continue in such institutions after initial enrollement. Are there background and other factors concerning initial enrollees which may be identified as being predictive of success and continuation in college? How defensible are scholastic achievement rankings in high school as predictors of success in college when girls and boys are ranked together?
- 2. There is a need to know, for planning cellegiate level institutions of all kinds including community colleges, the numbers and kinds of students from a school district operating a community college who will eventually enroll and continue in such institutions when they delay initial enrollment beyond



six months after graduation. What reasons for delays in initial enrollment may be removed by changes in the high school or college programs, by action of non-government society, and by action of our government?

- 3. There is a need, from the standpoint of the needs of individuals as well as the needs of our total society, for more of our young people to centinue their schooling beyond the twelfth grade. This need is acute for female graduates, especially in view of the large proportion of the more able who, as contrasted to male graduates, do not continue on to college. For those not continuing on to college or to some other post-twelfth grade institution, what are reasons for their net doing so? Are there any of these reasons which may be removed through curriculum changes in the high schools, through guidance and counseling activities in the high schools, through curriculum changes and admission policy changes in colleges and universities, or through removing financial charges to the individual for college attendance?
- 4. Some graduates of high schools will not, under any circumstances, continue their schooling beyond high school because of parental attitudes or personal convictions. In order that secondary schools may plan their programs so that these graduates will have received maximum educational benefits prior to graduation, what background and other factors are predictive of the number and kinds of students who will terminate their formal education with high school graduation?

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APPENDIX

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MAY, 1959 STUDENT QUESTIONNAIRE

Student Number_

> (Copy number from your parent questionnaire) 134

INTRODUCTION

The rapid population increases in Michigan — and especially in Kent and surrounding counties — present many problems for our schools and commonities. One of the most pressing problems concerns the kinds of educational opportunities which must be provided in this area for those people seeking education and training beyond the high school. In an effort to establish facts regarding these needs, the Committee on the Establishment of a four-Year College, is conducting a local survey. Your cooperation in answering the following questions will be helpful in this effort.

If you do not NOW plan to go to college upon graduation, what do you plan to do?

| Undecided | 1 |
|--|---|
| Get married . | 2 |
| Go to work | 3 |
| Take some technical training courses | 4 |
| Take some business or commercial courses | 5 |
| Go into armed services | 6 |
| Other (specify) | 7 |
| | |

9. If you plan to attend college, what vocation do you plan

| to enter after you complete your educ | tion |
|---------------------------------------|------|
|---------------------------------------|------|

| Undecided | 10 |
|---|------|
| Accounting | 11 |
| Agriculture | 12 |
| Architecture | 13 |
| Armed service | 14 |
| Art or art and crafts | 15 |
| Auto and airplane mechanics | 16 |
| Banking | 17 |
| Beautician or barber | 18 |
| Building trades (mason, electrician, carpenter, etc.) | 19 |
| Business administration | 20 |
| Chemist | 21 |
| Community service | 22 |
| Dental technology | 23 |
| Dentistry | 24 |
| Drafting | 25 |
| Electronics | 26 |
| Engineering | 27 |
| Government service | 28 |
| Homemaking | 29 |
| Industrial foreman | 30 |
| Journalism | 31 |
| Lab. technician | 32 |
| Low | 33 |
| Medical technology | 34 |
| Medicine | 35 |
| Metal trades and machine shop | 36 |
| Ministry or Religious Education | 37 |
| Music | 38 |
| Nursing | 39 |
| Pharmacy | T 40 |
| Radio-TV | T 41 |
| Retailing or Wholesale Trades | 42 |
| Salesmanship | T 43 |
| Science Research | 44 |
| Secretarial | 45 |
| Social work | 46 |
| Teaching | 47 |
| Veterinary medicine | 48 |
| Other (specify) | 49 |
| | |

3. What is your grade in school?

2. What is the name of the school you attend?

| 10th | grade | | 2 |
|------|-------|--|---|
| 12th | grade | | 3 |

1. What is the name of the city or township in which you live?

4. What is your sex?

| ale | 1 |
|-------|---|
| emale | 2 |

5. What is your present course of study?

| College preparatory | 1 |
|-----------------------|---|
| General | 2 |
| Commercial (Business) | 3 |
| Vocational | 4 |
| Other | 5 |

6. How certain are you of going into specialized training or college work after high school graduation?

| Very certain | 1 | |
|-------------------------------------|-----|--|
| Fairly certain | 2 | |
| No intention of going on to college | 🗆 3 | |
| Don't know | 4 | |

7. What plans, if any, have you already made to go to college after high school graduation? (Check the one most ap-

propriate response.)

| - | | |
|-----|--|---|
| You | have no intention of attending college | 1 |
| You | have already been accepted by a college | 2 |
| | (Name of college) | |
| You | have applied to the college of your choice | 3 |
| You | have received or written for information about | |
| | the college of your choice | 4 |
| You | or someone for you have made contact with a | |
| | representative of a college in which you are | |
| | particularly interested | 5 |
| You | may go to college but have made no plans | |
| | as yet | 6 |

| 0. | What | is | the | occupation | of | the | head | of | your | housel | nole | 43 |
|----|------|----|-----|------------|----|-----|------|----|------|--------|------|----|
|----|------|----|-----|------------|----|-----|------|----|------|--------|------|----|

| Unemployed | 10 |
|---|----|
| Accounting | |
| Agriculture | 1: |
| Architecture | 1: |
| Armed service | 14 |
| Art or art and crafts | 13 |
| Auto and airplane mechanics | 10 |
| Banking | 17 |
| Beautician or barber | 18 |
| Building trades (mason, electrician, carpenter, etc.) | 19 |
| Business administration | 20 |
| Chemist | 2 |
| Community service | 22 |
| Dental technology | 23 |
| Dentistry | 24 |
| Drafting | 25 |
| Electronics | 20 |
| Engineering | 27 |
| Government service | 28 |
| Homemaking | 29 |
| Industrial foreman | 30 |
| Journalism | 31 |
| Lab. technician | 32 |
| Law | 33 |
| Medical technology | 34 |
| Medicine | 35 |
| Metal trades and machine shop | 36 |
| Ministry or Religious Education | 37 |
| Music | 38 |
| Nursing | 39 |
| Pharmacy | 40 |
| Radio-TV | 41 |
| Retailing or Wholesale Trades | 42 |
| Salesmanship | 43 |
| Science Research | 44 |
| Secretarial | 45 |
| Social work | 46 |
| Teaching | 47 |
| Veterinary medicine | 48 |
| Retired | 49 |
| Other (specify) | 50 |
| | |

11. How far did your parents go in school?

| Did not complete the 8th grade | | 1 |
|---|--|---|
| Completed 8th grade | | 2 |
| Some high school | | 3 |
| Completed high school | | 4 |
| Some college | | 5 |
| Completed college | | 6 |
| Some professional or graduate school | | 7 |
| Completed professional or graduate school | | 8 |

12. How far in school do you plan to go?

| Through high school | 1 |
|--|---|
| High school plus specialized technical or business | |
| training | 2 |
| Through college | 3 |
| College plus advanced degree | 4 |
| Other (specify) | - |

13. If a four-year, state-supported college, within driving distance, say near Grand Rapids, were established, how certain would you be to attend such a college?

| Very certain to attend | 1 |
|------------------------|---|
| Probably attend | 2 |
| Uncertain | 3 |
| Probably not attend | 4 |
| Certain not to attend | 5 |

14. There are now fully accredited community or junior colleges in this area. How certain would you be to attend one of these?

| Very certain to attend | 1 |
|------------------------|---|
| Probably attend | 2 |
| Uncertain | 3 |
| Probably not attend | 4 |
| Certain not to attend | 5 |

15. Do you have one or more older brothers or sisters who are now attending or have attended college?

| Yes | | 1 |
|------------|-----|---|
| No | - 🗆 | 2 |
| Don't know | | 3 |

16. If so, which of the following have they attended or are they now attending?

| Central Michigan College | 0 |
|---|----|
| Eastern Michigan College | 1 |
| Ferris Institute | 2 |
| Michigan College of Mines and Technology | 3 |
| Michigan State University | 4 |
| Northern Michigan College | 5 |
| University of Michigan | 6 |
| Wayne State University | 7 |
| Western Michigan University | 8 |
| Any private or church college in Michigan | 9 |
| (Specify) | |
| Any public junior college in Michigan | 10 |
| (Specify) | |
| Out-of-state college or university | 11 |
| (Specify) | |

COMMENTS AND REMARKS

10. What is the occupation of the head of your household?

| Unemployed | 10 |
|---|----|
| Accounting | 11 |
| Agriculture | 12 |
| Architecture | 13 |
| Armed service | 14 |
| Art or art and crafts | 15 |
| Auto and airplane mechanics | 16 |
| Banking | 17 |
| Beautician or barber | 18 |
| Building trades (mason, electrician, carpenter, etc.) | 19 |
| Business administration | 20 |
| Chemist | 21 |
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| Ministry or Religious Education | 37 |
| Music | 38 |
| Nursing | 39 |
| Pharmacy | 40 |
| Radio-TV | 41 |
| Retailing or Wholesale Trades | 42 |
| Salesmanship | 43 |
| Science Research | 44 |
| Secretarial | 45 |
| Social work | 46 |
| Teaching | 47 |
| Veterinary medicine | 48 |
| Retired | 49 |
| Other (specify) | 50 |
| | |

| 11. | How far did your parents go in school? | |
|-----|---|--|
| | Did not complete the 8th grade | |
| | Completed 8th grade | |
| | Some high school | |
| | Completed high school | |
| | Some college | |
| | Completed college | |
| | Some professional or graduate school | |
| | Completed professional or graduate school | |

12. How far in school do you plan to go? 1 Through high school High school plus specialized technical or business 2 training 3 Through college □ 4 □ 5 College plus advanced degree Other (specify) 13. If a four-year, state-supported college, within driving dis-tance, say near Grand Rapids, were established, how cer-tain would you be to attend such a college? 1 Very certain to attend □ 2 Probably attend 3 Uncertain 0 4 Probably not attend 5 Certain not to attend 14. There are now fully accredited community or junior colleges in this area. How certain would you be to attend one of these? Very certain to attend

| Probably attend | 2 |
|-----------------------|---|
| Uncertain | 3 |
| Probably not attend | 4 |
| Certain not to attend | 5 |

15. Do you have one or more older brothers or sisters who are now attending or have attended college?

| fes | | 1 |
|------------|--|---|
| No | | 2 |
| Don't know | | 3 |
| | | |

16. If so, which of the following have they attended or are they now attending?

| Central Michigan College | 0 |
|---|----|
| Eastern Michigan College | 1 |
| Ferris Institute | 2 |
| Michigan College of Mines and Technology | 3 |
| Michigan State University | 4 |
| Northern Michigan College | 5 |
| University of Michigan | 6 |
| Wayne State University | 7 |
| Western Michigan University | 8 |
| Any private or church college in Michigan | 9 |
| (Specify) | |
| Any public junior college in Michigan | 10 |
| (Specify) | |
| Out-of-state college or university | 11 |
| (Specify) | |
| | |

COMMENTS AND REMARKS

Name___

STUDENT QUESTIONNAIRE

Student Number_

> (Copy number from your parent questionnaire)

INTRODUCTION

The repid population increases in Michigan — and especially in Kent and surrounding counties — present many problems for our schools and communities. One of the most pressing problems concerns the kinds of educational opportunities which must be provided in this area for those people seeking education and training beyond the high school, In an effort to establish facts regarding these needs, the Committee on the Establishment of a four-Year Callege, is conducting a local survey. Your cooperation in answering the following questions will be helpful in this effort.

| 1. | What is the name of the city or township in which | ch you liv | ei |
|----|--|------------|----|
| | | | |
| 2. | What is the name of the school you attend? | | |
| | | | |
| 3. | What is your grade in school? | | |
| | 10th grade | | 2 |
| | 12th grade | | 3 |
| ۱. | What is your sex? | | |
| | Male | | 1 |
| | Female | | 2 |
| | What is a second | | |
| | College and the course of study: | _ | , |
| | College preparatory | | |
| | General | | - |
| | Commercial (Business) | | 3 |
| | Vocational | | 4 |
| | Other | U | 5 |
| 5. | How certain are you of going into specialized | training | 01 |
| | Very sedele | | 1 |
| | Fairly certain | | 2 |
| | No intention of going on to college | | 3 |
| | Don't know | | 4 |
| | | | |

 What plans, if any, have you already made to go to college after high school graduation? (Check the one most appropriate response.)

| You have no intention of attending college | 1 |
|--|---|
| You have already been accepted by a college | 2 |
| (Name of college) | |
| You have applied to the college of your choice | 3 |
| You have received or written for information about | |
| the college of your choice | 4 |
| You or someone for you have made contact with a | |
| representative of a college in which you are | |
| particularly interested | 5 |
| You may go to college but have made no plans | |
| an uni | 4 |

If you do not NOW plan to go to college upon graduation, what do you plan to do?

| Undecided | 1 |
|--|---|
| Get married . | 2 |
| Go to work | 3 |
| Take some technical training courses | 4 |
| Take some business or commercial courses | 5 |
| Go into armed services | 6 |
| Other (specify) | 7 |
| | |

If you plan to attend college, what vocation do you plan to enter after you complete your education?

| 1.0 | | | |
|-----|--|-----------|----|
| | Indecided | H | 10 |
| | Accounting | 1 | |
| | Agriculture | 1 | 12 |
| 1 | Architecture | - | 13 |
| ^ | Armed service | - | 14 |
| Α | Art or art and crafts | | 15 |
| Α | Auto and airplane mechanics | | 16 |
| В | anking | | 17 |
| В | eautician or barber | | 18 |
| В | wilding trades (mason, electrician, carpenter, etc.) | | 19 |
| В | usiness administration | | 20 |
| C | hemist | | 21 |
| C | community service | | 22 |
| D | ental technology | | 23 |
| D | Dentistry | | 24 |
| D | Profting | | 25 |
| E | lectronics | | 26 |
| E | ngineering | | 27 |
| G | Government service | | 28 |
| н | lomemaking | | 29 |
| -1 | ndustrial foreman | | 30 |
| J | ournalism | | 31 |
| L | ab. technician | | 32 |
| Ъ | aw | | 33 |
| Ν | Aedical technology | | 34 |
| N | Nedicine | | 35 |
| N | Netal trades and machine shop | | 36 |
| N | Anistry or Religious Education | n. | 37 |
| N | Ausic | | 38 |
| N | lursing | | 39 |
| Р | harmacy | Π. | 40 |
| R | adio-TV | Π. | 41 |
| R | etailing or Wholesale Trades | | 42 |
| s | alesmanship | . | 43 |
| S | cience Research | | 44 |
| S | ecretarial | | 15 |
| S | ocial work | | 16 |
| T | eaching | | 17 |
| V | eteringry medicine | | 18 |
| C | Other (specify) | | 19 |
| | | - | |
| | | | |

LETTER OF TRANSMITTAL FOR PARENT POST-CARD QUESTIONNAIRE

November 2, 1959

Dear Parent or Guardian:

You can help the Committee on the Establishment of a Four-Year College in Kent County by completing and mailing the enclosed postal card as part of the study which I am doing for the Committee. I want to determine how many of last Spring's high school graduates have reached the goal which they expressed for themselves in the survey conducted in May, 1959.

Will you please complete and mail the enclosed card as soon as possible? We are very anxious to complete this final part of the study. We need the report on your child regardless of what he or she is doing at present.

Sincerely yours,

John X. Jamrich Director of the Survey



PARENT QUESTIONNAIRE

November, 1959

My son or daughter, who graduated from high school last spring, is now:

| 50 51 | going to school going to the school named below: | Yes | No |
|----------|--|--------|--|
| 53 | (name of school) going to school and working | Yes | (city) No |
| 54 | working only | Ies | No |
| 55 | type of work: | | ************************************** |
| Name of | Graduate | | |
| | Signed | | |
| | (Parent or Gua | rdian) | |



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FIRST AND SECOND FOLLOW-UP LETTER TO PARENTS

November 25, 1959 and December 15, 1959

Dear Parent or Guardian:

On November 2, 1959, I mailed a letter of inquiry to you concerning the present activity of your son or daughter who was graduated from high school in Grand Rapids last June. This survey was in connection with the study of the Committee on the Establishment of a Four-Year College in Kent County.

To date, we have not received the completed selfaddressed postal card from you. We realize that a postal card may be mislaid very easily so we are enclosing another one for your convenience.

We are very anxious to complete this phase of the study and we need information about your child regardless of what he or she is doing at present. We would greatly appreciate your completing and mailing the enclosed self-addressed postal card as soon as possible.

Sincerely yours,

John X. Jamrich

Enclosure

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AQUINAS COLLEGE

1959

Grand Rapids. Privately controlled; Roman Catholic affiliation. Coeducational. Founded 1922.

Accreditation -- Michigan Commission on College Accreditation, North Central Association of Colleges and Secondary Schools.

- <u>Type of College--College of arts and science. Majors offered:</u> Biology, Business Administration, Chemistry, English, French, German, History, Latin, Mathematics, Music, Philosophy, Psychology, Sociology, Spanish. <u>Pre-Frofessional programs offered:</u> Pre-Dentistry, Pre-Engineering, Fre-Law, Pre-Madione, Pre-Social Work, Teacher Education.
- <u>Degrees Offered</u>--Bachelor of Arts, Bachelor of Science, Bachelor of Music, Bachelor of Science in Business Administration.
- Admission Requirements-This college participates in the Michigan Cellege Agreement plan. For admission directly from a high school not in the Michigan College Agreement plan: Graduation with a C average from an accredited high school; rank, above lowest quartile of graduating class; recommendation of high school principal; fifteen units with two major and two minor sequences from academic groups. For admission with advanced standing: Official transcript of credits from an accredited college.
- <u>Calendar</u>--Semester plan. Academic year (September-June), thirty-four weeks; summer session, six weeks.
- Fees--Tuition: \$220 per semester. General fee: \$12.00 per semester. Board: \$500 per year. Room: \$280 per year.
- <u>Student Aids</u>--Thirty-six fellowships and scholarships awarded in 1959; range of stipend, \$150-1200. Employment office for students and placement service for graduates maintained.
- <u>Buildings and Grounds</u>-Total value: Lands, \$94,738; buildings, \$1,880,564; equipment, \$184,120. Capacity of residence halls: Students are placed in approved homes.
- <u>Enrollment</u> (equated to full time, end of 4th week of fall semester or term of 1959, exclusive of enrollments in extension, correspondence, and duplicates)--Total, 787. Freehman, 264.

Anne



CALVIN COLLEGE

1959

Grand Rapids. Privately controlled; Christian Reformed affiliation. Coeducational. Founded 1876.

<u>Accreditation</u>--Michigan Commission on College Accreditation, North Central Association of Colleges and Secondary Schools.

<u>Type of College</u>-College of arts and science. <u>Majors offered</u>: Bible, Biology, Chemistry, Datch. Economics, English, French, German, Greek, History, Latin, Mathematics, Music, Music (Applied), Philosophy, Physics, Political Science, Sociology, Speech. <u>Pre-Professional programs offered</u>: Pre-Seminary, Pre-Bueness Administration, Pre-Dentistry, Pre-Engineering, Pre-Forestry, Pre-Law, Pre-Medical Technology, Pre-Medicine, Pre-Nursing,

Degrees Offered -- Bachelor of Arts, Bachelor of Science.

- <u>Admission Requirements</u>--This college participates in the Michigan College Agreement plan. For admission directly from a high school not in the Michigan College Agreement plan: (1) two majors (one of which must be English); two minors; remaining five units may be chosen from such subjects as Drawing, Commercial Geography, Typing, Shorthand, etc.; (2) General Education Development tests for veterans. For admission with advanced standing: Official transcript of oredits from an accredited college; see catalog.
- Fees--Tuition: \$275 per semester. Board: \$400 per year. Room: \$200 per year.
- <u>Student Aids</u>-Thirty-six scholarships awarded in 1959; stipend, \$300. Amount of money available for student loans, \$7,000. Placement service maintained for graduates for teaching positions.
- Buildings and Grounds--Total value: Lands, \$650,000; buildings, \$3,500,000, equipment, \$500,000. Capacity of residence halls: For men, 75; for women, 150; for married couples, none.
- Enrollment (equated to full time, end of 4th week of fall semester or term of 1959, exclusive of enrollments in extension, correspondence, and dublicates)--Total 1,948. Freshmen, 614.

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GRAND RAPIDS JUNIOR COLLEGE

1959

Grand Rapids. Publicly controlled. Coeducational. Founded 1914.

<u>Accreditation</u>--Michigan Commission on College Accreditation, North Central Association of Colleges and Secondary Schools.

- Type of College -- Junier College. Curricula Offered: Two years of Preliminary training in Liberal Arts, Teacher Training, Social Work, Business Administration, Dental Hygiene, Physical Education for Men, Physical Education for Women, Pharmacy, Home Economics, Agriculture, Foods Distribution, Forestry, Conservation, Landscape Architecture and City Planning, Hotel Management, Medical Biology, Medical Technology, Physical Therapy, Health Administration, Sanitary Science, Mortuary Science, Optometry, Police Administration, Journalism, Nursing, Librarianship, Art, Music. Pre-Professional Programs Offered: Pre-Medical, Pre-Law, Pre-Engineering, Pre-Architecture, Pre-Dental, Pre-Veterinary. Terminal Curricula: Airline Hostess, Commercial Art, Costume Design, Interior Decorating, Technical Business, Salesmanship, Small Business Management, Accounting, Advertising, General Business, Cooperative Retailing, Hospital Dietetics and Foods in Business, Child Care and Development, Forestry, Home Economics, Mechanical Technology, Cooperative Office Course, Physican's Assistant. Industrial Chemistry. Drafting and Engineering, Practical Nursing. Secretarial. Clerical. Nursing.
- <u>Degrees Offered</u>--Associate in Arts, Associate in Science, Associate in Commerce, Associate in Science in Engineering, Associate in Fine Arts, Associate in Physical Education, Associate in Home Economics, Associate in Music, Associate in Mechanical Technology, Certificate of Achievement in Practical Nursing.
- Admission Requirements--This college participates in the Michigan College Agreement plan. For admission directly from a high school not in the Michigan College Agreement plan: (1) graduation from an accredited high school; recommendation by high school principal; (2) satisfactory passing of General Education Development tests for veterans, on an individual basis. For admission with advanced standing: Official transcript of credits.
- Fees--Tuition: Resident of Grand Rapids School District, \$80 per semester; non-resident of Grand Rapids School District, \$110 per semester. Activity fee: \$10 per semester.

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<u>Student Aids</u>--Sixty-six scholarships awarded in 1958-59, stipend, tuition for one year.

Buildings and Grounds--Total value, \$1,000,000.

Enrollment (equated to full time, end of 4th week of fall semester or term of 1957, exclusive of enrollments, in extension, correspondence, and duplicates)--Total 1,842. Freshmen, 1,626. 3. A second state of the second state of th

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DETAILED OCCUPATION OF THE EMPLOYED CIVILIAN LABOR FORCE OF THE CITY OF GRAND RAPIDS IN 1950

(From Information in Bulletin P-C22, PP. 22-228 of 1950, United States Census of Population for Michigan, Detailed Characteristics)

| | Occupation | Males | Females | Total |
|-----|---|--------|---------|---------|
| 1. | Professional, Technical, and Kindred Workers | 5,741 | 4,087 | 9,828 |
| 2. | Farmers and Farm Managers | 2,868 | 60 | 2,928 |
| 3. | Managers, Officials and Proprietors | 9,363 | 1,038 | 10,401 |
| 4. | Clerical and Kindred Workers | 5,554 | 9,245 | 14,799 |
| 5. | Sales Workers | 7,073 | 3,130 | 10,203 |
| 6. | Craftsmen, Foremen and Kindred | 18,168 | 626 | 18,794 |
| 7. | Operatives and Kindred Workers | 22,835 | 7,279 | 30,114 |
| 8. | Private Household Workers | 84 | 1,879 | 1,963 |
| 9. | Service Workers | 4,150 | 3,898 | 8,048 |
| 10. | Farm Laborers and Foremen | 1,008 | 80 | 1,088 |
| 11. | Laborers, Except Farm | 4,206 | 397 | 4,613 |
| 12. | Occupations Not Reported | 670 | 474 | 1,144 |
| 13. | Total, 14 Years and Older | 81,720 | 32,190 | 113,913 |

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INSTITUTIONS ATTENDED IN NOVEMBER, 1959 BY GRADUATES OF PUBLIC HIGH SCHOOLS OF CITY OF GRAND RAPIDS OF JUNE, 1959

(As Reported by Parents of Graduates)

Senier Colleges and Universities

Name of Institution

Location

Number Attending

| | 171.7 W |
|--|---------------------------|
| Albien College | Albion, Michigan |
| Alla College | Alma, Michigan |
| Anderson College | Anderson, Indiana |
| Aquinas College | orand kapids, Michigan |
| Augustana College | Rock Island, Illinois |
| Ball State Teachers College | Muncie, Indiana |
| Baptist Theological Seminary | Grand Rapids, Michigan |
| Bethel College | Mishawaka, Indiana |
| Calvin College | Grand Rapids, Michigan |
| Carleton College | Northfield, Minnesota |
| Carnegie Institute of Technology | Pittsburg, Pennsylvania |
| Case Technical Institute | Cleveland, Ohiø |
| Central Michigan University | Mt. Pleasant, Michigan |
| Celorado State College | Greeley, Colorado |
| Eastern Bible College | Pennsylvania |
| Eastern Michigan University | Ypsilanti, Michigan |
| Elmhurst College | Elmhurst, Illinois |
| Emmanuel Missionary College | Berrien Springs, Michigan |
| Ferris Institute | Big Rapids, Michigan |
| Hartnell Teachers College | Salinas, California |
| Hepe Cellege | Holland, Michigan |
| Heughton College | Houghton, New York |
| Kalamazoo College | Kalamazoo, Michigan |
| Kenyan College | Gambier, Ohio |
| Miami University | Oxford, Ohie |
| Michigan State University | East Lansing, Michigan |
| Michigan College of Mining & | |
| Technology | Houghton, Michigan |
| Northern Illinois University | DeKalb, Illineis |
| North Park College | Chicago, Illinois |
| Northwestern University | Chicago, Illinois |
| Oberlin College | Oberlin. Ohie |
| Ohio State University | Columbus. Ohie |
| Purdue University | Lafayette, Indiana |
| Ripon College | Ripon, Wisconsin |
| St. Peters College | Baltimore, Maryland |
| ······································ | |

Senier Colleges and Universities - Continued

| Name of Institution | Location | Number Attending |
|-----------------------------------|--------------------------|---------------------|
| University of Iowa | Iowa City, Iowa | 1 |
| Taylor University | Upland, Indiana | 2 |
| University of California at | - | |
| Los Angeles | Los Angeles, California | 1 |
| University of Miami | Coral Gables, Florida | 1 |
| University of Michigan | Ann Arbor, Michigan | 40 |
| University of Nevada | Las Vegas, Nevada | 1 |
| University of Redlands | Redlands, California | 1 |
| University of Southern California | Los Angeles, California | 1 |
| University of Toledo | Toledo, Ohio | 2 |
| Wayne State University | Detroit, Michigan | 1 |
| Waynesburg College | Waynesburg, Pennsylvania | 1 |
| Wheaton College | Wheaton, Illinois | 1 |
| Western Michigan University | Kalamazoo, Michigan | 20 |

Junior Colleges

| Freed Hardeman (Junior) College | Henderson, Tennessee | 1 |
|---------------------------------|------------------------|-----|
| Flint Junior College | Flint, Michigan | 1 |
| Grand Rapids Junior College | Grand Rapids, Michigan | 345 |
| Jeliet Junier College | Joliet, Illinois | 1 |

Nursing Schools (Hospital)

| Augustana School of Nursing | Chicago, Illinois | 1 |
|---------------------------------|------------------------|---|
| Butterworth Hospital School of | | |
| Nursing | Grand Rapids, Michigan | 5 |
| Blodgett Hospital School of | | |
| Nursing | Grand Rapids, Michigan | 2 |
| Bronson Hospital School of | | |
| Nursing | Kalamazoo, Michigan | 2 |
| Borgess School of Nursing | Kalamazoo, Michigan | 1 |
| Holy Cross Central School of | · • | |
| Nursing | South Bend, Indiana | 1 |
| Swedish Convalescent Hospital | · | |
| School of Nursing | Chicago, Illinois | 1 |
| Mercy Central School of Nursing | Grand Rapids, Michigan | 1 |

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Trade and Technical Institutes and Schools

Name of Institution

| Name of Institution | Location | <u>Number</u> Attending |
|-------------------------------------|------------------------|----------------------------|
| Acme School of Tool & Die | Grand Rapids, Michigan | 1 |
| Allied School of Mechanical Trade | Chicago, Illinois | 1 |
| Barber School on Adams | Detroit, Michigan | 1 |
| Comptometer School | Grand Rapids, Michigan | 5 |
| Central Technical Institute | Kansas City, Missouri | 2 |
| Davenpert Institute | Grand Rapids, Michigan | 20 |
| Dunbar | Chicago, Illinois | 1 |
| Emary-Riddle Aeronautical Institute | Miami, Florida | 1 |
| Grand Rapids School of Beauty | Grand Rapids, Michigan | 1 |
| Humboldt Institute | Minneapolis, Minnesota | 1 |
| Kendall School of Design | Grand Rapids, Michigan | 8 |
| LaParent Beauty School | Grand Rapids, Michigan | 1 |
| Montieth | Detroit. Michigan | 1 |
| National School of Aeronautics | Kansas City. Missouri | 1 |
| Radio Electronics School | Grand Rapids, Michigan | 3 |
| Staffon Funeral Home Apprenticeship | Ann Arbor, Michigan | í |
| Tracy Beauty Academy | Grand Rapids, Michigan | 4 |



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