

THE UNIVERSITY OF ALBERTA

NONINTELLECTIVE FACTORS AND THE PREDICTION OF
ACADEMIC ACHIEVEMENT AMONG NON-MATRICULATED ADULTS

by



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ABSTRACT

This study was designed to assess the relative contribution of a number of nonintellective factors in the prediction of academic achievement of non-matriculated adults. Twenty three nonintellective variables selected from the respondents' personal background and the scales of the California Psychological Inventory (completed by the respondents) were used in the assessment. Data pertaining to how the respondents became aware of the program for non-matriculants and the reasons they gave in support of their decision to attend university were also collected.

Data pertaining to background factors were collected by means of questionnaires distributed to students either presently or previously enrolled with the Faculty of Education as non-matriculated adults. Data pertaining to the California Psychological Inventory were obtained from the respondents' CPI profile sheets. A total of 160 questionnaires were returned.

Questionnaire data were examined by means of frequency distribution for each response category. A correlation analysis was performed on questionnaire data amenable to such a procedure. A stepwise regression program was used to determine: a) the relative value among the nonintellective background factors of non-matriculants and their first year GPA's, and b) the relative value among scales on the CPI in the prediction of academic performance of non-matriculants.

Most respondents became aware of the program for non-matriculants through self-initiated inquiry regarding university admittance requirements. The majority of the non-matriculated group reported their decision to attend university was based on a desire to change their occupation.

Correlations between non-matriculants' background factors and academic performance were low. No correlation coefficient was greater than ± 0.263 .

The twenty-three background factors selected for analysis made it possible to account for about 25 percent of the variance in academic performance. Six factors accounted for most of the variance. These included (in order of importance): a) sex, b) annual income of spouse, c) post secondary training of mother, d) level of school education of mother, e) club membership, and f) level of school education of father.

Male and female CPI scores were treated separately. The CPI scales of the female group were able to account for about 31 percent of the variance in academic performance. Six CPI scales accounted for most of this variance. These included (in order of importance): a) intellectual efficiency, b) sociability, c) communality, d) femininity, e) responsibility, and f) sense of well being.

The CPI scales of the male group were able to account for about 42 percent of the variance in academic performance. Nine CPI scales accounted for most of the variance. These included (in order of importance): a) communality, b) sociability, c) capacity for

status, d) social presence, e) femininity, f) sense of well being,
g) tolerance, h) psychological mindedness, and i) socialization.

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Chapter 1

INTRODUCTION

Candidates applying for admission to the Faculty of Education at the University of Alberta are normally required to present proof that they have completed one of the following matriculation programs.

1. **ALTERNATIVE 1.** The candidate must hold credit for five matriculation subjects with no grade lower than 50 percent, and with an average of at least 60 percent.
2. **ALTERNATIVE 2.** The candidate must hold credit in four matriculation subjects and in one non-matriculation subject. No grade may be lower than 50 percent. The average grade for the matriculation subjects must be at least 60 percent. The grade on the non-matriculation course must be at least 65 percent.

In 1969, the University of Alberta approved a program of studies with the Faculty of Education designed for adult students who are unable to meet regular admittance requirements. In order to be eligible for admittance to the aforementioned program as a non-matriculated adult, the following conditions must be satisfied.

1. **AGE.** The candidate must be twenty-four years of age or older.
2. **SUBJECT REQUIREMENTS.** The candidate must hold credit for English 30 and one other Grade XII examination subject appropriate to a possible future major with no grade less than 50 percent and with an average of 60 percent on the two subjects.
3. **INTERVIEWS.** Each candidate must arrange an interview with an officer of the Faculty of Education (usually the Associate Dean of Education, Student Records and Programs). Candidates who are eligible for admittance to the program are then referred to Student Counselling Services for psychological testing and an interview. A positive recommendation is required from Student Counselling Services for admittance.

Each student admitted to the program is registered as a probationary student and must complete the following five course program.

1. English 200 or 210 or two half-year English courses at the 200 level (COMPULSORY)
2. Ed. Psy. 269-271 or Psy. 202 (COMPULSORY)
3. Social Science or History, e.g. one of; Anthropology 202, Economics 200, History 200, Political Science 200 or Sociology 202, etc.
4. One of the following: Biology 130, Chemistry 130, Geology 201, Physics 100, Geography 201, a junior mathematics or a 100 level foreign language, etc.
5. An approved Arts/Science option (possible major)

The student must complete all these courses without repetition and achieve a grade point average of 4.5 with no grade below four. Upon meeting the above conditions, the student is granted clear admission to the Faculty of Education and credit in the equivalence of one year on the four-year Bachelor of Education program.

THE PROBLEM

Statement of the Problem

The major task of this investigation was to examine the relative value among a number of personal background factors in the prediction of the first year grade point averages of non-matriculated adult students enrolled in the Faculty of Education.

Statement of Sub-Problems

Sub-problems associated with this study were designed to examine the following questions:

1. How did those students enrolled in the Faculty of Education as non-matriculated adults become aware that they were eligible to attend university? The program for non-matriculants has only recently been implemented (1969) and has not been widely advertised.
2. What reasons did non-matriculants give in support of their decision to attend university? What factors motivated non-matriculants to advance their educational standing?
3. What was the relative value among a number of non-intellective personal background factors in the prediction of the first year grade point average of the non-matriculated student group? Are certain nonintellective characteristics of this group conducive to the prediction of academic achievement?
4. What was the relative value of those categories included in the California Psychological Inventory in the prediction of the first year grade point average of the non-matriculated adult group. To what extent is the California Psychological Inventory a valuable tool in the selection of potentially successful non-matriculants?

Importance of the Study

The study was undertaken to provide university administrators with information pertaining to non-matriculated adult students enrolled with the Faculty of Education. With a better knowledge of this group, administrators would be better equipped to advise and counsel future applicants to the program. Prospective students could be given some indication of their potential for success. Prior to the completion of this study, very little information regarding the personal background or the degree of academic achievement of this particular student group had been collected. No investigation had been performed which analyzed the relative value among selected personal background factors in the prediction of academic achievement. Consequently, the information compiled in this study will provide

university administrators with greater insight into the non-matriculated adult program.

Delimitations

1. Those nonintellective factors identified in the study as being predictive of academic achievement were not intended to represent all the factors which affect achievement. It is understood that many additional nonintellective factors exist. For the purpose of this study, only those factors readily accessible to the researcher were considered.

2. Differentiation was not made between respondents in terms of the year each individual commenced university studies. It was assumed that conditions remained relatively stable during this time with respect to academic standards in the university and in the admittance procedures related to non-matriculated adults. Furthermore, it was assumed that the social, economic, and political order remained relatively stable between 1969 and 1971.

DEFINITION OF TERMS USED IN THE STUDY

Non-matriculated adult. Refers to those students admitted to the Faculty of Education who: a) are at least twenty-four years of age, b) hold credit in English 30 and one other Grade XII examination subject with a grade of no less than 50 percent in each subject and with an average of at least 60 percent.

Probationary year. Non-matriculated adult students are registered as probationary students until a prescribed five course program

is completed. Probationary students receiving a grade point average of less than 4.5 on the prescribed program are normally required to withdraw from university. Students not on probation are normally not required to withdraw from university unless they receive a grade point average of less than 4.0.

Background factors. Refer to those personal, social and economic factors of the respondents selected for study by the researcher.

High risk student. Refers to those students considered to have high potential for failure.

Intellective variables/factors. Refers to those factors composed of traits and/or conditions which require intellectual operations. Tests which measure mental ability or proficiency in a given subject area are intellective in nature.

Nonintellective variables/factors. Refers to those factors composed of traits and/or conditions which require no intellectual operations. Physical and demographic characteristics are non-intellective in nature.

Chapter 2

REVIEW OF THE LITERATURE

INTRODUCTION

This chapter reviews the literature related to the prediction of academic success in university from nonintellective variables. Consideration must be given to the fact that many of the studies differ in terms of terminology, instrumentation, measurement, and statistical analysis.

NONINTELLECTIVE FACTORS AND THE PREDICTION OF ACADEMIC SUCCESS

A comprehensive review of the literature by Schroeder and Sledge (1966: 97) revealed a high degree of consensus that intellectual variables are more predictive of academic achievement at the post-secondary level than are non-intellective variables. They did however, recognize the fact that nonintellective factors are useful in the prediction of academic achievement. Cronbach (1949) and Struit and others (1949) found that differences in intellectual variability measured by a wide variety of intelligence testing instruments account for only a part of the difference in the academic performance of college students. They suggest that only one-half to one-tenth of the variability in academic performance can be accounted for by measures of scholastic aptitude.

NONINTELLECTIVE FACTORS

The identification of all those nonintellective factors associated with the prediction of academic success is limited by man's degree of knowledge in this area. A host of researchers have identified a number of nonintellective variables which currently appear to be representative of those factors which have the potential of affecting academic performance.

Statements concerning a number of nonintellective variables identified as being potentially valuable in the prediction of academic success follow. Findings are assumed to be inconclusive in cases where the volume of research is limited. Also, findings are labelled as being inconclusive in cases where various research documents indicate conflicting results.

Age

Pittenger (1917) found that college grades tend to be lower among students who enter college when their age is above the mean for freshmen entering that institution. Thornburg (1924) confirmed Pittenger's (1917) findings in a State of Washington study of college students. He established the fact that there is a decided drop in scholarship after the age of nineteen has been reached.

Baron's (1968) study of junior college students in Illinois did not support the conclusions established by Pittenger (1917) and Thornburg (1924). He concluded that no significant difference can be accounted for between grade point average and age.

Schroeder and Sledges' (1966) review of the literature reported age to be negatively correlated to achievement but state that this relationship is not maintained when the time span between high school graduation and college enrollment is taken into consideration.

Findings pertaining to the relationship between age and academic achievement are inconclusive.

Marital status

In a study of Illinois junior college students, Baron (1968) was unable to detect any relationship between successful and unsuccessful students in terms of their marital status. The success criterion in this study was based on a pass-fail standing and therefore constituted a very liberal definition of success.

Findings pertaining to the relationship between marital status and academic achievement are inconclusive.

School size

Somers (1924), Douglas (1931), and Feder (1940) reported a small positive relationship between high school size and academic achievement at the post-secondary level. Bedsoe's (1953) study of Georgia high school graduates confirmed the earlier findings. He found that students from large high schools receive significantly higher marks during their first year of college than do students previously enrolled in relatively small high schools.

Schroeder and Sledge (1966) reported that a majority of the literature indicates there is no significant difference between high school size and academic achievement.

Findings pertaining to the relationship between high school size and academic achievement are inconclusive.

Residence

Washburne (1959) concluded from a study based on two Virginia college populations, that students from an urban background tend to achieve higher GPA's than do students with a rural background. However, it was his contention that this positive correlation decreases as populations in urban areas approach 500,000.

Schroeder and Sledge reported that research in this area produced inconsistent results.

Findings pertaining to the relationship between residence characteristics and academic achievement are inconclusive.

Socio-economic factors

A large body of literature exists in which researchers have examined the relationship between socio-economic factors and scholastic achievement. Considerable variation is found in these studies with regard to the definition of what factors comprise various socio-economic categories. Generally, items such as family characteristics, residence locale, level of education and occupational category, and level of income are included as objective measures. More comprehensive studies identify attitudes and aspirations as being indicative of socio-economic level.

Nicholson (1970) reported that the consensus of research is that data of the socio-economic-status type are not only useful predictors of academic success but are also sometimes more effective than more subtle personality evaluations.

Jones' (1968) study of college freshmen in Washington revealed that students from relatively low socio-economic backgrounds achieve higher grade point averages than those considered to have relatively high socio-economic backgrounds. He concluded that a low socio-economic background has no adverse affect on college performance. Jones' findings give evidence to support the idea that the motivation to succeed is higher among groups of low socio-economic status.

Contrary to Jones' (1968) findings, MacDonald (1964) concluded that when socio-economic factors are taken into consideration together with aptitude and motivational factors, the potential for predicting academic success does not improve.

Schroeder and Sledge (1966) reported inconsistent results pertaining to the relationship between academic achievement and socio-economic factors. The findings in this area are inconclusive.

Sex

Schroeder and Sledge (1966) reported that research indicates that females are generally found to be superior to males in achievement at the college level. Baron's (1968) Illinois study produced evidence to support this contention.

Personality factors

The value of assessing personality factors for the purpose of predicting academic achievement at the post-secondary level has been widely disputed. Garrett's (1949) comprehensive review of the literature prompted him to conclude that factors of personality and

character are equally distributed among those students who are successful and unsuccessful in college scholarship. Freeberg (1967) supported Garrett's (1949) conclusions by pointing out that attempts to predict academic performance from personality inventories were generally disappointing. Hall's (1968) study of California junior college students revealed that personality measures are useful in distinguishing between social classes but are not valuable in differentiating between achievers and non-achievers. Cronbach (1970: 549) stated:

After reflection on the published literature and after sponsoring studies of its own, the College Entrance Examination Board (1963) made a noteworthy official statement to member colleges, warning "of very serious risks that would certainly attend the actual use of any existing personality tests in making admissions decisions." The problems mentioned include possible misunderstanding by the public, faking and coaching, absence of parallel forms, overemphasis on scales that correlate only slightly with marks, and inability to allow for the fact that adolescent personalities are changing.

In spite of the case against the use of personality factors in the prediction of academic achievement, a body of research has developed in its support. Carter's (1959: 256) review of the literature prompted him to conclude the following about existing personality inventories.

There is great variation in the predictive value of the measures which have been used. Those which have involved some subtlety of approach have been more effective than the inventories which have been quickly thrown together. The correlations with measures of achievement vary from approximately zero to an upper limit which is usually not above .50.

Nichols (1966) reported that the California Psychological Inventory (CPI) had one of the highest validities in the prediction of academic achievement among four personality inventories. The other inventories included: a) the Vocational Preference Inventory, b) the Adjective Check List, and c) the Objective Behavior Inventory. Gough (1964) using a sample selected from fourteen high schools in eleven states, provided evidence in support of the predictive value of the CPI as related to academic achievement.

ACHIEVEMENT AND THE PROBATIONARY STUDENT

Students admitted to university but who are believed to be potentially high risks in terms of academic success are often accorded probationary status. Probationary status is usually not imposed upon a student entering university for the first time because he has a poor record of academic success. The condition of probation is usually imposed at the time of admittance in cases where the student does not meet the regular prerequisite subject requirements of the institution.

Research indicates that probationary students tend to do relatively well in college. Schwartz (1968) found that 41 percent of all those students classified as high risk students at Michigan State University graduated compared to the national average of 40 percent which includes all college freshmen.. Blai (1970) found that only 9 percent of the first year probationary students at

Harcum Junior College dropped out at the end of one year whereas 14 percent of the regular students had withdrawn.

Perkins (1971) investigated the academic achievement of "mature" students admitted to the University of Lethbridge. He found that in terms of accumulative grade point average, the "mature" student group scored significantly higher than other student groups composed of regular students. Perkins stated that, "it would seem that the 'mature' students' higher GPA was due to their superior maturity and motivation....."

THE RATIONALE FOR THIS STUDY

Research related to the prediction of academic achievement from a particular set of nonintellective factors is generally inconclusive. It is considered to be inconclusive because similar investigations of similar populations from various parts of the North American continent have produced inconsistent results. It is apparent that there is some unidentified intervening variable in existence.

This study was carried out with the assumption that all of the nonintellective factors identified are potentially valuable in the prediction of academic achievement.

CHAPTER 3

RESEARCH DESIGN AND DESCRIPTION OF DATA

The purpose of this chapter is to describe the data required for the study, to describe the population, to describe the instruments, and to explain the collection and treatment of data.

DATA REQUIRED

Data required for the execution of this study included:

1. Information pertaining to selected personal background factors of the respondents as such conditions existed at the time application was made to attend university.
2. The grade point averages (GPA) credited to respondents during their probationary year.
3. Scores attained by the respondents on each of the scales of the California Psychological Inventory.

THE POPULATION

The population referred to in this study included all those individuals enrolled with the Faculty of Education as non-matriculated adults since the establishment of that student category in 1969. A list containing the names of all those students who had been admitted to the Faculty with such status was available from the office of the Associate Dean of Education in charge of Student Records and Programs. The population was found to consist of 220 individuals.

Non-matriculated adult students enrolled with other faculties were not included in the study for the following reasons.

1. The number of non-matriculants in faculties other than those of Arts and Education was too small to warrant consideration.
2. The consideration of non-matriculants in the Faculty of Arts was not feasible because Arts students in that category are classified as probationary students and cannot be distinguished easily from students on probation for academic reasons. The inspection of each probationary student's record would be the only possible way of identifying non-matriculants. The problem is compounded by the fact that when students successfully complete a probationary year, they are re-classified as regular students.

Distribution of the Population by Year of Admittance

Two-hundred and twenty non-matriculated adult students have been admitted to the Faculty of Education since the implementation of the program. Of the total population, 16.3 percent began studies during the 1969-1970 term, 40.5 percent began during the 1970-1971 term, and 43.2 percent began during the 1971-1972 term.

Distribution of the Population by Sex

Forty-six percent of the population were males and 54 percent were females.

Distribution of the Population by Age

At the time application was made to attend university, 49 percent of the population were twenty-nine years of age (inclusive) or under, 33 percent were between the ages of thirty and thirty-nine (inclusive), 18 percent were between the ages of forty and forty-nine (inclusive), and 2 percent were fifty years of age or older.

Distribution of the Population by Marital Status

At the time application was made to attend university, 66 percent of the population reported they were married, 21 percent reported they were single, and 11 percent reported they were either separated, widowed, or divorced. Two percent failed to indicate their marital status.

THE INSTRUMENTS AND COLLECTION OF DATA

Data pertaining to the nonintellective factors examined in the study were obtained from: a) a questionnaire completed by the respondent, and b) the results of the California Psychological Inventory which was completed by the respondent.

The Questionnaire

Data pertaining to the selected background characteristics of the respondents were collected through the use of a questionnaire (see Appendix B). The questionnaire was designed specifically for the collection of such information. It contained items referred to in previous research (see Chapter 2) as being potentially valuable in the prediction of academic achievement at the university level. Additional items were added as the result of suggestions made by fellow graduate students and professors in Educational Administration 510 (Research and Design).

The questionnaire consisted of two sections. The first section of the instrument was designed to collect information pertaining

to non-intellective background factors of the respondents. It was specified that respondents were to reply to questions in this section as they would have at the time they initially applied to attend university. Therefore, students beginning the program in 1969 were required to recall conditions as they were three years prior to this study. Students beginning the program in 1970 were required to relate conditions as they were two years prior to this study. And, students beginning the program in 1971 were required to relate conditions as they were one year prior to this study. It was necessary to determine conditions prior to the students' admittance to university in order to justify inferences to be made regarding future non-matriculated applicants.

After the first draft of the questionnaire was completed, it was submitted for discussion in Educational Administration 510. Suggestions regarding the format and wording were considered. Appropriate adjustments were made and a second draft of the questionnaire was submitted for discussion. Suggestions were again considered, adjustments were made, and the final draft was prepared for printing.

The second section of the questionnaire was designed to solicit information from the respondents regarding their reactions to admittance procedures. Provision was also made for comments and questions regarding the questionnaire material.

The Collection of Questionnaire Data

In December, 1971, duplicate copies of a letter were forwarded to the President of the University of Alberta and the Associate Dean of Education responsible for Student Programs and Records. The contents of the letters outlined the nature of this study and requested access to student records on behalf of the researcher. Access to student records was granted in January, 1972 (see Appendix A). (Student records are located both in the Office of the Registrar and, in Student Records and Program Office, 833 Education Building).

A list containing the names of all students admitted to the non-matriculated adult program in Education was obtained from Professor W. Pilkington, Associate Dean of Education. A total of 220 individuals were listed. The addresses and telephone numbers of these students were obtained from the records in the Office of the Registrar. The telephone numbers and addresses of students no longer enrolled in university were searched for in the City of Edmonton Telephone Directory. It was discovered that 190 potential respondents could be contacted.

Each of the potential respondents was contacted by telephone. The nature of the study was described and participation in the completion of the questionnaire was requested. Also, the purpose of a 'release form' to be included in the questionnaire package which would give the researcher access to the respondents' psychological tests (CPI) was explained. Arrangements were made with each of the potential respondents to complete the questionnaire at the university or to receive the package by mail.

Seventy-four respondents completed the questionnaire package at the university under the supervision of the researcher. The respondents were invited to discuss any problems the questionnaire presented to them. No significant problems were mentioned. The researcher cross-checked basic information on the questionnaire (age, marital status, residence) with information respondents had given on their original application found in the Office of the Registrar. This check was made to determine if any discrepancies existed. No discrepancies were found and it was assumed that the respondents had volunteered accurate information.

All those potential respondents who had indicated they preferred to complete the questionnaire at home were mailed the questionnaire package. The questionnaire package contained: a) a cover letter explaining the purpose of the study, b) a questionnaire, c) a 'release form' which would give the researcher access to CPI data and a brief explanation of how the information would be used, and d) return postage. A total of eighty-eight questionnaires and 'release forms' were returned by mail. Two questionnaire packages were destroyed because no name appeared on the returned material.

The total number of questionnaires used for research purposes was 160.

The California Psychological Inventory (CPI).

The results of CPI test scores were used to provide information pertaining to the personality characteristics of the respondents.

This instrument, developed by Gough (1957) was designed to measure certain character traits which are relevant to the understanding and prediction of social behavior in a variety of situations. Gough (1964:178) reported that, "the optimum prediction of achievement... is given by an equation incorporating I.Q. along with five CPI scales. The coefficient for this equation is .68, significantly higher than for I.Q. alone".

A description of the eighteen personality measurement scales follow (Gough, 1957: 12-13).

Dominance (Do). Used to assess factors of leadership ability, dominance, persistence, and social initiative.

Capacity for status (Cs). Used to serve as an index of an individual's capacity for status (not his actual or achieved status). Measures those personal qualities and attributes which underlie and lead to status.

Sociability (Sy). Used to identify persons of outgoing, sociable, participative temperament.

Social presence (Sp). Used to assess factors such as poise, spontaneity, and self confidence in personal and social interaction.

Self-acceptance (Sa). Used to assess factors such as sense of personal worth, self-acceptance, and capacity for independent thinking and actions.

Sense of well-being (Wb). Used to identify persons who minimize their worries and complaints, and who are relatively free from self-doubt and disillusionment.

Responsibility (Re). Used to identify persons of conscientious, responsible, and dependable disposition and temperament.

Socialization (So). Used to indicate the degree of social maturity, integrity, and rectitude which the individual has attained.

Self-control (Sc). Used to assess the degree and adequacy of self-regulation and self-control and freedom from impulsivity and self-centeredness.

Tolerance (To). Used to identify persons with permissive, accepting and non-judgmental social beliefs and attitudes.

Good impression (Gi). Used to identify persons capable of creating a favorable impression, and who are concerned about how others react to them.

Communality (Cm). Used to indicate the degree to which an individual's reactions are responses correspond to the modal pattern established for the inventory.

Achievement via conformance (Ac). Used to identify those factors of interest and motivation which facilitate achievement in any setting where conformance is a positive behavior.

Achievement via independence (Ai). Used to identify those factors of interest and motivation which facilitate achievement in any setting where autonomy and independence are positive behaviors.

Intellectual efficiency (Ie). Used to indicate the degree of personal and intellectual efficiency which the individual has attained.

Psychological-mindedness (Py). Used to measure the degree to which the individual is interested in, and responsive to, the inner needs, motives, and experiences of others.

Flexibility (Fx). Used to indicate the degree of flexibility and adaptability of a person's thinking and social behavior.

Femininity (Fe). Used to assess the masculinity or femininity of interests. (High scores indicate more feminine interests, low scores more masculine).

Gough (1957) established the validity for each of the eighteen scales of the CPI by correlating test scores with non-test criteria such as subjective ratings and reported life performances. Items on the inventory were also cross validated.

Gough (1957) indicated that the reliability of the CPI has been thoroughly established by a series of re-test situations among a variety of groups.

The CPI and the Prediction of Achievement

Conflicting reports exist pertaining to the value of the CPI in the prediction of academic achievement. Kelley (1965) indicated that the CPI was one of the best instruments of its kind. Nichols' (1966) investigation of the relationship between academic achievement at the college level and four different psychological inventories, indicated that the CPI was the most valuable instrument. These conclusions supported those of Gough (1964) who found that the use of the CPI contributed to the more accurate prediction of academic achievement among high school students.

Contrary to the aforementioned findings, Thorndike (1959) and Walsh (1972) presented a negative evaluation of the CPI instrument.

Their objections included questions regarding the validity of the instrument and its subjective method of interpretation.

Some counsellors have maintained the use of the CPI in the identification of personality types which show potential for success in university studies. The inventory therefore, may be used as a screening device to restrict the admittance of applicants exhibiting pathological personality patterns not conducive to academic success. The value of the instrument depends to a great extent upon the interpretive skill of the counsellor.

Goldberg (1972) supported the idea that the CPI would be a valuable instrument in the interpretation of personality characteristics for the next five years.

The Collection of CPI Data

The questionnaire package contained a 'release form' which, if endorsed by the respondent, would give the researcher access to psychological testing performed by Student Counselling services. A cover letter was attached which explained how the data was to be used (see Appendix B).

Among the total of 160 respondents 154 individuals granted the researcher access to psychological tests administered to them by the Student Counselling Service. Five respondents gave no reason for refusing access to their files. One respondent indicated that she did not wish to release such information because she felt the researcher was "not qualified to interpret psychological test information".

The 154 endorsed 'release forms' were presented to Student Counselling Services. Information pertaining to the CPI scores of the respondents was requested. Student Counselling Services then provided the researcher with copies of the CPI profiles. A total of 113 profiles were available. Sixty-six of these represented the scores of female respondents and forty-seven represented the scores of male respondents.

The CPI is not administered to all non-matriculated adults. Each individual counsellor decides which psychological tests are to be administered to those applicants assigned to him.

The data from each profile sheet were converted to standard scores as prescribed by Gough (1957:9) and transferred to a data sheet. The GPA for each individual was recorded on the data sheet with the respective profile scores. Data were then transferred to computer punch cards.

The Collection of GPA Data

Information pertaining to the grade point average (GPA) received by each non-matriculated respondent during their probationary year was required. This information was available from each individual respondent's student record card located in the Student Records and Programs Office. The researcher computed the GPA of each respondent for those courses prescribed as representing the probationary year. In cases where the respondent had not completed the prescribed five course (equivalent) program, the GPA was computed from the number of courses available.

TREATMENT OF DATA

All questionnaire data with the exception questions for which respondents were required to make comments were transferred to data sheets. Similarly, CPI and GPA data were recorded on these data sheets. All data were then transferred to computer punch cards.

Descriptive Analyses

Questionnaire data were examined by means of frequency distributions for each response category. Information pertaining to comments made by respondents were categorized and recorded. Other questionnaire data not amenable to statistical correlation (occupational categories) were submitted to descriptive analyses.

Statistical Analyses

The major thrust of the study was to examine the relative value among: a) a set of personal background factors in the prediction of academic achievement, and b) the various scales of the CPI and the prediction of academic achievement.

Since it was desirable to determine the degree of association between the personal background factors of the respondents and their academic achievement, a correlation analysis was performed. All data examined for correlation analysis were assumed to be at least of the interval scale. The Pearson r was employed for the calculation of correlation coefficients.

To determine the predictive order among: a) the personal background factors, and b) the scales of the CPI, a stepwise regression was employed. The regression program (Draper and Smith, 1966: 178-194) was designed to add all predictors in the order which they contribute to predictability. Data not meeting the requirements of at least an interval scale were not included in the regression analysis.

Chapter 4

DESCRIPTIVE ANALYSIS

The purpose of this chapter is to describe the reasons respondents gave for not completing regular matriculation requirements, to describe how respondents became aware of the program for non-matriculated adults, and to describe the reasons respondents gave in support of their decision to attend university. Respondents' reactions to admittance procedures are also included.

Reasons For Not Completing Regular Matriculation Requirements

The reasons respondents gave for not completing regular matriculation requirements were summarized and categorized. Of the total, 21.2 percent reported they had no motivation to complete the academic requirements of a matriculation program. Members of this group stated they had little interest in any academic school activity. Twenty percent indicated that they had completed high school but their credentials were not accepted by the University of Alberta authorities. This group was composed of two evenly distributed sub-groups. One-half of these students held credit for a diploma program. The remainder of the group indicated they held credit for academic courses at the Grade 12 level in their own province but these courses were not acceptable for admission purposes by the University of Alberta. It is understood that course content and grade equivalents vary somewhat among the various Canadian provinces. Of the remaining respondents, 15.6 percent

indicated they quit school to work; 13.8 percent stated a lack of finances caused the interruption of their education; 13.2 percent indicated their marks were too low for university admittance; 10 percent did not finish high school because they did not feel it was necessary to do so; 5.6 percent quit school to get married; and, .6 percent reported there was no high school facilities available. Table 1 shows the distribution of reasons respondents gave for not completing matriculation requirements during their regular school career.

Table 1

Distribution of Respondents According to Reasons Given
For Not Completing Matriculation Requirements

Reason Cited	Percentage Distribution of Respondents
Low academic aptitude	21.2
Credentials not acceptable for matriculation	20.0
Left school to work	15.6
Lack of finances	13.8
Low marks	13.2
Felt matriculation not necessary	10.0
Marriage	5.6
No school facilities	.6
Total	100

How Respondents Became Aware of the Program for Non-matriculated Adults

Respondents became aware they were eligible for admittance to the Faculty of Education as non-matriculated adults in several ways. From the total number of respondents, 36.2 percent indicated they discovered the program for non-matriculated adults through self-initiated inquiry. This group indicated they were unaware of the non-matriculated adult program and were prepared to complete regular matriculation requirements. They were informed of the program when they contacted university authorities in order to determine what high school courses they should enrol in to complete the regular matriculation requirements. About 29.4 percent of the respondents learned of the program for non-matriculated adults through friends; 19.4 percent were informed by officials acting in a counselling capacity; 9.4 percent became aware through relatives; and, 5.6 percent reported various publications as being their initial source of information. Table 2 indicates the percentage distribution of respondents reporting the various sources through which they first became aware of the non-matriculated adult program.

Reasons Supporting the Decision to Attend University

The respondents were requested to list several reasons, in order of importance, to support their decision to attend university. Due to internal similarities among many of the individual respondent's lists and because some respondents gave only one reason, only the first response or the one best representing the list was selected for analysis. From the total number of respondents, 51.9 percent stated

they decided to attend university in order to change their occupation; 30 percent indicated their decision was based on personal interest; 11.2 percent stated they wished to increase their earning power; and, 6.9 percent reported that a university education would insure their job security. Table 3 represents the distribution of respondents according to the reasons they gave in support of their decision to attend university.

REACTIONS TO ADMITTANCE PROCEDURES

To be admitted to the Faculty of Education as a non-matriculated adult student, respondents were required to arrange an interview appointment with an official representing the faculty (see Chapter 1). They were then referred to the Student Counselling Service for psychological testing and an interview. The following section represents the respondents' reactions with regard to these admittance procedures.

The Initial Interview

Respondents were asked to comment regarding the nature of their reactions related to the preliminary interview with the Associate Dean of the Faculty of Education (Professor W. Pilkington). From the total number of respondents, 24.4 percent made no comment; 70.6 percent reported a positive (favorable) reaction; 3.8 percent reported a neutral reaction; and, 1.2 percent indicated they had experienced a negative (unfavorable) reaction. Generally, respon-

Table 2

Distribution of Respondents According to How They Became
Aware of the Non-matriculated Adult Program

Initial Source of Information	Percentage Distribution of Respondents
Personal initiative	36.2
Friends	29.4
Officials (counsellors)	19.4
Relatives	9.4
Publications	5.6
Total	100

Table 3

Distribution of Respondents According to Reasons Given
in Support of the Decision to Attend University

Reason for Attending University	Percentage Distribution of Respondents
Change occupation	51.9
Personal interest	30.0
Increase earning power	11.2
Job security	6.9
Total	100

dents reporting a positive reaction to the interview indicated they appreciated the interest shown in them. Also, they felt relaxed by the informal approach of the interviewer. The two respondents who reported a negative reaction to the interview procedure indicated they would have preferred a more formal approach.

Psychological Testing and Interview by the Student Counselling Services

The second phase of the admittance procedure involved the referral of the respondent to Student Counselling Services for psychological testing and an interview. Because students are assigned to counsellors for this procedure, not all the respondents had contact with the same counsellor.

Respondents were asked to report both positive and negative reactions to these proceedings. About 18.1 percent of the respondents made no comment. From the total number of respondents, 46.9 percent indicated a positive reaction to the proceedings at Student Counselling Services; 8.8 percent reported a neutral reaction; and, 26.2 percent indicated a negative reaction. The reasons given in support of positive reaction are summarized immediately below.

The respondents indicated that:

1. Counsellors showed interest in applicants.
2. Counsellors were polite and cordial.
3. Test results were encouraging.
4. Counsellors instilled confidence in applicants.

The reasons given in support of negative reactions to Student Counselling proceedings are summarized below. The respondents reported that:

1. Counsellors were too impersonal and business-like.
2. Psychological tests were too time consuming.
3. No feedback on tests was available.
4. Test instructions were confusing.
5. Counsellor(s) exhibited an arrogant attitude.
6. Counsellor(s) appeared more interested in test results than in the applicant(s).
7. Psychological tests seemed irrelevant.
8. The 'desired' responses on psychological tests were too obvious.
9. Some personal questions were embarrassing to answer.

Chapter 5

ANALYSIS OF THE NONINTELLECTIVE BACKGROUND FACTORS OF THE RESPONDENTS

Data pertaining to the selected background factors of respondents were collected by a questionnaire. Frequency distributions of the responses given on the questionnaire follow.

A Comparison of the Respondent Group to the Population

The percentage distribution of respondents according to their age, sex, marital status, and the year which they entered university, was compared to the percentage distribution of those categories for the population. The results of these comparisons (shown in Tables 4, 5, 6 and 7) give evidence to support the contention that the respondent group is representative of the total population. It is reasonable to assume therefore, that findings based on an examination of the respondent group are valid for the total population.

Distribution of Respondents by Year

Table 4 indicates that the percentage distribution of respondents by year is very similar to that of the total population. Fifteen percent of the respondents entered university during the 1969-1970 academic term, 40 percent entered during the 1970-1971 term, and 45 percent entered during the 1971-1972 term.

Distribution of Respondents by Sex

Table 5 shows that the percentage distribution of respondents is very similar to the corresponding percentage distribution of the total population. From the total number of respondents, 52.5 percent were female and 47.5 percent were males.

Distribution of Respondents by Age

At the time application was made to attend university, 49.2 percent of the respondents reported they were twenty-nine years of age (inclusive) or younger, 32.3 percent reported they were between the age of thirty and thirty-nine (inclusive), and 18.5 percent reported they were forty years of age or over. A comparison of the age categories between the total population and the respondents reveals a distinct similarity (Table 6).

Distribution of Respondents by Marital Status

At the time application was made to attend university, 18.1 percent of the respondents indicated they were single, 68.8 percent reported they were married, and 13.1 percent indicated they were either separated, widowed, or divorced. Table 7 permits a comparison between the respondents and the total population.

Distribution of Respondents According to Age When First Married

Respondents were asked to indicate which age category they were in when they were first married. About 18 percent of the respondents reported they had never been married. Table 8 shows that most non-matriculated adults were first married between the ages of nineteen and twenty-two (inclusive). Twenty-five percent of the

Table 4

A Comparison of the Percentage Distribution of Respondents and the Total Population by Year of Entry to University

Academic Year	Percentage Distribution of Respondents	Percentage Distribution of the Total Population
1969-1970	15.0	16.3
1970-1971	40.0	41.5
1971-1972	45.0	43.2
Total	100	100

Table 5

A Comparison of the Percentage Distribution of the Respondents and Total Population by Sex

Sex	Percentage Distribution of Respondents	Percentage Distribution of the Total Population
Female	52.5	54.0
Male	47.5	46.0
Total	100	100

Table 6

A Comparison of the Percentage Distribution of Respondents and the Total Population According to Age Category

Age Category	Percentage Distribution of Respondents	Percentage Distribution of the Total Population
Under 29 yrs.	49.2	49.0
29 - 30 yrs.	32.3	33.0
Over 40 yrs.	18.5	18.0
Total	100	100

Table 7

A Comparison of the Percentage Distribution Between Respondents
and the Total Population According to Marital Status

Marital Status	Percentage Distribution of Respondents	Percentage Distribution of the Total Population
Single	18.1	21
Married	68.8	66
Sep./Wid./Div.	13.1	11
No Response	0.0	2
Total	100	100

Table 8

Distribution of Respondents According to Age When First Married

Age Category When First Married	Number of Respondents	Percentage Distribution of Respondents
15 - 18 yrs.	14	8.7
19 - 22 yrs.	66	41.4
23 - 26 yrs.	40	25.0
27 - 30 yrs.	10	6.2
31 - 35 yrs.	0	0
35 - 38 yrs.	1	.6
Never Married	29	18.1
Total	160	100

respondents married between the ages of twenty-three and twenty-six (inclusive).

Distribution of Respondents According to the Number of (Dependent and Non-dependent) Children Conceived

Fifty-four respondents indicated they had no children when they applied to attend university. Table 9 shows that the majority of respondents with children reported they had three or fewer.

Table 9

Distribution of Respondents According to
the Number of Children Conceived

Number of Children	Number of Respondents	Percentage Distribution of Respondents
1	18	11.3
2	37	23.1
3	26	16.3
4	15	9.3
5	6	3.8
6	2	1.2
7	2	1.2
No Children	54	33.8
Total	160	100

Distribution of Respondents According to the Number of Children in Their Parental Family

Table 10 indicates that most respondents reported having between one and four brothers and/or sisters. Only 6.2 percent reported they were the only child in the family while 8.1 percent indicated they came from families with nine or more children.

Table 10

Distribution of Respondents According to the Number of Children in Their Parental Family

Total Number of Children in Parental Family	Number of Respondents	Percentage Distribution of Respondents
1	10	6.2
2	29	18.1
3	30	18.8
4	27	16.9
5	18	11.2
6	15	9.4
7	11	6.9
8	7	4.4
9 or more	13	8.1
Total	160	100

Distribution of Respondents According to Occupational Category

The largest group of respondents indicated they were housewives (28.1 percent) at the time they applied to attend university. The second largest group (16.9 percent) indicated they held clerical positions. The third largest group (10 percent) reported that they were full-time students. This evidence suggests that the student group were already attending an educational institution when they applied to attend university. Table 11 shows the percentage distribution of all respondents according to their occupational category.

Distribution of Respondents According to the Occupational Category of the Major Wage Earner in Their Parental Family

The largest group of respondents (representing 16.2 percent of the total number) indicated that occupation of the major wage in their parental family was farming. The second largest group (15 percent) reported that the major wage earner in their parental family was engaged in a private business. Two groups, each representing 11.9 percent of the total number of respondents, indicated that the major wage earner in their parental family was involved in either skilled or unskilled labor. Table 11 shows the percentage distribution of all respondents according to the occupation of the major wage earner in their parental family.

Distribution of Respondents According to the Occupational Category of Their Spouse

Thirty-six individuals representing 22.5 percent of all the respondents indicated that questions pertaining to married students were not applicable to them. The largest group of married respondents (representing 22.5 percent of the total number of respondents) indicated that the occupation of their spouse included professional duties. The second largest group (representing 11.2 percent of the total) reported their spouses were housewives. The third largest group (representing 8.7 percent of the total) indicated the occupation of their spouse involved clerical duties. Table 11 shows the percentage distribution of respondents according to the occupational category of their spouse.

Distribution of Respondents According to the Occupational Categories of Individuals They Socialized With

Respondents were requested to indicate the occupational categories of individuals they socialized with most frequently, second most frequently, and third most frequently. In each instance, the largest single group of respondents reported that they tended to socialize with professional people. Students comprised the second most frequently mentioned occupational category. Table 12 shows a detailed description of the distribution of respondents according to the occupational categories of individuals they socialized with.

Table 11

Distribution of Respondents According to Their Occupation,
the Occupation of Their Spouse, and the Occupation of
the Major Wage Earner in Their Parental Family

Occupational Category	Percentage Distribution of Respondents According to:		
	Current Occupation of Respondent	Occupation of Parent	Occupation of Spouse
Tradesman	6.2	10.6	3.1
Professional	7.5	9.4	22.5
Technician	5.6	1.9	3.7
Sales	7.5	3.7	4.4
Housewife	28.1	.6	11.2
Business Office (Management)	5.0	7.5	3.7
Business Office (Clerical)	16.9	3.7	8.7
Skilled labor	1.2	11.9	5.0
Unskilled labor	2.5	11.9	3.1
Student	10.0	.0	4.4
Farming	.6	16.2	.6
Armed Forces	3.7	4.4	3.1
Private Business	1.2	15.0	3.1
Other	3.7	2.5	.6
No Response	.0	.6	22.5
Total	100	100	100

Table 12

Distribution of Respondents According to the Occupational
Categories of Individuals They Socialized With

Occupational Category	Percentage Distribution of Respondents According to the Occupational Category Socialized With:		
	Most Frequently	Second Most Frequently	Third Most Frequently
Tradesman	6.9	6.9	5.6
Professional	35.0	18.8	15.6
Technician	6.2	14.4	10.0
Sales	2.5	6.2	6.2
Housewife	4.4	5.6	5.6
Business Office (Management)	8.1	8.1	7.5
Business Office (Clerical)	6.9	8.1	10.0
Skilled Labor	3.7	5.6	10.0
Unskilled Labor	3.7	3.1	.6
Student	13.7	10.0	13.1
Farming	.0	5.0	6.9
Armed Forces	5.6	2.5	1.2
Private Business	2.5	5.6	7.5
Other	.6	.0	.0
Total	100	100	100

Distribution of Respondents According to Their Perception of the Level of Education of Those Individuals They Socialized With

Respondents were asked to indicate if they felt the level of education of the person they socialized with most frequently was lower than their own level of education, about the same, or higher. From the total number of respondents, 46.9 percent indicated the level of education of the person they most frequently socialized with was higher than their own; 40 percent reported it was about the same as theirs; and, 13.1 percent felt it was lower than their own.

Distribution of Respondents According to the Number of Years Since Their Last Regular School Attendance

There was a wide range in the number of years between the termination of the respondents' regular schooling and enrolment in university. Table 13 indicates there was no predominant clustering.

Distribution of Respondents According to Their Age at the Time of Regular School Termination

Most respondents indicated they left school between the ages of sixteen and nineteen. Six individuals (representing 3.6 percent of the total number of respondents) reported quitting school after the age of twenty-one had been reached. It is apparent that this group considered their most recent school attendance as being part of their 'regular' schooling. A misinterpretation of the question is apparent (see Appendix B, page 11). Table 14 gives a detailed distribution of the respondents according to their age at the time of regular school termination.

Table 13

Distribution of Respondents According to the Number of
Years Since the Last Regular School Attendance

Number of Years Since Last Regular Attendance	Number of Respondents	Percentage Distribution of Respondents
1	2	1.2
3	1	.6
5	10	6.2
6	13	8.1
7	13	8.1
8	10	6.2
9	11	6.9
10	8	5.0
11	7	4.4
12	4	2.5
13	7	4.4
14	6	3.7
15	4	2.5
16	8	5.0
17	6	3.7
18	5	3.1
19	4	2.5
20	7	4.4
21	5	3.1
22	3	1.9
23	3	1.9
24	1	.6
25	7	4.4
26	3	1.9
27	4	2.5
28	1	.6
29	2	1.2
30	1	.6
31	1	.6
32	1	.6
35	2	1.2
Total	160	100

Table 14

Distribution of Respondents According to Their Age
at the Time of School Termination

Age in Years	Number of Respondents	Percentage Distribution of Respondents
12	1	.6
14	3	1.9
15	10	6.2
16	27	16.9
17	43	26.9
18	47	29.4
19	18	11.2
20	5	3.1
21	1	.6
22	2	1.2
23	1	.6
29	1	.6
31	1	.6
Total	160	100

Distribution of Respondents According to the Level of Education of Their Parents and Their Spouse

Respondents were asked to report the level of education of both parents. Not all respondents were able to give this information because: a) some respondents had only one parent, b) some respondents were unable to convert European grades to their western equivalents, and c) post-secondary education/training proved difficult to assess in terms of years.

The regular elementary/secondary educational level of the respondents' mothers and fathers was generally at least grade eight or higher. At least 18 percent of the respondents indicated their father had completed grade twelve. About 22 percent of the respondents indicated their mother had completed grade twelve.

Respondents were requested to report the level of education of their spouse. Nearly 22 percent indicated the question was not applicable to them because they were single, separated, widowed or divorced. Some individuals in the separated, widowed, and divorced categories did however, indicate the educational level of their spouse. The largest group of respondents (41.3 percent) reported that their spouse had completed grade twelve.

Respondents were asked to indicate the level of education/training completed by both parents and their spouse. Only "formal" educational or training activities offered by recognized institutions were to be considered in establishing the educational/training level. From the total number of respondents, 25 percent reported their mothers held credit for some post-secondary education/training and 32.8 percent indicated their father held credit at this level.

Nearly 60 percent of all the respondents indicated that they were either not married or their spouse had completed no post-secondary education/training. However, 40.5 percent of the total number of respondents reported their spouse held credit for some post-secondary education/training. About 59 percent of all married respondents reported that their spouse held credit for some post-secondary education/training.

Table 15 and Table 16 indicate the distribution of respondents according to the level of education/training of their parents and their spouse.

Distribution of Respondents: Income Factors

Respondents were asked to indicate their gross income for the year prior to entering university. Approximately 46 percent reported their earnings were less than four thousand dollars during that period. Slightly over 48 percent indicated their earnings were greater than four thousand but less than ten thousand dollars. Only 4.9 percent of the respondents indicated gross earnings greater than ten thousand dollars. Table 17 shows the percentage distribution of respondents according to their gross annual income.

Respondents were asked to indicate the gross annual income of the major wage earner in their parental family for the year prior to university entrance. Slightly over 19 percent did not complete this question because: a) the parent was deceased, b) the information was not known, and c) such information was felt to be confidential. Only 17.5 percent of the respondents indicated their

Table 15

Distribution of Respondents According to the Level of
Elementary and Secondary Education of Their
Parents and Their Spouse

Grade Level	Percentage Distribution of Respondents According to the Level of Education of Their:		
	Mother	Father	Spouse
1	-	-	-
2	.6	-	-
3	.6	3.7	-
4	2.5	5.0	-
5	1.3	.6	-
6	3.2	6.2	.6
7	3.2	2.5	.6
8	22.2	23.1	3.1
9	15.8	11.2	5.0
10	10.8	13.1	6.2
11	9.5	9.4	13.7
12	22.8	18.1	41.3
13	4.4	5.6	6.9
No Response	3.2	1.2	22.5
Total	100	100	100

Table 16

Distribution of Respondents According to the Level of
Post-Secondary Education/Training of Their Parents
and Their Spouse

Years of Training Beyond Regular Schooling	Percentage Distribution of Respondents According to the Level of Post- Secondary Training of Their:		
	Mother	Father	Spouse
1	11.9	3.1	4.3
2	7.6	8.8	5.6
3	4.3	6.9	8.2
4	1.2	6.2	12.6
5	-	.6	4.3
6	-	.6	1.8
7	-	5.6	3.7
No Response	75.0	68.2	59.5
Total	100	100	100

parent's annual gross income was under four thousand dollars. Thirty-eight percent reported their parent's annual income as being between four and ten thousand dollars. Twenty-five percent indicated that the gross annual income of the major parental wage earner was greater than ten thousand dollars. Table 17 shows the percentage distribution of respondents according to the gross annual income of the major wage earner in their parental family.

Respondents were asked to indicate the gross annual income of their spouse for the year prior to university entrance. Nearly 32 percent of the respondents indicated the question was not applicable to them because they were single, separated, widowed, or divorced. About 20.6 percent of the respondents reported the gross annual income of their spouse was less than four thousand dollars. Nearly 34 percent indicated their spouse's income was between four and ten thousand dollars per year. Approximately 20 percent reported their spouse's income was greater than ten thousand dollars per year. Table 17 shows the percentage distribution of respondents according to the gross annual income of their spouse.

Distribution of Respondents: Residence Factors

Respondents were asked to indicate whether they lived on a farm, in a city, in a town, or in a village during the majority of their elementary school education. Table 18 shows that slightly more than half the respondents indicated they lived in city areas during that time. Nearly 19 percent reported they had lived on a farm; about 18 percent in towns; and, approximately 11 percent in villages.

Table 17

Distribution of Respondents: Income Factors

Gross Annual Income in Dollars	Percentage Distribution of Respondents According to:		
	Respondent's Income	Parental Income	Spouse's Income
0 - 2,000	31.3	10.6	13.7
2,001 - 4,000	15.0	6.9	6.9
4,001 - 6,000	19.4	13.7	15.6
6,001 - 8,000	18.8	16.2	9.4
8,001 - 10,000	10.0	8.1	8.7
10,001 - 12,000	3.1	6.2	5.0
12,001 - 14,000	.6	6.9	3.1
14,001 - 16,000	.6	4.4	2.5
16,001 - 18,000	-	1.9	1.2
Over 18,000	.6	5.6	3.1
No Response	.6	19.5	30.6
Total	100	100	100

Respondents were asked to indicate whether they lived on a farm, in a city, in a town, or in a village during the majority of their secondary school education. Table 18 shows that 59.4 percent lived in a city; 16.9 percent lived in a town; 14.4 percent lived on a farm; and, 9.4 percent lived in a village.

Respondents were asked to indicate whether they were living on a farm, in a city, in a town, or in a village at the time they applied to attend university. Table 18 shows that 83.1 percent reported living in a city; 9.4 percent in a town; 5.0 percent in a village; and 2.5 percent on a farm.

Distribution of Respondents According to Special Training

Respondents were asked to indicate if (at the time they applied to attend university) they held recognized credit for any training beyond the highest regular school grade they had completed. From the total number of respondents, 55.6 percent indicated they did hold such credit, and 44.4 percent reported they did not.

Distribution of Respondents According to Club Membership

Respondents were asked to indicate if they belonged to any service clubs at the time they applied to attend university. From the total number of respondents, 25 percent reported they were club members and 75 percent indicated they were not.

Distribution of Respondents According to the Distance of Their Residence From the University Campus

Respondents were asked to indicate the distance from their home to the university campus at the time they applied to attend university. From the total number of respondents, 86.7 percent indicated they

lived within twenty miles of the campus. All but 1.2 percent of the remainder reported that they resided within 380 miles from the campus.

Table 18

Distribution of Respondents: Residence Factors

Description of Residence Type	Percentage Distribution of Respondents According to:		
	Elementary School Residence	Secondary School Residence	Residence at Time of Application
City	51.9	59.4	83.1
Town	18.1	16.9	9.4
Village	11.2	9.4	5.0
Farm	18.8	14.4	2.5
Total	100	100	100

THE CALCULATION OF RESPONDENTS' MEAN GPA'S
FOR SELECTED NONINTELLECTIVE FACTORS

To conduct a thorough analysis of the data, the respondents' mean GPA's were calculated for a selected group of nonintellective factors. The selection of factors was based on: a) the interest of the researcher, and b) the fact that some of the variables (involving the categorization of marital status and occupational categories) are not amenable to the statistical analysis performed on other variables later in this study.

Categories containing only a few subjects cannot be considered to have traits which are generally representative of that category. For the purpose of this section of the study, categories containing fewer than ten subjects were not considered to be representative of that particular group. All categories however, irregardless of the number of respondents contained in them are shown on the following tables. Consequently, the complete distribution of respondents is available.

Respondents' GPA's were calculated for courses that had been completed during the probationary year. Not all the respondents had completed their probationary year. Nearly 34 percent of the 160 respondents had not completed an equivalent of five full courses at the time of this study.

Mean GPA for all the Respondents

The mean GPA for all 160 respondents was 6.3.

Respondents' Mean GPA by the Number of Courses Completed

Only 34.7 percent of the respondents had not completed the five course program designed for non-matriculated adults. A comparison of the mean GPA for this group with the group which had completed the five course program revealed only a very slight difference between the two groups in terms of the mean GPA (see Table 19).

Respondents' Mean GPA According to the Year of Entry to University

The mean GPA for non-matriculants entering university in 1969 and in 1971 was 6.2. The group entering university in 1970 received a mean GPA of 6.3. Table 20 shows the similarity of the mean GPA for the three different years.

Respondents' Mean GPA According to Sex

The mean GPA for females was higher than that of the males (see Table 21). This supports the contention of Schroeder and Sledge (1966) and of Baron (1968) who concluded that females are generally found to be superior to males in achievement at the college level.

Respondents' Mean GPA According to Age

Table 22 shows that those individuals between the ages of twenty-nine and forty-three years (inclusive) scored a higher mean GPA than did the group of individuals who were twenty-eight years of age or younger. These observations tend to conflict with those of Pittenger (1917) and Thornburg (1924) who found a negative, correlation between age and academic achievement at the college level.

Table 19
 Respondents' Mean GPA According to
 the Number of Courses Completed

Number of Completed Courses	Number of Respondents	Mean GPA
Less than 5	54	6.25
5	106	6.26

Table 20
 Respondents' Mean GPA According to Year of Entry to University

Year of Entry to University	Number of Respondents	Mean GPA
1969	24	6.2
1970	64	6.3
1971	72	6.2

Table 21
 Respondents' Mean GPA According to Sex

Sex	Number of Respondents	Mean GPA
Female	84	6.5
Male	76	6.0

However, the fact that the older group of students scored a higher mean GPA than the younger group lends support to Schroeder and Sledge's (1966) contention that the negative correlation between age and achievement is not maintained when the time span between high school graduation and college enrollment is taken into consideration.

Table 22
Respondents' Mean GPA According to Age

Age Category (inclusive)	Number of Respondents	Mean GPA
20 - 23	2	5.5
24 - 28	68	6.0
29 - 33	31	6.5
34 - 38	26	6.5
39 - 43	22	6.4
44 - 48	8	6.0
49 - 53	3	6.8
Total	160	6.3

Respondents' Mean GPA According to Marital Status

Table 23 shows that married non-matriculants tended to achieve better academic grades than did those who were single.

Table 23

Respondents' Mean GPA According to Marital Status

Marital Status	Number of Respondents	Mean GPA
Single	29	5.7
Divorced	9	5.7
Married	110	6.4
Widowed	5	7.3
Separated	7	6.2

Respondents' Mean GPA's According to Special Training Beyond Regular Schooling

Table 24 shows that respondents indicating they held recognized credit for training beyond their regular schooling scored only slightly higher than those who reported no special training.

Table 24

Respondents' Mean GPA According to Special Training

Training Beyond Regular School Education	Number of Respondents	Mean GPA
Yes	89	6.3
No	71	6.2

Respondents' Mean GPA According to Club Membership

Table 25 shows that respondents who reported they were members of a service club scored only slightly higher than did non-members.

Respondents' Mean GPA According to Secondary School Residence Factors

Table 26 shows that non-matriculants who attended secondary schools in non-city areas achieved a higher mean GPA than did the group attending secondary schools in city areas. It is interesting to note that Washburne (1959) found that students from an urban background tend to achieve higher GPA's than do students from a rural background. He did, however, suggest that the positive correlation decreases as populations in urban areas approach 500,000.

Respondents' Mean GPA: Occupational Factors

The mean GPA for each occupational category reported in the study was calculated. Categories containing fewer than ten respondents were not considered to have enough individuals to represent the mean GPA for that category accurately. The mean GPA for all respondents was 6.3 with a standard deviation of 1.0.

Among the occupational categories of the respondents, housewives and professionals scored higher GPA's than the mean for the whole non-matriculated adult group. It is interesting to note that the group which listed its occupation as being "student", scored a lower mean GPA than did the total number of respondents as a whole. Table 27 shows the distribution of the respondents' mean GPA's for the various occupational categories.

Table 25

Respondents' Mean GPA According to Club Membership

Club Membership	Number of Respondents	Mean GPA
Yes	40	6.4
No	120	6.2

Table 26

Respondents' Mean GPA According to Secondary School Residence Factors

Description of Residence During Secondary Schooling	Number of Respondents	Mean GPA
City	95	6.2
Town	27	6.3
Village	15	6.5
Farm	23	6.3

Respondents were asked to indicate the occupation of their spouse. The mean GPA for respondents who reported they were either single or not living with their spouse was lower than the mean GPA for all non-matriculants. The group which reported their spouses' occupation as involving professional duties, scored a higher mean GPA than the total group. Table 27 shows the distribution of the respondents' mean GPA's according to the occupation of their spouse.

Respondents were asked to indicate the occupation of the major wage earner in their parental family. Table 27 shows that those categories containing enough respondents to give an accurate representation of that category, were grouped closely to the mean GPA for the total number of non-matriculated adults.

Respondents' Mean GPA According to the Occupational Categories of Individuals They Socialized With

Respondents were asked to indicate the occupational categories of individuals they socialized with most frequently prior to university enrollment (see Appendix B). Table 28 shows the respondents' mean GPA's according to the occupational categories respondents identified they socialized with most frequently and second most frequently. Generally, the respondents' mean GPA for each occupational category was found to be close to the mean for the whole group. However, the mean GPA for respondents who reported they socialized most frequently with students, was lower than the mean GPA for all non-matriculated adults.

Table 27

Respondents' Mean GPA: Occupational Factors

Occupational Category	Respondent		Respondents' Parent		Respondents' Spouse	
	N	GPA	N	GPA	N	GPA
Tradesman	10	5.7	17	6.3	5	6.7
Professional	12	6.6	15	6.4	36	6.6
Technician	9	6.1	3	7.5	6	6.4
Sales	12	6.2	6	6.9	7	6.7
Housewife	45	6.16	1	5.4	18	6.0
Business Office (Management)	8	6.3	12	6.4	6	6.6
Business Office (Clerical)	27	6.2	6	5.6	14	6.3
Skilled labor	2	6.3	19	6.0	8	6.4
Unskilled labor	4	6.0	19	6.0	5	6.0
Student	16	5.8	--	--	7	6.4
Farming	1	4.4	26	6.3	1	8.3
Armed Forces	6	5.8	7	5.9	5	6.6
Private Business	2	7.0	24	6.4	5	6.3
Other	6	6.3	5	6.9	1	6.3
Not applicable	--	--	--	--	36	5.7
Total	160	6.3	160	6.3	160	6.3

Table 28

Respondents' Mean GPA According to the Occupational Category
of Those Individuals They Socialized With

Occupational Category	Respondent Socialized With:			
	Most Frequently		Second Most Frequently	
	N	Mean	N	Mean
Tradesman	11	6.0	11	6.0
Professional	56	6.4	30	6.3
Technician	10	6.0	23	6.1
Sales	4	7.1	10	6.2
Housewife	7	7.1	9	6.5
Business Office (Management)	13	6.2	13	6.4
Business Office (Clerical)	11	6.3	13	6.5
Skilled labor	6	6.4	9	6.5
Unskilled labor	6	6.4	5	5.2
Student	22	5.6	16	6.0
Farming	--	--	8	6.5
Armed Forces	9	6.1	4	6.0
Private Business	4	6.0	9	6.5
Other	1	6.6	--	--
Total	160	6.3	160	6.3

Chapter 6

THE PREDICTION OF ACADEMIC ACHIEVEMENT FROM NONINTELLECTIVE FACTORS

This chapter is composed of three major divisions. The purpose of the first section is to examine the correlation between certain nonintellective factors and the academic achievement of the non-matriculants. The purpose of the second section is to examine the relative value among a number of nonintellective personal background factors in the prediction of the first year GPA's of the non-matriculants. The purpose of the third section is to examine the relative value among those categories of the CPI in the prediction of the first year GPA's of the non-matriculated adult group.

Only those nonintellective factors meeting the requirements of at least an interval scale and those having a dichotomous classification were used in the aforementioned analyses. Missing data were taken into consideration in the calculation of correlation coefficients.

THE CORRELATION BETWEEN NONINTELLECTIVE BACKGROUND FACTORS AND ACADEMIC ACHIEVEMENT

The following nonintellective background factors of the respondents were selected for correlation analysis:

1. Age
2. Age Category

3. Age when first married
4. Number of children (conceived by respondent)
5. Number of children (in parents family)
6. Respondents' perception of the level of education of the person socialized with most frequently
7. Respondents' perception of the level of education of the person socialized with second most frequently
8. Number of years since last regular school attendance
9. Age at the time of regular school termination
10. Level of elementary/secondary education of the respondents' father
11. Level of post-secondary education/training of the father
12. Level of elementary/secondary education of the respondents' mother
13. Level of post-secondary education/training of the mother
14. Level of elementary/secondary education of respondents' spouse
15. Level of post-secondary education/training of respondents' spouse
16. Special training or skill of respondent (recognized credit)
17. Respondents' annual income
18. Annual income of respondents' parent
19. Annual income of respondents' spouse
20. Distance of respondents' residence from the university
21. Membership in service clubs
22. Expected length of university career (in terms of the length of time respondents expected to persue university studies)

23. Sex

24. Number of courses (either five or less than five)
for which GPA was calculated

Table 29 shows that the correlation between the nonintellective background factors of the respondents in this study and the GPA's they achieved was relatively low. No correlation coefficient was greater than ± 0.263 .

A low correlation between each of the nonintellective variables and the GPA is to be expected. It is recognized that nonintellective factors account for only a portion of the variability in academic achievement. Schroeder and Sledge (1966), Cronbach (1949), and Struit and others (1949) contend that intellective factors are more closely related to academic performance at the college level than are nonintellective factors. Therefore, the correlation between nonintellective factors and academic achievement is low.

Table 29

The Correlation Between the Nonintellective Background Factors
of the Respondents and Their GPA's

Variable	Correlation Coefficient with the GPA
1. Age of respondent	0.167 ^b
2. Age when respondent first married	-0.048
3. Number of children: respondent's	0.182 ^b
4. Number of children: parental family	-0.083
5. Level of education (best friend)	-0.030
6. Level of education (2nd best friend)	0.010
7. Number of years since last regular school attendance	0.162 ^b
8. Respondent's age at time of school termination	-0.028
9. Regular school education of father	0.152 ^c
10. Post-secondary education of father	-0.064
11. Regular school education of mother	0.114
12. Post-secondary education of mother	-0.077
13. Regular school education of spouse	0.042
14. Post-secondary education of spouse	0.185 ^b
15. Respondent's special training	-0.082
16. Respondent's annual income	-0.063
17. Parent's annual income	-0.044
18. Spouse's annual income	-0.090
19. Distance of respondent's residence from university	-0.058
20. Membership in service clubs	0.088
21. Expected length of university career	0.016
22. Sex	0.263 ^a
23. Number of courses for which GPA was taken	0.009

^a Level of significance is .01

^b Level of significance is .05

^c Level of significance is .1

REGRESSION ANALYSIS: PERSONAL BACKGROUND FACTORS

The Principle of Stepwise Regression

Regression analysis based on the forward selection procedure utilizes the principle of inserting variables into the regression model in the order which they contribute to prediction. "The order of insertion is determined by using the partial correlation coefficient as a measure of the importance of variables not yet in the equation" (Draper and Smith, 1966: 169). Stepwise regression analysis involves an improved variation of the forward selection procedure. Draper and Smith (1966: 171) point out the value of the stepwise regression procedure.

The improvements involve the re-examination at every stage of the regression of the variables incorporated into the model in previous stages. A variable which may have been the best single variable to enter at an early stage may, at a later stage, be superfluous because of the relationships between it and other variables now in regression. [The stepwise regression procedure].... provides a judgement on the contribution made by each variable as though it had been the most recent variable entered, irrespective of its actual point of entry into the model. Any variable which provides nonsignificant contribution is removed from the model. This process is continued until no more variables will be admitted to the equation and no more are rejected.

The Analysis of Nonintellective Background Data

A stepwise regression analysis was performed in order to determine the relative value among the respondents' nonintellective background factors in the prediction of their academic achievement. Table 30 shows the order of regression of these nonintellective factors. Only the first four variables were significant at the

.05 level. These included (in order of importance): a) the respondent's sex, b) the annual income of the respondent's spouse, c) the level of post-secondary training of the respondent's mother, and d) the level of secondary education of the respondent's mother.

The twenty-three nonintellective variables selected for analysis made it possible to account for 25.24 percent of the variance in academic performance. Six variables accounted for the majority of the variance. These included (in order of importance):

1. Sex^a
2. Annual income of spouse^b
3. Post secondary training of mother^b
4. Level of school education of mother^a
5. Club membership^a
6. Level of school education of father.^b

None of the remaining nonintellective variables were able to make an individual contribution of greater than 1.0 percent to the total variance in academic performance.

^a Positive correlation

^b Negative correlation

Table 30

Regression Analysis: Respondents' Nonintellective Background Factors

Order of Regression	Probability	Percent of Variance Accounted For
1. Sex	.000776	6.92
2. Annual income of spouse	.005658	11.36
3. Post-secondary training of mother	.023406	14.24
4. Level of school education of mother	.043982	16.46
5. Club membership	.155271	17.56
6. Level of school education of father	.192221	18.47
7. Post-secondary training of father	.125534	19.72
8. Age	.203368	20.58
9. Level of education of best friend	.262441	21.25
10. Number of Children: parent's family	.233448	22.00
11. Annual income of parent	.331379	22.49
12. Number of courses used for calculating GPA.	.403929	22.86
13. Distance of residence from university	.313936	23.40
14. Annual income of respondent	.419986	23.74
15. Age when first married	.463812	24.02
16. Post-secondary training of spouse	.252327	24.72
17. Number of children: respondent's family	.528332	24.93
18. Special training of respondent	.634735	25.05
19. Expected length of university career	.684384	25.14
20. Respondent's age at the time of school termination	.775437	25.18
21. Level of education of second best friend	.829501	25.21
22. Level of school education of spouse	.847277	25.23
23. Number of years since last regular school attendance	.880594	25.24

REGRESSION ANALYSIS: THE CALIFORNIA PSYCHOLOGICAL INVENTORY

The stepwise regression procedure was used to determine the relative value among the scales of the CPI in the prediction of the first year GPA's of non-matriculated adults. Males and females were treated separately because of the differences in male and female norms. The CPI scores of sixty-six females and forty-seven males were examined.

The CPI and Female Achievement: Regression Analysis

The regression analysis of female CPI scores made it possible to account for 31.01 percent of the variance in academic performance. Six CPI scales accounted for the majority of the variance. These included (in order of importance):

1. Intellectual efficiency*
2. Sociability*
3. Communality
4. Femininity
5. Responsibility
6. Sense of Well Being

None of the remaining female CPI scales were able to make an individual contribution of greater than 1.0 percent to the total variance in academic performance. Table 31 shows the complete regression order for all the female CPI scales.

* Level of significance is .05

Table 31

Regression Analysis: Female CPI Scores

Order of Regression: CPI Scales	Probability	Percent of Variance Accounted For
1. Intellectual Efficiency ^a	.002450	13.45
2. Sociability ^a	.057042	18.32
3. Communality ^a	.077192	22.37
4. Femininity ^a	.247573	24.06
5. Responsibility ^a	.293635	25.46
6. Sense of Well Being ^a	.330716	26.65
7. Good Impression ^a	.418454	27.48
8. Self Control ^a	.282828	28.95
9. Socialization ^a	.475413	29.60
10. Capacity for Status ^a	.460742	30.30
11. Dominance ^a	.516732	30.84
12. Achievement via Conformance ^b	.873910	30.87
13. Psychological Mindedness ^a	.877877	30.91
14. Self Acceptance ^a	.898220	30.93
15. Social Presence ^a	.887417	30.96
16. Flexibility ^a	.874166	30.99
17. Achievement via Independence ^a	.928783	31.00
18. Tolerance ^b	.964877	31.01

^a Positive correlation

^b Negative correlation

The CPI and Male Achievement: Regression Analysis

The regression analysis of male CPI scores made it possible to account for 42.25 percent of the variance in academic performance. Nine CPI scales accounted for most of the variance. These included (in order of importance):

1. Communality*
2. Sociability
3. Capacity for Status
4. Social presence
5. Femininity
6. Sense of Well Being
7. Tolerance
8. Psychological Mindedness
9. Socialization

None of the remaining male CPI scales were able to make an individual contribution of greater than 1.0 percent to the total variance in academic performance. Table 32 shows the complete regression order for all the male CPI scales.

CHAPTER SUMMARY

The first section of this chapter examined the correlations between a number of the respondents' nonintellective background factors and their academic achievement. All correlation coefficients were found to be lower than ± 0.263 . Low correlation coefficients were expected because it is recognized that nonintellective factors account for only a portion of the variance in academic performance.

*Level of significance is .05

Table 32

Regression Analysis: Male CPI Scores

Order of Regression:	CPI Scales	Probability Level	Percent of Variance Accounted For
1.	Communality ^a	.005363	15.98
2.	Sociability ^a	.152616	19.84
3.	Capacity for Status ^a	.270915	22.09
4.	Social Presence ^a	.168138	25.58
5.	Femininity ^a	.198297	28.56
6.	Sense of Well Being ^a	.104568	33.17
7.	Tolerance ^a	.204949	35.90
8.	Psychological Mindedness ^a	.186226	38.81
9.	Socialization ^a	.243897	41.05
10.	Achievement via Independence ^a	.641987	41.41
11.	Flexibility ^a	.613476	41.84
12.	Responsibility ^a	.807052	41.94
13.	Self Acceptance ^a	.784465	42.08
14.	Intellectual Efficiency ^a	.827088	42.16
15.	Achievement via Conformance ^a	.901084	42.19
16.	Self Control ^a	.895137	42.23
17.	Dominance ^b	.938875	42.24
18.	Good Impression ^a	.952289	42.25

^a Positive correlation

^b Negative correlation

The second section of this chapter consisted of a stepwise regression analysis of the respondents' nonintellective background factors. The sex of the respondent was found to be the best individual predictor. Females tend to score higher GPA's than do males. It was found that all twenty-three nonintellective background factors were capable of accounting for about 25 percent of the variance in the respondents' academic performance.

The third section of this chapter consisted of a stepwise regression analysis of the respondents' CPI scores. Male and female CPI scores were analysed separately. "Intellectual efficiency" was found to be the best female predictor of academic performance. Gough (1957: 13) reports that high scores of "intellectual efficiency" indicate the subject tends to be seen as "efficient, clear-thinking, capable, intelligent, planful, thorough, ...". Low scores on this scale indicate the subject seen as being "cautious, confused, easy-going, defensive, shallow, unambitious ...". It was found that the eighteen CPI scales of the female group were capable of accounting for about 31 percent of the total amount of variance in academic performance.

Among the male CPI scales, "communality" was found to be the best predictor of academic performance. Gough (1957: 13) indicated that "communality" was used to indicate the degree to which an individual's reactions and responses correspond to the modal pattern established for the inventory. High scores indicate the individual tends to be seen as "dependable, moderate, tactful, reliable, sincere, patient, ...". Low scores indicate the subject tends to be seen as

"impatient, changeable, complicated, imaginative, disorderly,..."

The eighteen male CPI scales were capable of accounting for just over 42 percent of the variance in academic performance.

Chapter 7

SUMMARY, FINDINGS, IMPLICATIONS, AND RECOMMENDATIONS FOR FURTHER STUDY

SUMMARY

The Problem

The study was designed to answer the following questions:

- 1) How did those students enrolled in the Faculty of Education as non-matriculated adults become aware they were eligible to attend university?
- 2) What reasons did non-matriculants give in support of their decision to attend university?
- 3) What reasons did non-matriculants give for not completing regular matriculation requirements?
- 4) What is the relative value among a number of nonintellective background factors in the prediction of the first year academic performance of non-matriculated adults?
- 5) What is the relative value of those categories of the California Psychological Inventory in the prediction of the first year academic performance of non-matriculated adults?

Methodology

The population consisted of 220 students who were presently or previously enrolled with the Faculty of Education as non-matriculated adults. Questionnaires were distributed to the population in order to collect information pertaining to the nonintellective background factors of the recipients. A total of 160 usable questionnaires were returned. Data pertaining to the respondents'

CPI scores were obtained from the Student Counselling Service.

Questionnaire data were examined by means of frequency distributions for each response category. A correlation analysis was performed on questionnaire data which was amenable to meaningful correlation analysis. A stepwise regression program was used to determine, a) the relative value among the nonintellective background factors of the respondents and their first year academic performance, and b) the relative value among scales on the CPI in the prediction of academic performance.

FINDINGS

Reasons for not Completing Regular Matriculation Requirements

About one-fifth of all the respondents indicated they had not completed regular matriculation requirements during their regular secondary school career because of a low academic aptitude. Another one-fifth registered in diploma or business programs which were not acceptable for admittance to university. About a third of the respondents left school prior to graduation to work due to financial shortages. About one-fifth of the remaining respondents mentioned low marks and marriage as reasons for not completing school.

How Respondents Became Aware of the Program for Non-Matriculated Adults

Over one-third of the 160 respondents reported they discovered their eligibility for admittance through their own initiative. Just over one-third learned of the program through friends

or relatives. About one-fifth were referred to the university by counsellors or other officials. Only about one-twentieth of the respondents learned of the program through published materials.

Reasons Supporting the Decision to Attend University

The group of respondents who reported their decision to attend university was based on a desire to change their occupational status accounted for about two-thirds of all the non-matriculants. This group stated that a university education would: a) enable them to change their occupation, b) increase their earning power, and/or c) enhance their job security. The remaining one-third of the non-matriculated adult group reported their decision to attend university was based on a personal (asthetic) interest in education.

Correlations: Respondents' Background Factors and GPA's

The correlation coefficients between the respondents' background factors and their GPA's during the first year of university were relatively low. No correlation coefficient was greater than ± 0.263 . Low correlation coefficients were expected because intellectual factors are more significant in the prediction of academic performance. However, the importance of nonintellectual factors should not be disregarded.

Regression Analysis: Respondents' Background Factors

The twenty-three nonintellectual variables selected for analysis made it possible to account for about 25 percent of the variance in academic performance. Six factors accounted for most of the variance. These included (in order of importance):

1. Sex^a (Females tend to score higher)
2. Annual income of spouse^b
3. Post secondary training of mother^b
4. Level of school education of mother^a
5. Club membership^a (club members tend to score higher)
6. Level of school education of father^b

Regression Analysis: The California Psychological Inventory

Male and female CPI scores were treated separately. The CPI scales of the female group were able to account for about 31 percent of the variance in academic performance. Six CPI scales accounted for most of this variance. These included (in order of importance):

1. Intellectual efficiency^a
2. Sociability^a
3. Communality^a
4. Femininity^a
5. Responsibility^a
6. Sense of Well Being^a

The CPI scales of the male group were able to account for about 42 percent of the variance in academic performance. Nine CPI scales accounted for most of the variance. These included (in order of importance):

1. Communality^a
2. Sociability^a

^a Positive correlation

^b Negative correlation

3. Capacity for Status^a
4. Social Presence^a
5. Femininity^a
6. Sense of Well Being^a
7. Tolerance^b
8. Psychological Mindedness^a
9. Socialization^a

IMPLICATIONS

The findings of this study suggest the following implications.

1. More prospective non-matriculated adults would become aware they are eligible for university admittance if the program was more widely advertised. It would seem logical for the university to seek potential students because of declining enrollments. The mean first year GPA of the respondents in this study indicate that non-matriculants have a high potential for academic success.
2. The knowledge of an applicant's nonintellective background may be a useful tool in the prediction of the potential for academic success among prospective non-matriculants.
3. The California Psychological Inventory may be a useful tool in the prediction of the academic success among applicants to the non-matriculated adult program.

^a Positive correlation

^b Negative correlation

4. The results of this study may be useful in setting up procedures for the admittance and counselling of future non-matriculated adult students at the University of Alberta, Edmonton.

RECOMMENDATIONS FOR FURTHER STUDY

1. Intellectual factors are more valuable than are non-intellectual factors in the prediction of academic success. It would be of great value to examine the non-matriculated adult group in terms of intellectual factors. A more reliable method of admitting non-matriculants may result.

2. Non-matriculated adults are undoubtedly highly motivated. It would be useful to make an examination of the motivation of this group. Perhaps academic achievement could be linked to motivation?

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APPENDICES

APPENDIX A
CORRESPONDENCE

APPENDIX B
QUESTIONNAIRE PACKAGE

To: All Students Presently or Previously
Enrolled in the Faculty of Education
as Non-Matriculated Adult Students

From: Professor W. Pilkington,
Associate Dean of Student Programs and
Records, Faculty of Education

Mr. James E. Clarke
Faculty of Graduate Studies and Research
Department of Educational Administration

All Students admitted to the Faculty of Education as non-matriculated adult students are being requested to participate in a study of that particular student category. Information collected from students during this study will enable university administrators to better understand the adult student in terms of his background and subsequently make future contacts with prospective adult students more meaningful. Information solicited for the purposes of this study is completely confidential.

Thank you for your cooperation.

Name _____
(Surname) (Given names)

Student Identification Number _____

Year and term you entered University
(circle the appropriate information
from each column).

<u>A</u>	<u>B</u>
1969	Summer Session
1970	Evening Credit
1971	Winter Session

Faculty _____

Major _____

The purpose of the major part of this questionnaire is to obtain information pertaining to the personal, social, and economic background of individuals admitted to The Faculty of Education as Non-matriculated Adult Students.

We are primarily interested in conditions as they were at the time you applied to attend University. Therefore, unless otherwise specified answer all questions as you would have on the day you submitted your successful application for admission to this University. Some individuals will have to respond to questions as they would have three years ago, others two years ago, and others one year ago.

Answer questions in the following manner.

EXAMPLE:

What was your age on your last birthday? 29 yrs.

EXAMPLE:

In which age category do you belong (inclusive)?

- | | |
|---------------|------------|
| 1. 54 or over | 5. 34 - 38 |
| 2. 49 - 53 | 6. 29 - 33 |
| 3. 44 - 48 | 7. 24 - 28 |
| 4. 39 - 43 | 8. 20 - 23 |

6

ANSWER the questions on this page as you would have on the day you submitted your (successful) application.

1. What was your age on your last birthday? _____ yrs.

2. In which age category do you belong (inclusive)?

- | | |
|-----------------|------------|
| 1. 54 (or over) | 5. 34 - 38 |
| 2. 49 - 53 | 6. 29 - 33 |
| 3. 44 - 48 | 7. 24 - 28 |
| 4. 39 - 43 | 8. 20 - 23 |
- _____

3. What is your marital status?

- | | | |
|-------------|------------|--------------|
| 1. Single | 3. Married | 5. Separated |
| 2. Divorced | 4. Widowed | |
- _____

4. If you have ever been married, in which age category were you when you first married (inclusive)? (Single respondents answer NA).

- | | |
|------------|---------------|
| 1. 15 - 18 | 5. 31 - 34 |
| 2. 19 - 22 | 6. 35 - 38 |
| 3. 23 - 26 | 7. 39 - 42 |
| 4. 27 - 30 | 8. 43 or over |
- _____

5. At the time you applied to attend university, how many children (both dependent and non-dependent) did you have?

1 2 3 4 5 6 7 8 9 or over

6. At the time you applied to attend university, what was the total number of children in your parent's family? (Include live and deceased children)

1 2 3 4 5 6 7 8 9 or more

ANSWER the questions on this page as you would have on the day you submitted your (successful) application.

Below are listed a number of occupational categories. Read them all and answer questions as directed. If none of the following describe an occupational category you would like to identify, respond 13. Other and specify in the space provided.

- | | |
|------------------------------------|----------------------|
| 1. Tradesman | 8. Skilled labor |
| 2. Professional | 9. Unskilled labor |
| 3. Technician | 10. Student |
| 4. Sales | 11. Farming |
| 5. Housewife | 12. Armed Forces |
| 6. Business Office
(management) | 13. Private business |
| 7. Business Office
(clerical) | 14. Other _____ |

7a. Which of the above best describes your current occupation?

Other _____

7b. Which of the above best describes the occupation that the major wage earner in your parental family has been engaged in for the majority of his/her work career.

Other _____

7c. Which of the above best describes the occupation of your spouse. (Single respondents answer NA)

Other _____

7d. Which of the above best describes the occupational category of those people you socialize with a) most frequently, b) second most frequently, and c) third most frequently. (Make three choices and list the appropriate numbers in the spaces provided. Relatives may be included. Categories may be mentioned more than once.

Socialize with most frequently. _____

Socialize with second most frequently. _____

Socialize with third most frequently. _____

ANSWER the questions on this page as you would have on the day you submitted your (successful) application.

8. Would you say that the people you have identified in question 7d as being the ones you most frequently socialized with at the time of your application had:

Check the
Appropriate Space

- A lower level of education than yourself. _____
About the same level of education as yourself. _____
A higher level of education than yourself. _____

9. Would you say that the people you have identified in question 7d as being the ones you socialized with second most frequently had:

Check the
Appropriate Space

- A lower level of education than yourself. _____
About the same level of education as yourself. _____
A higher level of education than yourself. _____

10. How many years has it been since you last attended a regular (elementary, junior high, senior high) school as a full-time student?

_____yrs.

11. How old were you when you terminated your last regular (elementary, junior high, senior high) full-time school attendance?

_____yrs.

12. What was the highest school grade that your father completed (elementary, secondary levels only)?

0 1 2 3 4 5 6 7 8 9 10 11 12 13

13. How many years of education/training did your father complete in addition to his regular schooling?

0 1 2 3 4 5 6 7 or more

(Specify type of institution attended if applicable)

ANSWER the questions on this page as you would have on the day you submitted your (successful) application.

14. What was the highest school grade that your mother completed (elementary, secondary levels only)?

0 1 2 3 4 5 6 7 8 9 10 11 12 13

15. How many years of formal education/training did your mother complete in addition to her regular school attendance?

0 1 2 3 4 5 6 7 or more

(Specify type of institution attended if applicable)

16. What was the highest school grade that your spouse completed (elementary, secondary levels only)?
(Answer NA if the question does not apply to you)

0 1 2 3 4 5 6 7 8 9 10 11 12 13

17. How many years of formal education/training did your spouse complete beyond regular school attendance?
(Write NA if this question does not apply to you)

0 1 2 3 4 5 6 7 or more

(Specify type of institution attended if applicable)

18. At the time you applied to attend university, did you have any special training (for which you hold recognized credit) beyond the highest regular school grade you had completed?

1. yes

2. no

If yes, please elaborate

Type of Institution

Length of course

ANSWER the questions on this page as you would have on the day you submitted your (successful) application.

Below are listed a number of income categories. These categories express the gross income of a one year earning period. Using these categories, answer the following questions.

- | | |
|------------------------|-------------------------|
| 1. \$ 00. - 2,000. | 7. \$12,001. - 14,000. |
| 2. \$ 2,001. - 4,000. | 8. \$14,001. - 16,000. |
| 3. \$ 4,001. - 6,000. | 9. \$16,001. - 18,000. |
| 4. \$ 6,001. - 8,000. | 10. \$18,001. - 20,000. |
| 5. \$ 8,001. - 10,000. | 11. over \$20,000. |
| 6. \$10,001. - 12,000. | |

19a. Which category best describes your last years gross income?

19b. Which category best describes the last years gross income of your spouse. Single, divorced, widowed, separated marital status should answer NA.

19c. Which category best describes the last years gross income of the major wage earner of your parental family?

20. At the time you applied to attend university, what was the approximate distance in miles from your residence to the University of Alberta, Edmonton?

- | | |
|---------------|--------------------|
| 1. 0 - 20 | 11. 200 - 220 |
| 2. 20 - 40 | 12. 220 - 240 |
| 3. 40 - 60 | 13. 240 - 260 |
| 4. 60 - 80 | 14. 260 - 280 |
| 5. 80 - 100 | 15. 280 - 300 |
| 6. 100 - 120 | 16. 300 - 320 |
| 7. 120 - 140 | 17. 320 - 340 |
| 8. 140 - 160 | 18. 340 - 360 |
| 9. 160 - 180 | 19. 360 - 380 |
| 10. 180 - 200 | 20. over 380 miles |

Please specify

ANSWER the questions on this page as you would have on the day you submitted your (successful) application.

Listed below are descriptions of various types of residence areas.

- | | |
|----------------------|---------|
| 1) City | 2) Town |
| 3) Village or hamlet | 3) Farm |

21a. Which of the above best describes the type of community you lived in for the majority of your elementary school education (grades 1 to 6)?

21b. Which of the above best describes the type of community you lived in for the majority of your secondary school education (grades 7 to 12)?

21c. Which of the above best describes the type of community you lived in at the time you applied to attend university?

22. At the time you applied to attend university, did you belong to any service clubs? (Example: Elks, Women's clubs, Chamber of Commerce)

- 1) yes 2) no

If yes, please list:

ANSWER the questions on this page as you would have on the day you submitted your (successful) application.

23. At the time you submitted your application, which of the following best described the length of time you intended to remain at university?

1. Less than one year (less than five full courses)
2. One year (five full courses)
3. Two years (ten full courses)
4. Three years (fifteen full courses)
5. Four years (twenty full courses)
6. More than four years (over 20 full courses).

24. For what reason(s) did you decide to attend university?
(Please list as many as you can in order of importance).

1.

2.

3.

4.

25. Describe how you first became aware that you might be eligible to enrol at the University of Alberta as a non-matriculated adult student.

26. Why did you not complete university matriculation requirements during your regular school attendance?

Please respond to questions on this page in the present context.

27. Briefly recount what your feelings/reactions were resulting from meetings with the Associate Dean of Student Records and Programs (Professor W. Pilkington). Were there aspects of these meetings that you particularly liked/disliked?

Suggestions:

28. What was your reaction to the Student Counselling Services? Aspects you particularly liked/disliked.

Suggestions:

Please respond to questions on this page in the present context.

29. Is the program you are currently enrolled in directly related to your occupational goal? Briefly explain how it is or is not related.

30. Do you intend to seek a teaching position sometime in the future?

1. yes

2. no

If you have experienced any problems in answering any of the foregoing questions, please outline in the space below.

If you have any questions regarding this study, or comments to make, please elaborate.

Thank You For Your Cooperation!

The Study

The fact that little is known about the background characteristics of adult students makes it difficult for university administrators to assess the success of the program. The purpose of this study is to provide information which will not only assist in such an assessment, but also to develop a better understanding of the adult student as an individual. With an insight into the unique situation of the adult student, future contacts can be made more meaningful.

What we would like to know.

1. The personal, social, and economic background characteristics of adult students.
2. What motivated these individuals to attend university?
3. What were the reactions to admittance procedures?
4. How did these individuals become aware of the adult program?
5. Are there any correlations between various background factors and academic grades received?

Why

To provide insight into the unique situations adult students may be subject to at the time they are admitted to University. To improve admittance procedures on behalf of the adult student.

- - - - -

Re: Attached Student Counselling Release Form

Non-matriculated adult students are being asked to make one psychological test (The California Personality Inventory) available to myself (J. Clarke) for research purposes. Correlations will be made between the scores obtained on this personality inventory and the academic grades received by adult students. The result will indicate whether or not the California Personality Inventory is a valuable tool in the prediction of the academic success of adult students.

Completing the form

Please print or write your name in the first blank and sign (in pen) in the space provided below. Today's date should appear opposite your signature. Other information can be completed by myself.

Questions?? Call Jim Clarke: 432-4912
435-4346

STUDENT COUNSELLING SERVICES

PERMISSION TO COMMUNICATE INFORMATION DERIVED FROM CONSULTATIONS

I, _____, give full permission to
the Student Counselling Services of the University of Alberta to
communicate information derived from the psychological testing
done _____ between the
dates _____ and _____
to (Mr. Mrs. Dr. etc.) _____
address: _____

where it is required.

Date _____ Signed _____

Witness _____

Relation to the person making the
request, if any, _____