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Ph.D. degree in Counseling

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A STUDY ON THE ADAPTATION PROBLEMS OF FOREIGN GRADUATE
STUDENTS AT MICHIGAN STATE UNIVERSITY BASED ON TINTO'S MODEL

By

Qasem Sammour

A DISSERTATION

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ABSTRACT

The present study investigated the initial or pre-enrollment characteristics of foreign graduate students (sex, country of origin, major of study, socioeconomic status, and financial support), and the academic and social integrations of foreign graduate students as they relate to depression and the likelihood of dropping out of school.

The sample included sixty-two foreign graduate students from the Middle East and North Africa (Arab students), Africa (non-Arab students), and East Asia enrolled at Michigan State University during the winter of 1991.

The instruments used for data collection consist of personal data sheets, the Beck Depression Inventory, a questionnaire assessing the self-reported likelihood of dropping out of school, a measure of social integration, and a measure of academic integration.

Descriptive statistics and one-way analysis of variance on country of origin were used. The hypotheses were tested using a multiple regression procedure and correlational analysis. The opinion alpha level for this study was set at .05.

The central findings of the study were as follows:

1. No significant relationship was found between the pre-enrollment characteristics and academic or social integration variables.

2. No significant relationship was found between the pre-enrollment characteristics and the self-reported likelihood of dropping out of school.

3. A significant relationship was found between the pre-enrollment characteristics and depression.

4. A significant negative relationship was found between academic integration and the likelihood of dropping out of school.

5. A significant negative relationship was found between peer-group interaction and the likelihood of dropping out of school.

6. No significant relationship was found between interaction with faculty and the self-reported likelihood of dropping out of school.

7. A significant negative relationship was found between academic integration and depression.

8. A significant negative relationship was found between peer-group interaction and depression.

9. a significant negative relationship was found between faculty interaction and depression.

This dissertation is dedicated to my parents, sisters and brothers for their patience and support, and to the memory of a very special friend Hani Barakat.

May God bless all of them.

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Chapter I

INTRODUCTION

The impact of foreign students on the United States extends far beyond financial considerations of concerned administrators. Foreign students provide an opportunity for American students, faculty, and community members to become acquainted with people from countries which directly or indirectly affect the American economy and way of life (Burn, 1980). Foreign educational exchange also affords the opportunity for communicating American values, beliefs, and cultures to important segments of the world's present and future elites (Hoopes, Pederson, & Renwick, 1978).

The needs, problems, and aspirations of these students require special attention by the host institutions. Since 1960, increasing interest has been expressed about the academic and social-personal adaptation of foreign students in the U.S. (Ahmadian, 1983; Alexander, Workneh, Klein, & Miller, 1976; Boer, 1981, 1984; Higbee, 1961; Hull, 1978; Klineberg, 1979; Mahdavi-Harsini, 1982; Motarassed, 1982; Porter, 1963; Selltiz, Cook, Christ, & Havel, 1963; Spaulding & Flack, 1976).

Statement of the problem

The rapid increase in numbers of foreign students on U.S.

campuses in the 1960s and 1970s, and the fact that large numbers of these individuals have come from non-Western nations, brought the special needs of these individuals to the forefront as well as the challenges facing student personnel workers and counselors. It is apparent that student affairs programs designed to meet needs of U.S. students are often inadequate to meet the needs of students who spend long periods of time in a predominantly alien culture (Wehrly, 1988).

Many studies (e.g., DeArmond, 1983; Dominques, 1970, cited in Wehrly, 1986; Wehrly, 1988) document foreign students' special needs. A high percentage of depression has been found among students in general. Foreign students, in addition to the stress of being students, are confronted by other environmental factors related to the adaptation process within another culture. These factors--such as language barriers, cultural differences, and loneliness--play a major role in creating depressive states among foreign students and causing dissatisfying experiences for them as they are forced to deal with more pressure and demands.

These studies emphasize that the stress experienced by most foreign students is on-going during their time of study in the United States. Meeting the basic needs of food, clothing, shelter, and safety is often stressful because of vast cultural differences between the students' home

countries and the culture of the university community. Homesickness and loneliness are pervasive and depression is common (Wehrly, 1986). Emotional problems tend to occur more frequently for students whose home cultures are vastly different from the United States' culture (DeArmond, 1983; Dominques, 1970, cited in Wehrly, 1986). Separation from the extended family support system to which many foreign students are accustomed can be stressful, especially if the students are unable to build new support systems where they are studying (Wehrly, 1988).

Tinto's Model

Vincent Tinto (1975) articulated a model of retention in higher education. Tinto's model (see Figure I) was developed to understand college dropout and was a modification of Durkheim's theory of suicide, first published in 1897 (cited in Tinto, 1987).

Durkheim (cited in Tinto, 1987) stated that suicide was more likely when individuals are insufficiently integrated into the fabric of society. Dropping out of college, according to Tinto (1987), is analogous to suicide. Students become dissatisfied, discouraged, depressed and consider leaving school when they are insufficiently integrated into the value patterns and social structure of the school. Tinto emphasized that integration was necessary in two domains...academic and social.

Durkheim (cited in Tinto, 1987, p.99) postulated four types of suicide: altruistic, anomic, fatalistic and egotistic. Tinto has used these four types to describe college dropouts. Altruistic departure occurs when students leave college as a form of protest. An anomic departure occurs when there are disruptive forces on the campus that undermine the daily operation of the institution and undercut the normal bonds which tie individuals to it. A fatalistic departure occurs when an individual becomes oppressed under the structure of the institution and cannot tolerate it any longer. Egotistical departure arises when individuals are unable to become integrated into both the intellectual and social fabric of the institution.

Tinto's model considers the many and complex reasons for school departure. Tinto (1975, 1987) begins with the pre-entry attributes of family background, the student's skills and abilities, and prior schooling. These attributes that the student brings to the institution become the base-line for a set of intentions, goals and commitments vis-a-vis the institution.

From there, the model spreads in two directions- academic and social systems. In each system there is a range of experiences: those produced by the institution and those which the student engages in as a function of his /her involvement with the institution. These experiences delineate two levels- academic and social integration, which

Tinto emphasized are critical to long-term success. The social and academic integration lead to the formulation of goals and commitments. External factors or choices (factors not related to the institution) also may play an important role in a student's decision to depart from or stay in the institution. Tinto's model presents an overall picture of the aspects and factors of a student's decision to depart from or stay in the institution. In short, the model asserts that students come to a particular institution with a range of background characteristics (e.g., sex, race, academic ability, secondary school performance, parents' social status) and goal commitments (e.g., highest degree expected, importance of graduating from college). These background characteristics and goal commitments influence not only how the student will perform in college, but also how he or she will interact with, and subsequently become integrated into, an institution's social and academic systems. Tinto (1975) indicates that "Given individual characteristics, prior experiences, and commitments, it is the individual's integration into the academic and social systems of the college that most directly relates to his continuance in that college" [p. 96]. Pascarella and Terenzini (1980) developed a 19-item measure to operationalize the constructs of social and academic integration. Results showed a substantial predictive validity for the measures in 79% of the persisters and 76% of the voluntary leavers in an

independent cross-validation sample.

Since Tinto introduced his model, many research studies have been generated to test its validity.

Terenzini and Pascarella (1977, 1978, 1980, 1982, 1985) have worked together in numerous studies to test the validity of the model. Pascarella and Terenzini (1977a) using a random sample of 1008 freshman students at Syracuse University in an effort to investigate the effects of student-student and student-faculty contacts on voluntary withdrawal from college, found significant differences in social and academic integration between persisters and leavers. Later, in another study, Terenzini and Pascarella (1977b) looked at the academic and social integration factors of Tinto's model and used a random sample of 500 students from Syracuse University. They found significant differences between those who stayed and those who left the university. Similar conclusions can be drawn from other studies (Tinto 1975; Pascarella 1980; Munro 1981; Pascarella & Terenzini 1983).

Terenzini and Pascarella (1978), using the same sample used in the 1977 study, conducted a longitudinal study to investigate the predictive value of pre-college characteristics and the interaction of sex, major field of study, and ethnicity with academic and social integration factors. They found that even though the pre-college attributes are important, they have limited predictive value. Their findings also indicated that some

subpopulations of the university are more susceptible to specific influences of integration than others.

Terenzini and Pascarella (1980) summarized six studies done in the previous five years that investigated Tinto's model, and they concluded that the model has a solid support and the concepts of academic and social integration have been significant in discriminating between those who stayed and those who left the institution.

Pascarella and Terenzini (1980) used a longitudinal study and a random sample of 1905 freshmen drawn from Syracuse University in order to test Tinto's model. They developed a multidimensional instrument to be used in testing the model. Results showed significant support for both the instrument and the model.

Pascarella (1985) investigated the structural and organizational factors of the institution (e.g., type of control, enrollment, student-faculty ratio). The overall sample was 9448 nonminority students attending 100 colleges and universities. He concluded that the institutional factors have few direct impacts on affective student development, and at best, those factors are modest and indirect. They also found that institutions with large enrollment, a high student/faculty ratio, and public control negatively influence student social integration with both faculty and peers.

Other studies have investigated the different aspects of Tinto's model and were supportive of its validity (Steele 1978; Jackson 1978; Tierney 1980; Jensen 1981; Hall 1982; Crouse 1982; Blanc, DeBuhr, & Martin 1983; Getzlaf, Sedlacek, Kearney & Blackwell 1984).

Studies of departure among students of different race and social class have focused almost entirely on black and white students (Kendrick & Thomas 1970; Shaffer 1973; Sedlacek & Webster 1978; Allen 1985; Donovan 1984; Tracey & Sedlacek 1985; Pascarella 1985). The emphasis of this study was in applying Tinto's model to foreign graduate students.

College students must adjust to separation from home and family, independent living, unexpected demand for self-care, expectations for achievement, and competition with others. If this is true for American students, then how is the experience of adaptation characterized in foreign college students?

Every foreign student encounters potential inhibitors and stimulators affecting his/her interaction with the host society. Language problems often cause a foreign student to shy away from mixing with local people. Opportunities to practice English also stimulate interaction. The host country's culture may have characteristics which offend the visitor, and he/she may decide not to be part of that culture. A heavy academic workload can drastically reduce the time available to a foreign student to develop local

relationships (Heikinheimo & Shute 1986).

According to Heikinheimo and Shute (1986), foreign students find language skills, academic issues, and social interaction the most difficult adjustment problems. Alexander, Klein, Workneh, and Miller (1981) researched the adaptation of foreign students from third world countries to life on U.S. campuses. They found that most third world students continued to experience stress and feelings of vulnerability during their time of study in the United States.

Depression has been identified as the most common psychological disorder in the United States. Depression on college campuses is also a common disorder (Bosse et al. 1975; Hammen 1980; Kashani & Priesmeyer 1983). It has been suggested that depression may contribute to the rate of dropouts among the college student population (Nicholi 1967), and to the suicide rate (Bailey & Hernandez 1982; Fouts & Norrie 1977).

There has been an increased interest in the cross-cultural study of depression as evidenced by a number of studies (Wehrly 1988; Aneshensel, Clark & Frerichs 1983; Jablensky, Sartorius, Gulbinat & Ernberg 1981; Marsella, Kinzie & Gordon 1973; Murphy, Witkower & Chance 1967; Tanka- Matsumi & Marsella 1976; Zung 1969, 1972). Wehrly (1988), through his own work and reviews of numerous other studies, found that homesickness and loneliness were pervasive and

depression was common among foreign students.

Foreign students are a high-risk group, and they encounter a series of high-risk situations that produce emotional stress as well as academic and social difficulties. Identifying the variables related to foreign students' likelihood of dropping out of school and of suffering from situational depression may enable counselors and university administrators to develop support systems tailored to the special needs of these students.

Purpose of the Study

The previous studies based on Tinto's model have been conducted with undergraduate American students: Blacks and Whites. This study has applied the model to investigate some aspects without testing the entire model with a sample of foreign graduate students. Additionally, this study has used depression as another dependent variable. The commitment variables have been excluded from the study in the belief that enrolling in college implies an initial commitment toward completing a degree, and in addition to that, the measure of likelihood of dropping out is an indication of the later commitments the students have.

In particular, the present study investigated the initial or pre-enrollment characteristics of foreign graduate students (sex, ethnic origin, major of study, academic

aptitude, socioeconomic status, and financial support), and the academic and social integration of foreign graduate students as they relate to depression and the likelihood of dropping out of school.

Chapter II

REVIEW OF LITERATURE

This review of the literature covers recent studies in the following areas: (a) studies on the adaptation problems faced by foreign students in U.S.A. colleges and universities, (b) studies on depression among college students, (c) studies on depression among foreign students, and (d) studies using Tinto's model.

Adaptation Problems of Foreign Students

It has been established that foreign students' adjustment is positively related to contact and interaction with Americans (Hull, 1978; Klinberg & Hull, 1979; Selltiz et al., 1963). Selltiz et al. (1963) studied the effects of various factors on the development of social relations. The following factors were found to have an effect on social relations: individual characteristics, opportunities for association provided by environment, and orientation experiences. Among the individual characteristics, the strongest relation was found to be national-cultural background. Europeans scored higher than non-Europeans on interaction with Americans.

Hull (1978) proposed what he called a "modified culture contact hypothesis" to explain foreign students' satisfaction with their sojourn. He points out "contact with Americans may be a key mechanism in coping as a foreign student" (p. 126).

Klinberg and Hull (1979) conducted a cross-national study which reported data obtained in 11 countries: Brazil, Canada, The Federal Republic of Germany, France, Hong Kong, India, Iran, Japan, Kenya, the United Kingdom, and the United States. The investigators argued that, "the more contact there is with local people, the more satisfying the overall sojourn experience is likely to be" (p. 53). The results of this study showed that those students most likely to be dissatisfied overall with regard to other than academic aspects of their sojourn, "were the most likely to have been studying in Iran, followed by France, then India, and then Canada" (pp. 63 & 66). Those students most likely to be dissatisfied overall with regard to their studies were studying in Japan, France, Iran, the Federal Republic of Germany, or Canada.

Jarrahi-Zadeh and Eichman (1970) found that Indian and Arab students at the University of North Carolina exhibited a positive relationship between adaptation and interaction with American faculty members and graduate students. Valdes (1979) found that Latin American students at the University of Houston associate with other Latin American International

students rather than U.S. students. In the Valdes (1979) study, the best predictors of social involvement were: years in the U.S., father's occupation, and marital status. Latin American students who most associated with American students were mostly married, had better educated fathers, and had been in the U.S. longer than Latin Americans associating with their fellow nationals.

Demographic Variables

Studies indicate that the adjustment of international students to the U.S. is also affected by several variables such as age, sex, marital status, nationality, academic level, and length of stay in the U.S.

Collins (1977) sought to determine the problems of international students at Howard University as perceived by the students themselves. The investigator attempted to ascertain whether sex, college major, place of birth, marital status, or class were related to the number and kind of problems reported. Collins (1977) found that single international students, as a group face more problems than married, separated, or divorced students. It was also found that male international students experienced significantly more problems than their female counterparts. There was not a significant difference in the kind of problems among freshman, sophomore, junior, senior, and graduate students.

In addition, the number of problems was not significantly different among international students in various majors. It is also noticed that the sample population reported problems in home and family, finances, living conditions, and employment. Asian students showed the largest number of problems. Caribbean students indicated significantly fewer problems than students from Africa, Asia, and the Near East.

Payind (1977) studied the nature and extent of academic, social and personal problems of Iranian and Afghan students in the U.S. The study also examined the relationships between student's adjustment and length of stay, country of origin, and financial consideration. The findings indicate no significant relationship between the students' country of origin and their adjustment problems. Females were found to have more adjustment problems than males. Married students have fewer problems than single students. It was also found that students in the humanities and social sciences have more adjustment problems than those students in sciences and engineering majors. In addition, students who have financial support experienced fewer adjustment problems. Saleh (1980) studied the adjustment problems of Arab students at selected Texas Universities. Also, his study investigated the relationship between adjustment, sex, marital status, and academic level. Contrary to Payind's (1977) findings, Saleh (1980) found no significant differences at the .05 level of significance between males and females, married and single,

and graduate and undergraduate Arab students.

Der Yeghiayan (1981) found that Armenian students at selected universities in southern California had academic, social and personal problems, but also found no difference between males and females in their adjustment problems.

Akpan-Iquot (1981) found no significant relationships between marital status, academic major, country of origin and problems of foreign students at selected Oklahoma colleges and universities.

Yeung (1981) attempted to identify the specific adjustment problems anticipated by foreign students prior to departure from their home countries and those actually experienced while they are in the U.S.A. These data were also analyzed in relation to sex, marital status, age, GPA, academic level, residence, and incidence of pre- and post- arrival orientation. No relationship was found. However, Yeung (1981) said that "there is a tendency for students who are female, married, in the graduate level, academically below average, living off campus, less than 25 years of age, and having no pre- or post- arrival orientation to experience greater discrepancies between problems as anticipated and experienced" (p. 4622-A).

Surdam (1981) studied the adaptation of foreign students at the University of Wyoming and various demographic variables. Students' adaptation was not significantly related to sex, GPA, age or marital status. At George

Washington University, MacMillen (1982) found a significant relationship between sex, academic level and academic major with self-perceived problems of foreign students. (Country of origin and marital status were found to be strongly related to intensity of problems. Married students reported more problems than did unmarried students.)

The studies discussed above present contradictory results in regards to the relationship between adjustment and demographic variables such as sex, marital status, academic level and major of study.

Other studies also investigated the adjustment problems of foreign students at U.S.A. campuses (Stafford et al., 1980; Carter & Sedlacek, 1985; Boyer & Sedlacek, 1986; Boyer & Sedlacek, 1987; Schram & Lauver, 1988; Cunningham & Kang, 1990).

Stafford et al. (1980) asked 747 foreign students to complete a questionnaire to obtain information about their adjustment so that special services could be developed for them. Homesickness was their greatest area of concern, as well as housing, social relationships, the English language, and finances.

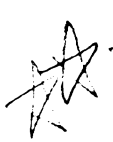
Carter & Sedlacek (1985) conducted a study to determine the needs, interests, and goals of undergraduate foreign students at the University of Maryland, College Park. Entering undergraduate foreign students (N=56) from Asia, Latin America, Africa, and the Mideast completed a

questionnaire concerning their backgrounds, goals, perceptions, and attitudes regarding their education, vocational plans, social issues, and self-perceptions. The results showed that students tended to be supported by family members, both economically and psychologically. Students reported feeling that meeting U.S. students and learning to think independently would be difficult adjustments. Even though they indicated financial difficulties, they reported also high hopes and expectations of success.

Boyer and Sedlacek (1986) administered a questionnaire to 164 incoming foreign students at the University of Maryland at College Park. Students responded to items pertaining to study habits, academic background, educational objectives, college expectations, work plans, and personal orientation, as well as to questions concerning attitudes toward seeking counseling. The results indicated that foreign students took their education quite seriously, valuing it both for the intrinsic reward of academic pursuit and for career-related reasons. They anticipated that the hardest part of adjusting to college would be meeting financial expenses. In a later study by the same authors, (Boyer & Sedlacek, 1987), the effectiveness of noncognitive variables in predicting college grades and persistence for foreign students over eight semesters was studied at the University of Maryland, College Park. The Noncognitive Questionnaire (NCQ), an

instrument designed to assess eight noncognitive variables found to be related to academic success for U.S. minority students, was administered to 248 freshmen foreign students. The noncognitive dimensions on the NCQ are: self-confidence, realistic self-appraisal especially regarding academic abilities, community service, knowledge in a field, leadership experiences related to cultural background, preference for long-range goals, understanding of racism, and having a strong support person. Different noncognitive variables were significant predictors of college grade point average (GPA) and persistence across the eight semesters. The finding suggests that GPA is related to individual variables while persistence may require an additional adjustment to environmental variables.

Schram and Lauver (1988) examined alienation of foreign students from university life among 600 foreign students. They found that alienation could be predicted on the basis of social contact, graduate status, and geographical home region. Results suggest that foreign students at high risk for alienation are non-European undergraduates who spend little time with others.

 Cunningham and Kang (1990) investigated adjustment problems of 197 Korean students at four universities (three urban and one non-urban) in Texas during the 1989-1990 academic year. Findings showed that students seemed to adjust relatively well to American higher education, but

were still struggling to adjust in financial, communication/language, and social/cultural areas. Female students seemed to perceive the verbally related adjustment problems as more difficult than male students. The variables of age, academic classification, religion, and family status did not seem to be significant adjustment factors.

Depression Among College Students

Depression, the most common psychological disorder in the U.S., has been investigated by numerous researchers. Schwab, Bown, Holzer, and Sokolof(1968) examined various studies and found that 4 to 24 percent of the population was estimated to experience depression. The typical depressed person, according to various epidemiological studies, appears to be female, married, and between the ages of 26 and 40 (Blaser, Gehring & Poeldinger, 1969; Schwab et al., 1968; Weissman & Paykel, 1974).

The frequency of depression among college students is also a common disorder (Bossee et al., 1975; Hammen, 1980; Kashani & Priesmeyer, 1983). It has been suggested that depression may affect the rate of dropouts (Nicholi, 1967). Bossee et al. (1975), studied the frequency of depression among Washington University students. The best estimate of frequency was obtained by finding the proportion of students who reported having experienced a depressive episode during

their freshman year. The sophomores were selected because they had been exposed to potentially depression-arousing experiences during an entire academic year, and because they suffer less attrition than those in upper classes. Of those responding, 75% reported having experienced at least mild depression in the preceding year. Of the respondents, 41% reported moderate to severe depression. Of this 41%, 58% did not consult a helping facility due to the belief that one should be self-sufficient. The students who used helping facilities rated them neutral in effectiveness.

In another study by Kashani and Priesmeyer (1983), of 100 students who used a college counseling service, 31 sought job counseling and 61 sought help in coping with and adjusting to college life and other situational stresses. Thirty-five students were diagnosed as depressed, regardless of their reason for coming to the center, and 90% of the freshmen as opposed to 38% of the seniors came to the center for psychiatric reasons. Freshmen were significantly more likely to have problems in concentration and appetite disturbances and to report feelings of worthlessness and suicidal ideation. Results illustrate the pressures that college freshmen face in terms of separation from home and family, independent living, and academic completion. The lack of sex differences in the incidence of depression was possibly due to the similar demands faced by both sexes in the college setting.

Cole and Milstead (1989), compared Coyne's interpersonal model of depression to Lewinsohn's social skill model of depression in a large sample of college students (N= 202). Contrary to both Coyne and Lewinsohn, no evidence of a direct relation between social support and depression was found. Those results suggest social skills deficits are a consequence, not a cause of depression.

Tomlinson and Cope (1988), examined characteristics of black student users of university counseling services enrolled at a predominantly white state university. They found that black women predominated, reporting a high incidence of depression and loneliness, whereas black men tended to underutilize services.

Deykin et al (1987) interviewed 434 college students. Results revealed that prevalence of major depressive disorder (MDD) was 6.8%; of alcohol abuse 8.2%; and of substance abuse 9.4%. Alcohol and substance abuse were associated with MDD. Substance abuse was associated with other psychiatric diagnosis as well. MDD usually preceded alcohol or substance abuse, suggesting that self-medication was a causal factor.

Lopez et al (1986), investigated the influence of subjects' sex on the relation between psychological separation (independence of parents), college adjustment, and depression. Results indicated that men were significantly more independent of parents than were women,

but their hypothesis that this independence would be positively correlated with college adjustment was not supported. Contrary to expectation, correlations between these two variables were negative for both men and women. The negative correlation between depression and psychological separation that was hypothesized was found only for women.

Bryson and Pilon (1984), carried out four experiments in which male and female undergraduates (N= 384) completed the Beck Depression Inventory under conditions ranging from absolute anonymity to a face-to-face interview. Results showed no evidence that depression is more severe or common in females. Responses appeared essentially unaffected by method of administration. Nagelberg et al (1983), used the Beck Depression Inventory (BDI) to assess depression rates in college students (N= 729). He examined relative proportions of depressed students among infirmity users, counseling center users, and class attenders, compared according to gender. Results showed that all female and male infirmity users were at risk for depression.

Depression Among Foreign Students

Marion (1986), reviewed research conducted since the 1950's on the academic, social and psychological adjustment of foreign students in U.S. colleges and universities. Academic achievement of foreign students is found to be

similar to that of American students and is related to English language ability. Studies indicate that students' cultural adjustment follows a U-shaped curve. Difficulties in adjusting may manifest in social withdrawal, sexual and sleep disturbances, depression, academic problems, and loss of self-esteem. These students used a variety of mechanisms for coping. Association primarily with co-nationals is a frequent mechanism. Academic achievement affects, and is affected by, student attitudes and adjustment.

A research study of 245 students from Korea, Arab countries, and Nigeria was conducted by Cho (1988) to determine whether there are significant relationships between any of the three measures (anxiety, depression, and somatic complaints) among international college students. Variables analyzed in the study included English language proficiency; social interaction with Americans, co-nationals, and other internationals; health; financial condition; nationality; length of stay; and marital status. Extensive use of questionnaires and follow-up phone calls revealed significant relationships between both anxiety and depression and English language proficiency and social interaction with Americans. Duration of stay was also found to be significant in determining overall stress level; this was not found to be significantly different for marital status. In regard to anxiety, the two best predictive variables were found to be social interactions with

Americans and health conditions; it was concluded that frequent social interaction with Americans predicts a lower stress level, and that a poor health condition is suggestive of a high stress level. It was also found that stress level becomes higher during the first and third year of stay in this country.

why ?

In a longitudinal study, Ebbin and Blankenship (1986), compared foreign with domestic students in regards to health care. They reviewed 96,804 diagnoses from student visits to a university student health center during a 3-year period. The diagnoses coded for foreign students were compared to those for domestic students. Results indicate that foreign students use the health center more frequently than domestic students. There was an increased use of the health center by foreign students for psychiatric problems such as anxiety, depression, insomnia, and sexual dysfunction. It is suggested that the increased visits by foreign students may be partly related to a need for interaction because of loneliness, depression, and stress; to a sense of stigma on the part of some foreign students around seeking emotional support from the student counseling center; and to special HC programs designed to orient foreign students.

Studies using Tinto Model

Terenzini and Pascarella (1977) assessed the validity of

Tinto's (1975) theory of student attrition, which asserts that withdrawal relates most directly to students' integration in the social and to the academic systems of an institution, and examined the relative importance of these two dimensions. Subjects were 60 Syracuse University freshmen who returned for the sophomore year and 60 who chose not to return. Multivariate analyses of variance indicated that both social and academic integration were significantly and independently related to voluntary freshman attrition. Discriminant analysis suggested that when the two variable sets were combined, the joint contributions of the two sets were approximately equal, tending to support Tinto's assertion of the concomitant importance of these two constructs. The findings also suggest that informal interaction with faculty may play a more important role than presently specified by the model in the socialization of students, contributing to their integration into both the academic and social systems of the institutions. Later in the same year, Pascarella and Terenzini (1977), investigated the pattern of relationships between different types of informal student contact with faculty and persistence during the freshman year. A longitudinal study of 1008 incoming students at a large private university completed the Activities Index (a personality measure), and data on Scholastic Aptitude Test (SAT) scores were obtained from student records. Midway

through the second semester and during the next fall semester, the AI and questionnaires about the amount of contact with faculty were administered; data were obtained from 344 students, of whom 55 were determined to be voluntary leavers at the end of their freshman year. Results show that informal student-faculty contact was a significant predictor of college persistence. After controlling for sex, academic aptitude and personality attributes, frequency of informal interaction with faculty still discriminated significantly between subjects who voluntarily withdrew at the end of the freshman year and those who persisted into their sophomore year.

To test Tinto's theory of college attrition, Terenzini and Pascarella (1978) conducted a longitudinal study involving 766 students enrolled in Syracuse University in September 1975 to determine whether freshmen persisters and voluntary dropouts differed on certain attitudinal and behavioral measures of academic and social integration once selected background characteristics had been statistically controlled. Multiple regression was used to assess the relative importance of four sets of variables: pre-college characteristics; level of academic integration; level of social integration; and interactions between sex, major, and racial or ethnic origins, and each of the social and academic integration variables. The results indicate that pre-college traits are not significantly related to

attrition, but that the other three sets are, with the interactions explaining the largest proportion of the variance, followed by the academic and social integration sets in that order. These findings suggest that Tinto's theory may be conceptually useful in studying attrition, but also that certain revisions in the model may be needed.

Pascarella and Terenzini (1978) investigated the hypothesized association between informal student-faculty interaction and academic achievement, while controlling the influence of the pre-enrollment characteristics. Usable data were obtained from 498 university students, including: (a) the Activities Index, (b) a detailed questionnaire to assess background and college expectations, (c) Scholastic Aptitude Test scores, (d) size of high school class and student's rank, (e) freshman year GPA, and (f) two questionnaires administered during and after the freshman year to measure the quantity of student-faculty interaction related to academic program, careers, intellectual or course matters, campus issues, personal counseling, and socializing. Multiple regression analysis showed that interactions accounted for 62% of the variance between predicted and actual GPA and that only those related to careers and intellectual or course matters were significant. Results are in accord with the hypotheses, but the correlational nature of the study precludes definite proof of causality.

Terenzini et al (1983) replicated an earlier study of the

predictive validity of Tinto's theory of college student attrition by using an independent sample of students from another university. Tinto conceived of the attrition /retention process as a series of sociopsychological interactions between the characteristics students bring with them to college and their experiences while enrolled. Usable responses to a questionnaire were received from 1105 college freshmen at summer orientation; after the first academic year 723 were assessed. Attention was directed to the major constructs of Tinto's model: background characteristics, including family background; individual attributes; pre-college schooling; academic aspiration; commitment to staying at the college; and academic and social integration. With some few exceptions, the results are consistent with those of the earlier work and with theoretical expectations based on the model.

Stage and Richardson (1985) investigated the relationships among motivational orientations of entering university freshmen, their involvement in social and academic systems, and persistence/attrition at Arizona State University. Also considered was the applicability of Tinto's theory, which suggests that if background and commitments are equal, the greater the integration of the individual into the system, the greater the commitment will be to the institution and to the goal of college completion. From the random sample of 185 first-year students who were mailed

surveys, usable responses were received from 124. The survey combined Boshier's Educational Participation Scales, Pascarella and Terenzini's Institutional Integration Scales, and 21 questions about students' background and participation in college activities. Findings based on factor analysis and LISREL analysis included the following: both academic and social integration directly influenced persistence, while satisfaction had almost no effect on persistence. The two background characteristics that had the greatest effect on persistence were mother's and father's level of education.

A causal model based on Tinto's work was employed by Pascarella et al (1986) to explain the long-term persistence/withdrawal of students who began their postsecondary education in two-year institutions. Persistence was defined as completing the bachelor's degree within a 9-year period, or actively working toward the degree as of 1980. The model was estimated on a national sample of 825 students who initially enrolled in 85 two-year institutions in fall 1971. Although there were differences in the factors associated with persistence for men and women, the results tend to confirm the importance of person-environment fit as a salient influence on degree persistence/completion. Measures of academic and social integration had the most consistent pattern of positive direct effects, while much of the influence of student

pre-college traits was indirect. That is, the student's experience of college may have an important, unique influence on persistence beyond that of differences in family background, secondary school experiences, individual attributes, and initial commitments on college entry. Subsequent institutional commitment had a significantly stronger positive influence on persistence for men than for women. Conversely, level of secondary school social involvement was a significantly more important positive influence on persistence for women than for men.

Allen (1986) tested Pascarella's reconceptualization of the Tinto model of the persistence/withdrawal process for use in a non-residential institution. Subjects were 372 college freshmen who had attended freshmen orientation and had completed an opinionnaire both during orientation and at the end of their first year in a medium-sized, urban commuter institution. Path analysis and estimates of direct and indirect causal effects were used to test the predictive validity of the model. Results tended to confirm the importance of applying a causal model cautiously even within the same types of institutions. Results further suggest that there is considerable between-institution variance within the broad category of commuter colleges. The influence of key concepts such as social integration and institutional commitment were found to vary significantly from the reconceptualized version of Tinto's model. The degree of fit

between the individual student and the institutional environment was largely predicated upon the magnitude of relationship between academic integration and institutional commitment. Other things being equal, the greater the individual's level of academic integration, the greater his or her subsequent commitment to the institution. The combination of academic integration and subsequent commitment was seen as having a positive influence on persistence.

Stage (1987), in a longitudinal study, examined the associations among background characteristics, commitment levels, institutional involvements, and persistence for male and female university students. Data were collected from college records and surveys completed by 316 university freshmen at the beginning of, and 10 weeks into, the 1984 fall semester and at the beginning of the 1985 spring semester. Logistic regression analysis in conjunction with LISREL was used to analyze the data. Within LISREL, an initial model was specified using paths described in Tinto's model of college student attrition. Tinto's model consists of six key constructs linked causally: background characteristics, initial commitments, academic and social integration, later commitment, and persistence. Results reinforced Tinto's conjecture that background effects do influence persistence directly. Initial levels of institutional and goal commitments strongly influenced later

levels of the same variables. For both males and females, academic and social integration positively influenced persistence. For females, academic integration, social integration and later institutional commitment were significant predictors of persistence. For males, only academic integration and social integration significantly and directly influenced persistence.

Beltzer (1985) tested the Tinto (1975) model on a group of General Educational Development (GED) examinees and on a comparison group of traditional high school graduates from a single public community college. The sample consisted of 198 GED students and 201 traditional high school graduates who entered Queensborough Community College, City University of New York in the fall 1981 semester. The instrument used was one developed by Pascarella and Terenzini (1980) that was designed to tap the major dimensions of the Tinto model--specifically, levels of academic integration, social integration, institutional commitment, and goal commitment. Results supported the predictive validity of the Tinto model in identifying potential dropouts among GED examinees as well as for the comparison group. It was found that for GED examinees, first-year grade point average was the most important predictor of persistence; institutional commitment was the most important predictor for the traditional high school graduates; and the two groups were not statistically different in the rate of persistence.

Pascarella (1985) employed data from the 1971-1980 Cooperative Institutional Research Program surveys on 5,577 students (2,096 White men, 2,641 White women, 362 Black men, and 478 Black women) initially enrolling in 352 4-year colleges and universities to investigate racial differences in the factors associated with bachelor's degree completion. Tinto's (1975) theoretical model guided the selection of 19 predictor variables, which account for 15-20% of the variance in attaining the bachelor's degree. For all race and sex subgroups, measures of the collegiate experience (e.g. number of institutions attended, academic and social integration, subsequent institutional commitment /satisfaction) had the strongest and most consistently positive regression weights with degree completion. Only a few significant race or sex differences were found in the factors associated with degree completion. For Black men, the number of institutions attended and the size of the institution initially attended had significantly stronger negative associations with degree attainment than they did for White men. Institutional commitment/satisfaction had positive regression weights for all subsamples, but the magnitude was greater for men of both races than it was for women. Within samples, academic integration was a stronger predictor of degree attainment than social integration for Whites but not for Blacks. Findings suggest similarity in the Tinto model constructs influencing bachelor's degree

completion for Black and White students.

Summary and Hypotheses

Foreign students have all of the stressors that most college students have, but are also faced with language and cultural differences that pose additional problems for them in completing degree programs in this country. In his work on persistence in college, Tinto has postulated that preexisting family and personal characteristics interact with school experiences to create a level of social and academic integration that is related to personal satisfaction and persistence in school. His theory has had some empirical support, but has not been tested with graduate students or with foreign students. Tinto indicated that depression was one of the outcomes of lack of social or academic integration, but this relationship has not been tested until the study reported here.

The studies based on the Tinto model have indicated a relationship between integration variables (social and academic) and attrition. However, the results of the relationship between the background variables and attrition have not been conclusive .

Previous studies based on Tinto's model have been conducted with undergraduate, American students: Blacks and Whites. The study presented here has applied the model to

investigate some aspects of it with a sample of foreign graduate students. Furthermore, this study has added depression as another dependent variable.

Specifically, the present study investigated the pre-enrollment characteristics of foreign graduate students (sex, country of origin, major field of study, academic aptitude, socioeconomic status, and financial support), and the academic and social integration of these students, and the relationships of these variables to depression and the likelihood of dropping out of school.

This study attempted to answer these questions based on the Tinto model:

1. Is there any relationship between the pre-enrollment characteristics of foreign graduate students at MSU and their social and academic integration?

2. Is there a relationship between the pre-enrollment characteristics of foreign graduate students and the likelihood of their dropping out of the school?

3. Is there a relationship between the pre-enrollment characteristics of foreign graduate students and depression?

4. Is there a relationship between the social and academic integration of foreign graduate students and the likelihood of dropping out of school?

5. Is there a relationship between the social and academic integration of foreign graduate students and depression?

The present study used multiple regression procedure and

correlational analysis to analyze the data. This procedure investigated the relationships among the following variables: (1) the initial or pre-enrollment characteristics of foreign graduate students, (2) the social and academical integration of foreign graduate students and, (3) the self-reported likelihood of dropping out of college and depression as dependent variables.

The following hypotheses were tested:

1. There will be a relationship between the pre-enrollment characteristics and other variables in this study, specifically:

a. There will be a relationship between the pre-enrollment characteristics and academic integration.

b. There will be a relationship between the pre-enrollment characteristics and social integration (interaction with peer group).

c. There will be a relationship between the pre-enrollment characteristics and social integration (interaction with faculty).

d. There will be a relationship between the pre-enrollment characteristics and the self-reported likelihood of dropping out of school.

e. There will be a relationship between the pre-enrollment characteristics and depression.

2. There will be an inverse relationship between academic

integration and the likelihood of dropping out of the school.

3. There will be an inverse relationship between social integration (interaction with peers) and the likelihood of dropping out of school.

4. There will be an inverse relationship between social integration (interaction with faculty) and the likelihood of dropping out of school.

5. There will be an inverse relationship between academic integration and depression.

6. There will be an inverse relationship between social integration (interaction with peers) and depression.

7. There will be an inverse relationship between social integration (interaction with faculty) and depression.

Chapter III

METHODOLOGY

This chapter presents the method of investigation employed in this study. It includes a discussion of subjects, instruments, data collection procedures, and data analysis.

The hypotheses that were the focus of this study involved the expected relationships among pre-enrollment characteristics, social and academic integration, and depression, and the self-reported likelihood of dropping out of school as suggested by the Tinto model. The model was tested on a sample of foreign graduate students selected from three geographical areas: East-Asia, Middle-East & North Africa (Arab students), and Africa (non Arabs).

Research participants

A random sample of 112 graduate foreign students: (36 Arab students, 31 African {non Arabs} students, and 45 East-Asian students) attending Michigan State University in the academic year of 1990-1991 were selected by computer. Each of these students was contacted by mail and asked to participate in the study. A total of 62 students or 55.4 per cent of the initial sample agreed to be subjects in this

study and completed a personal data sheet and four other instruments (the Beck Depression Inventory, a questionnaire assessing the self-reported likelihood of dropping out of school, a measure of social integration, and a measure of academic integration). The personal data sheet requested information on the subject's country of origin, sex, marital status, major of study, academic aptitude, socio-economic status, father's education, mother's education, and major source of income. The demographic characteristics of the sample are shown in Table 3.1.

TABLE 3.1

Demographic characteristics of the sample

N=62					
<u>VARIABLE</u>	<u>*</u>	<u>E-Asia</u>	<u>M-East</u>	<u>Africa</u>	
Subsample					
composition	3	21	21	17	62
<u>SEX</u>	3				
Male		15	19	10	44
Female		6	2	7	15
<u>MARITAL STATUS</u>	4				
Unmarried		6	14	3	23
Married		14	7	14	35
<u>ACADEMIC MAJOR</u>	1				
Agriculture		1	3	6	10

Arts & Letters	3	2	2	7
Business	1	1	1	3
Communication	2	0	1	3
Education	3	1	4	8
Engineering	3	12	0	15
Ecol & Medicine	8	0	2	10
Nat. & Soc Science	2	1	2	5
<u>PARENTS' SES</u>	5			
Upper	7	7	5	19
Middle	11	12	7	30
Lower	2	1	5	8
<u>MOTHER'S EDUCATION</u>	10			
No schooling	4	9	7	20
High school	11	7	3	21
BA/BS	2	3	5	10
Graduate Degree	1	0	0	1
<u>FATHER'S EDUCATION</u>	9			
No schooling	1	4	6	11
High school	12	10	4	26
BA/BS	3	5	4	12
Graduate Degree	2	0	2	4
<u>SOURCE OF INCOME</u>	6			
Scholarship	0	9	3	12
Parents or saving	6	3	1	10
Work	15	8	11	34

*= missing values

Instrumentation

Five instruments were used for data collection in this study. These instruments were: personal data form, Beck Depression Inventory (BDI), a measure of social integration, a measure of academic integration, and a self-report instrument of the likelihood of dropping out of school.

Personal Data Form. A personal data form was developed by the researcher to obtain descriptive information of the students' initial or pre-enrollment characteristics, including sex, marital status, country of origin, major of study, academic aptitude, socioeconomic status, father's education, mother's education, and major source of income (See Appendix B).

Beck Depression Inventory (BDI). The BDI consists of 21 items and takes approximately 15-20 minutes to complete. Each item is rated on a 4-point scale, ranging from 0 to 3. The maximum total score is 63. The scores from 0 to 9 are considered within a normal range or asymptomatic; scores of 10 to 18 indicate mild-moderate depression; scores of 19 to 29 indicate moderate-severe depression; and scores of 30 to 63 indicate extremely severe depression. The stability of

this instrument for psychiatric patients ranged from .48 to .86, whereas the test-retest correlations for nine studies of nonpsychiatric patients ranged from .60 to .90 (Beck & Steer, 1987).

Moran & Lambert (1983, cited in Beck et al., 1987) compared the BDI's content against DSM-III Affective Disorder criteria and concluded that the BDI reflected only six of the nine DSM-III criteria well. Two DSM-III criteria were only partially addressed, and one was not included.

The BDI was found to discriminate between Dysthymic and Major Depressive Disorders (Beck et al., 1987).

Beck et al. (1974, cited in Beck et al., 1987) found that scores on the Hopelessness Scale (HS) were positively related to the BDI scores in all six normative samples.

Meta-analysis found a mean correlation of .72 between clinical ratings of depression and the BDI for psychiatric patients, and a mean correlation of .60 between clinical ratings of depression and BDI scores for nonpsychiatric subjects (Beck et al., 1987).

Previous research with the BDI (Bumberry et al., 1978; Oliver et al., 1979) provides evidence that this measure is valid and reliable in the detection of depression in college students. Bumberry et al (1978) selected a sample of 56 students at both undergraduate and graduate levels from both Washington University and St. Louis University. The interrater reliability of psychiatric estimate was .62, and

the correlation coefficient between the inventory and the psychiatric rating was .77. Oliver et al (1979) randomly selected a sample of 222 undergraduate and graduate students at St. Louis University and the 3-week test-retest reliability was .78.

Measure of Social and Academic Integration. A instrument developed by Pascarella and Terenzini (1980) to assess the social and academic integration constructs was used. This measure consists of the following two scales: Social Integration and Academic Integration. The items for each scale are scored on a five-point, Likert-type scale, where 5= strongly agree and 1= strongly disagree.

The social integration scale measures interaction with peers and with faculty. The measure yields a peer interaction score based on seven items and a faculty interaction score based on five items as well as a combined score for a measure of social integration. Pascarella and Terenzini reported an alpha reliability of .84 for the measure of peer integration and a .83 for the measure of faculty interaction. An alpha reliability of .47 for the measure of peer integration and .88 for the measure of faculty integration was found with the sample under the present study.

The social integration measure (Interaction with Faculty scale) is a five-item scale of student interaction and

familiarity with faculty and staff. Alpha reliability was .83. Simple correlation was .35, and partial correlation .34 with the criterion variable.

The Self-Reported Likelihood of Dropping Out of School.

A self-report instrument was developed consisting of statements assessing the subjects' likelihood of dropping out of school (e.g. asking subjects if they thought, or are thinking, of dropping out of school, thinking of moving to another school, changing their major of study, etc.) (See Appendix C.) The subjects responded to each statement on a five-point scale, ranging from "strongly agree" (1) to "strongly disagree" (5).

In an initial pilot test of this instrument, eight statements were given to five foreign graduate students to obtain their responses. Reliability in this test administration as determined by the alpha coefficient was .56. This reliability was considered to be too low and the measure was revised.

Four more items were added to the measure to bring the total to twelve. A second pilot test of the instrument with five foreign graduate students resulted in an alpha coefficient of .76, which was regarded as sufficiently reliable for this study.

Procedures for Collecting Data

A stratified random sample was selected through the Registrar's office by generating a random list of subjects according to the country code in student records. The number of subjects in each subsample and their percentage in the subgroup from which they were drawn were as follow: 36 Arab graduate students (25%), 31 African graduate students (25%), and 45 East Asian graduate students (5%).

After obtaining permission to conduct the study on human subjects from the Human Research Committee at MSU, the instruments were sent to each student in the sample by mail with a stamped return envelope and a cover letter (See Appendix A) explaining the voluntary nature of their participation and asking the subjects to complete and return the following materials:

1. A Personal Data Form.
2. Beck Depression Inventory (BDI).
3. Academic and Social Integration Assessments.
4. Self-Reported Likelihood of Dropping Out of School.

After two weeks, a postcard was sent to all subjects thanking those who had returned the completed materials and reminding those who had not yet replied. Two weeks later a follow-up letter was sent to the subjects who did not return the questionnaire, again asking them to comply. Sixty-two

subjects finally agreed to participate and returned the completed materials.

Analysis Procedures

The scores of the four measures were determined for each subject. The data was coded according to country of origin, marital status, sex, socio-economic status, father's education, mother's education, major of study, and major source of income.

Descriptive statistics and a one-way analysis of variance on country of origin were used. The first hypothesis was tested using a multiple regression procedure, and for hypotheses two through seven correlations were computed. The a priori alpha level for this study was set at .05.

The original plan had been to include aptitude test scores and grade-point averages as part of the pre-enrollment data. However, these scores were excluded from the analysis because of many missing values. There were 36 aptitude test scores (GRE/GMAT) missing, and 15 grade-point averages missing in the data collected.

Chapter IV

Analysis of the Data

The purpose of this study was to investigate the pre-enrollment characteristics (sex, country of origin, major of study, academic aptitude, socioeconomic status and financial support), and the academic and social integration of foreign graduate students at MSU as those variables relate to depression and the self-reported likelihood of dropping out of school based on the Tinto Model.

This chapter presents a description of the results of the test of the seven major hypotheses and the subhypotheses, followed by an overall description of the manner in which the variables related to one another. The academic aptitude variables have been excluded from the analysis because of many missing values. Thirty-six Graduate Record Exam scores were missing as were 15 pre-enrollment grade point averages and 15 graduate grade point averages.

Tests of Hypotheses

To test the first major hypothesis (the power of the pre-existing variables of sex, marital status, country of origin, major of study, socioeconomic status, and financial support to predict social and academic integration,

depression, and the likelihood of dropping out of school), a multiple regression procedure was used. For each of the subhypotheses, the null hypothesis of no linear regression was tested using the F ratio: $F = \text{Mean square linear regression} / \text{Mean square deviations and error}$. An alpha level of .05 was used in the test of each hypothesis.

For hypotheses two through seven which predicted relationships between the variables measured in the questionnaires completed by subjects, correlations were computed.

In addition, descriptive statistics have been used, and analysis of variance was used to test for differences on all measures that could be attributed to country of origin.

Hypotheses:

There will be a relationship between the pre-enrollment characteristics and other variables in this study, specifically:

- a. There will be a relationship between academic integration and the pre-enrollment characteristics.
- b. There will be a relationship between the pre-enrollment characteristics and social integration (interaction with peer group).
- c. There will be a relationship between the pre-enrollment characteristics and social interaction (interaction with faculty).

d. There will be a relationship between the pre-enrollment characteristics and the self-reported likelihood of dropping out of school.

e. There will be a relationship between the pre-enrollment characteristics and depression.

Results of Testing Hypothesis 1:

Hypothesis 1 predicted a relationship between pre-enrollment characteristics and each of the variables assessed in the questionnaires filled out by subjects.

a. No significant relationship was found between pre-enrollment characteristics and academic integrations significance ($F=1.06$, $p=.43$ and $R\text{-square}=42.1\%$). (See Table 4.1).

Table 4.1

Analysis of Variance on the Relationship Between Pre-
Enrollment Characteristics and Academic Integration

Source	DF	SS	MS	F	P
Regression	20	294.09	14.70	1.06	.43
Error	29	403.69	13.92		
Total	49	697.78			

A simple regression using only the marital status as an independent variable, showed a relationship between academic integration and marital status. Married students in this sample were more academically integrated than nonmarried students ($F=5.70$, $p=.02$), but only 9.1% of the variance (R-square) is explained. (see Table 4.2).

Table 4.2

Analysis of Variance on the Relationship between Marital
Status and Academic Integration

Source	DF	SS	MS	F	P
Regression	1	75.62	75.62	5.70	.02
Error	57	756.18	13.27		
Total	58	831.80			

b. No significant relationship was found between the pre-enrollment characteristics and interaction with peer group ($F=.82$, $p=.67$ and $R\text{-Square}=35.4\%$). (See Table 4.3)

Table 4.3

Analysis of Variance on the Relationship Between Pre-Enrollment Characteristics and Interaction with Peer Group

Source	DF	SS	MS	F	P
Regression	20	278.65	13.93	.82	.67
Error	30	509.39	16.98		
Total	50	788.04			

c. No overall significant relationship was found between pre-enrollment characteristics and interaction with faculty ($F=1.66$, $P=.099$ and $R\text{-square}=51.8\%$). (See Table 4.4) Simple regression analyses found relationships between marital status and faculty interaction ($p=.005$); between engineering and social science majors in interaction with faculty ($p=.01$); between income from scholarship vs. parents' support and saving in interaction with faculty ($p=.006$); and income from work vs. parents' support and savings and faculty interaction ($p=.007$). Married students in this sample interacted more with faculty than did nonmarried students, and engineering students interacted with faculty more than did social science students. Furthermore, students

who worked interact more with faculty than students who do not work. (see Table 4.4).

Table 4.4

Analysis of Variance on the Relationship Between Pre-enrollment Characteristics and Interaction with Faculty

Source	DF	SS	MS	F	P
Regression	20	533.26	26.66	1.66	.099
Error	31	496.80	16.03		
Total	51	1030.06			

d. No significant relationship was found between the pre-enrollment characteristics and the self-reported likelihood of dropping out of school ($F=.67$, $p=.82$ and $R\text{-square}=31.7\%$). (See Table 4.5)

Table 4.5

Analysis of Variance on the Relationship Between Pre-
Enrollment Characteristics and the Likelihood of Dropping
Out of School

Source	DF	SS	MS	F	P
Regression	20	546.42	27.32	.67	.82
Error	29	1178.16	40.63		
Total	49	1724.58			

e. A significant relationship was found between the pre-enrollment characteristics and depression ($F=2.30$, $p=.018$, and $R\text{-square}= 59.7$). (See Table 4.6) A significant relationship was found between marital status and depression ($p=.04$). Married students had lower scores on the depression measure than nonmarried students. A significant relationship was also found between source of income and depression ($p=.02$). Students who worked scored lower on the depression measure than students who received their financial support from parents or personal saving.

Table 4.6

Analysis of Variance on the Relationship Between Pre-
Enrollment Characteristics and Depression

Source	DF	SS	MS	F	P
Regression	20	1122.18	56.11	2.30	.018
Error	31	756.506	24.40		
Total	51	1878.67			

Results of Testing Hypothesis 2:

It was hypothesized that there would be an inverse relationship between academic integration and the likelihood of dropping out of school. A significant negative correlation was found between these two variables and the pre-enrollment characteristics ($r = -.34$, $p < .01$).

Students who were satisfied with their academic progress, found their courses interesting, and experienced a stimulating intellectual environment at the university were less likely to be considering dropping out of school

Results of Testing Hypothesis 3:

It was hypothesized that there would be an inverse relationship between social integration (interaction with peers) and the likelihood of dropping out of school. A significant negative correlation was found between peer group interaction and the self-reported likelihood of dropping out of school ($r = -.46$, $p < .01$).

Students who reported positive social relationships with fellow students were less likely to be contemplating withdrawal from school.

Results of Testing Hypothesis 4:

It was hypothesized that there would be an inverse relationship between social integration (interaction with faculty) and the likelihood of dropping out of school. No significant relationship has been found between these two variables ($r = -.23$, $p < .05$).

While the observed relationship was in the direction hypothesized, the correlation coefficient did not reach significance. A correlation of .25 was necessary to be significant at the .05 level.

Results of Testing Hypothesis 5:

An inverse relationship between academic integration and depression was hypothesized, and the results support this hypothesis. A significant negative correlation was found

between academic integration and depression ($r=-.38$, $p<.01$). High academic integration scores were associated with low depression scores.

Results of Testing Hypothesis 6:

An inverse relationship between social integration (interaction with peers) and depression was hypothesized, and the results support this hypothesis. A significant negative correlation was found between these two variables ($r=-.30$, $p<.05$).

Students who had positive social interactions with other students indicated less depression.

Results of Testing Hypothesis 7:

It was hypothesized that there would be an inverse relationship between social integration (interaction with faculty) and depression. A significant negative correlation was found between interaction with faculty and depression ($r=-.38$, $p<.01$). The higher the student interaction with faculty, the lower was the depression they reported.

Additional Analyses

A one-way anova was run on each of the major variables in regards to country of origin. The results of the analysis of variance showed no significant differences among the three

subsamples, East Asians, Arabs and Africans (non-Arabs), on any of the variables under study. (See Tables 4.7, 4.8, 4.9, and 4.10).

Table 4.7

Analysis of Variance on Peer-Group Interaction and Country of Origin

Source	DF	SS	MS	F	P
Country	2	32.6	16.3	1.11	0.336
Error	55	806.2	14.7		
Total	57	838.8			

Table 4.8

Analysis of Variance on Faculty Interaction and Country of Origin

Source	DF	SS	MS	F	P
Country	2	0.6	0.3	0.01	0.336
Error	55	1295.83	23.6		
Total	57	1296.4			

Table 4.9

Analysis of Variance on Academic Integration and Country of Origin

Source	DF	SS	MS	F	P
Country	2	4.1	2.0	0.14	.869
Error	53	770.9	14.5		
Total	55	775.0			

Table 4.10

Analysis of Variance on Depression and Country of Origin

Source	DF	SS	MS	F	P
Country	2	13.32	6.7	0.18	0.835
Error	56	2059.62	36.8		
Total	58	2072.9			

In addition, the means and standard deviations of the main variables are shown below (Table 4.11).

Table 4.11

The Mean and Standard deviation of the Main Variables

	N	MEAN	Stdev
<hr/>			
BDI	61	5.6	6.0
Dropout	60	42.4	5.7
Peer intg	61	19.1	3.9
Fac intg	61	13.3	4.8
Acad intg	59	16.6	3.8

Summary

The results of the multiple regression analysis failed to support the hypotheses of a relationship between the pre-enrollment characteristics tested and the social and academic integration variables.

Simple regression analysis showed that in this sample of subjects, married students were more academically integrated and apt to socialize with the faculty than were nonmarried students, and engineering students interacted with faculty more than did students in social science. Simple regression also revealed that students who worked interacted more with faculty than did students who received their financial support from their parents or savings. Although the above

relationships were found to be significant at the .05 level when tested using simple regressions, they are not taken to be indicative of population parameters as they were not hypothesized and were the result of multiple tests that were not independent.

A relationship was found between pre-enrollment characteristics and depression. Specifically, a relationship was found between marital status and depression. Married students had lower mean scores on the depression measure than did nonmarried students. Also, students who work have lower mean scores on the depression measure than students who receive their financial support from parents or personal savings.

No relationship was found between the self-reported likelihood of dropping out of school and the pre-enrollment characteristics.

Academic integration, satisfaction with courses, education progress, and the intellectual environment was found to be inversely related to depression and the likelihood of dropping out of school.

Social integration with peers was inversely related to depression and the likelihood of dropping out of school.

A significant inverse relationship was found between social integration with faculty and depression, but the inverse relationship between social integration with faculty and the likelihood of dropping out of school failed to reach

the .05 level of significance.

Chapter V

Discussion

This chapter contains a brief summary of the study and the findings it produced. Conclusions and recommendations are made based on these findings. Various observations and reflections are shared as the ramifications of the findings and conclusions are considered.

The primary purpose of the study was to investigate the pre-enrollment characteristics of foreign graduate students (sex, country of origin, major field of study, academic aptitude, socioeconomic status, and financial support), and the academic and social integration of these foreign graduate students as they relate to depression and the self-reported likelihood of dropping out of school based on Tinto model. Tinto had hypothesized that persistence in school was related to students' academic and social integration in the school setting, which, in turn, was dependent upon the students' pre-enrollment characteristics.

Seven major hypotheses were formulated describing the expected relationships among pre-enrollment variables, measures of academic and social integration and feelings of depression and satisfaction with school. Data were collected from a stratified random sample of foreign

graduate students attending Michigan State University. From the original sample of 112 students, responses were obtained from 62 of them after repeated mailings. Missing information in three data sets made the usable sample 59 students composed as follows: 21 East Asians, 21 Middle Eastern Arabs, and 17 Non-Arab Africans.

The assessment of depression was measured using the Beck Depression Inventory (BDI) scale. The academic and social integrations were measured by scales developed by Pascarella and Terenzini (1980). The self-reported likelihood of dropping out of school was measured by a scale developed and pilot tested by this researcher. A personal data sheet, also developed for this study, which served to gather demographic data from the subjects studied. Data were collected by mailing the instruments to subjects with a request for them to complete and return them. Followup mailings were used to increase the response rate.

The statistical analysis chosen to test the hypotheses in this study consists of multiple regression to test the first hypothesis and correlational analysis to test hypotheses two through seven. The a priori alpha level for this study was set at .05.

Overall, the results of the study were consistent with the literature reviewed or supportive of the Tinto model. This study supports the applicability of the Tinto model to foreign graduate students.

Hypothesis 1:

A relationship between the pre-enrollment characteristics of students and measures of academic and social integration, likelihood of dropping out of school, and depression was hypothesized.

No statistically significant relationship was found between the pre-enrollment characteristics and the academic or social integration variables using multiple regression analysis. The failure to get a larger return from the original sample may have prevented the finding of a significant relationship. In subsequent simple regression analyses, a relationship was found between marital status and social integration (interaction with faculty), and between major field of study and interaction with faculty. Married students interacted more with faculty than did nonmarried students. Engineering students interacted more with faculty than did any other majors. In addition, a relationship was found between source of income and interaction with faculty. The students who worked interacted more with faculty than other students who did not. These findings are only descriptive of the sample and are not to be generalized beyond the sample as they were not hypothesized and were the results of multiple non-independent tests.

The failure to find a relationship between the pre-enrollment characteristics and academic and social

integration is congruent with the early work of Terenzini and Pascarella (1978), whose findings suggested that even though the pre-college characteristics are important, they have limited predictive value. However, a later study by Terenzini et al (1983) found support for the predictive validity of Tinto's theory of college student attrition, which postulates a relationship between the pre-enrollment characteristics and social and academic integration variables. The failure of the present study to support this hypothesized relationship may be due to the particular pre-enrollment characteristics chosen or to the poor return of data from subjects. The inability to obtain academic aptitude measures as a pre-enrollment characteristic was unfortunate, because logic would lead one to believe this variable to be among the most important student characteristics in relationship to academic integration.

No significant relationship was found between the pre-enrollment characteristics and the self-reported likelihood of dropping out of school. The failure to find this hypothesized relationship is consistent with results of a study by Terenzini and Pascarella (1978), which indicated that pre-college traits are not significantly related to attrition. Stage and Richardson (1985), however, did find such a relationship. They concluded that the two background characteristics that had the greatest effect on persistence in college were mother's and father's level of education.

Pascarella et al (1986) concluded from their own study that much of the influence of student pre-college traits was indirect. That is, the student's experience of college may have an important, unique influence on persistence beyond that of differences in background characteristics and individual attributes on college entry. These findings are inconsistent with the assertion of Stage (1987) that background characteristics do influence persistence directly. The present study can shed no light on this subject.

A significant relationship was found between the pre-enrollment characteristics and depression. Married students scored lower on the depression measure than nonmarried students. Furthermore, students who worked scored lower on the depression measure than students who receive their financial support from either parents or personal savings. These findings are consistent with those of Collins (1977) who found that single foreign students, as a group, face more problems than married, separated, or divorced students. But he noted that all students in the sample reported some problems in home and family and finances, living conditions, and employment. Payind (1977), also found married students have fewer problems than single students.

This present study also found that students in the humanities and social sciences have more adjustment problems

than those students in science and engineering. A possible explanation for this might be that the social sciences rely more on ability in English, and the sciences rely more on ability in math, and foreign students are more disadvantaged in the English language.

As might be expected, students who had financial support experienced fewer adjustment problems.

Contrary to Payind (1977), and the present study, Saleh (1980) found no significant differences between males and females, married and single, graduate and undergraduate Arab students. In addition, Der Yeghiayan(1980), Akpan-Iquot(1981), Surdam(1981), and Yeung(1981) reported findings which were consistent with Saleh's (1980) conclusions, while MacMillen's (1982) results were consistent with the present study findings.

Hypotheses 2 & 3:

A significant negative relationship was found between academic integration and the likelihood of dropping out of school. Also, a significant negative correlation was found between peer-group interaction and the likelihood of dropping out of school. These findings are in accord with the hypothesized relationships and consistent with the results of previous studies (Allen, 1986; Beltzer, 1985; Pascarella, 1985; Pascarella et al, 1983, 1986; Pascarella & Terenzini, 1977, 1978, 1980 ; Stage, 1987; Stage &

Richardson, 1985).

These results imply that, the more academically integrated the students are, and the more they interact with peers, the less likely it is that they consider dropping out of school.

Hypothesis 4:

No significant relationship was found between interaction with faculty and the self-reported likelihood of dropping out of school. These findings are inconsistent with the results of the previous studies (Pascarella & Terenzini, 1978; Stage, 1987; Stage & Richardson, 1985; Terenzini et al, 1983; Terenzini & Pascarella, 1977).

Hypothesis 5:

A significant negative relationship was found between academic integration and depression. These findings are consistent with the previous studies in regards to the relationship between depression and academic problems (Bossee et al., 1975; Cho, 1988; Kashani & Priesmeyer, 1983; Marion, 1986; Nicholi, 1967) and present partial support for Tinto's model.

The mean of the BDI score in this study was 5.62, and is generally interpreted as normal rather than depressed. Furthermore, the explained variance of the relationship between depression and academic integration is very small

(R-square = 14%). Consequently, these findings should be looked at with caution.

Hypotheses 6 & 7:

A significant negative correlation was found between peer-group interaction and depression, and between faculty interaction and depression. These findings are consistent with previous findings, which indicated that satisfaction and adjustment of foreign students are positively related to contact and interaction with Americans (Hull, 1978; Jarrahi-Zadeh & Eichman, 1970; Klinberg & Hull, 1979; Selltiz et al., 1963).

With some few exceptions, the results are in accord with the hypotheses, and generally support the validity of Tinto's model of college student attrition. The findings of the present study served to complement and extend the body of research that concerns itself with the role of the Tinto model in explaining student attrition. The results of the present study further indicate that depressed subjects are less likely to be integrated academically and socially. Furthermore, the results indicate that depressed students are likely to be nonmarried and receive their financial support from either parents or personal savings. In contrast, no significant relationship was found between interaction with faculty and the self-reported likelihood of dropping out of school, which is inconsistent with the

results of the previous studies. There are several possible reasons that the results of hypothesis four appears to differ from the results of previous research based on the Tinto model. First, the sample used in this study differs from the kind of samples used in the previous studies. This study employed a sample of graduate foreign students unlike the previous studies which used samples of American undergraduates. The graduate students generally are older than undergraduates. Their age and their choice to pursue higher level of education may reflect more maturity and apparantly more experience with the school's pressure and study demands than is true of undergraduate students. That is, social integration may play a more critical role for poorly prepared students than for those who enter with better preparation. In addition, some of them have established themselves and have jobs waiting for them back in their country. Even though they might encounter the same problems as the undergraduates, they appear less likely to give up easily and decide to leave the school.

Second, the measure of dropout used in this study, differs from the measures of dropout used in the previous studies. Most of the previous studies were longitudinal in nature and compared the actual dropouts and nondropouts in regards to other variables, while the current study was correlational in nature and used an attitude measure that measures students' likelihood of dropping out of school. Also, it

might be that the measure itself, although it demonstrated moderately high reliability, was not reliable enough to detect a relationship if indeed one existed.

Third, whereas the previously cited research focused on larger sample sizes, the sample size in this study (62 subjects) was very small compared to the samples used in the previous studies. If the sample size were larger, the variance of the scores on the measures used might have increased the ability to detect relationships among variables.

In addition, no relationship was found between the pre-enrollment characteristics and any of the integration variables. Furthermore, no relationship was found between the pre-enrollment characteristics and the self-reported likelihood of dropping out of school. These findings are consistent with some of the previous studies, but inconsistent with other research findings. The contradictory results across these studies could be explained, in part, within the broad context of differences across institutional types, which were mentioned in the second chapter of this study. It seems to be that larger institutions provide less opportunity for students to interact with faculty than smaller institutions. In addition, the students's experiences within the school system, rather than the pre-enrollment characteristics may have different effects upon their integration into the school system, which

influence, in turn, the decision of staying or leaving the school. Though the model emphasizes the role of intra-institutional experiences, it does not exclude the possibility that external events can also influence individual decisions regarding departure. Social forces external to the institution may influence student decisions regarding behavior in the institutional setting. External communities including families, work settings, and peer groups may serve to counter, rather than support, participation in college communities.

Recommendations

The following section presents recommendations concerning future research:

1. Future research on the adjustment and psychological problems of foreign students in the U.S. might use different instruments. In regards to depression, instruments such as the Zung Self-Rating Depression Scale and The Taylor Manifest Anxiety Scale can be used. The Zung Self-Rating Depression Scale and the Taylor Manifest Anxiety Scale have been used with foreign students and can provide information on factors related to the psychological profile of different cultural groups. In addition, different instruments need to be developed to measure the likelihood of dropping out of school as well as collecting actual data on dropouts and

comparing them to nondropouts. Based on the research in this area, counselors and other helping professionals can design services aimed at helping students recognize, deal with, and overcome specific behaviors that block their process of adaptation.

2. Research is needed in the way foreign students deal with stress and conflict. It is believed that foreign students who lack appropriate coping mechanisms isolate themselves, withdraw, and/or avoid interaction with Americans as a way to protect themselves against the new culture, or associate only with co-nationals. This knowledge of stressors and how foreign students deal with stress will help counselors in designing educational services to help these students to develop the coping skills needed to adapt to the new culture.

3. Research is needed on the use of an American subsample in addition to a foreign students sample in applying the Tinto model. This would serve counselors in differentiating between the needs and problems of foreign students and American students.

4. Research is needed to include college characteristics in the model when used with foreign students. The previous studies showed how college characteristics interact with different variables and affect students' decision to stay or to leave the school.

5. Research is needed on the use of both graduate and

undergraduate foreign students. Both groups differ in their perspective and orientation regarding study and career. Graduate students as a group are more likely to be professionally established than undergraduates and more likely to cope with study pressures than undergraduates, and consequently, less likely to drop out of school. Adding undergraduates might help to clarify the relationship between academic level and the other variables. In addition, a larger sample might be needed, since many variables are included in the model. A larger sample would allow more variation among the subjects, and the larger the sample the more heterogeneous the group will be, resulting in less error, and a lower probability of finding some relationships by chance.

6. Additional research is recommended to measure the differences in depression between males and females, between married and nonmarried, between students who have financial support and those who do not, and between students in different academic majors. The research findings were not conclusive in these issues. This knowledge will help counselors to design services suitable for the different groups and to understand better the differences among the various groups, which will help in counseling and therapy.

7. More research is needed on the relationship between depression and the other variables in the Tinto model. Since this is the first study to include depression as an

additional variable in the Tinto model, further research is needed to verify the present findings.

APPENDICES

APPENDIX A: Cover Letter

Announcement

Re: Study on adaptation of foreign students at MSU.

Dear student,

I am a doctoral student in counseling, and I am interested in studying the factors which relate to the adaptation of foreign students at MSU.

Foreign students encounter many difficulties during their stay in the United States, and this study will help in revealing some of the factors that affect your adaptation in the United States as a foreign student.

I am asking students who are interested in volunteering to give about one to two hours of their time to fill out some forms and questionnaires pertaining to thoughts and responses about the adaptation of foreign students.

In return for the volunteered time, I will provide each participant with some information about the study and the results after the collection of data upon request.

If you are interested in learning more about this study, please contact me at 339-2756. If you should decide that you are interested in participating in this study, your confidentiality will be protected, and the study will be conducted within the university regulations.

Qasem Sammour

Doctoral student in Counseling

APPENDIX B: Data Form

Instructions: please complete the following information and answer each statement by writing the appropriate answer which applies best to your situation.

Sex:-----

Marital status:-----

Country of origin:-----

Major of study:-----

Combined GRE or GMAT score:-----

Grade Point Average:-----

B.A./B.S or MA/MS G.P.A.:-----

Parents' social class (e.g. upper-upper class, upper class, upper-middle class, middle, lower middle, lower class)

Mother's formal education:-----

Father's formal education:-----

Major source of income:-----

Comments or additions:-----

**APPENDIX C: The Self-Reported Likelihood of Dropping Out of
School**

Instructions: Read each statement carefully and mark the appropriate answer which applies best to your situation. The answers range from strongly agree to strongly disagree.

SA = Strongly Agree

D = Disagree

A = Agree

SD= Strongly Disagree

U = Undecided

1. I am thinking of quitting
the university at the present. SA A U D SD
2. I thought about dropping
out of the university before. SA A U D SD
3. I am thinking about moving
to another university. SA A U D SD
4. I think that the courses
I must take are beyond my
ability. SA A U D SD
5. I am thinking of changing
my major of study. SA A U D SD
6. I have low grades, or
lower than those required
by the school system. SA A U D SD
7. I think that I made a mistake
by coming here to study. SA A U D SD
8. I think life is so stressful

here, that it interferes with my studies.	SA	A	U	D	SD
9. I have repeated class absences.	SA	A	U	D	SD
10.I am always late in completing the class assignments.	SA	A	U	D	SD
11.My financial situation interferes with my study.	SA	A	U	D	SD
12.My social life is very unsatisfying here.	SA	A	U	D	SD

APPENDIX D: The Social and Academic Integration measures

Instructions: Read each statement carefully and mark the appropriate answer which applies best to your situation. The answers range from strongly agree to strongly disagree.

SA= Strongly Agree

D = Disagree

A = Agree

SD= Strongly Disagree

U = Undecided

1. Since coming to this university

I have developed close personal

relationships with other students.

SA A U D SD

2. The student friendships I have

developed at this university have

been personally satisfying.

SA A U D SD

3. My interpersonal relationships

with other students have had a positive

influence on my personal growth,

attitudes, and values.

SA A U D SD

4. My interpersonal relationships

with other students have had a positive

influence on my intellectual growth

and interest in ideas.

SA A U D SD

5. It has been difficult for me to

meet and make friends with other

students.

SA A U D SD

6. Few of the students I know would be willing to listen to me and help me if I had a personal problem.

SA A U D SD

7. Most students at this university have values and attitudes different from my own.

SA A U D SD

8. My nonclassroom interactions with faculty have had a positive influence on my personal growth, values, and attitudes.

SA A U D SD

9. My nonclassroom interactions with faculty have had a positive influence on my intellectual growth and interest in ideas.

SA A U D SD

10. My nonclassroom interactions with faculty have had a positive influence on my career goals and aspirations.

SA A U D SD

11. Since coming to this university I have developed a close, personal relationship with at least one faculty member.

SA A U D SD

12. I am satisfied with the opportunities to meet and interact informally with faculty members.

SA A U D SD

13. I am satisfied with the
extent of my intellectual
development since enrolling
in this university.

SA A U D SD

14. My academic experience has
had a positive influence on my
intellectual growth and interest
in ideas.

SA A U D SD

15. I am satisfied with my academic
experience at this university.

SA A U D SD

16. Few of my courses this year
have been intellectually
stimulating.

SA A U D SD

17. My interest in ideas and
intellectual matters has increased
since coming to this university.

SA A U D SD

18. I am more likely to attend
a cultural event (for example,
a concert, lecture, or art show)
now than I was before coming to
this university.

SA A U D SD

19. I have performed academically
as well as I anticipated I would.

SA A U D SD

FIGURE I: Tinto Model

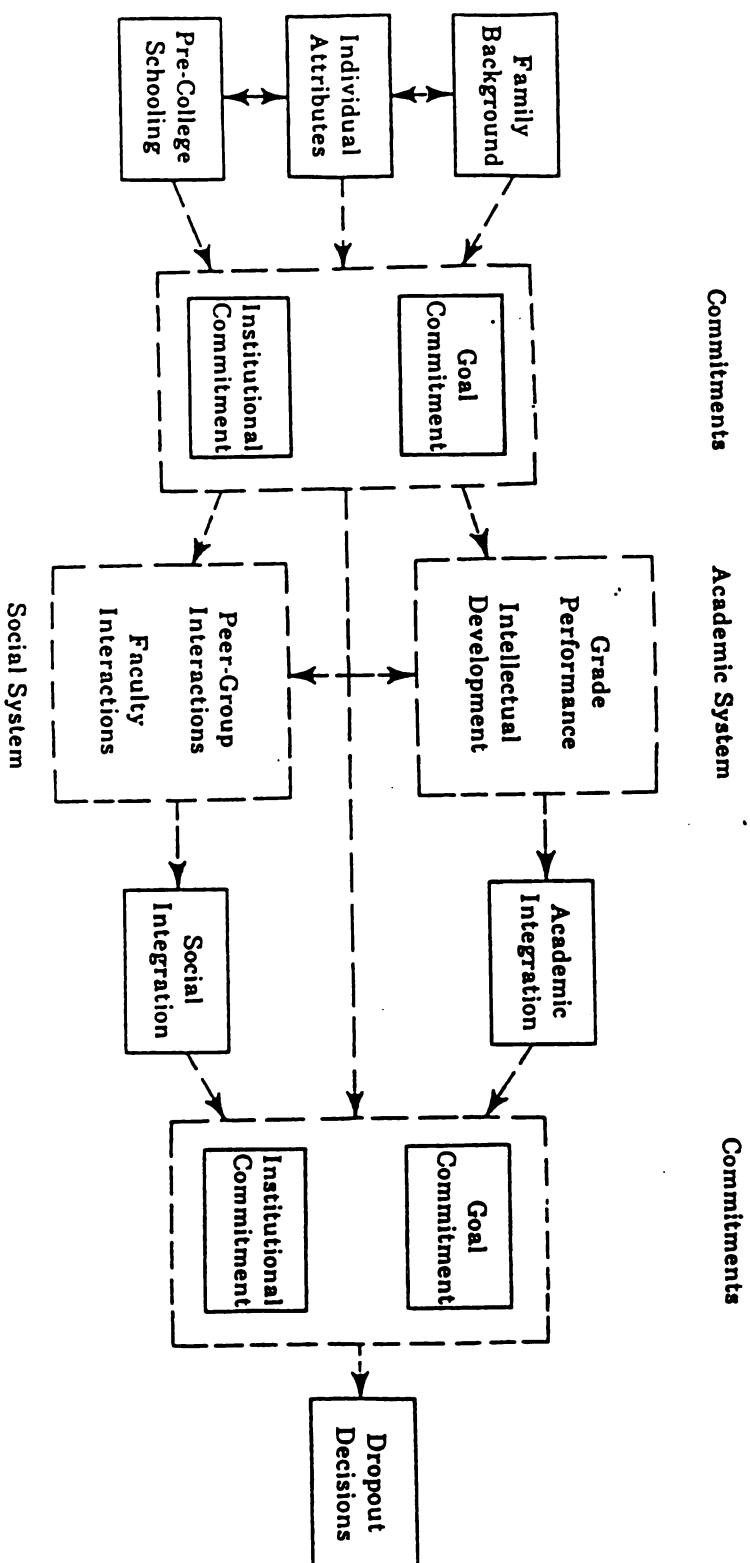


Figure 1
A conceptual Schema for Dropout from College

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