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An analysis of student satisfaction as perceived by foreign students at Iowa State University

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An analysis of student satisfaction as perceived

by foreign students at Iowa State University

by

Umporn Siriboonma

A Dissertation Submitted to the

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INTRODUCTION

Background Information

On the campus of Iowa State University there are 1271 foreign

students enrolled for the 1977-78 academic year. With varying cultural,

educational and social backgrounds, these students are exposed to a

different system and philosophy of education than usually found in

their home countries. While the number of study programs open to

them is large and diversified, these programs all operate within the

framework of the American system of higher education. This means, of

course, that foreign students must learn to function within this un-

familiar system which is not always an easy task. In addition, they

must become settled in new living quarters in a strange community, and

at the same time learn to move in an unfamiliar cultural environment;

i.e. they must speak the strange language and become acquainted with

new customs. They may find these situations trivial or severe, take

them in stride, or they may become more and more upset by them as time

goes by. Foreign students at Iowa State University may find the educa-

tional experience a source of great satisfaction or one of deep dis-

comfort and disillusionment.

In recent years there has been increasing interest in the study of

the college environment, foreign student academic adjustments, and

foreign student achievements (Astin, 1963; Watuma, 1967; and Ellakany,

1968). Research in the area of foreign student satisfaction, however,

has been severely limited and, for the most part, has been confined

to studies of foreign students' social relations, adjustment to

university and community life and to some extent the foreign students'

attitudes toward the United States (Selltiz, et al., 1963).

In a review of research in college student satisfaction, Sturtz

(1971) states that:

> "It would seem particularly important for student
> personnel workers to have facts regarding how satisfied
> students are with various aspects of college and education
> they are receiving, and how their satisfaction is related
> to behavior. Yet, progress has been slow in developing
> an understanding of the nature of college student satisfac-
> tion" (p. 220).

In one of a few published studies of college student satisfaction,

Pervin (1967a, b) and Pervin and Rubin (1967) assessed students' per-

ceived congruence with their environment as a predictor of college

student satisfaction, by using the Transactional Analysis of Personality

and Environment (TAPE) questionnaire to measure separate aspects of

satisfaction. Their findings indicated that the discrepancies between

students' perceptions of themselves and their colleges are related to

dissatisfaction with college.

Rand (1968) provided contradictory evidence regarding the rela-

tionship between satisfaction and student environment congruency.

He included measures of personality, interest, scholastic potential,

and subcultural orientation. The satisfaction measure consisted of

a single item on a three-point scale (very satisfied, satisfied, and

dissatisfied). The results of this study cast serious doubt on any

simplistic notions of "goodness of fit" as related to satisfaction.

Rand concluded that there were some significant relationships between

individual environment similarity and student satisfaction, but the

overall relationship appeared to be minimal and quite complex.

In their discussion of needs for continued and broader investigation of the college student satisfaction; Betz, Klingensmith, and Menne (1970) state that:

> "...the few existing studies of college student satisfaction in the major research literature provide little basis for conclusion or generalization. For the most part, measurement of college student satisfaction has been based on instruments of unknown or limited psychometric quality; there has been no systematic research on college student satisfaction as a significant variable per se" (p. 111).

Most of the research studies of college student satisfaction have been based on populations of American undergraduate students. The present study will attempt to expand the state of knowledge concerning college student satisfaction. Specifically, the investigation will consider college satisfaction of foreign students, a population which has not been thoroughly researched.

Statement of the Problem

According to Betz, Klingensmith, and Menne (1970), student satisfaction is one of the least investigated variables in the college setting. What aspects of the college environment are satisfying or dissatisfying to students? How satisfied are students with their overall college experience? What variables have an effect on satisfaction? What aspects of the college environment could be modified to increase student satisfaction? These are but a few of the many questions in need of answers at this time.

The proposed study was designed to meet the demanding need for research concerning foreign students' college satisfaction. In fact,

there have been virtually no extensive studies on college satisfaction

among foreign students. The researcher found only four published

studies (Brandwine, 1965; Flores, 1970; Johnson, 1971; and Matteson and

Hamann, 1975) related closely to this topic, and these were limited in

scope. However, more will be mentioned about them in the Review of

Literature section.

Purposes

The purposes of this study were: (1) To determine the relation-

ships between foreign student satisfaction and nine demographic variables

(age, sex, geographical background, source of support, marital status,

curriculum, classification, type of residence, and length of stay) as

measured by the College Student Satisfaction Questionnaire; and (2) To

gain insight into the area of foreign student satisfaction. The

specific questions to be answered by this study included:

1. What is the level of satisfaction concerning working condi-

tions as perceived by foreign students when the nine demographic variables

are considered?

2. What is the level of satisfaction concerning compensation as

perceived by foreign students when the nine demographic variables are

considered?

3. What is the level of satisfaction concerning quality of educa-

tion as perceived by foreign students when the nine demographic variables

are considered?

4. What is the level of satisfaction concerning social life as perceived by foreign students when the nine demographic variables are considered?

5. What is the level of satisfaction concerning recognition as perceived by foreign students when the nine demographic variables are considered?

6. What is the level of total satisfaction as perceived by foreign students when the nine demographic variables are considered?

7. Is there any significant relationship between combinations of selected demographic variables including interaction effects and the level of satisfaction as perceived by foreign students?

Hypotheses

The seven general forms of null hypotheses were:

1. There is no significant difference in satisfaction with working conditions as perceived by foreign students when each of the nine demographic variables is considered individually.

2. There is no significant difference in satisfaction with compensation as perceived by foreign students when each of the nine demographic variables is considered individually.

3. There is no significant difference in satisfaction with quality of education as perceived by foreign students when each of the nine demographic variables is considered individually.

4.   There is no significant difference in satisfaction with social

life as perceived by foreign students when each of the nine demographic

variables is considered individually.

5.   There is no significant difference in satisfaction with

recognition as perceived by foreign students when each of the nine

demographic variables is considered individually.

6.   There is no significant difference in total satisfaction as

perceived by foreign students when each of the nine demographic variables

is considered individually.

7.   There is no significant relationship between combinations

of selected demographic variables including interaction effects and

the level of satisfaction as perceived by foreign students.

Definition of Terms

The College Student Satisfaction Questionnaire Manual (Starr,

Betz, and Menne, 1971) described the five scales of college student

satisfaction in the following manner:

Working Conditions: The physical conditions of the student's

college life, such as the cleanliness and comfort of his place of

residence, adequacy of study areas on campus, quality of meals,

facilities for lounging between classes;

Compensation: The amount of input (e.g., study) required relative

to academic outcomes (e.g., grades), and the effect of input demands

on the student's fulfillment of his other needs and goals;

Quality of Education: The various academic conditions related to the student and vocational development, such as the competence and helpfulness of faculty and staff, including the advisors and counselors, and the adequacy of curriculum requirements, teaching methods, and assignments;

Social Life: Opportunities to meet socially relevant goals, such as dating, meeting compatible or interesting people, making friends, participating in campus events and informal social activities;

Recognition: Attitudes and behaviors of faculty and students indicating acceptance of the student as a worthwhile individual.

Scale scores are based on the sum of the 14 item responses for each scale. A total satisfaction score is derived by summing all 70 item responses.

Limitations

This study was limited to 500 foreign students. The sample was randomly selected from the foreign student population at Iowa State University during Winter Quarter 1978. This condition placed a limitation on this study because the sample of foreign students was taken only from one particular institution at a specific time.

REVIEW OF THE LITERATURE

Introduction

This review focuses on the studies concerned with college student

satisfaction based on the American student population and the available

foreign student studies. The summary of the Review of Literature con-

sists of the major similarities of findings in the studies reviewed,

the differences or contradictions (unclear findings) of what was done

and what was not, and a brief statement about the present study in

terms of what is still needed to clarify foreign student satisfaction

level.

Studies on American Students

As early as 1944, Berdie investigated relationships between

students' curricular satisfaction and performance measures of first

year honor point ratio, high school grades, and scores on a series

of ability tests. Only high school grades was found to have a significant

relationship with curricular satisfaction.

By studying the differences between groups of satisfied and dis-

satisfied students on selected ability, personality, and certain achieve-

ment variables, Almos (1957) found that students who remained enrolled

longer had higher total satisfaction scores; satisfied students had

higher mean ability scores and made better grades than the dissatisfied

students.

Westlund (1960) investigated the relationship of students' academic

potentiality and their satisfaction with college experiences. The

results showed that students of high potentiality reported themselves
as more satisfied than students of average potentiality; women as more
satisfied than men. There was no indication that high achieving
students reported more satisfaction than lower achieving students of
the same potentiality.

Willsey (1971) examined the relationship between academic performance
of students and satisfaction with college environment by using the
College Student Questionnaire, Part 2. He found that students' overall
satisfaction and students' satisfaction with faculty were significantly
related to grade point average. The higher the grade point average,
the greater the degree of satisfaction. These results indicated a
significant relationship between satisfaction and grade point average.

In a study of college satisfaction and academic performance of
college students, Balais (1976) explored the perception of students
with respect to the college administration, faculty, students, and
college in general. The results of this study indicated that the
freshmen were the most satisfied group and the seniors were the
least satisfied. The females scored significantly higher than the
males on the four satisfaction scales. Also, students with high level
of total college satisfaction obtained significantly higher grades
than students whose satisfaction with college in general was low.

Salzman (1970) investigated the relationships between students'
needs and perceptions in terms of satisfaction with the college en-
vironment. He found that satisfied students perceived the college
environment as being friendly and cohesive; as stressing personality
enrichment and expressiveness; and as emphasizing politeness,

consideration and academic pursuits. Dissatisfied students show greater
needs to be successful and recognized, to criticize and attack contrary
points of view and to experience novelty and change in daily routine.

In agreement with Salzman, Evan (1972) found that students who
expressed satisfaction with the college environment tended to treat
others with kindness, to be generous with others, and to show affection
or concern toward others, and in general tended to refrain from criticisms
of those in position of authority, follow supervision, and avoid un-
conventional situations.

In examining the relationship of role concept and self-concept
to academic success, Seymour (1964) found that agreement between the
students' picture of themselves and their picture of the successful
student was significantly related to satisfaction, but such agreement
was not significantly related to grades.

The relationship between student persistence in college and
satisfaction with environmental factors was studied by Robinson (1969).
The factors investigated were social environment, faculty, advise-
ment, scholastic habits, finances, study arrangements, and counseling.
The results indicated that students who were dropped by the university
expressed a greater degree of dissatisfaction with advisement,
scholastic habits, and faculty than those who persisted. There were
no indications that the dropped students were dissatisfied with the
social environment and study conditions factors. In addition, the
financial factor did not support the hypothesis that financial problems
were a major cause of attrition among students.

Richardson (1969) explored the relationship of congruence between student and campus environment. The results supported the hypothesis that the stronger the congruence between student and institution, the greater would be satisfaction with college. Significant differences were found between orientation-environment congruence and student satisfaction with faculty, administration, majors, and other students as measured by the College Student Questionnaire, Part 2. Students in a state of high congruence with their institutional environment expressed more satisfaction than did students of the moderate and low congruence groups.

In a study conducted in Carbondale, Illinois at the Southern Illinois University, Gallo (1977) investigated the student perceived satisfaction as measured by the College Student Satisfaction Questionnaire (CSSQ) with the variables of sex, marital status, learning preference, and enrollment within the university. The results indicated that significant differences were found between the single and married students. Women were more dissatisfied with the college environment than were men. There were no differences between the two learning preferences on the CSSQ.

At the University of Maryland, Schmidt and Sedlacek (1972) looked at variables related to student satisfaction. The focus of their research was on satisfaction as it related to the students' feeling of isolation or lack of identity with the institution as a whole. The University Student Census was employed for this study.

Their findings indicated that new students anticipated significantly more satisfaction than those students who were previously enrolled at

at Maryland. In a social and academic factor, satisfaction differed

depending upon the number of professors with whom the students were ac-

quainted. The dissatisfied students were those acquainted with no

professors, the most satisfied were those acquainted with six or more.

Furthermore, satisfaction differed depending upon what the students

found to be a difficult adjustment in college. The students who chose

"being away from home and friends" as an important factor found this

as the hardest adjustment as students at the institution. The most

dissatisfied students were those indicating difficulty in choosing a

major field or career.

In addition, student satisfaction varied as a function of dates

per month. The more dates the student had, the higher the degree of

dissatisfaction. The type of counseling services the students were

interested in was significantly related to satisfaction. Those students

who sought counseling due to educational or emotional concerns were

the most dissatisfied. In sum, the dissatisfied students knew fewer

faculty, had difficulty in choosing major fields, and felt more need

for counseling than the satisfied students.

By using the College Student Questionnaire, Part 2, as the source

of satisfaction measures, Hecklinger (1972) examined students' vocational

plans in relation to satisfaction with various aspects of the college

environment at Trenton State College in Trenton, New Jersey. He found

that the students who were undecided for long range or immediate plans

were less satisfied than the decided students in the areas of satis-

faction with administration, satisfaction with faculty, satisfaction

with major, and satisfaction with students. When comparing on the

basis of sex, women were found to be more satisfied with their major fields of study than were men.

Martin (1968) investigated student perceived satisfaction with college as evidenced by the correlation between each student's real and ideal description of college. The modified College Q-Sort was employed in this study. His subjects included freshmen, graduate students, and faculty members at the University of Saskatchewan. The results indicated that freshmen were relatively satisfied with college but their satisfaction decreased by the end of the first year. Graduate students and faculty members were less satisfied with college than were freshmen at either the first or the last of the year.

An investigation into student satisfaction with different aspects of the teaching system was carried out at a provincial university in England by Startup (1972). The students (470 undergraduates) were asked a series of questions about lectures, courses, and the relationship they had with faculty members. They were also given the opportunity to indicate changes they would like to see brought about in these areas.

Startup found that fewer students were satisfied with the presentation of lectures than were satisfied with their content. More students were satisfied with the quality of the individual help by the faculty, than with the amount of it. More of the dissatisfied students were found in the Art and Social Studies departments. Approximately 40% were dissatisfied and only about 35% were satisfied with the amount of informal contact they had with faculty members. The remaining 25% had mixed reactions.

Passons (1971) investigated the accuracy with which student affairs personnel, residence advisor, and faculty members can predict student satisfaction through the students' frame of reference. The College Student Questionnaire, Part 2 was employed in the study. The results revealed that faculty members estimates of students' satisfaction with administration was significantly lower than that reported by the students. Also, the student affairs staff's prediction of degree of satisfaction with faculty was significantly below that indicated by students. No significant differences were found in satisfaction with students.

In a similar study, Hallenbeck (1974) examined the students' reported level of satisfaction and the perceptions of that satisfaction by academic advisors and the student affairs staff at Iowa State University as measured by the <u>College Student Satisfaction Question-naire (CSSQ), Form C</u>. The sample consisted of 300 Iowa State University undergraduates, 300 academic advisors, and 92 student affairs staff members. A random sampling method was employed in selecting students and academic advisors.

The results of this study did not support any of Hallenbeck's hypotheses. Some significant differences were found among and within groups in all comparisons. It was found that students' reported level of satisfaction did not vary greatly on the variables measured by the CSSQ. As a group, academic advisors did not accurately perceive the level of student satisfaction. The student affairs staff more accurately perceived the students' reported level of satisfaction than did the academic advisors.

In their study of college student satisfaction Betz, Klingensmith, and Menne (1970) explored the relationship between student satisfaction and the demographic variables of sex, type of residence, and year in school. They found that significant relationships were indicated for both type of residence and year in school as related to various aspects of college student satisfaction. Sex differences seemed to have little, if any, relationship with satisfaction on any of the dimensions measured by the CSSQ after the effects of year and residence were removed. The results of this study did not clearly indicate direction of changes in satisfaction over the school years. However, the findings supported the CSSQ as a useful measure of college student satisfaction.

In 1971, Betz, Menne, Starr, and Klingensmith further investigated the components of student satisfaction in a factor analytic study of the dimensions of satisfaction for two samples of college undergraduates. Their findings gave considerable support for viewing working conditions, compensation, educational quality, social life, and recognition as important dimensions of college student satisfaction.

Starr, Betz, and Menne (1972) investigated the differences in satisfaction among academic dropouts, nonacademic dropouts, and non-dropouts as measured by the CSSQ. The results indicated significant satisfaction differences among the three student groups on three scales: compensation, recognition, and quality of education. The comparison of total satisfaction scores across groups also indicated significant differences. The social life and working condition scores were not significant. In each case, the nondropouts scored higher than the nonacademic dropouts and the academic dropouts. The nonacademic

dropouts and the academic dropouts differed only on the compensation dimension.

Sturtz (1971) examined differences in student satisfaction between a group of adult women students (age 25 or above) and a group of young women students (age 18 to 21) as measured by the CSSQ. She found the age variable to be a significant factor in students' satisfaction with the quality of their education and in their overall satisfaction, i.e. adult women students were found to be more satisfied than the younger women students.

By using the College Student Satisfaction Questionnaire (CSSQ), Betz, Starr, and Menne (1972) conducted a study in ten public and private colleges and universities to provide further information concerning students' satisfaction with their institutions. Their findings indicated that the satisfaction of students in large public universities differed from that of students attending small private colleges. Sex differences were found to have a negligible effect. Only compensation was significant.

In this particular study, the score reliability for each of the two normative groups ranged from .78 to .84 with a median of .82 for public universities, and from .79 to .84 with a median of .82 for private colleges. The validity of the CSSQ was established from the results of several studies in which anticipated relationships had been statistically confirmed (e.g., Betz, et al., 1970; Betz, et al., 1971; Sturtz, 1971; Starr, et al., 1972; Betz, et al., 1972).

Studies on Foreign Students

The foreign students' English, achievement, and satisfaction has been examined by Brandwine (1965). The subjects in this study consisted of 384 foreign students at New York University during the academic year 1961. English proficiency was measured by objective language tests administered by the American Institute of New York University. Academic achievement was measured by grade point average. Cultural contact and social satisfaction were determined by a questionnaire administered by New York University.

Findings indicated that foreign students who had higher grade point average were those exempted from taking the English Proficiency Test; they reported more cultural and social contact and a greater degree of cultural and social satisfaction. The English proficiency was found not significantly related to cultural contact and social satisfaction. Comparisons between the tested and untested groups also showed that students in the untested group benefited from scholarships and spent longer periods of time in the United States.

Flores (1970) investigated the similarities and differences between the Filipino and American College students' satisfaction with the administration, faculty, and other students. The College Student Questionnaire, Part 2 was employed in this study. The subjects consisted of Filipino college students at Silliman University in the Philippines and the American students from a national sample at 37 colleges and universities. Comparisons between groups were limited to the freshman and sophomore students.

The findings indicated that the Filipino students by class and by sex were more satisfied with the administration and the faculty than with their fellow students. Comparison of the satisfaction of the American groups showed wide variability and significant differences. A significant difference was found between the Filipino males and females in their perception of the administration and faculty while no significant difference was found between sexes in the American groups' perceptions of the same variables.

Johnson (1971) compiled information about foreign students participation in campus activities, use of university facilities, residential patterns, extracurricular activities, and means of support. His work was conducted under the supervision of the Office of International Student Affairs at the University of Tennessee in Knoxville. The subjects were foreign students enrolled at the institution during Winter term, 1971. Students were requested to indicate whether each item in a questionnaire was a "very important problem," an "important problem," "sometimes a problem," or "not a problem" to them.

The findings indicated that quality of education, social activities, food, getting along with faculty, and housing were not the problem areas as viewed by the students. Many factors thought to be of great concern to foreign students were not evaluated by them as being significant problems. Specifically, only 20% of the students gave the English language proficiency factor the high rating of "very important problem." At the other extreme 40% said that English proficiency was "not a problem." The second most troublesome factor was considered to be

"my ability to get along financially here," yet only 17% indicated

that this was a "very important problem," and 45% said finances

were "not a problem."

Using the College Student Questionnaire, Part 2, Matteson and

Hamann (1975) examined the degree of satisfaction the foreign

students expressed regarding their majors, the faculty, other students,

and the administration of their programs. The subjects consisted of

35 graduate students from each of the international groups — Brazil,

India, and Nigeria who studied for at least six months at the University

of Wisconsin in Madison, and a sample of 70 American graduate students.

Their findings indicated that the overall satisfaction score with

other students was considerably lower for the Indian students than

for the other three nationality groups. Satisfaction with the administra-

tion of their programs was lower for the American students than for

any other groups. Nigerian students were the group most satisfied

with their majors. Conversely, the Indian students were the group

least satisfied with their majors. The nationality group most satis-

fied with all areas of their programs were the Nigerians; whereas the

Indians and Americans were the least satisfied groups. When viewed as

an entire group, the respondents were most satisfied with their majors

and least satisfied with other students.

Summary of Literature Review

The review of literature has presented a review of the kinds of

research that have been done in the area of college student satisfaction

based on both American and foreign student populations. However, this had not led to any substantial conclusions as to what factors do in fact contribute to college student satisfaction.

The first factor examined is academic performance of the students. and satisfaction with the college environment. The studies in this area found some evidence for a direct relationship between satisfaction and academic performance. The students with the higher level of satisfaction tended to obtain higher grades than students whose satisfaction with college in general was low.

In the case of students' needs and its relationship to satisfaction with the college environment, satisfied students perceived the college environment as being friendly and cohesive. Dissatisfied students tended to express the greater needs to be successful and recognized. The most dissatisfied students were those who knew no faculty or staff members, had difficulty in choosing major field, and felt more need for counseling than the satisfied students.

Furthermore, the students who were undecided for long range or immediate plans were less satisfied than the decided students. Students who were dropped by the university expressed a greater degree of dissatisfaction with advisement, scholastic habits, and faculty than those who persisted. The students in a state of high congruence with their institutional environment expressed more satisfaction than did students of the moderate and low congruence groups.

In the studies on the foreign students, English proficiency or language competence was considered to be an important factor, but no significant differences were found on English proficiency with any

satisfaction measures. It seems that it must be judged on an individual basis as language competence is reported to be a function of goals, field of study, and intended length of stay (Du Bois, 1956).

The demographic variables of age, sex, curriculum, academic classification, financial support, marital status, type of residence, and year in school have been examined in determining their effects on college student satisfaction. Only age, year in school, and type of residence seem to affect the level of student satisfaction more than any other demographic variables. Further research is needed in exploring these demographic variables to adequately determine their effects on various aspects of college student satisfaction.

It is apparent that in the study of college student satisfaction, the definition of satisfaction varies from study to study; satisfaction is defined by the instrument being used. For example, the College Student Questionnaire, Part 2, utilizes four scales of satisfaction: major, faculty, students, and administration. The College Student Satisfaction Questionnaire, however, measures satisfaction on five different scales: working conditions, compensation, quality of education, social life, and recognition.

Through review of the literature, this investigator failed to find sufficient research adequately answering the questions of college foreign student satisfaction. Some prior research studies have utilized the College Student Questionnaire, Part 2, in measuring the foreign student satisfaction in the college setting, but no studies known to this investigator at this time have used the College Student Satisfaction Questionnaire (CSSQ) to measure the level of satisfaction of foreign

student population in the college setting. Therefore, this study is

attempting to answer questions about college foreign student satis-

faction, as measured by the CSSQ, that have not been adequately dealt

with.

As previously mentioned, the CSSQ is being employed in the present

study. Satisfaction will be measured on the following scales: working

conditions, compensation, quality of education, social life, and

recognition. The investigator considered the language competence

factor in terms of curriculum and length of stay as the demographic

variables. Age, sex, geographical background, source of support,

classification, marital status, and type of residence were the other

variables examined in comparing foreign students' level of satisfaction.

METHODOLOGY

Introduction

The population under investigation was 1271 foreign students en-rolled at Iowa State University during Winter Quarter 1978. The sample was composed of 500 randomly selected foreign students who were asked to complete the College Student Satisfaction Questionnaire. The pur-poses of this study were to test the following seven general forms of null hypotheses:

1. There is no significant difference in satisfaction with working conditions as perceived by foreign students when each of the nine demographic variables is considered individually.

2. There is no significant difference in satisfaction with compensation as perceived by foreign students when each of the nine demographic variables is considered individually.

3. There is no significant difference in satisfaction with quality of education as perceived by foreign students when each of the nine demographic variables is considered individually.

4. There is no significant difference in satisfaction with social life as perceived by foreign students when each of the nine demographic variables is considered individually.

5. There is no significant difference in satisfaction with recognition as perceived by foreign students when each of the nine demographic variables is considered individually.

6. There is no significant difference in total satisfaction as perceived by foreign students when each of the nine demographic variables is considered individually.

7. There is no significant relationship between combinations of selected demographic variables including interaction effects and the level of satisfaction as perceived by foreign students.

Subjects

The Iowa State University Office of International Educational Services (OIES) supplied a list of all foreign students' names and addresses enrolled at the institution during the 1977-78 academic year. There were 1271 students enrolled at that time. Snedecor and Cochran's (1972) Table of Random Numbers was employed to help randomly select 500 students from the list of names provided by the OIES. No attempt was made to select subjects on the basis of any specific demographic variable. However, demographic variables were considered in the statistical analysis of the data. These variables included:

1. Age

    a. 18-22
    b. 23-27
    c. 28 and above

2. Sex

    a. Male
    b. Female

3. Geographical Background

    a. Africa
    b. Far East
    c. Middle East

    d. Europe
    e. Latin America

4. Source of Support

    a. Parents
    b. Scholarship/Assistantship
    c. Partial Scholarship/Assistantship
    d. Self
    e. Any combination of the above

5. Curriculum (by College)

    a. Agriculture
    b. Education
    c. Engineering
    d. Home Economics
    e. Science and Humanities
    f. Veterinary Medicine

6. Classification

    a. Undergraduate
    b. Graduate

7. Marital Status

    a. Single
    b. Married

8. Type of Residence

    a. Dormitory
    b. Married Student Housing
    c. Fraternity/Sorority
    d. Private Residence/Apartment

9. Length of Stay (use number of months)

    a. In the United States
    b. At Iowa State University

Materials

The instrument employed in this study to measure the level of

foreign student satisfaction was the <u>College Student Satisfaction</u>

Questionnaire, Form C. The CSSQ is a 70-item questionnaire relating to various aspects of college life. A 5-choice Likert-type scale offers response alternatives ranging from "Very Dissatisfied," through "Satisfied," to "Very Satisfied," scored one to five points respectively. The exact response alternatives are listed below:

1 means: I am VERY DISSATISFIED

2 means: I am SOMEWHAT DISSATISFIED

3 means: I am SATISFIED, no more, no less

4 means: I am QUITE SATISFIED

5 means: I am VERY SATISFIED

Five different scale scores (working conditions, compensation, quality of education, social life, and recognition) are derived as well as a total satisfaction score. Scale scores are based on the sum of the 14-item responses for each scale. The total satisfaction score is derived by summing all 70 responses. Responses to all seventy items on the CSSQ and all demographic variables were recorded by each subject on a computerized General Purpose NCS Answer Sheet.

Distribution of the CSSQ

A packet of materials was mailed to each subject participating in this study. The materials consisted of a form cover letter, the CSSQ, Form C booklet, the computerized General Purpose NCS Answer Sheet, and the self-addressed stamped envelope (see Appendix A for sample copies of these materials). After ten days, a telephone follow up and a second mailing were carried out. The second mailing included only those

subjects failing to return the answer sheet. A coding system for all subjects randomly selected was developed by the researcher. This enabled the investigator to determine which subjects completed or neglected to complete the questionnaire. The subjects were assured that their responses would be treated in a strictly confidential manner.

A criterion level for rate of return of the CSSQ responses was arbitrarily set at 50 percent. That is, the investigator required a return of 250 responses from the original 500 subjects selected.

Analysis

Scale reliabilities, distribution of scale scores, and correlations between scale scores were calculated for the foreign student data. To test the previously stated hypotheses (1-6), the one-way classifications analysis of variance (ANOVA) statistical procedure (Snedecor and Cochran, 1972) was employed to evaluate the effect of each of the demographic variables (age, sex, geographical background, source of support, curriculum, marital status, type of residence, and length of stay) on scale scores of the CSSQ (working conditions, compensation, quality of education, social life, recognition, and total satisfaction). The level of significance was set at $p = .05$. When any of the F-values were significant at the .05 level, the comparisons between group means within each of the demographic variables was computed by using the Scheffe multiple comparison method (Bancroft, 1968).

To test the seventh hypothesis, the multiple classifications analysis of variance by way of regression format (Bancroft, 1968; Draper and

Smith, 1966) was employed to evaluate the effects of combinations of selected demographic variable (including interaction effects) on scale scores of the CSSQ. The level of significance was set at .05. Each of the selected demographic variables for the regression model was previously found (by the F-test for the one-way classifications ANOVA) to be significant in terms of students' reported satisfaction.

FINDINGS

The purposes of this study were to determine the relationships between the effects of nine demographic variables (sex, classification, age, geographical background, source of support, curriculum, marital status, type of residence, and length of stay) on scale scores of the College Student Satisfaction Questionnaire (working conditions, compensation, quality of education, social life, recognition, and total satisfaction). The one-way classifications analysis of variance (ANOVA), the Scheffe multiple comparison method, and the multiple classifications analysis of variance by way of regression format (MANOVA) were employed to test the seven general forms of null hypotheses posed in the introductory chapter.

As previously mentioned in the methodology chapter, questionnaires were sent to 500 foreign students asking them to participate in this study. The total number of responses to the questionnaire was 272, with 261 of those being usable. The usable responses represented a return of 52.20 percent. The foreign students responding to the CSSQ were representative of the random sample selected to participate in this study. It was assumed by this investigator that those students not responding did not differ significantly from those who responded.

The following table (Table 1) summarizes the characteristics of the demographic variables of the foreign student sample.

Tables 2-7 show the means and the variances for each of the five CSSQ scales and the total satisfaction scale by demographic variables. Table 8 shows the intercorrelation of the five CSSQ scales with the total satisfaction score for the sample.

Table 1. Demographic characteristics of the sample

Variable	N	Percent of sample
Sex		
Male	209	80.08
Female	52	19.92
	261	100.00
Classification		
Undergraduate	77	29.50
Graduate	184	70.50
	261	100.00
Age		
18-22	53	20.30
23-27	102	39.08
28 or above	106	40.62
	261	100.00
Region		
Africa	31	11.88
Far East	113	43.30
Middle East	61	23.37
Europe	16	6.13
Latin America	40	15.32
	261	100.00
Source of Support		
Parents	58	22.22
Scholarship	120	45.98
Partial scholarship	21	8.05

Table 1. Continued

Variable	N	Percent of sample
Self	21	8.05
Combination of above	41	15.70
	261	100.00
Curriculum (College)		
Agriculture	62	23.75
Education	14	5.36
Engineering	96	36.78
Home Economics	8	3.07
Science and Humanities	76	29.12
Veterinary Medicine	5	1.92
Marital Status		
Single	145	55.55
Married	116	44.44
	261	100.00
Type of Residence		
Dormitory	92	35.25
Fraternity/Sorority	2	0.77
Married Student Housing	93	35.63
Private Residence/ Apartment	74	28.35
	261	100.00
Length of Stay		
In the United States		(Use number of months)
At Iowa State University		

Table 2. Means and variances of working conditions by demographic
variables

Variable	Classification	n	Mean	Variance
Sex	1. Male	209	41.249	73.120
	2. Female	52	42.289	73.582
Classification	1. Undergraduate	77	38.935	60.219
	2. Graduate	184	42.511	75.059
Age	1. 18-22	53	39.547	69.753
	2. 23-27	102	40.696	71.342
	3. 28 or above	106	43.142	72.579
Region	1. Africa	31	41.258	76.064
(Geographical Background)	2. Far East	113	41.584	76.281
	3. Middle East	61	40.098	65.857
	4. Europe	16	45.938	82.329
	5. Latin America	40	41.525	65.589
Source of Support	1. Parents	58	39.465	63.762
	2. Scholarship	120	42.617	76.776
	3. Partial scholarship	21	41.476	61.662
	4. Self	21	42.333	95.833
	5. Any combination of the above	41	40.414	65.848
Curriculum	1. Agriculture	62	41.774	62.735
(By College)	2. Education	14	44.642	75.785
	3. Engineering	96	40.041	68.629
	4. Home Economic	8	38.125	37.267
	5. Science and Humanity	76	42.513	86.626
	6. Veterinary Medicine	5	45.000	85.000
Marital Status	1. Single	145	39.275	64.437
	2. Married	116	44.181	71.106
Type of Residence	1. Dormitory	92	39.315	73.712
	2. Fraternity/Sorority	2	53.000	32.000
	3. Married Student Housing	93	44.784	66.061
	4. Apartment	74	39.621	57.827
Length of Stay	1. In the U.S.	261	41.456	74.633
	2. At Iowa State	261	41.456	75.684

Table 3. Means and variances of compensation by demographic variables

Variable	Classification	n	Mean	Variance
Sex	1. Male	209	43.956	84.406
	2. Female	52	40.576	69.974
Classification	1. Undergraduate	77	41.337	79.700
	2. Graduate	184	44.097	82.678
Age	1. 18-22	53	41.905	72.933
	2. 23-27	102	41.803	86.990
	3. 28 or above	106	45.396	78.336
Region	1. Africa	31	44.935	67.595
(Geographical Background)	2. Far East	113	44.867	78.973
	3. Middle East	61	41.098	80.190
	4. Europe	16	44.312	72.495
	5. Latin America	40	40.450	98.253
Source of Support	1. Parents	58	42.637	79.638
	2. Scholarship	120	44.308	82.870
	3. Partial scholarship	21	44.190	76.061
	4. Self	21	43.142	64.428
	5. Any combination of the above	41	40.804	99.260
Curriculum	1. Agriculture	62	42.532	71.761
(By College)	2. Education	14	46.714	70.835
	3. Engineering	96	43.260	774.468
	4. Home Economic	8	42.375	75.982
	5. Science and Humanity	76	43.421	110.967
	6. Veterinary Medicine	5	42.800	41.200
Marital Status	1. Single	145	42.344	71.546
	2. Married	116	44.456	95.745
Type of Residence	1. Dormitory	92	43.467	89.658
	2. Fraternity/Sorority	2	46.500	60.500
	3. Married Student Housing	93	44.075	94.439
	4. Apartment	74	41.973	61.423
Length of Stay	1. In the U.S.	261	43.284	79.815
	2. At Iowa State	261	43.284	85.785

Table 4. Means and variances of quality of education by demographic
          variables

Variable		Classification	n	Mean	Variance
Sex	1.	Male	209	45.578	78.754
	2.	Female	52	43.615	97.927
Classification	1.	Undergraduate	77	43.376	69.895
	2.	Graduate	184	45.945	86.696
Age	1.	18-22	53	43.339	66.074
	2.	23-27	102	43.607	82.121
	3.	28 or above	106	47.632	83.206
Region	1.	Africa	31	48.483	82.058
(Geographical Background)	2.	Far East	113	45.531	81.483
	3.	Middle East	61	42.524	71.153
	4.	Europe	16	44.500	72.533
	5.	Latin America	40	46.000	96.769
Source of Support	1.	Parents	58	43.155	65.571
	2.	Scholarship	120	46.916	85.287
	3.	Partial scholarship	21	46.142	93.128
	4.	Self	21	43.333	69.433
	5.	Any combination of the above	41	43.463	89.654
Curriculum	1.	Agriculture	62	46.032	86.785
(By College)	2.	Education	14	45.142	43.670
	3.	Engineering	96	44.177	73.726
	4.	Home Economic	8	42.625	138.267
	5.	Science and Humanity	76	45.565	93.982
	6.	Veterinary Medicine	5	52.600	43.300
Marital Status	1.	Single	145	44.048	75.990
	2.	Married	116	46.612	88.430
Type of Residence	1.	Dormitory	92	44.684	87.470
	2.	Fraternity/Sorority	2	43.000	162.000
	3.	Married Student Housing	93	47.139	83.469
	4.	Apartment	74	43.418	70.082
Length of Stay	1.	In the U.S.	261	45.188	81.320
	2.	At Iowa State	261	45.188	84.148

Table 5. Means and variances of social life by demographic variables

Variable		Classification	n	Mean	Variance
Sex	1.	Male	209	36.497	94.491
	2.	Female	52	39.192	93.334
Classification	1.	Undergraduate	77	36.454	106.777
	2.	Graduate	184	37.277	90.518
Age	1.	18-22	53	37.509	109.985
	2.	23-27	102	36.009	96.168
	3.	28 or above	106	37.783	86.723
Region	1.	Africa	31	34.548	121.989
(Geographical Background)	2.	Far East	113	37.469	74.340
	3.	Middle East	61	34.655	81.129
	4.	Europe	16	45.250	141.533
	5.	Latin America	40	38.075	104.071
Source of Support	1.	Parents	58	37.310	88.147
	2.	Scholarship	120	36.833	87.501
	3.	Partial scholarship	21	35.761	69.590
	4.	Self	21	40.285	134.414
	5.	Any combination of the above	41	36.219	122.675
Curriculum	1.	Agriculture	62	36.887	106.200
(By College)	2.	Education	14	38.857	118.901
	3.	Engineering	96	35.770	90.810
	4.	Home Economic	8	37.375	86.553
	5.	Science and Humanity	76	38.105	93.082
	6.	Veterinary Medicine	5	41.200	25.700
Marital Status	1.	Single	145	35.986	90.499
	2.	Married	116	38.344	98.488
Type of Residence	1.	Dormitory	92	36.021	105.889
	2.	Fraternity/Sorority	2	51.500	112.500
	3.	Married Student Housing	93	39.150	88.020
	4.	Apartment	74	35.243	88.020
Length of Stay	1.	In the U.S.	261	37.034	98.344
	2.	At Iowa State	261	37.034	103.280

Table 6. Means and variances of recognition by demographic variables

Variable	Classification	n	Mean	Variance
Sex	1. Male	209	44.186	87.806
	2. Female	52	43.288	83.228
Classification	1. Undergraduate	77	41.246	80.793
	2. Graduate	184	45.163	85.077
Age	1. 18-22	53	42.377	83.701
	2. 23-27	102	41.921	79.261
	3. 28 or above	106	46.830	83.380
Region	1. Africa	31	46.225	75.380
(Geographical Background)	2. Far East	113	44.079	81.966
	3. Middle East	61	41.344	83.862
	4. Europe	16	48.250	88.066
	5. Latin America	40	44.450	99.125
Source of Support	1. Parents	58	41.620	83.923
	2. Scholarship	120	45.216	84.389
	3. Partial scholarship	21	44.904	80.490
	4. Self	21	42.619	76.547
	5. Any combination of the above	41	44.097	100.290
Curriculum	1. Agriculture	62	45.887	81.347
(By College)	2. Education	14	44.214	69.104
	3. Engineering	96	42.500	87.115
	4. Home Economic	8	45.250	142.214
	5. Science and Humanity	76	43.921	90.367
	6. Veterinary Medicine	5	48.400	21.300
Marital Status	1. Single	145	42.696	83.518
	2. Married	116	45.646	86.560
Type of Residence	1. Dormitory	92	43.956	77.954
	2. Fraternity/Sorority	2	44.000	200.000
	3. Married Student Housing	93	46.311	90.869
	4. Apartment	74	41.175	79.461
Length of Stay	1. In the U.S.	261	44.008	88.417
	2. At Iowa State	261	44.008	89.148

Table 7. Means and variances of total satisfaction by demographic
variables

Variable	Classification	n	Mean	Variance
Sex	1. Male	209	211.469	1395.692
	2. Female	52	208.962	1294.900
Classification	1. Undergraduate	77	201.351	1217.520
	2. Graduate	184	214.995	1387.808
Age	1. 18-22	53	204.679	1322.452
	2. 23-27	102	204.039	1292.632
	3. 28 or above	106	220.783	1334.076
Region	1. Africa	31	215.452	1197.655
(Geographical Background)	2. Far East	113	213.531	1325.197
	3. Middle East	61	199.721	1263.304
	4. Europe	16	228.250	1045.800
	5. Latin America	40	210.500	1715.384
Source of Support	1. Parents	58	204.190	1251.665
	2. Scholarship	120	215.892	1423.727
	3. Partial scholarship	21	212.476	1117.161
	4. Self	21	211.714	1525.814
	5. Any combination of the above	41	205.000	1397.100
Curriculum	1. Agriculture	62	213.113	1234.560
(By College)	2. Education	14	219.571	940.725
	3. Engineering	96	205.750	1309.578
	Home Economic	8	205.750	1659.071
	5. Science and Humanity	76	213.526	1649.079
	6. Veterinary Medicine	5	230.000	725.000
Marital Status	1. Single	145	204.352	1185.729
	2. Married	116	219.241	1491.941
Type of Residence	1. Dormitory	92	207.446	1279.436
	2. Fraternity/Sorority	2	238.000	882.000
	3. Married Student Housing	93	221.462	1492.316
	4. Apartment	74	201.432	1129.152
Length of Stay	1. In the U.S.	261	210.969	1389.150
	2. At Iowa State	261	210.969	1436.526

Table 8. Correlation matrix of sample subscales with total satisfaction

	Working conditions	Compensation	Quality of education	Social life	Recognition	Total satisfaction
Working conditions	1.000	0.495	0.558	0.584	0.518	0.774
Compensation	0.495	1.000	0.701	0.391	0.675	0.805
Quality of education	0.558	0.701	1.000	0.477	0.767	0.866
Social life	0.584	0.391	0.477	1.000	0.507	0.739
Recognition	0.518	0.675	0.767	0.507	1.000	0.859
Total satisfaction	0.774	0.805	0.866	0.739	0.859	1.000

Table 9 shows the reliability measure, coefficient alpha, for each CSSQ scale for the foreign student sample. The reliability coefficients are derived by means of coefficient alpha method:

$$\text{rel.} = \frac{n}{n-1}\left(1 - \frac{\text{sum } s_i^2}{s_y^2}\right)$$

as indicated in Starr, Betz, and Menne (1971). Coefficient alpha is a measure of internal consistency and is the average of all possible split-half reliability coefficients for a given instrument. A higher alpha coefficient indicates a reliable instrument (Hallenbeck, 1974).

Table 9. Reliability coefficients for the five CSSQ scales for the foreign student sample

Scale	Sample
Working conditions	0.783
Compensation	0.837
Quality of education	0.848
Social life	0.854
Recognition	0.840
Total satisfaction	0.952

Tests of Hypotheses

The first general form of null hypothesis states that there is no significant difference in satisfaction with working conditions as perceived by foreign students when each of the nine demographic variables

is considered individually. This hypothesis was tested by the F-test

of significance for the one-way classifications analysis of variance

(ANOVA) and the Scheffe multiple comparison method. The ANOVA

findings are presented in Table 10, and results of the Scheffe method

are presented in Appendix B.

The results of the ANOVA for satisfaction with working conditions

as perceived by foreign students yielded significant differences when

students were grouped by classification (F = 9.82, p < .01), age (F = 3.87,

p < .05), marital status (F = 23.01, p < .01), and type of residence

(F = 9.89, p < .01).

These findings indicated that graduate students expressed greater

satisfaction with working conditions than did undergraduates (see Table 2

for means and variances). When students were grouped according to age,

the students in the 28 and above age group were more satisfied with

working conditions than those in the other age groups. Students in

the 18-22 age group were the least satisfied with working conditions

of all the age groups within the sample as indicated by the ANOVA.

In addition, analysis by way of the Scheffe method also revealed a

significant difference (p = .05) in satisfaction with working conditions

between students in the 18-22 and students in the 28 and above age

groups.

When students were grouped by marital status, married students ex-

pressed greater satisfaction with working conditions than did single

students. When students were grouped according to type of residence,

the students who live in fraternity/sorority housing reported a higher

level of satisfaction with working conditions than did students living

Table 10. Analysis of variance for satisfaction with working conditions
as perceived by foreign students when each of the nine
demographic variables is considered individually

Source of variation	df	Sum of squares	Mean squares	F-test Computed F-value	Prob > F
Sex	1	45.008	45.008	0.61	0.434
Residual	259	18961.735	73.211		
Classification	1	694.089	694.089	9.82	0.002**
Residual	259	18312.654	70.705		
Age	2	553.155	276.578	3.87	0.022*
Residual	258	18453.588	71.525		
Region	4	437.034	109.258	1.51	0.200
Residual	256	18569.709	72.537		
Source of Support	4	452.089	113.022	1.56	0.186
Residual	256	18554.654	72.479		
Curriculum	5	576.995	115.399	1.60	0.160
Residual	255	18429.748	72.273		
Marital Status	1	1550.579	1550.579	23.01	0.0001**
Residual	259	17456.164	67.398		
Type of Residence	3	1967.780	655.926	9.89	0.0001**
Residual	257	17038.963	66.299		
Length of Stay					
a. In the U.S.	64	4378.682	68.416	0.92	0.651
Residual	196	14628.061	74.633		
b. At Iowa State	53	3340.149	63.021	0.83	0.783
Residual	207	15666.594	75.684		
Corrected total	260	19006.743			

*p < .05.

**p < .01.

in other accommodations. In contrast, the Scheffe method revealed

significant differences (p = .05) in satisfaction with working conditions

between students who live in dormitory and married student housing, and

between students who live in married student housing and private residence/

apartment.

Results of the ANOVA and the Scheffe method were somewhat different be-

cause in this study the Scheffe method was employed to compare only subsets

of all possible comparisons while the ANOVA was comparing the overall

differences. Another factor that seems to have an effect in determining

significant difference between pairs of means by the Scheffe method is the

nature of the data (unequal size samples for various classifications

of each demographic variable). For example, among the classifications

of type of residence, 92 students live in various dormitories, 2 students

in fraternity/sorority housing, 93 students live in married student

housing, 74 students live in private residence/apartment. The small

number of student (2) residing in fraternity/sorority housing definitely

has a restrictive effect on testing for significant differences between

pairs of means from type of residence as performed by the Scheffe

method, which is the conservative measure.

Sex, region (geographical background), source of support, curriculum

(by college in which students were majoring), and length of stay (in

the United States and at Iowa State University) were the other demographic

variables examined by the ANOVA. On these variables, no significant

differences were found in students' level of satisfaction with working

conditions at the .05 probability level.

The second general form of null hypothesis states that there is no significant difference in satisfaction with compensation as perceived by foreign students when each of the nine demographic variables is considered individually. This hypothesis was tested by the F-test of significance for the ANOVA and the Scheffe method. The ANOVA findings are presented in Table 11 and results of the Scheffe method are presented in Appendix B.

As evidenced by the ANOVA findings, significant differences were found in students' levels of satisfaction with compensation when students were grouped by sex ($F = 5.83$, $p < .05$), classification ($F = 5.06$, $p < .05$), age ($F = 4.94$, $p < .01$), and region ($F = 3.10$, $p < .05$).

These results indicated that male students expressed greater satisfaction with compensation than did female students (see Table 3 for means and variances). When students were grouped by classification, graduate students were more satisfied with compensation than were undergraduates.

When students were grouped by age, students in the 28 and above age group were more satisfied with compensation than those in the other age groups. Students in the 23-27 age group were the least satisfied with compensation of all the age groups within the sample as indicated by the ANOVA. Analysis by way of the Scheffe method also revealed a significant difference ($p = .05$) in satisfaction with compensation between students in the 23-27 and students in the 28 and above age groups.

When students were grouped according to region (geographical background), the ANOVA findings indicated that the students who came

Table 11. Analysis of variance for satisfaction with compensation
as perceived by foreign students when each of the nine
demographic variables is considered individually

Source of variation	df	Sum of squares	Mean squares	F-test Computed F-value	Prob > F
Sex	1	475.714	475.714	5.83	0.016*
Residual	259	21125.305	81.565		
Classification	1	413.559	413.559	5.06	0.025*
Residual	259	21187.460	81.804		
Age	2	797.054	398.526	4.94	0.008*
Residual	258	20803.965	80.635		
Region	4	997.392	249.348	3.10	0.016*
Residual	256	20603.627	80.483		
Source of Support	4	419.782	104.945	1.27	0.283
Residual	256	21181.237	82.739		
Curriculum	5	209.036	41.807	0.50	0.779
Residual	255	21391.983	83.890		
Marital Status	1	287.476	287.476	3.49	0.063
Residual	259	21313.543	82.292		
Type of Residence	3	209.198	69.733	0.84	0.477
Residual	257	21391.821	83.237		
Length of Stay					
a. In the U.S.	64	5957.256	93.082	1.17	0.212
Residual	196	15643.763	79.815		
b. At Iowa State	53	3843.337	72.515	0.85	0.763
Residual	207	17757.682	85.785		
Corrected total	260	21601.019			

*p < .05.

**p < .01.

from Africa reported a higher level of satisfaction with compensation

than did students coming from other parts of the world. In contrast,

the Scheffe method did not substantiate the results of the ANOVA since

no pairs of means were significantly different at the .05 probability

level.

Source of support, curriculum, marital status, type of residence,

and length of stay were the other demographic variables examined by

the ANOVA. On these variables, there were no significant differences

found in students' levels of satisfaction with compensation at the .05

probability level.

The third general form of null hypothesis states that there is no

significant difference in satisfaction with quality of education as

perceived by foreign students when each of the nine demographic variables

is considered individually. This hypothesis was tested by the F-test

of significance for the ANOVA and the Scheffe method. The ANOVA findings

are presented in Table 12 and results of the Scheffe method are presented

in Appendix B.

The results of the ANOVA for satisfaction with quality of education

as perceived by foreign students yielded significant differences when

students were grouped by classification (F = 4.38, p < .05), age (F = 6.74,

p < .01), region (F = 2.52, p < .05), source of support (F = 2.51,

p < .05), and marital status (F = 5.20, p < .05).

The findings indicated that graduate students expressed greater

satisfaction with quality of education than did undergraduates (see

Table 4 for means and variances). Students in the 28 and above age

group were more satisfied with quality of education than those in the

Table 12. Analysis of variance for satisfaction with quality of education as perceived by foreign students when each of the nine demographic variables is considered individually

Source of variation	df	Sum of squares	Mean squares	F-test Computed F-value	F-test Prob > F
Sex	1	160.545	160.545	1.95	0.164
Residual	259	21375.255	82.529		
Classification	1	358.266	358.266	4.38	0.037*
Residual	259	21177.534	81.766		
Age	2	1068.949	534.474	6.74	0.001**
Residual	258	20466.851	79.328		
Region	4	816.704	204.176	2.52	0.041*
Residual	256	20719.096	80.933		
Source of Support	4	811.597	202.899	2.51	0.042*
Residual	256	20724.203	80.953		
Curriculum	5	480.415	96.083	1.16	0.327
Residual	255	21055.385	82.570		
Marital Status	1	423.595	423.595	5.20	0.023*
Residual	259	21112.205	81.514		
Type of Residence	3	618.745	206.248	2.53	0.056
Residual	257	20917.055	81.389		
Length of Stay					
a. In the U.S.	64	5597.133	87.455	1.08	0.347
Residual	196	15938.667	81.319		
b. At Iowa State	53	4117.213	77.683		0.626
Residual	207	17418.587	84.147	0.92	
Corrected total	260	21535.800			

*p < .05.

**p < .01.

other age groups. Students in the 18-22 age group were the least

satisfied with quality of education of all the age groups within the

sample. The Scheffe method also revealed significant differences (p = .05)

in satisfaction with quality of education between students in the 18-22

and students in the 28 and above age groups, and between students in

the 23-27 and students in the 28 and above age groups.

When students were grouped according to region, the ANOVA findings

indicated that the students who came from Africa reported a higher level

of satisfaction with quality of education than those coming from other

parts of the world. When students were grouped by source of support,

the students who received either scholarships by their governments or

assistantships by their colleges expressed greater satisfaction with

quality of education than those who were supported by other means.

In contrast, the Scheffe method did not substantiate the results of the

ANOVA for region and source of support.

Finally, when students were grouped according to marital status,

married students reported a higher level of satisfaction with quality

of education than those who were single. Sex, curriculum, type of

residence, and length of stay were the other variables examined by the

ANOVA. On these variables, there were no significant differences found

in students' levels of satisfaction with quality of education at the .05

probability level.

The fourth general form of null hypothesis states that there is

no significant difference in satisfaction with social life as perceived

by foreign students when each of the nine demographic variables is

considered individually. The F-test of significance for the ANOVA and

the Scheffe method were employed to test this hypothesis. The ANOVA

findings are presented in Table 13 and results of the Scheffe method

are presented in Appendix B.

As evidenced by the ANOVA findings, significant differences were

found in students' levels of satisfaction with social life when students

were grouped by region (F = 4.67, p < .01), and type of residence (F =

4.24, p < .01). These results indicated that the European students

expressed greater satisfaction with social life than those coming from

other parts of the world. The Africans were the least satisfied group

with social life of all the international groups within the sample (see

Table 5 for means and variances). Results of the Scheffe method also

revealed similar significant differences in satisfaction with social

life between the Europeans and the Africans, and between the Europeans

and the Middle Easterners at the .05 probability level.

When students were grouped by type of residence, the ANOVA findings

indicated that students living in fraternity/sorority housing reported

a higher level of satisfaction with social life than did students living

in the other accommodations. But the Scheffe method did not substantiate

the results of the ANOVA, since no pairs of means were significantly

different at the .05 probability level.

The other demographic variables explored were sex, classification,

age, source of support, curriculum, marital status, and length of stay.

On these variables, there were no significant differences found in

students' levels of satisfaction with social life at the .05 probability

level.

Table 13. Analysis of variance for satisfaction with social life as
perceived by foreign students when each of the nine
demographic variables is considered individually

Source of variation	df	Sum of squares	Mean squares	F-test Computed F-value	Prob > F
Sex	1	302.364	302.364	3.21	0.074
Residual	259	24414.325	94.263		
Classification	1	36.734	36.734	0.39	0.535
Residual	259	24679.955	95.289		
Age	2	178.444	89.222	0.94	0.393
Residual	258	24538.245	95.109		
Region	4	1681.325	420.331	4.67	0.001**
Residual	256	23035.364	89.981		
Source of Support	4	292.489	73.122	0.77	0.547
Residual	256	24424.200	95.407		
Curriculum	5	375.974	75.194	0.79	0.561
Residual	255	24340.715	95.453		
Marital Status	1	358.510	358.510	3.81	0.052
Residual	259	24358.179	94.047		
Type of Residence	3	1166.719	388.906	4.24	0.006**
Residual	257	23549.970	91.634		
Length of Stay					
a. In the U.S.	64	5441.217	85.019	0.86	0.749
Residual	196	19275.472	98.344		
b. At Iowa State	53	3337.826	62.977	0.61	0.983
Residual	207	21378.863	103.279		
Corrected total	260	24716.689			

**$p < .01$.

The fifth general form of null hypothesis states that there is no significant difference in satisfaction with recognition as perceived by foreign students when each of the nine demographic variables is considered individually. This hypothesis was tested by the F-test of significance for the ANOVA and the Scheffe multiple comparison method. The ANOVA findings are presented in Table 14 and results of the Scheffe method are presented in Appendix B.

As evidenced by the ANOVA findings, significant differences were found in students' levels of satisfaction with recognition when students were grouped by classification ($F = 9.93$, $p < .01$), age ($F = 8.73$, $p < .01$), region ($F = 2.60$, $p < .05$), marital status ($F = 6.61$, $p < .05$), and type of residence ($F = 4.34$, $p < .01$). These results indicated that graduate students expressed a greater satisfaction with recognition than did the undergraduates (see Table 6 for means and variances). Students in the 28 and above age group were more satisfied with recognition than those in the other age groups. Of all the age groups within the sample, students in the 23-27 age group were the least satisfied with recognition. The Scheffe method also revealed a significant difference ($p = .05$) in satisfaction with recognition between students in the 23-27 and students in the 28 and above age groups.

When students were grouped according to region, the ANOVA findings indicated that European students were more satisfied with recognition than those coming from other parts of the world. In contrast, the Scheffe method did not substantiate the results of the ANOVA since

Table 14. Analysis of variance for satisfaction with recognition as perceived by foreign students when each of the nine demographic variables is considered individually

Source of variation	df	Sum of squares	Mean squares	F-test Computed F-value	F-test Prob > F
Sex	1	33.589	33.589	0.39	0.535
Residual	259	22508.395	86.905		
Classification	1	832.564	832.564	9.93	0.002**
Residual	259	21709.420	83.820		
Age	2	1429.216	714.608	8.73	0.0002**
Residual	258	21112.768	81.832		
Region	4	881.611	220.402	2.60	0.036*
Residual	256	21660.373	84.610		
Source of Support	4	563.591	140.897	1.64	0.164
Residual	256	21978.393	85.853		
Curriculum	5	547.191	109.438	1.27	0.277
Residual	255	21994.793	86.254		
Marital Status	1	560.827	560.827	6.61	0.011*
Residual	259	21981.157	84.869		
Type of Residence	3	1087.485	362.495	4.34	0.005**
Residual	257	21454.499	83.480		
Length of Stay					
a. In the U.S.	64	5212.329	81.443	0.92	0.643
Residual	196	17329.655	88.417		
b. At Iowa State	53	4088.297	77.137	0.87	0.729
Residual	207	18453.687	89.148		
Corrected total	260	22541.984			

*p < .05.

**p < .01.

no pairs of means were significantly different at the .05 probability level.

When students were grouped by marital status, the ANOVA results showed that married students expressed a greater satisfaction than did single students. As far as type of residence is concerned, the students residing in married student housing were more satisfied with recognition than those living in the other accommodations. The students living in private residence/apartment were the least satisfied with recognition as compared to the other groups within the sample. The Scheffe method also indicated a significant difference ($p = .05$) is satisfaction with recognition between students who live in married housing and those who live in apartment/private residence.

The sixth general form of null hypothesis states that there is no significant difference in total satisfaction as perceived by foreign students when each of the nine demographic variables is considered individually. This hypothesis was tested by the F-test of significance for the ANOVA and the Scheffe method. The ANOVA findings are presented in Table 15 and results of the Scheffe are presented in Appendix B.

The results of the ANOVA for total satisfaction as perceived by foreign students yielded significant differences when students were grouped by classification ($F = 7.55$, $p < .01$), age ($F = 6.54$, $p < .01$), region ($F = 2.59$, $p < .05$), marital status ($F = 10.81$, $p < .01$), and type of residence ($F = 4.98$, $p < .01$).

These findings indicated that graduate students expressed a greater satisfaction with their overall college experience than did the under-graduates (see Table 7 for means and variances). Students in the 28 and

Table 15. Analysis of variance for satisfaction with total satisfaction
as perceived by foreign students when each of the nine
demographic variables is considered individually

Source of variation	df	Sum of squares	Mean squares	F-test Computed F-value	Prob > F
Sex	1	261.784	261.784	0.19	0.663
Residual	259	356343.970	1375.845		
Classification	1	10105.227	10105.227	7.55	0.006**
Residual	259	346500.527	1337.839		
Age	2	17204.355	8602.177	6.54	0.002**
Residual	258	339401.399	1315.509		
Region	4	13868.673	3467.168	2.59	0.037*
Residual	256	342737.081	1338.816		
Source of Support	4	7093.725	1773.431	1.30	0.271
Residual	256	349512.029	1365.281		
Curriculum	5	6461.669	1292.333	0.94	0.456
Residual	255	350144.085	1373.114		
Marital status	1	14287.451	14287.451	10.81	0.001**
Residual	259	342318.303	1321.692		
Type of Residence	3	19573.746	6524.582	4.98	0.002**
Residual	257	337032.008	1311.408		
Length of Stay					
a. In the U.S.	64	84332.304	1317.692	0.95	0.588
Residual	196	272273.450	1389.150		
b. At Iowa State	53	59244.853	1117.827	0.78	0.859
Residual	207	297360.901	1436.526		
Corrected total	260	356605.754			

*p < .05.

**p < .01.

above age group were more satisfied with their total college experience than those in the other age groups. Of all the age groups within the sample, students in the 23-27 age group were the least satisfied with their total college experience. The Scheffe method also revealed significant differences in total satisfaction between students in the 18-22 and students in the 28 and above age groups, and between students in the 23-27 and students in the 28 and above age group at the .05 probability level.

When students were grouped according to region, the ANOVA findings indicated that the European students were more satisfied with their overall college experience than those coming from other parts of the world. The Scheffe method did not substantiate results of the ANOVA since no pairs of means were significantly different at the .05 probability level. When students were grouped by marital status, the ANOVA showed that married students were more satisfied with their total college experience than were the single students.

As far as type of residence is concerned, the ANOVA findings indicated that the students residing in fraternity/sorority housing were more satisfied with their overall college experience than those living in the other accommodations. The Scheffe method did not substantiate the ANOVA findings concerning overall satisfaction of the students living in fraternity /sorority housing as compared with students residing in the other accommodation. However, the Scheffe method did reveal a significant difference ($p = .05$) in total satisfaction between students living in the married housing and students living in apartment/ private residence.

The seventh general form of null hypothesis states that there is no significant relationship between combinations of selected demographic variables including interaction effects and the level of satisfaction as perceived by foreign students. This hypothesis was tested by the sequential F-test of significance for the multiple classifications analysis of variance by way of regression (MANOVA). In the sequential F-test, variables are added one by one in stages to a regression equation (Draper and Smith, 1966). Each selected demographic variable for the regression equation was previously found (by F-test for ANOVA) to be significant in terms of students' satisfaction. The order of fit in the regression equation is important and will have an influence on the data analysis. The MANOVA findings are presented in Tables 16-21.

The results of the MANOVA indicated significant relationships between combinations of selected demographic variables (including interaction effects) and students' levels of satisfaction with working conditions (see Table 16). When students were grouped according to classification, age, marital status, and type of residence, significant relationships were found in the overall regression effect ($F = 3.50$, $p < .01$), classification ($F = 11.14$, $p < .01$), marital status (after taking the effects of classification and age into consideration) ($F = 14.95$, $p < .01$), type of residence (after taking the effects of classification, age, and marital status into consideration ($F = 3.22$, $p < .05$), and classification X type of residence (after taking the effects of classification, age, marital status, type of residence, classification X age, and classification X marital status into consideration) ($F = 4.37$, $p < .05$).

Table 16. Analysis of variance for satisfaction with working conditions
as perceived by foreign students when classification, age,
marital status, and type of residence are considered

Source of variation	df	Sum of squares	Mean squares	F-test Computed F-value	Prob > F
Regression	18	3921.944	217.866	3.50	0.0001**
Classification	1	694.089	694.089	11.14	0.001**
Age	2	165.862	82.931	1.33	0.266
Marital Status	1	931.863	931.863	14.95	0.0001**
Type of Residence	3	602.621	200.874	3.22	0.023*
Class X Age	2	53.008	26.504	0.43	0.654
Class X Marital	1	64.409	64.409	1.03	0.310
Class X Type[a]	2	544.892	272.446	4.37	0.014*
Age X Marital[a]	1	215.608	215.608	3.46	0.064
Age X Type[a]	3	454.454	151.485	2.43	0.065
Marital X Type[a]	2	195.134	97.567	1.57	0.211
Residual	242	15084.799	62.333		
Corrected total	260	19006.743			

*p < .05.

**p < .01.

[a]Analysis of the data revealed the following facts concerning the
missing observations: one cell with no observations in Class X Type;
one cell with no observations in Age X Marital; three cells with no
observations in Age X Type; and one cell with no observations in
Marital X Type. Therefore, six interaction terms cannot be estimable,
the df for interactions is reduced by six.

These findings indicated that classification, marital status, type of residence, and classification X type of residence did show a combined effect in students' reported satisfaction with working conditions. Age, classification X age, classification X marital status, age X marital status, age X type of residence, and marital status X type of residence did not show any effect (p = .05) in students' reported satisfaction with working conditions.

As shown in Table 17, the results of the MANOVA indicated significant relationships between combinations of selected demographic variables (including interaction effects) and students' levels of satisfaction with compensation. When students were grouped by sex, classification, age, and region (geographical background), significant relationships were found in the overall regression effect (F = 2.15, p < .01), sex (F = 6.46, p < .05), classification (after taking the effect of sex into consideration) (F = 5.97, p < .05), age (after taking the effects of sex and classification into consideration) (F = 3.08, p < .05), region (after taking the effects of sex, classification, and age into consideration) (F = 3.95, p < .05), and sex X age (after taking the effects of sex, classification, age, region, and sex X classification into consideration) (F = 3.29, p < .05).

These findings revealed that sex, classification, age, region, and sex X age did show a combined effect in students' reported satisfaction with compensation. Sex X classification, sex X region, classification X age, classification X region, and age X region did not indicate any effect (p = .05) in students' reported satisfaction with compensation.

Table 17. Analysis of variance for satisfaction with compensation as perceived by foreign students when sex, classification, age, and geographical background (region) are considered

Source of variation	df	Sum of squares	Mean squares	F-test Computed F-value	F-test Prob > F
Regression	29	4590.950	158.308	2.15	0.001**
Sex	1	475.714	475.714	6.46	0.012*
Classification	1	439.309	439.309	5.97	0.015*
Age	2	453.916	226.958	3.08	0.048*
Region	4	1163.749	290.937	3.95	0.004**
Sex X Class	1	108.371	108.371	1.47	0.226
Sex X Age	2	484.333	242.167	3.29	0.039*
Sex X Region	4	172.238	43.060	0.58	0.674
Class X Age	2	30.717	15.359	0.21	0.812
Class X Region	4	659.751	164.938	2.24	0.066
Age X Region	8	602.852	75.356	1.02	0.419
Residual	231	17010.069	73.636		
Corrected total	260	21601.019			

*p < .05.

**p < .01.

The results of the MANOVA (see Table 18) did not reveal the overall significant relationship between combinations of selected demographic variables (including interaction effects) and students' levels of satisfaction with quality of education when students were grouped by classification, age, region, source of support, and marital status.

Table 18. Analysis of variance for satisfaction with quality of education as perceived by foreign students when classification, age, geographical background (region), source of support, and marital status are considered

Source of variation	df	Sum of squares	Mean squares	F-test Computed F-value	Prob > F
Regression	61	5786.842	94.866	1.20	0.178
Classification	1	358.266	358.266	4.53	0.035*
Age	2	744.552	372.276	4.70	0.0101*
Region	4	490.510	122.628	1.55	0.189
Source of Support	4	284.240	71.060	0.90	0.466
Marital Status	1	18.269	18.269	0.23	0.631
Class X Age	2	81.354	40.677	0.51	0.598
Class X Region	4	476.881	119.220	1.51	0.202
Class X Support[a]	3	73.014	24.338	0.31	0.821
Class X Marital	1	2.575	2.575	0.03	0.857
Age X Region	8	1098.574	137.322	1.74	0.092
Age X Support[a]	7	668.333	95.476	1.21	0.300
Age X Marital[a]	1	126.961	126.961	1.60	0.206
Region X Support[a]	15	909.932	60.662	0.77	0.714

*p < .05.

[a]Analysis of the data revealed the following facts concerning the missing observations: one cell with no observations in Class X Support; one cell with no observations in Age X Support; one cell with no observations in Age X Marital; and one cell with no observations in Region X Support. Therefore, four interaction terms cannot be estimable, the df for interfactions is reduced by four.

Table 18. Continued

Source of variation	df	Sum of squares	Mean squares	F-test Computed F-value	Prob > F
Region X Marital	4	157.611	39.403	0.50	0.737
Support X Marital	4	295.769	73.942	0.93	0.445
Residual	199	15748.958	79.140		
Corrected total	260	21535.800			

The only significant relationship found was in classification ($F = 4.53$, $p < .05$) and age (after taking the effect of classification into consideration) ($F = 4.70$, $p < .01$). This indicated that classification (alone) and age (after the effect of classification) had an effect on students' reported satisfaction with quality of education.

Region, source of support, marital status, classification X age, classification X region, classification X source of support, classification X marital, age X region, age X source of support, age X marital status, region X source of support, region X marital status, and source of support X marital status did not show any effect ($p = .05$) in students' reported satisfaction with quality of education.

Results of the MANOVA (see Table 19) indicated significant relationships between combinations of selected demographic variables and students levels of satisfaction with social life when students were grouped according to region and type of residence. The significant relationships were found in the overall regression effect ($F = 2.04$, $p < .05$), region ($F = 4.70$, $p < .01$), and type of residence (after taking

Table 19. Analysis of variance for satisfaction with social life as perceived by foreign students when geographical background (region), and type of residence are considered

Source of variation	df	Sum of squares	Mean squares	F-test Computed F-value	Prob > F
Regression	16	2911.338	181.958	2.04	0.012*
Region	4	1681.325	420.331	4.70	0.001**
Type of Residence	3	893.811	297.937	3.33	0.020*
Region X Type[a]	9	336.201	37.356	0.42	0.924
Residual	244	21805.351	89.366		
Corrected total	260	24716.689			

*p < .05.

**p < .01.

[a]Analysis of the data revealed that there were three cells with no observations in Region X Type. Therefore, three interaction terms cannot be estimable, the df for interactions is reduced by three.

the effect of region into consideration) ($F = 3.33$, $p < .05$). These findings revealed that region and type of residence did show a combined effect in students' reported satisfaction with social life. Region X type of residence did not show any effect ($p = .05$) in students' reported satisfaction with social life.

As evidenced by the MANOVA findings indicated in Table 20, significant relationships were found between combinations of selected demographic variables (including interaction effects) and students' levels of satisfaction with recognition. When students were grouped according to classification, age, region, marital status, and type of

Table 20. Analysis of variance for satisfaction with recognition as perceived by foreign students when classification, age, geographical background (region), marital status, and type of residence are considered

Source of variation	df	Sum of squares	Mean squares	F-test Computed F-value	F-test Prob > F
Regression	47	5849.372	124.454	1.59	0.015*
Classification	1	832.564	832.564	10.62	0.001**
Age	2	909.364	454.682	5.80	0.003**
Region	4	588.636	147.159	1.88	0.115
Marital Status	1	21.533	21.533	0.27	0.600
Type of Residence	3	619.362	206.454	2.63	0.050*
Class X Age	2	86.101	43.051	0.55	0.578
Class X Region	4	113.191	28.297	0.36	.836
Class X Marital	1	1.698	1.698	0.02	0.883
Class X Type[a]	3	125.977	41.992	0.54	0.662
Age X Region	8	1325.625	165.703	2.11	0.035*
Age X Marital[a]	1	67.623	67.623	0.86	0.354
Age X Type[a]	3	125.977	41.992	0.54	0.662
Region X Marital	4	146.610	36.653	0.57	0.759

*p < .05.

**p < .01.

[a]Analysis of the data revealed the following facts concerning the missing observations: one cell with no observations in Class X Type; one cell with no observations in Age X Marital; three cells with no observations in Age X Type; three cells with no observations in Region X Type; and one cell with no observations in Marital X Type. Therefore, nine interaction terms cannot be estimable, the df for interactions is reduced by nine.

Table 20. Continued

Source of variation	df	Sum of squares	Mean squares	F-test Computed F-value	Prob > F
Region X Type[a]	9	720.032	80.004	1.02	0.424
Marital X Type[a]	2	162.449	81.225	1.04	0.356
Residual	213	16692.612	78.369		
Corrected total	260	22541.984			

residence, significant relationships were found in the overall regression ($F = 1.59$, $p < .05$), classification ($F = 10.62$, $p < .01$), age (after taking the effect of classification into consideration) ($F = 5.80$, $p < .01$), type of residence (after taking the effects of classification, age, region, and marital status into consideration) ($F = 2.63$, $p = .05$), and age X region (after taking the effects of classification, age, region, marital status, type of residence, classification X age, classification X region, classification X marital status, and classification X type of residence into consideration) ($F = 2.11$, $p < .05$).

These findings revealed that classification, age, type of residence, and age X region did show a combined effect in students' reported satisfaction with recognition. Region, marital status, classification X age, classification X region, classification X marital status, classification X type of residence, age X marital status, age X type of residence, region X marital status, region X type of residence, and marital status X type of residence did not indicate any effect ($p = .05$)

in students' reported satisfaction with recognition.

Table 21 presents the results of the MANOVA indicating significant relationships between combinations of selected demographic variables and students' perceptions of total satisfaction. When students were grouped according to classification, age, region, marital status, and type of residence, significant relationships were found in the overall regression effect ($F = 1.44$, $p < .05$), classification ($F = 7.95$, $p < .01$), and age (after taking the effect of classification into consideration) ($F = 4.16$, $p < .05$). These findings indicated that classification and age did yield a combined effect in students' perceptions of total satisfaction.

Region, marital status, type of residence, classification X age, classification X region, classification X marital status, classification X type of residence, age X region, age X marital status, age X type of residence, region X marital status, region X type of residence, and marital status X type of residence did not reveal any effect ($p = .05$) in students' perceptions of total satisfaction.

Table 21. Analysis of variance for satisfaction with all scales (total satisfaction) as perceived by foreign students when classification, age, geographical background (region), marital status, and type of residence are considered

Source of variation	df	Sum of squares	Mean squares	F-test Computed F-value	F-test Prob > F
Regression	47	85963.440	1839.009	1.44	0.044*
Classification	1	10105.227	10105.227	7.95	0.005**
Age	2	10565.021	5282.511	4.16	0.017*
Region	4	10300.444	2575.111	2.03	0.092
Marital Status	1	4117.180	4117.180	3.24	0.073
Type of Residence	3	6759.162	2253.054	1.77	0.151
Class X Age	2	1520.733	760.366	0.60	0.551
Class X Region	4	3925.616	981.404	0.77	0.544
Class X Marital	1	608.246	608.246	0.48	0.489
Class X Type[a]	2	139.729	69.865	0.05	0.946
Age X Region	8	16382.769	2047.846	1.61	0.123
Age X Marital[a]	1	3400.169	3400.169	2.68	0.103
Age X Type[a]	3	5102.243	1700.747	1.34	0.261
Region X Marital	4	680.348	170.087	0.13	0.969

*p < .05.

**p < .01.

[a]Analysis of the data revealed the following facts concerning the missing observations: one cell with no observations in Class X Type; one cell with no observations in Age X Marital; three cells with no observations in Age X Type; three cells with no observations in Region X Type; and one cell with no observations in Marital X Type. Therefore, nine interaction terms cannot be estimable, the df for interactions is reduced by nine.

Table 21. Continued

Source of variation	df	Sum of squares	Mean squares	F-test Computed F-value	Prob > F
Region X Type[a]	9	7042.116	782.457	0.62	0.784
Marital X Type[a]	2	5314.431	2657.215	2.09	0.126
Residual	213	270642.314	1270.621		
Corrected total	260	356605.754			

DISCUSSION

Discussion of the findings are presented in this chapter under three major sections: (1) effect of each demographic variable (sex, classification, age, region, source of support, curriculum, marital status, type of residence, and length of stay) on scale scores of the CSSQ (working conditions, compensation, quality of education, social life, recognition, and total satisfaction) as perceived by foreign students (hypotheses 1-6); (2) effects of combined demographic variables (including interactions) on scale scores of the CSSQ as perceived by foreign students (hypothesis 7); and (3) summary of findings for null hypotheses 1-7. Recommendations for further study are also presented in this chapter.

Effect of Each Demographic Variable

In this section, the general forms of null hypotheses tested were:

1. There is no significant difference in satisfaction with working conditions as perceived by foreign students when each of the nine demographic variables is considered individually.

2. There is no significant difference in satisfaction with compensation as perceived by foreign students when each of the nine demographic variables is considered individually.

3. There is no significant difference in satisfaction with quality of education as perceived by foreign students when each of the nine demographic variables is considered individually.

4. There is no significant difference in satisfaction with social life as perceived by foreign students when each of the nine demographic variables is considered individually.

5. There is no significant difference in satisfaction with recognition as perceived by foreign students when each of the nine demographic variables is considered individually.

6. There is no significant difference in total satisfaction as perceived by foreign students when each of the nine demographic variables is considered individually.

Results of testing these hypotheses indicate the effect of each demographic variable on scale scores of the CSSQ as perceived by foreign students as follows:

The sex variable

Significant difference was found only in students' reported satisfaction with compensation when students were grouped according to sex, i.e. male students were found to be more satisfied with compensation than were female students. This finding is in agreement with the study by Betz, Starr, and Menne (1972) in which sex was found to have an effect on students' levels of satisfaction with compensation. The results of the present study, however, were based on data from a foreign student population whereas the results of the Betz, et al. study were based on an American student population.

No significant differences in students' levels of satisfaction with any other CSSQ scales were found among students when grouped by sex.

The classification variable

Significant differences in students' reported satisfaction were found between graduate and undergraduate students on the following scales: working conditions, compensation, quality of education, recognition, and total satisfaction. Graduate students were found to be more satisfied on all of these scales than were the undergraduates. This could possibly be related to the likelihood of graduate students being more mature and already having goals set for their future careers. These findings are not in agreement with the study by Martin (1968) in which it was found that graduate students were less satisfied with college than were undergraduates. The lack of agreement in findings could possibly be due to the dissimilarity in samples (Martin used American students) and the different instrument employed. In the study by Martin, the Modified College Q-Sort was used to measure students' perceived satisfaction with college whereas in this study the CSSQ was employed.

There was no significant difference found between graduate and undergraduate students on the social life scale.

The age variable

In the following scales: working conditions, compensation, quality of education, recognition, and total satisfaction, significant differences were found in students' reported levels of satisfaction when students were grouped by age. Students in the 28 and above age group were more satisfied with working conditions and quality of education than were those in the other age groups. Of all the age groups within the sample,

students in the 18-22 age group were the least satisfied with working conditions and quality of education.

Students in the 28 and above age group were more satisfied with compensation and recognition than were those in the other age groups. Students in the 23-27 age group were the least satisfied with compensation and recognition. Also, students in the 28 and above age group expressed a greater satisfaction with their overall college experience than did students in the 23-27 age group. There was no significant difference found in students' reported satisfaction with social life.

The findings in terms of students' reported satisfaction with their quality of education and their overall college experience (total satisfaction) are in agreement with the study by Sturtz (1971) in which the age variable was found to be a significant factor in students' satisfaction with the quality of their education and in their overall satisfaction. But the sample data used in Sturtz's study came from only female American students attending Iowa State University in 1971. Thus, a comparison between Sturtz's study and the present study may not be appropriate even if both studies employed the same instrument, i.e. the CSSQ.

The region variable (geographical background)

Significant differences were found (through the ANOVA) in students' levels of satisfaction with compensation, quality of education, recognition, and total satisfaction when students were grouped according to region. In contrast, the Scheffe method did not substantiate the results

of the ANOVA since no pairs of means were significantly different at the .05 probability level.

Results of the ANOVA and the Scheffe method were somewhat different because in this study the Scheffe was employed to compare only subsets of all possible comparisons (between pairs of means) while the ANOVA was comparing the overall differences. Another factor that seems to have an effect in determining significant differences between pairs of means by the Scheffe method is the nature of the data (unequal size samples for various classifications of each demographic variable).

In this particular case, among the classifications of region, 31 students came from Africa, 113 students came from the Far East, 61 students came from the Middle East, 16 students came from Europe, and 40 students came from Latin America. The unequal sample groups definitely has a restrictive effect on testing for significant differences between pairs of means from region as performed by the Scheffe method.

However, the only significant difference in students' reported satisfaction was found on the social life scale when students were grouped according to region. European students expressed greater satisfaction with social life than those coming from other parts of the world. Of all the international groups within the sample, Africans were the group least satisfied with social life.

The source of support variable

No significant differences were found in students' reported satisfaction with working conditions, compensation, social life, recognition,

and total satisfaction when students were grouped according to their
source of support. Only on the quality of education scale, significant
difference was found (through the ANOVA) among students when grouped by
source of support. The Scheffe method did not substantiate the ANOVA
finding since no pairs of means were significantly different at the .05
probability level.

These findings are in agreement with the study (on American students)
by Robinson (1969) and the study (on foreign students) by Johnson (1971)
in which it was found that source of support was not a major factor in
students' overall satisfaction with college life.

The curriculum variable (by college in which students were majoring)

No significant relationship was found between students' levels of
satisfaction with any of the CSSQ scales and the curriculum variable.
This finding seems to suggest that no matter what college a foreign
student is attending at Iowa State University, his satisfaction with
college life is about the same as that of any other foreign student.

The marital status variable

When students were grouped according to their marital status,
married students expressed greater satisfaction with working conditions,
quality of education, recognition, and overall college experience
(total satisfaction) than did unmarried students. These findings are
in agreement with the study (on American students) by Evan (1972) in
which marital status was found to have an effect on students' levels
of satisfaction with overall college experience.

No differences were found in the levels of satisfaction with compensation and social life among students when grouped by marital status.

The type of residence variable

Differences were found in students' levels of satisfaction in terms of working conditions, recognition, and total satisfaction when students were grouped according to their living accommodations. Students residing in married student housing expressed greater satisfaction with working conditions than did students residing in apartment/private residence. Of all the groups within the sample, students living in dormitories were the least satisfied with working conditions.

On the recognition and total satisfaction scales, the students residing in married student housing were more satisfied than those living in the other accommodations. On these two scales, the students living in apartment/private residence were the least satisfied group as compared to the other groups within the sample.

These findings are in agreement with the study (using American students) by Betz, Klingensmith, and Menne (1970) in which the type of residence variable was found to be a significant factor as related to various aspects of college student satisfaction. On the social life scale, the Scheffe method did not substantiate the ANOVA finding when students were grouped according to type of residence.

The length of stay variable (in the United States and at Iowa State)

No difference was found in students' reported level of satisfaction on any of the CSSQ scales when the length of stay variable was considered.

This finding seems to suggest that no matter how long a student has been in the United States or at Iowa State University, his satisfaction with college life is about the same as that of any other foreign student.

Effects of Combined Demographic Variables

Results of testing the general form of null hypothesis 7 indicated significant relationships between combinations of selected demographic variables (including interaction effects) and students' reported levels of satisfaction as measured by the CSSQ.

The findings indicated that classification, marital status, type of residence, and classification X type of residence did reveal a combined effect in relation to students' levels of satisfaction with working conditions. Sex, classification, age, region, and sex X age did show a combined effect in relation to students' levels of satisfaction with compensation. Classification and age seem to have little, if any, relationship with students' levels of satisfaction with quality of education. Combined effects of region and type of residence were found to be related to students' levels of satisfaction with social life. Classification, age, type of residence, and age X region did yield a combined effect in relation to students' levels of satisfaction with recognition. Combined effects of classification and age were found to be related to students' overall satisfaction.

Summary of Findings for Null Hypotheses 1-7

Certain variables were found to be significant in terms of foreign

student satisfaction:

The results of the ANOVA and MANOVA indicated that classification,

age, marital status, and type of residence (either individually or com-

bined) were related to several aspects of foreign student satisfaction

(i.e. working condition, compensation, quality of education, social life,

recognition, and overall satisfaction). Sex differences seem to be

related only to satisfaction with compensation. Region was related only

to satisfaction with social life.

Source of support, curriculum, and length of stay (in the United

States and at Iowa State University) did not seem to have any significant

relationships with aspects of foreign student satisfaction (the CSSQ

dimensions).

Recommendations for Further Study

Based on the findings of this study the following recommendations

are made for future study of foreign student satisfaction:

1.   Since foreign students reported differences in all scales of

the CSSQ, further study is needed in determining the effects of what

factors cause the differences on the scales in relation to students'

satisfaction with their overall college experience.

2.   The replication of the study on foreign students' satisfaction

with larger sample groups covering foreign students of several

universities is needed to substantiate the effects of both the significant

and nonsignificant factors (i.e. the CSSQ dimensions in the present

study). Thus, the problem areas could be further investigated, the

results of which might possibly suggest what could be done to increase ,

students' satisfaction in the college environment.

3.   Improve directions of the questionnaire so that all foreign

students will not have any difficulty in replying to the questionnaire.

4.   In this study, the larger sample group consisted of graduate

students. Their levels of satisfaction with the overall college setting

were quite high as compared with the undergraduate students. Further

investigation is needed in determining foreign undergraduate students'

satisfaction.

5.   Demographic variables such as source of support, curriculum,

and length of stay should be further investigated in order to determine

if any or all of them influence foreign students' levels of satisfaction.

In this study, these variables did not have any significant effect on

students' levels of satisfaction with all aspects of their college

life (the CSSQ dimensions).

SUMMARY

On the campus of Iowa State University there are 1271 foreign students enrolled for the 1977-1978 academic year. With a great deal of heterogeneity in personal background and education preparation, these students are not only foreign to the university community but are foreign to each other. They must learn not only to deal with the usual problems of college life but also to function within this unfamiliar environment. It is important that the university community learn more about foreign students' satisfaction and be concerned with their ability to function within the academic and social environment.

The purposes of this study were to determine the relationships between foreign student satisfaction and nine demographic variables (sex, classification, age, region, source of support, curriculum, marital status, type of residence, and length of stay) as measured by the College Student Satisfaction Questionnaire (CSSQ). The specific questions to be answered by this study included:

1. What is the level of satisfaction concerning working conditions as perceived by foreign students when the nine demographic variables are considered?

2. What is the level of satisfaction concerning compensation as perceived by foreign students when the nine demographic variables are considered?

3. What is the level of satisfaction concerning quality of education as perceived by foreign students when the nine demographic variables are considered?

4. What is the level of satisfaction concerning social life as perceived by foreign students when the nine demographic variables are considered?

5. What is the level of satisfaction concerning recognition as perceived by foreign students when the nine demographic variables are considered?

6. What is the level of overall satisfaction as perceived by foreign students when the nine demographic variables are considered?

7. Is there any significant relationship between combinations of selected demographic variables including interaction effects and the level of satisfaction as perceived by foreign students?

Subjects were 500 foreign students who were randomly selected from the foreign student population (1271) attending Iowa State University during Winter Quarter 1978. Questionnaires were sent to these 500 subjects requesting their participation in this study. The total number of responses to the questionnaire was 272, with 261 of these being usable. The usable responses represented a returned of 52.20 percent of the sample.

Seven general forms of null hypotheses were generated and tested to answer the questions posed by the study:

1. There is no significant difference in satisfaction with working conditions as perceived by foreign students when each of the nine demographic variables is considered individually.

2. There is no significant difference in satisfaction with compensation as perceived by foreign students when each of the nine demographic variables is considered individually.

3. There is no significant difference in satisfaction with quality of education as perceived by foreign students when each of the nine demographic variables is considered individually.

4. There is no significant difference in satisfaction with social life as perceived by foreign students when each of the nine demographic variables is considered individually.

5. There is no significant difference in satisfaction with recognition as perceived by foreign students when each of the nine demographic variables is considered individually.

6. There is no significant difference in total satisfaction as perceived by foreign students when each of the nine demographic variables is considered individually.

7. There is no significant relationship between combinations of selected demographic variables including interaction effects and the level of satisfaction as perceived by foreign students.

The results of this study show the significance of certain variables in all of the general forms of null hypotheses which were tested. Significant differences in students' reported satisfaction with working conditions were found when students were grouped according to classification, age, marital status, and type of residence (hypothesis 1).

Graduate students expressed greater satisfaction with working conditions than did undergraduates. Students in the 28 and above age group were more satisfied with working condition than were those in the other age groups. Students in the 18-22 age group were the least satisfied with working conditions of all the age groups within the sample.

Married students reported a higher level of satisfaction with working conditions than did unmarried students. Students residing in married student housing expressed greater satisfaction with working conditions than did students residing in apartment/private residence. Students living in dormitories were the least satisfied with working conditions.

No significant differences were found in students' levels of satisfaction with working conditions when students were grouped by sex, region, source of support, curriculum, and length of stay.

Significant differences in students' perceived satisfaction with compensation were found when students were grouped according to sex, classification, age, and region (hypothesis 2). Male students were found to be more satisfied with compensation than were female students. Graduate students expressed greater satisfaction with compensation than did undergraduates. Students in the 28 and above were more satisfied with compensation than were those in the other age groups. Students in the 23-27 were the least satisfied with compensation.

The Scheffe method did not substantiate the ANOVA finding in students' perceived satisfaction with compensation, when students were grouped by region. No significant differences were found in students' satisfaction with compensation when students were grouped according to source of support, curriculum, marital status, type of residence, and length of stay.

Significant differences in students' levels of satisfaction with quality of education were found when students were grouped by classification, age, and marital status (hypothesis 3). Graduate students were

found to be more satisfied with quality of education than were the

undergraduates. Students in the 28 and above age group reported a

higher level of satisfaction with quality of education than were those

in the other age groups. Students in the 18-22 age group were the

least satisfied with quality of education. Married students were more

satisfied with quality of education than were the unmarried.

The Scheffe method did not support results of the ANOVA in students'

reported satisfaction with quality of education when students were

grouped according to region and source of support. No significant dif-

ferences were found in students' perceived satisfaction with quality of

education when students were grouped by sex, curriculum, type of resi-

dence, and length of stay.

Significant difference was found in students' reported satis-

faction with social life when students were grouped by region (hypothesis

4). European students expressed greater satisfaction with social life

than those coming from other parts of the world. Of all the inter-

national groups within the sample, Africans were the group least satis-

fied with social life.

When students were grouped by type of residence, the Scheffe

method did not substantiate the ANOVA findings for students' perceived

satisfaction with social life. Other demographic variables not found

significant in students' satisfaction with social life were sex, classi-

fication, age, source of support, curriculum, marital status, and

length of stay.

Significant differences were found in students' reported satis-

faction with recognition when students were grouped according to

classification, age, marital status, and type of residence (hypothesis 5). Graduate students were more satisfied with recognition than were undergraduates. Students in the 28 and above age group showed a higher level of satisfaction with recognition than those in the other age groups. Students in the 23-27 age group were the least satisfied with recognition.

Married students expressed greater satisfaction with recognition than did the unmarried. Also, students residing in married student housing were more satisfied with recognition than those living in the other accommodations. Students living in apartment/private residence were the least satisfied group with recognition.

The Scheffe method did not confirm the ANOVA finding in students' levels of satisfaction with recognition when students were grouped by region. The other demographic variables explored and not found significant in students' perceived satisfaction with recognition were sex, source of support, curriculum, and length of stay.

On total satisfaction scale, significant differences were found in students' reported overall satisfaction when students were grouped by classification, age, marital status, and type of residence (hypothesis 6). Graduate students expressed a greater satisfaction with their overall college experience than did the undergraduates. Students in the 28 and above group were more satisfied with their overall college experience than were those in the other age groups. Students in the 23-27 age group were the least satisfied group in terms of their overall college experience.

Married students were more satisfied with their overall college experience than were the unmarried students. Also, students living in the married student housing expressed greater satisfaction with their overall college experience than those living in apartment/private residence.

The other demographic variables examined and not found significant in students' perceived overall satisfaction were sex, source of support, curriculum, and length of stay. Also, the Scheffe method did not support the ANOVA finding for students' perceived overall satisfaction when students were grouped by region.

Results of testing general form of null hypothesis 7 indicated significant relationships between combinations of selected demographic variables (including interaction effects) and students' reported levels of satisfaction. The results of the multiple classifications analysis of variance by way of regression (MANOVA) indicated that the combined effects of classification and age were related to several aspects of college student satisfaction (i.e. compensation, recognition, and total satisfaction). Combined effects of region and type of residence were found to be related to students' levels of satisfaction with social life. Classification, marital status, type of residence, and classification X type of residence did reveal a combined effect in relation to students' levels of satisfaction with working conditions.

In summation, the results of this study indicate the significance of the following demographic variables: classification, age, marital status, and type of residence in all of the general forms of null hypotheses which were tested. Source of support, curriculum, and length

of stay (in the United States and at Iowa State University) did not seem to have any significant relationships with aspects of foreign student satisfaction. This seems to suggest that no matter how long a foreign student has been in the United States or at Iowa State University, what college he is attending (or what curriculum he is studying), or how he finds financial support, his satisfaction with college life is about the same as that of any other foreign student.

Further research in foreign student satisfaction is recommended, using larger population (covering foreign students of several universities) to investigate the effects of source of support, curriculum, region, and length of stay in relation to the students' level of satisfaction with college life in general.

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APPENDIX A: COVER LETTER AND COLLEGE STUDENT

SATISFACTION QUESTIONNAIRE

IOWA STATE
UNIVERSITY

March 1, 1978

Dear

As a foreign student at Iowa State University, you have been randomly selected to participate in a research study. The purpose of the study is to determine foreign students' level of college satisfaction.

Your participation in completing the seventy items on the enclosed College Student Satisfaction Questionnaire (CSSQ) will require approximately 10-20 minutes of your time. This will give you an opportunity to rate things which you consider both satisfactory and unsatisfactory about your college experience. If you have any questions concerning the questionnaire, please feel free to contact me (292-7845). You may be assured that your responses will be treated in a strictly confidential manner.

This study is being completed by the researcher in partial fulfillment of the requirements for the Ph.D. degree in Education. It is being conducted under the supervision of Dr. George Kizer, Professor of Education; Dr. Milton Brown, Associate Professor of Education; Dr. Ray Bryan, Professor of Education; Dr. Trevor Howe, Professor of Education; Dr. Anton Netusil, Professor of Education; and Dr. Richard D. Warren, Professor of Sociology and Statistics.

Please return the questionnaire booklet and the answer sheet in the enclosed stamped, and self-addressed envelope before Wednesday March 8 or as early as possible. Your time spent in completing this questionnaire will be of immense value to the researcher and your cooperation in this study will be truly appreciated. The results of the study may also be instrumental in the improvement of conditions for foreign students at Iowa State University.

Most sincerely,

Umporn Siriboonma
Foreign Student in Education
P.O. Box 1173, ISU Station
Ames, Iowa 50010

Enclosures:
Questionnaire booklet
Answer sheet
Envelope

COLLEGE STUDENT SATISFACTION QUESTIONNAIRE - FORM C
By Betz, Menne, Klingensmith
Copyright 1971 - Central Iowa Assoc. Inc.

DIRECTIONS

This questionnaire contains 70 items regarding satisfactions and dissatisfactions of college students. Its purpose is to give you a chance to tell how you feel about your university... what things you are satisfied with, and what things you are not satisfied with.

How to Fill Out the Questionnaire

1. First, record the following information on the left side of your answer sheet by darkening the appropriate blanks with a soft black pencil (not a pen):

--Your sex (M for Male; F for Female)

--Educational level (labeled under "GRADE" or "EDUC")
1 --undergraduate student
2 --graduate student

Under the heading of "IDENTIFICATION NUMBER", record the remainder of the information in the appropriate blanks:

--Your age (in column A)
1 --age 18-22
2 --age 23-27
3 --age 28 or above

--Part of the world you come from (in column B)
1 --Africa   4 --Europe
2 --Far East   5 --Latin America
3 --Middle East

--Source of support (in column C)
1 --Parents
2 --Scholarship/Assistantship (by your government/college)
3 --Partial scholarship/assistantship
4 --Self
5 --Any combination of the above

--Your major of study: by College (in column D)
1 --Agriculture   4 --Home Economic
2 --Education   5 --Science and Humanities
3 --Engineering   6 --Veterinary Medicine

--Your marital status (in column E)
1 --Single   2 --Married

--Where you live while at college (in column F)
1 --Dormitory   3 --Married Student Housing
2 --Fraternity/Sorority   4 --Private Residence/Apartment

--How long have you been in the United States. In columns
G and H, darken the appropriate blanks (use number of months).
For example - If you have been in the U.S. for 6 months,
darken the blank (0) in column G and the
blank (6) in column H.
- If you have been in the U.S. for 4 years
and 3 months (=51 months), darken (5) in
in column G and (1) in column H.

--How long have you been at Iowa State University. In columns
I and **J** (use number of months). Do the same as the examples
above.

2.   On the following pages, you will find 70 statements about your
university.

Read each statement carefully.

Decide how satisfied you are with that aspect of your school
described in the statement.

3.   Mark your answers on the answer sheet by darkening the blank,
numbered 1, 2, 3, 4, or 5 which best represents how satisfied you
are. Use the following key:

> 1 --If you are VERY DISSATISFIED.
> 2 --If you are SOMEWHAT DISSATISFIED.
> 3 --If you are SATISFIED, no more, no less.
> 4 --If you are QUITE SATISFIED.
> 5 --If you are VERY SATISFIED.

Please note:

Be sure to use a number 2 or soft black pencil (not a pen).

Do not fold or bend the answer sheet.

Return both answer sheet and questionnaire booklet.

Key 1 means: I am VERY DISSATISFIED
2 means: I am SOMEWHAT DISSATISFIED
3 means: I am SATISFIED, no more, no less
4 means: I am QUITE SATISFIED
5 means: I am VERY SATISFIED

INDICATE HOW SATISFIED YOU ARE WITH:

1. The opportunity to make close friends here.

2. The amount of work required in most classes.

3. The way teachers talk to you when you ask for help.

4. The competence of most of the teachers in their own fields.

5. The amount of study it takes to get a passing grade.

6. The chances of getting a comfortable place to live.

7. The chance you have of doing well if you work hard.

8. The amount of personal attention students get from teachers.

9. The chance "to be heard" when you have a complaint about a grade.

10. The friendliness of most students.

11. The help that you can get when you have personal problems.

12. The availability of good places to live near the campus.

13. The ability of most advisors in helping students develop their course plans.

14. The cleanliness of the housing that is available for students here.

15. The chance to take courses that fulfill your goals for personal growth.

16. The kinds of things that determine your grades.

17. The preparation students are getting for their future careers.

18. The chance to have privacy when you want it.

19. The chance to work on projects with members of the opposite sex.

20. Teachers' expectations as to the amount that students should study.

21. The availability of good places to study.

22. The fairness of most teachers in assigning grades.

23. The interest that advisors take in the progress of their students.

24. The places provided for students to relax between classes.

Key:
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1 means:  I am VERY DISSATISFIED.
2 means:  I am SOMEWHAT DISSATISFIED.
3 means:  I am SATISFIED, no more, no less.
4 means:  I am QUITE SATISFIED.
5 means:  I am VERY SATISFIED.
```

INDICATE HOW SATISFIED YOU ARE WITH:

25. The social events that are provided for students here.

26. Teachers' concern for students' needs and interests.

27. The chance to get scheduled into the courses of your choice.

28. The activities and clubs you can join.

29. The difficulty of most courses.

30. The chance to get help in deciding what your major should be.

31. The chance to get acquainted with other students outside of class.

32. The availability of your advisor when you need him.

33. The chances to go out and have a good time.

34. The pressure to study.

35. The chance of getting a grade which reflects the effort you put into studying.

36. The quality of the education students get here.

37. The number of D's and F's that are given to students.

38. The concern here for the comfort of students outside of classes.

39. The things you can do to have fun here.

40. The chance for a student to develop his best abilities.

41. The chance of having appropriate social activities here.

42. The chances of getting acquainted with the teachers in your major area.

43. The chance to explore important ideas.

44. The quality of the material emphasized in the courses.

45. The chance of getting into the courses you want to take.

46. The noise level at home when you are trying to study.

47. The amount of time you must spend studying.

48. The availability of comfortable places to lounge.

INDICATE HOW SATISFIED YOU ARE WITH:

49. The chances for men and women to get acquainted.

50. The counseling that is provided for students here.

51. The chance to prepare well for your vocation.

52. The chance to live where you want to.

53. The chance you have for a "fair break" here if you work hard.

54. The friendliness of most faculty members.

55. The chances to meet people with the same interest as you have.

56. What you learn in relation to the amount of time you spend in school.

57. The choice of social activities you have here.

58. The amount of study you have to do in order to qualify someday for a job you want.

59. The kinds of things you can do for fun without a lot of planning ahead.

60. The willingness of teachers to talk with students outside of class time.

61. The places where you can go just to rest during the day.

62. The campus events that are provided for students here.

63. The practice you get in thinking and reasoning.

64. Your opportunity here to determine your own pattern of intellectual development.

65. The chance to participate in class discussions about the course material.

66. The activities that are provided to help you meet others.

67. The sequence of courses and prerequisites for your major.

68. The availability of quiet study areas for students.

69. The chance you have to substitute courses in your major when you think it is advisable.

70. The appropriateness of the requirements for your major.

IOWA STATE
UNIVERSITY

March 10, 1978

Dear

You may recall that I recently sent you a College Student
Satisfaction Questionnaire (CSSQ) and requested your
participation in my research study this quarter concerning
foreign student college satisfaction. Since I have not
yet received your complete CSSQ form, may I take this time
to urge you to consider participating in my study.
Completion of the CSSQ form will only take about 10-20
minutes of your time. I realized that like most students,
you are probably quite busy with your personal studies,
but I would be most appreciative if you would spare some
of your valuable time to complete the CSSQ and return it
to me by March 16.

If you have already completed and returned the original
CSSQ form I sent, please disregard this letter. I once
again thank you for your cooperation in helping me with
this research project.

Very truly,

Umporn Siriboonma
Foreign Student in Education
P.O. Box 1173, ISU Station
Ames, Iowa 50010

APPENDIX B: TABLES SHOWING RESULTS OF THE SCHEFFE

MULTIPLE COMPARISON METHOD FOR HYPOTHESES 1-6

Table 22. Results of the Scheffe method for hypothesis 1 (working conditions)

Variable	Classification	n	Mean	Variance
Age	1. 18-22	53	39.547	69.753
	2. 23-27	102	40.696	71.342
	3. 28 and above	106	43.142	72.579

$\bar{x}_1$ vs $\bar{x}_3$ significantly different at p = .05.

No other pairs of means significantly different at p = .05.

Variable	Classification	n	Mean	Variance
Type of residence	1. Dormitory	92	39.315	73.712
	2. Fraternity/sorority	2	53.000	32.000
	3. Married student housing	93	44.784	66.061
	4. Apartment/private residence	74	39.621	57.827

$\bar{x}_1$ vs $\bar{x}_3$ and $\bar{x}_3$ vs $\bar{x}_4$ significantly different at p = .05. No other pairs of means significantly different at p = .05.

Table 23. Results of the Scheffe method for hypothesis 2 (compensation)

Variable	Classification	n	Mean	Variance
Age	1. 18-22	53	41.905	72.933
	2. 23-27	102	41.803	86.990
	3. 28 and above	106	45.396	78.336

$\bar{x}_2$ vs $\bar{x}_3$ significantly different at p = .05.

No other pairs of means significantly different at p = .05.

Variable	Classification	n	Mean	Variance
Region	1. Africa	31	44.935	67.595
	2. Far East	113	44.867	78.973
	3. Middle East	61	41.098	80.190
	4. Europe	16	44.312	72.495
	5. Latin America	40	40.450	98.253

No pairs of means significantly different at p = .05.

Table 24. Results of the Scheffe method for hypothesis 3 (quality of education)

Variable	Classification	n	Mean	Variance
Age	1. 18-22	53	43.339	66.074
	2. 23-27	102	43.607	82.121
	3. 28 and above	106	47.632	83.206

$\bar{x}_1$ vs $\bar{x}_3$ and $\bar{x}_2$ vs $\bar{x}_3$ significantly different at $p = .05$. $\bar{x}_1$ vs $\bar{x}_2$ not significantly different at $p = .05$.

Region	1. Africa	31	48.483	82.058
	2. Far East	113	45.531	81.483
	3. Middle East	61	42.524	71.153
	4. Europe	16	44.500	72.533
	5. Latin America	40	46.000	96.769

No pairs of means significantly different at $p = .05$.

Source of support	1. Parents	58	43.155	65.571
	2. Scholarship	120	46.916	85.287
	3. Partial scholarship	21	46.142	93.128
	4. Self	21	43.333	69.433
	5. Any combination of the above	41	43.463	89.654

No pairs of means significantly different at $p = .05$.

Table 25. Results of the Scheffe method for hypothesis 4 (social life)

Variable	Classification	n	Mean	Variance
Region	1. Africa	31	34.548	121.989
	2. Far East	113	37.469	74.340
	3. Middle East	61	34.655	81.129
	4. Europe	16	45.250	141.533
	5. Latin America	40	38.075	104.071

$\bar{x}_1$ vs $\bar{x}_4$ and $\bar{x}_3$ vs $\bar{x}_4$ significantly different at p = .05. No other pairs of means significantly different at p = .05.

Variable	Classification	n	Mean	Variance
Type of residence	1. Dormitory	92	36.021	105.889
	2. Fraternity/sorority	2	51.500	112.500
	3. Married student housing	93	39.150	88.020
	4. Apartment/private residence	74	35.243	78.131

No pairs of means significantly different at p = .05.

Table 26. Results of the Scheffe method for hypothesis 5 (recognition)

Variable	Classification	n	Mean	Variance
Age	1. 18-22	53	42.377	83.701
	2. 23-27	102	41.921	79.261
	3. 28 and above	106	46.830	83.380

$\bar{x}_1$ vs $\bar{x}_3$ and $\bar{x}_2$ vs $\bar{x}_3$ significantly different at p = .05. $\bar{x}_1$ vs $\bar{x}_2$ not significantly different at p = .05.

Variable	Classification	n	Mean	Variance
Region	1. Africa	31	46.225	75.380
	2. Far East	113	44.079	81.966
	3. Middle East	61	41.344	83.862
	4. Europe	16	48.250	88.066
	5. Latin America	40	44.450	99.125

No pairs of means significantly different at p = .05.

Variable	Classification	n	Mean	Variance
Type of residence	1. Dormitory	92	43.956	77.954
	2. Fraternity/sorority	2	44.000	200.000
	3. Married student housing	93	46.311	90.869
	4. Apartment/private residence	74	41.175	79.461

$\bar{x}_3$ vs $\bar{x}_4$ significantly different at p = .05. No other pairs of means significantly different at p = .05.

Table 27. Results of the Schefee method for hypothesis 6 (total satisfaction)

Variable	Classification	n	Mean	Variance
Age	1. 18-22	53	204.679	1322.452
	2. 23-27	102	204.039	1292.632
	3. 28 and above	106	220.783	1334.076

$\bar{x}_1$ vs $\bar{x}_3$ and $\bar{x}_2$ vs $\bar{x}_3$ significantly different at p = .05. $\bar{x}_1$ vs $\bar{x}_2$ not significantly different at p = .05.

Region	1. Africa	31	215.452	1197.655
	2. Far East	113	213.531	1325.197
	3. Middle East	61	199.721	1263.304
	4. Europe	16	228.250	1045.800
	5. Latin America	40	210.500	1715.384

No pairs of means significantly different at p = .05.

Type of residence	1. Dormitory	92	207.446	1279.436
	2. Fraternity/sorority	2	238.000	882.000
	3. Married student housing	93	221.462	1492.316
	4. Apartment/private residence	74	201.432	1129.152

$\bar{x}_3$ vs $\bar{x}_4$ significantly different at p = .05. No other pairs of means significantly different at p = .05.