

EFFECT OF FOREIGN STUDENTS' ATTITUDES TOWARD  
RETURNING TO THE COUNTRY OF ORIGIN ON THE  
NATIONAL LOSS OF PROFESSIONAL SKILLS

By

MAN SINGH DAS

Bachelor of Science  
University of Allahabad  
Allahabad, India  
1955

Master of Arts  
University of Illinois  
Urbana, Illinois  
1963

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of the Oklahoma State University  
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Thesis Approved:

*Donald G. Allen*

Thesis Adviser

*Gene Hoff*

*Jan Wesley*

*Jennett E. Wiggins*

*D. N. Durham*

Dean of the Graduate College

729902

## PREFACE

The loss of highly qualified and trained manpower by the less developed to the more developed parts of the world, has in recent years, attracted national as well as international attention. As in the past, pious protests by politicians and educators are now heard to the effect that impoverished nations have been robbed of their talent and stripped of their human resources. There is increasing concern in many of the less developed and developing nations of Asia, Africa and Latin America that their promising students, scholars, and researchers who go abroad fail to return. The original purpose of those who go to foreign countries is graduate studies and specialized training, but subsequent to their graduation they often postpone their return and decide to accept jobs with attractive salaries. A similar criticism of foreign students is commonly expressed in the United States that these students do not go back to their home countries.

Therefore, the main purpose in this study is to examine empirically what these alien students are actually planning to do on completion of their studies in the United States, and the effect of their attitudes on the national loss of professional skills.

I would like to take this opportunity to express my immeasurable indebtedness to members of my graduate advisory committee, Professors Donald E. Allen and Gene Acuff, both gentlemen and scholars. They were always available for counsel and encouragement. They gave so generously of their time, read with great patience the first draft of this

dissertation, and offered many valuable suggestions and comments for its improvement. Such acknowledgment here seems a small recognition for their continuing interest, encouragement, and support over the entire period of this study.

I am equally indebted to Professors Kenneth E. Wiggins and Dan Wesley for their critical reading of this dissertation, and their invaluable advice and assistance given to me.

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## CHAPTER I

### THE NATURE OF THE PROBLEM

#### Introduction

The movement of foreign students to and from centers of learning is of interest, especially in the United States, since this country is host to one of the largest populations of foreign students, scholars and researchers. It is a subject about which there will never be sufficient information. This study seeks to add to the available information about the future plans of foreign students in the United States.

The wandering of students from one country to another is not a new phenomenon. From the beginning of the twelfth century, thousands of students went to Paris and Bologna for advanced studies. During the academic year of 1200, the majority of students at Bologna University were foreigners. Most of these foreign students came from European countries. Students were free to travel to any country of their choice for studies. There were no visa and passport requirements for students and individuals to travel abroad. In more recent times, the fears and national prides fostered by the world wars greatly stimulated the use of passports, visas and special documents, and once they were required it was difficult to get governments to give them up, ridiculous though some of the requirements may appear.<sup>1</sup>

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<sup>1</sup>Donald R. Taft, Human Migration (New York, 1936), p. 355.

Coelho<sup>2</sup> mentions that foreign students organized themselves into national associations and they absorbed the best learning of their day. Some of these students settled down in the cultural centers to which they had migrated earlier. Other students returned home after completion of their studies at Paris and Bologna with new vision and new knowledge to establish new centers of learning in their countries and thus propelled such movements of thought as scholasticism, science and humanism into civilization-wide revolutions. Coelho adds that similar movements had also occurred two thousand years ago when students from several neighboring countries came to the Academy in Athens and later to Alexandria.

Professor Dedijs of Sweden<sup>3</sup> traces the history of the early migration of scientists. He shows how scientists and scholars moved from one country to another as early as 600 B.C. He mentions that Jehovah, Zeus, and Minos were the first gods who gave rise to the migration of the lovers of knowledge. He quotes Greek mythology where Hermes was the God of travel, of commerce, of invention and of science. Legends tell us that the thirst and hunger for knowledge forced such mythical men and demigods like Adam, Prometheus and Daedalus to migrate because of disagreements with the powers ruling their places of residence or of work. Dedijs also provides information on ancient universities such as Salerno and Bologna in Italy, and Montpellier and Paris in France founded in the eleventh and early twelfth centuries.

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<sup>2</sup>George V. Coelho, Changing Images of America (Glencoe, 1958), pp. xiii-xiv.

<sup>3</sup>Steven Dedijs, "Early Migration," The Brain Drain, ed. Walter Adams (New York, 1968), pp. 9-28.

Dedijer makes the following conclusions about the early migration of scientists and scholars:

. . . that migration of scientists is as old as science. That people in power in the past have acted to stimulate or prevent such migrations. Many had specific policies with respect to migration of scientists. Primarily those people in power who had a high degree of appreciation of the social value of science of their time had such policies.<sup>4</sup>

The same sort of migration of students from one country to another has been taking place globally for the last half century. The traditional interest of European countries, such as Britain, France and Germany, in offering higher educational and training facilities for foreign students is well recognized. Thousands of students from colonial countries went to universities in highly industrialized societies. They learned there modern science, technology and liberalism which they introduced in their home countries on their return. The return of foreign students to their countries was one of the bases for the exchange and propagation of new learning and ideas.

Before World War II, when most of the countries of Asia and Africa were under the rule of western powers, students from these regions went to universities in colonizing countries. In most instances, students went to England and France. Today the student who leaves India, Pakistan, Indonesia, Ghana, Nigeria or some other emerging nation in Asia, Africa and Latin America, is coming from an independent country. In the majority of present cases, a student does not go to England or France for studies as he used to do before World War II but he comes to the United States. Therefore, our aim is to examine empirically what these foreign students are actually planning to do on completion of their studies in the United States.

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<sup>4</sup>Ibid.

In recent years students and scholars from less developed and developing countries who go abroad to the highly advanced countries, go with the declared intention of obtaining education or training and then returning home, but instead these students change their minds and immigrate to the advanced countries. Thus, immigration of students, scholars and persons of every walk of life is not only the life history of several of the countries of the New World, it is a world-wide phenomenon with practically every free nation involved. The world has become unified through human migration to such proportions that reactions of international scope are prevalent.

#### Statement of the Problem

The loss of highly qualified and trained manpower by the less developed to the more developed parts of the world has, of late, assumed alarming proportions. Not only the developing countries but also some of the developed ones that have recently been adversely affected are taking all-around measures to mitigate this loss. In some developing countries, recent appraisals show, development programs have received a great setback due to the imbalance created by the loss of trained manpower.

There is increasing concern in many of the less developed and developing nations that their promising students, scholars and researchers who go abroad fail to return. The original purpose of those who go to foreign countries is graduate studies and specialized training, but subsequent to their graduation they often postpone their return and decide to accept jobs with attractive salaries. This "brain drain" of top talents is causing some alarm among Asian public officials,

and various governments are now considering emergency remedial measures.

A similar criticism of foreign students is commonly expressed by the American people. That is, foreign students, who come from less developed and developing nations where their talents and special training are sorely needed, do not return to their home countries. Therefore, the main interest is to examine the significance of these losses of scientific manpower to the less developed and developing countries.

The immediate problem of investigation in this study is to examine empirically what these foreign students from less developed and developing countries of Asia, Africa and Latin America are actually planning to do on completion of their studies in the United States, and the effect of their attitudes on the national loss of professional skills. It is popularly held, both in the United States and abroad, that the students who come to American colleges and universities for higher learning fail to return to the country of origin after the completion of their studies. This, according to the general criticism, results in "brain drain" from the developing countries to the highly developed nations.

#### Purpose of the Study

The main objectives of the study are as follows:

1. To determine the extent of loss of students who are actually leaving their home countries.
2. To evaluate the impact of "brain drain" on the less developed and developing countries in terms of professional skills.
3. To study and compare the government sponsored students with

those who have private means of support in order to examine the significance of losses of scientific manpower to the less developed and developing countries.

4. To evaluate the concept of gain or loss inherent in the international exchange of students which is erroneously referred to as "brain drain" but is actually "brain interchange" or "brain exchange."

5. To identify the social and cultural factors related to the problem of "brain drain."

#### Scope of the Study

1. The study was limited to the foreign students enrolled for the fall semester of 1968-69 academic year in American colleges and universities and the ones who were on F-1 (student) visa but had secured full-time jobs as a part of their practical training. (Students in practical training with F-1 visa were included only where their names, addresses or their employers' addresses were available. This information was made available by six universities.)

2. The sample was restricted to twenty American universities randomly selected and with a minimum enrollment of 400 foreign students.

3. The sample was drawn from less developed and developing countries of Asia, Africa and Latin America.

4. The study is concentrated exclusively on male students because much smaller numbers of female students are involved, and they are not regarded as a significant factor in the "brain drain" problem.

#### Assumptions

The main assumptions underlying this study are as follows:



1. It has been an age-long tendency of men to migrate from one place to another in order to improve their conditions of life. Thus, foreign students who go to the more advanced countries with the declared intention of higher education and training will return to their countries on completion of their studies abroad only if they are convinced that the country of origin can offer them comparable professional opportunities. Otherwise they are likely to postpone their return.

2. People from agrarian and traditional societies who go abroad to improve their economic conditions eventually return home due to close family ties.

3. Those who remain in advanced countries for a longer period of time may find it more difficult to return home as they become accustomed to a higher standard of living. Their new basis for differential comparison of socio-economic rewards may exert an increasing influence in time.

#### Hypotheses to be Tested

The following hypotheses were formulated under the main assumptions of this study:

H<sub>1</sub>: Students who have studied in the United States for two years or more are less likely to plan to return to their home countries than those who have spent a shorter period of time.

H<sub>2</sub>: Younger students are less likely to remain in the United States subsequent to their graduation than are the older students.

H<sub>3</sub>: Students from less developed nations are more likely to return to their countries on completion of their studies than students from developing nations.

H<sub>4</sub>: Privately supported students whose wives and children are at home are more likely to return home subsequent to their graduation than those whose wives and children are living with them in the United States.

H<sub>5</sub>: Students from lower socio-economic classes are more likely to plan to stay in the United States than students from upper socio-economic classes.

H<sub>6</sub>: Privately supported students who have resigned their jobs in their countries are less likely to plan to return home than those granted leaves by their employers.

H<sub>7</sub>: Students whose home countries provide them suitable employment opportunities are less likely to plan to stay in the United States than those students whose countries do not provide employment opportunities.

#### Definition of Terms and Concepts

Foreign students: By foreign students we mean those students who are non-American citizens and hold F-1 and J-1 visas (student and exchange visitor visas) and were enrolled in American colleges and universities for the fall semester of 1968-69 and the ones who were on a student visa but had secured full-time jobs as a part of their practical training.

Privately supported students: Students who came to the United States at their own expense and were receiving a fellowship or an assistantship from American colleges or universities or were being solely supported by their parents or working part-time or were sponsored by a private American organization or by a private organization of their own country during the period of their study when the questionnaire was administered to them.

Government supported students: Students who were sponsored by their governments or received financial assistance from the American government or the United Nations or by some other governmental agencies.

Highly developed nations: Those countries ranking highest on Berry's<sup>5</sup> "technological scale," that is, those countries which trade extensively and have many international contacts and well developed internal systems of communications, including dense and intensively used transport networks. They produce and consume much energy, have high national products output, are highly urbanized, and are well provided with such facilities as medical services; but are among the lowest ranking countries in the "demographic scale" with low birth and death rates.

Less developed nations: The less developed nations are those countries ranking highest on Berry's "demographic scale," that is, those countries with the highest birth and death rates, the highest population densities, small amounts of land area cultivated, low rice yields and low per cent of foreign trade. These countries are among the lowest ranking countries on the "technological scale," that is, those countries which have very little trade and have less international contacts and less developed internal systems of communications, they produce and consume less energy, have low national products, are less urbanized, and are poorly provided with such facilities as medical services.

Developed nations: Those countries falling between the highly developed and less developed nations on Berry's "technological and

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<sup>5</sup>Brian J. L. Berry, "An Inductive Approach to Regionalization of Economic Development," Essays on Geography and Economic Development, ed. Norton Ginsburg (Chicago, 1960), pp. 78-107.

demographic scales" are considered developed nations.

Brain drain: By "brain drain" we mean a flow of skilled and talented people out of countries where they can make the greatest contribution to human welfare, to the highly industrialized countries which are well supplied with trained, skilled and talented people.

## CHAPTER II

### REVIEW OF THE LITERATURE

In this chapter, a survey of pertinent theories and related information on technical losses through emigration will be presented, and the background for the present study will be outlined. Particular attention will be paid to the change of attitudes of foreign students toward returning to their home countries upon completion of their studies in the United States. Thus far, most of the studies dealing with returnees are descriptive or employ a historical and cultural anthropological perspective. A few deal with the problem of attitudinal changes in a systematic and theory-guided manner. Research dealing with the effect of scientific manpower losses to the less developed and developing countries will be reviewed.

#### Studies on the Change of Attitude of Foreign Students

A study by Loomis and Schuler<sup>1</sup> of the changes in attitudes, opinions, information and the English language ability of 62 Latin-American trainees who came to the United States for a year's study in agriculture showed that the trainees, at the end of their training compared their home country unfavorably to the United States.

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<sup>1</sup>P. Loomis and E. A. Schuler, "Acculturation of Foreign Students in the United States," Applied Anthropology, VII (1948), pp. 17-34.

In Coelho's<sup>2</sup> study of Indian Students' Perceptions, a case study which focuses on changes in the foreign student's image of his host and home countries during a prolonged sojourn abroad, the researchers were particularly interested in the degree to which he views each culture globally and differentiates in his images of it as time passes. The researchers were also interested in the extent to which he categorizes and distinguishes each culture as a single, simple, whole or perceives each to be a composition of disparate parts.

The Watson-Lippitt<sup>3</sup> study of 29 German visitors, composed of three teams of 12, 10 and 7, who stayed twelve, six and six months respectively in the United States, showed that there was heightened defensiveness among the German teams in the early phase of their visit in the United States. However, there was also a restructuring process at work which set in motion "certain processes of thinking and re-evaluation which are then carried through by the visitor regardless of external pressure and regardless of temporary emotional bias."

Veroff,<sup>4</sup> in a study of African students studying in the United States, observed some changes in their attitudes after a period of time. He also sought a broad view of emotional difficulties confronting the African students.

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<sup>2</sup>George V. Coelho, Changing Images of America (Glencoe, 1958).

<sup>3</sup>Jeanne Watson and R. Lippitt, Learning Across Cultures: A Study of Germans Visiting America (Ann Arbor, 1955).

<sup>4</sup>Joseph Veroff, "African Students in the United States," Journal of Social Issues, XIX (1963), pp. 48-60.

Becker's<sup>5</sup> study, in an application of foreign students' attitudes which predicts two distinct patterns of attitudinal and behavioral change, found that students from underdeveloped countries had a hostile attitude toward the United States and an idealization of the home country. This shows why students from less developed countries would wish to return to their home country upon completion of their studies. Her study indicates that students from developed countries had a less defensive attitude toward their home country.

Useem and Useem,<sup>6</sup> in The Western Educated Man in India, provide us with numerous valuable insights into the nature of the final phase of the temporary migration cycle--the crucial "pay-off" period after the return home. In addition to perceptive analyses of "changes in the character and outlook of the individual," "the use of foreign training in India," and "implication for international understanding," the Useems offer a number of cautiously stated recommendations which they believe should increase the effectiveness of the current student exchange program.

Indian Students on an American Campus, by Lambert and Bressler,<sup>7</sup> is a study which differs rather markedly with the Useems' study in the situations explored and the personnel studied. This study examines the experience of 19 students from India, Pakistan and Ceylon who were

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<sup>5</sup>Tamar Becker, "Patterns and Attitudinal Changes Among Foreign Students," The American Journal of Sociology, LXXIII (1968), pp. 431-442.

<sup>6</sup>John Useem and Ruth Hill Useem, The Western Educated Man in India (New York, 1955).

<sup>7</sup>Richard D. Lambert and Marvin Bressler, Indian Students on an American Campus (Minneapolis, 1956).

studying at a single institution in the United States during a single year. The study deals with a series of individuals who enjoy a high degree of anonymity, and a temporary reprieve from many of the demands for conformity of their own culture, "one on the aisle for a series of American tableaux often played especially for their benefit, and inexhaustible if uninformed audience, and an academic bureaucracy in which they are all fitted at roughly the same level."

In the Useems' study we have a series of individuals placed at many different levels of Indian society where most of the life pattern is dominated by factors other than the foreign-returned status. The only common characteristic among the subjects was that they made visits of varying lengths to diverse parts of the West at varying times in the past.

A general limitation of both studies (Useem and Lambert) is that neither employed a standard sampling procedure, nor are these studies essentially statistical. Nagpal,<sup>8</sup> in a study of the Asian student, made an attempt to bring out some of the problems--economic, social and emotional--which the returning student experiences on the eve of his departure from the United States, and on his arrival back home. It was pointed out that once the student gets suitable employment and is established, he does demonstrate the worth of new skills and also transmits liberal humanitarian values as an agent of inter-culture contact.

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<sup>8</sup> Kamla Nagpal, "The Returning Asian Student: Problem and Opportunities," Indian Journal of Social Research, IV (1963), pp. 65-69.



Valipour's<sup>9</sup> study compares the returning and the non-returning students and former students from Iran who were studying in the United States during the 1961-62 academic year. In view of the potential contributions that the American-trained students are expected to make to the social and economic development of Iran, and in view of the existing shortages in many areas of technical manpower, Valipour identifies some of the more salient factors which are generally associated with the non-return behavior. His study is rather "programmatic"<sup>10</sup> in the sense that its findings could be utilized by an "action agency" interested in encouraging and facilitating the return of the international students who have completed their education and training in the United States.

Scully's<sup>11</sup> study is an exploratory look at a sampling of cases of foreign students in the New York City area who were enrolled during the academic year 1954-1955 and who did not wish to return home on completion of their studies in the United States. The study attempted to isolate factors which tend to take away from the individual the will to return home. It examined the kind of counseling and experience given to foreign students. The study also made some recommendations, on the basis of the findings, how the work of the foreign student advisors

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<sup>9</sup>Iraj Valipour, "A Comparison of Returning and Non-Returning Iranian Students in the United States" (unpub. Ph.D. dissertation, Columbia University, 1961), p. 21.

<sup>10</sup>Hyman defines evaluative or programmatic survey as a kind of explanatory survey which has its immediate objective the ". . . application, modification or change of some state of affairs or phenomenon on the basis of proven knowledge as to the factors which are involved." Herbert Hyman, Survey Design and Analysis (Glencoe, 1957), p. 66.

<sup>11</sup>Grace Mary Scully, "An Exploratory Study of Students Who Do Not Wish to Return to Their Home Country" (unpub. Ph.D. dissertation, Columbia University, 1956), pp. 21-22.

might be improved. The study looked at the cases as seen by foreign student advisors. Each case was presented to the investigator through interviews with the foreign student advisors or other institutional officers.

The above studies deal with the change of attitude of foreign students toward their host country after a certain period of stay in the United States. These students assimilate the western culture which makes it difficult for them to return home, and if they do return home and are well established, they attempt to transmit the western cultural values. In this way, the less developed and developing countries gain by the contributions made by their students. Most of these studies deal with a limited sample and have not been put to rigorous statistical treatment. They are descriptive and exploratory in nature and do not follow a theoretical framework. These studies are programmatic and their findings can be utilized by the various governments and groups interested in encouraging the return of foreign students.

#### Survey of International Migration

Steven Dedijer,<sup>12</sup> of the University of Lund in Sweden, examines critically the process of migration of scientists to other countries through a careful analysis of ancient history of migration. He mentions that the scientists have been migrating for at least the past 2,200 years and the governments involved increasingly sought to curtail the migration. His study suggests that migration of scientists, scholars, researchers and skilled people is not a new phenomenon.

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<sup>12</sup>Steven Dedijer, "Early Migration," The Brain Drain, ed. Walter Adams (New York, 1968), pp. 9-28.

Brinley Thomas,<sup>13</sup> of the University of Wales, emphasizes the role of migration in economic growth. He draws from the record of international mobility in the century ending in the 1920's. During this period there was relatively unrestricted international movement of all factors--physical capital, skilled and unskilled workers, and the process of diffusion was on the whole mutually beneficial to sending and receiving countries. But during the last twenty years, there have been significant changes in the pattern and occupational character of international flows and in the policies of governments toward immigration. The striking new features are the high proportion of international migrants who belong to the professional classes and the relative immobility of unskilled workers. Governments now regulate immigration according to strictly national needs and interests, and there is a preference for manpower with specialized skills.

Thomas' paper presents a summary of the mechanism of mobility which promoted the economic growth of both the sending and the receiving countries in the second half of the nineteenth century. It is interesting to note that current studies on migration deal primarily with the mobility of skilled and professional workers, and both countries--the receiving as well as the sending--gain by this phenomenon of mobility.

#### Theories of Cosmopolitan and National Models

Harry G. Johnson,<sup>14</sup> of the London School of Economics and Political Science, developed an analytical framework in discussing the phenomenon

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<sup>13</sup>Brinley Thomas, "Modern Migration," The Brain Drain, ed. Walter Adams (New York, 1968), pp. 29-49.

<sup>14</sup>Harry G. Johnson, "An Internationalist Model," The Brain Drain, ed. Walter Adams (New York, 1968), pp. 69-91.

of "brain drain" and suggested an internationalist or a cosmopolitan liberal model. He assumes that the international circulation of human capital is a beneficial process since it reflects the free choices of the individuals who choose to migrate.

However, Don Patinkin,<sup>15</sup> of Hebrew University in Jerusalem, suggests a nationalist model for an analytical framework of "brain drain." The "nationalist" model regards human capital, or more precisely, certain minimum levels of human capital, as indispensable to a country's economic development. If the emigration of human capital causes the nation to fall below this minimum, the consequence is not merely to raise the marginal productivity of the human capital remaining, but to jeopardize the growth-potential of all combined resources in the economy.

Walter Adams,<sup>16</sup> of Michigan State University, presents a critical view of both "international," or "cosmopolitan," and "nationalist" models. Though they rest on quite different assumptions, they provide the policy maker with valuable insights. A wholehearted reliance on the "nationalist" model would lead to neglect the positive factors that ensue from human capital flow in divergent directions. The model also fails to specify a means for achieving optimum allocation of domestically available resources. The "cosmopolitan" model, on the other hand, while calling attention to the externalities in the form of scientific or other advances from which the losing, as well as the highly developed

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<sup>15</sup> Don Patinkin, "A Nationalist Model," The Brain Drain, ed. Walter Adams (New York, 1968), pp. 92-108.

<sup>16</sup> Walter Adams, ed., The Brain Drain (New York, 1968), pp. 4-5.

nation's benefit, has no prescription for combating that part of the "brain drain" that should justifiably be checked.

#### Empirical Studies on "Brain Drain"

We must not forget that most of the scholars who have written on the problem of "brain drain" are natural scientists, engineers, educators, or government officials witnessing a situation that they considered serious for their countries or their societies. As a result, a large majority of these works reflect a valuable personal and in some cases, institutional experience; but very few of them are supported by empirical analysis.<sup>17</sup>

It is also noticed that the existing theories on internal and international migrations deal, in most cases, with the problem of the movements of the low economic and social population stratum. Thus, they are not too effective for explaining the much more complex nature of the migrations of highly educated, middle and upper class persons, both

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<sup>17</sup>Richard Humphrey, "International Migration of Intellectual Talent: The Academic Community and the Brain Drain," American Council of Education Bulletin, IV (1966), pp. 1-8; U. S., Department of State, Council on International Educational and Cultural Affairs, The Interagency Council and the "Brain Drain" in Developing Countries (Washington, October 6, 1967), mimeo; Charles V. Kidd, "The Loss of Scientists from the Less to the More Developed Countries," Scientific and Technological Policy: Planning and Organization, IX (1967), pp. 18-26; Senator Walter F. Mondale, "The Brain Drain from Developing Countries," Congressional Record, CLXXII (1966), pp. 20589-20592; Carnegie Corporation, Report to the Corporation, Brain Drain (New York, 1966), pp. 1-58; U. S., Congress, Committee on Government Operations, Brain Drain into the United States of Scientists, Engineers, and Physicians (Washington, 1967); and U. S., Congress, House, Committee on Government Operations, The Brain Drain of Scientists, Engineers, and Physicians from the Developing Countries into the United States, Hearings, before a Subcommittee of the Committee on Government Operations, House of Representatives, 90th Cong., 2d sess., 1968.

in the country of origin and in the country of destination.

Given the nature of the above inadequacies, Enrique Oteiza,<sup>18</sup> of Buenos Aires, has directed his studies toward a loose empirical analysis of the international migration of high level human resources. In answering the question as to why people with a high educational level migrate, many authors<sup>19</sup> have tried to analyze the pull and push factors. The push factors are those depressing characteristics in the country of origin (for a given profession--which produce emigration) and the pull factors are the attracting aspects in the country of destination (for the same profession that induces immigration). He points out that this type of approach is weak from an analytical viewpoint. It does not properly take into account the complex comparative aspects which are crucial in this phenomenon. Therefore, Enrique Oteiza<sup>20</sup> suggests a differential approach to the factors that influence migration of highly trained persons. Such factors are: income differential, logistical support differential, differential of the relative average wages of a professional category in comparison to national average income per capita of the labor force and preference differential.

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<sup>18</sup>Enrique Oteiza, "Emigration of Engineers from Argentina: A Case of Latin American 'Brain Drain'," International Labor Review, XCII (1965), pp. 445-461. See also: Enrique Oteiza, "A Differential Push-Pull Approach," The Brain Drain, ed. Walter Adams (New York, 1968), pp. 120-134.

<sup>19</sup>Charles V. Kidd, Statement on the Migration of Highly Trained Persons Before the Senate Immigration and Naturalization Subcommittee (Washington, March 6, 1967), pp. 104-110.

<sup>20</sup>Oteiza, pp. 120-134.

Myers'<sup>21</sup> study examined the methodological probings and conceptual concerns rather than substantive findings. He was more concerned with the concepts and methods which he applied to measure the foreign students' non-return in order to maintain a balance between the studies which are emotional rather than analytical.

He employed his methodology to the study of Peruvian students in the United States and their migration by gathering data through questionnaires and interviews. His findings supported the official Peruvian attitudes of conflicting feelings toward their students staying abroad and toward their emigrants.

The theories of internal and international migrations have largely dealt with economic, demographic, cultural and political factors but did not include the individual migrant's aspirations, attitudes and motives. William Petersen<sup>22</sup> has developed an elaborate typology of migration in an effort to improve upon earlier typologies that failed to take into account many variables involved in the concrete movements of peoples. Though the author will be dealing with just a few aspects of Petersen's modified typology, the latter offers a promising model for examining the problem of international "brain drain."

Kindleberger,<sup>23</sup> of Massachusetts Institute of Technology, examines critically the relationship between study abroad and migration. He suggests that foreign students from less developed and developing

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<sup>21</sup>Robert G. Myers, "Study Abroad and the Migration of Human Resources" (unpub. Ph.D. dissertation, University of Chicago, 1967).

<sup>22</sup>William Petersen, "A General Typology of Migration," Population and Society, ed. Charles B. Nam (Boston, 1968), pp. 288-297.

<sup>23</sup>Charles P. Kindleberger, "Study Abroad and Emigration," The Brain Drain, ed. Walter Adams (New York, 1968), pp. 135-155.

## A GENERAL TYPOLOGY OF BRAIN DRAIN\*

Relation	Brain Drain Force	Class of Brain Drain	Type of Brain Drain	
			Temporary	Permanent
Nature and Man	Ecological Push	Primitive	<u>Wandering:</u> Educated people migrating from rural to urban areas in a country. <u>Ranging:</u> Educated people moving from one state to another in the country.	<u>Flight from the country:</u> Educated people who settle down in less developed countries for exploitation.
State and Man	Government Policy	Forced	<u>Displacement:</u> Intellectuals put in jail for expressing their ideas against the government.	<u>Exile:</u> Forced to leave the country.
Economics and Man	Economic Conditions	Impelled	<u>Temporary Flight:</u> Educated people leave the country temporarily--such as visiting professors and doctors, etc. in order to earn more while they are in developed countries.	<u>Permanent Flight:</u> Educated people migrating to developed countries to improve their economic conditions.
Man and his Norms	Higher Aspirations	Free	<u>Ambition:</u> Students go abroad for advanced studies so they work for a few years in foreign countries and on their return are offered better jobs.	<u>Higher Ambition:</u> Students going abroad with the intention of settling down in that country as they are attracted by higher salaries and standard of living.
Collective Behavior	Social Momentum	Mass	<u>Unsuccessful:</u> When people hear that their colleagues are doing well in other countries they too leave but return home after a few years as they fail to make necessary adjustment.	<u>Successful:</u> Those who have left their countries and are now well settled in the developed countries make arrangements for their friends and relatives to follow them.

\*Adapted from William Petersen, pp. 288-297.



countries who come to the United States with the hope that they would return to their home countries after completion of their studies and make a successful contribution in the economic development of their country, face at least three hurdles which prevent them from making a successful contribution to their country. Those hurdles are: foreign students may fail in their work at the American university or college; they may fail to return to their home country; or, they may return and be ineffective as a consequence of being trained abroad. Kindleberger's study examines these possible causes of failure and suggests how they may be reduced.

#### The Theoretical Framework

The relatively eclectic theoretical approach that this study will follow is the general push and pull factor, the differential factor as suggested by Enrique Oteiza<sup>24</sup> and the theory of Petersen<sup>25</sup> which includes the individual's aspirations, attitudes and motives. In studying the attitudes of foreign students toward returning to their home country on completion of their studies in the United States, these three approaches seem most promising.

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<sup>24</sup>Oteiza, pp. 120-134.

<sup>25</sup>Petersen, pp. 288-297.

## CHAPTER III

### SAMPLING AND PROCEDURES

The first phase of the project was spent in organizing, planning, designing and pre-testing of instruments, and contact work. The second phase of the project was devoted to data collection and included initial statistical analysis and programming. The final phase focused on intensive statistical treatment of data, hypothesis testing, and write up.

#### The Instrument

The research tool for this sociological inquiry was the mailed self-administering questionnaire which was devised to explore hypotheses. Most of the items included in the questionnaire were mainly structured items with a few open-ended questions (see Appendix B). In constructing the questionnaire, three factors were kept in mind. First, the instrument was simple and questions were kept to the point to minimize the foreign students' problems in interpreting the items. Second, the questionnaire was short (43 items) so as to increase the voluntary response rate. Third, only information directly relevant to the test of the hypotheses was sought.

In developing the instrument, colleagues, locally available foreign students and others were consulted. A draft was submitted to experts so that ambiguities, biases, and sequence could be corrected. After the

literature had been studied and experts consulted, a pilot study was launched and pre-testing of the instrument was conducted. Afterwards, a revised draft of the questionnaire was shown to experts and some foreign students to determine readability and clearness of the items as well as other recommendations. The questionnaire was modified consistent with their suggestions.

The specific items in the questionnaire were clustered in such a way to test the hypotheses listed on pages 7 and 8. Each item was designed to enable a test of no difference between the students planning to return and the students planning to remain in the United States. For example, the developmental state of the country of origin, the period of stay in this country, the parental income, the marital status, the age of foreign students, the employment status in the country of origin, the major field of study and previous educational attainment, the mode of financial support, the procuring of travel documents, the professional aspirations, and perceptions about employment opportunities in the country of origin were related to the students' plans to return home or to stay in the United States.

The instrument was designed in an attempt to study the attitudes of foreign students toward returning to their home countries subsequent to their graduation in the United States. Most of the structured items of the questionnaire were already pre-coded. The open-ended items were coded later after we had received complete returns from students. All 43 items were coded so that frequencies could be obtained.

#### The Sample

The source of data for this study was as follows:

1. A random sample of 1500 foreign students from less developed and developing countries of Asia, Africa and Latin America who were enrolled in American colleges and universities during the fall semester of 1968-69, and the ones who were on F-1 (student) visa but had secured full-time jobs as a part of their practical training.

2. The sample was drawn from 20 American universities and colleges with a minimum enrollment of 400 foreign students. The universities shown in Table I were randomly selected as they represent the cross-section of the United States.

3. The random sample of 1500 foreign students was drawn from 31 less developed and developing countries of Asia, Africa and Latin America. The other continents were not included in our research as they did not fall in the categories of less developed and developing countries.

Berry,<sup>1</sup> of the University of Chicago, in a study of regionalization of economic development devised a technique for distinguishing highly developed countries from less developed countries. He found that on the basis of several factors, or clusters of characteristics, countries tend to be ranked along a linear continuum. In the present study, two factors of the five developed by Berry were used to regionalize various countries: factor one, the technological scale; and factor two, the demographic scale.

These countries ranking highest on the technological scale are "those which trade extensively and have many international contacts and

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<sup>1</sup>Brian J. L. Berry, "An Inductive Approach to Regionalization of Economic Development," Essays on Geography and Economic Development, ed. Norton Ginsburg (Chicago, 1960), pp. 78-107.

TABLE I  
 UNITED STATES UNIVERSITIES WITH MORE THAN 400 FOREIGN STUDENTS  
 1967-1968

Universities	No. of Foreign Students	Total Enrollment	% of Total Enrollment
1. University of California, Los Angeles	1,695	29,070	5.8
2. New York University	3,340	41,130	8.1
3. Columbia University	2,590	25,412	10.2
4. University of Wisconsin	2,046	54,997	3.7
5. University of Illinois	1,791	44,806	4.0
6. University of Michigan	1,614	37,283	4.3
7. Howard University	1,400	8,813	15.9
8. Harvard University	1,269	15,215	8.3
9. University of Washington	1,287	29,977	4.3
10. Cornell University	1,078	14,297	7.5
11. Stanford University	927	12,175	7.6
12. University of Oregon	844	15,207	5.6
13. University of Minnesota	1,368	46,088	2.9
14. University of Kansas	676	17,025	4.0
15. Catholic University of America	559	6,591	8.5
16. University of Texas	819	52,681	1.6
17. University of Missouri	783	40,337	1.9
18. Louisiana State University	611	28,328	2.2
19. University of Hawaii	1,176	20,275	5.8
20. Oklahoma State University	437	19,711	2.2

Source: Adapted from Open Doors 1968, Institute of International Education, Report on International Exchange (New York, 1968), p. 4.

well developed internal systems of communications, including dense and intensively used transport networks. They produce and consume much energy, have high national products, are highly urbanized, and are well provided with such facilities as medical services."

Factor two is made up of five demographic indices--population density, crude birth rates, crude death rates, population growth rates and infant mortality rates--population densities on cultivated land, per cent of land area cultivated, rice yields, and per cent of exports. On this dimension, countries spread evenly as on a linear continuum. The highest ranking countries on the demographic scale are those with the highest birth and death rates, the highest population densities, amounts of land area cultivated, rice yields, and per cent of trade exported.

There is an inverse relationship of the importance of the indices on the two dimensions. There is a tendency for countries ranking high on factor one to rank low on factor two and vice versa.

Eleven countries from Asia, ten countries each from Africa and Latin America were randomly selected according to Berry's<sup>2</sup> "technological and demographic scales." Five countries were less developed and the other five were developing countries (except Asia where we selected six developing countries). In other words, five per cent of the students from each of the 20 American universities were chosen from 31 different countries representing those different continents. In our sample the countries included are shown in Table II.

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<sup>2</sup>Ibid.

TABLE II

## LESS DEVELOPED AND DEVELOPED COUNTRIES

Asia		Africa		Latin America	
Developed Countries	Less Developed Countries	Developed Countries	Less Developed Countries	Developed Countries	Less Developed Countries
India	Burma	Egypt	Nigeria	Brazil	Honduras
Pakistan	Thailand	Ghana	Ethiopia	Peru	Nicaragua
Iran	South Vietnam	Tunisia	Libya	Ecuador	Paraguay
China	Jordan	Morocco	Liberia	Venezuela	Haiti
South Korea	Indonesia	Algeria	Sudan	Bolivia	Dominican Republic
Philippines					

## Procedures

The following methods were incorporated for collecting data used in the pilot study.

Before starting the project in February 1968, the researcher talked with some of the foreign students on the Oklahoma State University campus, presidents of some international student associations and the international student adviser, late Mr. John Whitten. During the first visit the idea of the research project was presented to them. The foreign students showed a great deal of enthusiasm and promised to assist the author in all possible ways.

A draft of the questionnaire was prepared and the items were so designed that relevant information to test the hypotheses could be obtained.

A list of all the foreign students enrolled at Oklahoma State University for the spring semester of 1967-68, along with the names of various international students' organizations and their presidents was obtained from the Office of International Students. During that semester 440 foreign students representing 59 different countries were enrolled.

Self-administered questionnaires were distributed at the meetings of various international students' organizations on the Oklahoma State University campus. Of the 440 foreign students, a total of 174 students, or 39.54% of the total population, was collected. This sample represented 28 independent nations.

This first phase of the project was used as a pilot study and a pre-testing of the instrument. This was completed in May, 1968. The second phase of the study included actual data collection. In



selecting a random sample of 1500 foreign students from 20 American universities and colleges, the following procedures were employed.

A letter dated September 19, 1968, to Foreign Student Advisers at 20 American universities was mailed with the request to send us a directory of foreign students enrolled for the fall semester of 1968-69 in their universities (see Appendix A). Eleven foreign student advisers promptly replied to our request and promised to cooperate with us. Eleven directories and a list of foreign students' organizations were received between September and November, 1968. Two universities were unable to release information about students due to their policy to respect the privacy of their students. Four foreign student advisers did not respond to our repeated request. One adviser mentioned that his office did not have a directory of foreign students.

In cases where directories were not available through the office of the foreign student adviser, student directories were purchased from student union bookstores. In other cases directories were obtained through friends. In cases where directories were not available through the above means, we sought the help and cooperation of foreign student organizations.

From the directories we randomly selected 1500 foreign students on F-1 and J-1 visas who were enrolled for the fall semester of 1968-69 and the ones who were on F-1 (student) visa but had secured full-time jobs as a part of their practical training. (From five directories local addresses of students on practical training and names and addresses of their employers were helpful.)

In selecting 1500 foreign students we chose five per cent of the total number of foreign students from each of the 20 American

universitiss. These students were selected from three different continents of Asia, Africa and Latin America. Students were chosen only from those countries which fell in the categories of less developed and developing nations.<sup>3</sup>

A questionnaire, along with a self-addressed and stamped envelope, was mailed to 1500 foreign students between October and November, 1968 (see Appendix B). At the same time we sent another 155 questionnaires to international students' organizations at two campuses with a personal request for their help and cooperation in filling out and returning the questionnaire (see Appendix C).

Once a student had been selected randomly, our aim was to follow up until we got the completed questionnaire back from him. Out of 1500 questionnaires, 79 were not delivered as these students evidently had not left their forwarding address. Three students returned blank questionnaires with no comments. Perhaps they did not want to fill them out.

After three weeks, a reminder was sent to students who had failed to respond (see Appendix D).

After another two weeks a second reminder along with a second copy of the questionnaire was mailed to those who did not respond earlier (see Appendix E).

After repeated efforts, by the end of January, 1969, we received 1293 (or 86.2%) returns out of a total of 1500 questionnaires that we mailed. Seventy-nine (or 5.26% of the questionnaires came back as students had moved to some other place with no forwarding address.

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<sup>3</sup>Explained in the section under the Sample

Three students (or .2%) returned blank questionnaires. Seventeen questionnaires (or 1.13%) did not have complete information. One hundred eight students (or 7.2%) did not respond at all. Out of another 155 questionnaires mailed to international student organizations at two campuses, 107 returns (or 69.03%) were received. A total of 1400 returns (or 84.59%) out of 1655 questionnaires were available for use for statistical analysis in the study.

After receipt of 1400 returns, a letter was sent to 31 embassies located in Washington, D. C. requesting information on students from their country and the employment situation in their country (see Appendix F).

## CHAPTER IV

### FINDINGS OF THE STUDY

#### Foreign Students in the United States

Before World War II, when most of the countries of Asia and Africa were being ruled by western powers, students from these regions attended the universities of the countries of whose colonies they were a part. In most instances, students went to England and France. Most of these countries of Asia and Africa have now achieved independence, and as a result, more educational opportunities are open for them abroad. In the majority of cases, most of the students from these countries now come to the United States.

The number of foreign students in the United States has been increasing every year. The annual census of the Institute of International Education reported that 110,315 foreign students attended American colleges and universities in the year 1967-68. In the previous year, 1966-67, 100,262 foreign students were enrolled, or an increase of 10,053 or 10 per cent (see Table III). During the 1966-67 academic year, there was a gain of more than 17,500 foreign students over the 1965-66 academic year.<sup>1</sup>

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<sup>1</sup>Open Doors 1967, Institute of International Education, Report on International Exchange (New York, 1967), p. 1.

TABLE III  
FOREIGN STUDENTS IN THE UNITED STATES

Area	1966-67					1967-68				
	Under-graduate	Graduate	Other, Special & No Answer	Total	%	Under-graduate	Graduate	Other, Special & No Answer	Total	%
Far East	11,374	20,363	1,833	33,570	33.5	12,550	22,306	2,372	37,228	33.7
Near and Middle East	7,460	4,646	724	12,830	12.8	7,699	4,760	888	13,347	12.1
Latin America	11,482	4,763	1,937	18,182	18.1	14,174	5,435	2,229	21,908	19.9
Africa	3,858	2,877	435	7,170	7.2	3,614	2,925	362	6,901	6.3
Other Areas Such as Europe and North America	14,283	12,104	2,123	28,510	28.4	15,317	12,783	2,901	30,931	28.0
Total	48,457	44,753	7,052	100,262	100.0	53,354	48,209	8,752	110,315	100.0

Source: Adapted from Open Doors 1967 and 1968, Institute of International Education, Report on International Exchange (New York, 1967 and 1968), p. 2.

Foreign students are classified according to their date of arrival and length of stay in the United States, their major fields of study, their academic status, their sources of financial support, their employment status in home countries, their marital status, their plans after completion of their studies, and their reasons either to return home or stay in the United States.

#### Home Countries of Foreign Students

Table IV, based on the Institute of International Education census report of 1968, shows home country, sex, year study began in the United States, financial support and academic status of foreign students enrolled in American colleges and universities for the academic year 1967-68.

From underdeveloped regions there were 84,230 male students and 26,085 female students. Out of a total of 110,315 foreign students, the largest proportion, 34 per cent, came from the Far East; 20 per cent came from Latin America, 14 per cent from Europe, and 12 per cent from the Near and Middle East. Students from Northern America, principally Canada, made up 11 per cent of the total, Africans 6 per cent and students from Oceania, 2 per cent.

It is interesting to note that the number of female students going abroad from these countries has also been increasing. This shows that agrarian and traditional societies are slowly breaking away from traditional norms and allowing females not only to study in their home countries, but in western countries. The largest number of female students in the United States is from Far Eastern countries and the smallest number is from African countries.

TABLE IV  
CHARACTERISTICS OF FOREIGN STUDENTS IN THE UNITED STATES

Home Country	Total	Sex		Year Began Study in U.S.						Financial Support										Academic Status				
		Male	Female	1967-68	1966	1965 & Before	No Answer	U. S. Govt.	Foreign Govt.	Self	U. S. College or Univ.	U. S. College or Univ. & Private	U. S. College or Univ. & U. S. Govt.	U. S. College or Univ. & U. S. Govt. & Foreign	Private	Private & Foreign Govt.	Private & U. S. Govt.	No Answer	Under-graduate	Grad., Prof., Unspecified No Degree	Graduate Pursuing Master's	Ph. D.	Special	No Answer
TOTAL	110,315	84,230	26,085	29,857	18,698	33,987	27,773	6,329	5,087	41,541	19,955	1,830	1,588	836	8,319	514	401	23,924	53,354	10,963	21,342	15,904	6,873	1,879
Africa	6,901	5,919	982	1,495	1,306	2,777	1,323	1,111	521	1,318	1,050	383	312	115	796	69	74	1,152	3,614	666	1,281	978	290	72
Algeria	49	47	2	11	5	25	8	11	4	3	4	-	1	-	17	-	-	9	24	4	7	12	2	-
Ethiopia	361	289	72	121	103	79	58	141	15	55	28	20	23	-	31	2	4	42	169	27	102	31	31	1
Ghana	374	331	43	98	77	133	66	37	27	90	54	29	27	6	42	4	6	52	215	30	72	37	16	2
Liberia	299	209	90	82	74	82	61	42	103	45	22	8	3	9	18	-	4	45	199	24	54	10	8	4
Libya	96	93	3	37	16	15	28	6	43	7	1	-	-	1	14	-	2	22	52	7	21	7	8	1
Morocco	72	58	14	18	9	22	23	4	-	17	10	8	7	-	8	1	-	17	44	3	16	4	2	3
Nigeria	1,790	1,634	156	373	343	771	303	248	48	530	329	75	52	28	200	4	4	272	1,056	146	342	187	41	18
Sudan	150	142	8	28	51	47	24	34	38	15	10	3	3	3	24	1	2	17	49	16	40	33	12	-
Tunisia	89	87	2	16	19	34	3	5	3	2	1	2	1	-	1	-	3	37	60	4	16	8	1	-
U. A. R.	868	692	176	114	116	373	265	84	155	167	140	12	13	25	49	5	8	210	128	182	133	393	20	12
Far East	37,228	27,647	9,554	10,945	6,621	11,798	7,864	1,742	640	14,894	9,415	525	432	147	2,346	106	50	6,931	12,550	4,529	10,463	7,314	1,846	526
Near & Mid. East	13,347	11,807	1,540	2,841	2,154	5,260	3,092	613	1,612	5,763	1,647	122	138	65	737	29	25	2,596	7,699	995	1,969	1,796	711	177
Burma	100	72	28	13	11	49	27	2	9	40	23	-	1	1	5	-	-	19	44	15	18	16	4	3
China	6,850	4,993	1,857	2,004	1,282	2,710	854	117	127	2,571	3,129	53	21	42	215	4	6	565	1,023	477	2,940	2,175	181	54
India	8,221	7,339	882	2,572	1,454	2,460	1,735	205	85	2,949	2,498	170	143	38	512	24	8	1,589	1,606	1,214	2,589	2,455	248	109
Indonesia	533	417	116	193	75	162	103	110	7	137	96	12	6	-	77	1	-	87	193	63	127	98	47	5
Korea	3,435	2,687	748	865	622	1,241	707	131	38	1,354	904	54	35	14	228	8	6	663	962	419	1,102	673	233	46
Philippines	2,634	1,318	1,316	741	503	683	707	130	30	1,021	385	53	35	14	358	15	9	584	859	406	795	404	143	27
Thailand	2,629	1,820	809	968	579	702	380	261	215	1,434	152	12	8	5	177	7	9	349	1,309	207	774	142	175	22
Vietnam	657	438	219	313	113	121	110	254	11	183	83	4	4	1	27	5	2	83	390	35	114	48	60	10
Iran	4,276	3,780	496	655	607	2,167	847	59	179	2,742	410	12	5	15	156	2	2	694	3,108	246	427	286	158	51
Jordan	825	755	70	199	166	298	162	36	6	439	138	13	2	3	54	2	1	131	523	53	116	89	37	7
Pakistan	1,258	1,159	99	338	263	432	225	210	31	368	209	27	49	6	115	6	4	233	374	142	291	389	46	16
Latin America	21,908	16,207	5,701	5,693	3,371	5,780	7,064	2,091	605	8,491	1,979	352	235	107	1,999	145	82	5,822	14,174	1,395	2,809	1,231	1,858	441
South America	8,844	6,801	2,043	2,839	1,593	2,185	2,227	652	389	3,439	914	209	123	80	1,207	79	48	1,704	4,553	777	1,613	721	992	188
D. Republic	711	608	103	94	104	85	428	11	6	192	24	6	4	-	23	2	1	442	610	16	35	4	43	3
Haiti	326	224	102	101	40	62	123	6	-	173	22	1	2	-	23	1	-	98	200	17	28	6	66	9
Bolivia	417	326	91	121	66	132	98	28	7	185	52	10	11	-	41	5	1	77	273	19	56	23	43	3
Brazil	1,101	803	298	434	198	211	258	210	59	256	97	27	11	22	190	22	15	192	322	139	300	130	188	22
Ecuador	521	419	102	167	86	143	125	44	6	230	69	18	8	1	52	7	2	84	321	30	70	25	62	13
Paraguay	88	69	19	26	19	25	18	18	1	14	18	4	4	1	16	2	-	10	47	5	24	8	4	-
Peru	1,189	939	250	394	227	324	244	87	14	561	153	30	12	2	134	10	4	182	743	84	177	55	116	20
Honduras	313	227	86	89	72	88	64	20	8	170	28	8	1	1	16	2	2	57	229	9	25	9	29	12
Nicaragua	424	335	89	120	86	116	102	22	10	253	21	4	5	1	19	2	1	86	332	17	28	7	35	5
Venezuela	1,501	1,240	261	491	272	386	352	40	188	708	42	12	-	3	213	4	6	285	824	80	275	69	210	43

Source: Adapted from Open Doors 1968, Institute of International Education, Report on International Exchange (New York, 1968), pp. 14-19.

In Table V, compiled from research data of the 1,400 foreign student respondents, we observe that 654 or 47 per cent of the students came from Asian countries, 374 or 26 per cent from Latin American countries, and 372 or 27 per cent from African countries.

The largest number of students in the United States from the Asian continent was from India - 8,221, China was the second highest - 6,850 students, and the smallest number of students came from Burma - 100. Of the Latin American continent, the largest number of students came from Venezuela - 1,501, classified as a developed country, and the smallest number of students came from Paraguay, a less developed country - 88. Of the African continent, the largest number of students came from Nigeria, a less developed country - 1,790, and the smallest number of students came from Algeria, classed as a developed country - 49 (see Table IV, page 37, compiled from the 1968 census report of the Institute of International Education).

It is interesting to note that whereas the largest number of students from the continents of Asia and Latin America (those students came to the United States in 1967-68) came from the developed countries, the smallest number came from the less developed countries. However, this pattern was reversed in the case of the African continent.

Another interesting feature relates to the male-female distribution. Although the largest number of male students from the Asian continent during the 1967-68 academic year came from India (7,339 male students), China being the second (4,993 male students); the pattern in the case of female students was reversed (India had 482 female students and China had 1,857 female students, see Table IV, page 37). Of the African continent, the largest number of female students came from Egypt, a



developed country (176 female students), and the second largest from Nigeria, a less developed country (156 female students).

#### Length of Stay in the United States

In Table IV, it can be observed that of the total 110,315 foreign students during the academic year 1967-68, 27 per cent of the students reported that 1967-68 was their first year of college study in the United States. Seventeen per cent reported that 1967-68 was their second year in the United States, and 31 per cent said that they had been studying in the United States for three years or more. In raw figures, 29,857 foreign students came to the United States in 1967-68, 18,698 in 1966, and 33,987 students had been in the United States for more than three years.

Among the Asian students, 2,710 Chinese and 2,460 Indian students have studied in the United States for three years or more (arrived before 1965). The largest number of students - 2,572 came from India during the academic year 1967-68, and China ranked second with 2,004 students. Of the Latin American students, the largest number, 491, of students came from Venezuela and the smallest number of students, 26, came from Paraguay. The largest number of students who have studied in the United States for three years or more came from Venezuela and the smallest from Paraguay. Among the African students, 373 came from Nigeria and 11 students from Algeria. Seven hundred and seventy-one students from Nigeria and 15 students from Libya have been in this country for three years or more.

In Table V we notice that 64 per cent of the total 1,400 students sampled reported that 1968 was their first year of college in the United States, 20 per cent reported that they arrived in 1967,

TABLE V

## HOME COUNTRIES, ARRIVAL AND ACADEMIC STATUS OF FOREIGN STUDENTS

Home Country	Total	Arrival in U.S.						Academic Status											
		1968		1967		1966		1965 & Before		Undergrad.		Master's		Ph.D.		Special*		No Answer	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<b>ASIA</b>	<b>654</b>	<b>393</b>	<b>60.09</b>	<b>113</b>	<b>17.27</b>	<b>41</b>	<b>6.26</b>	<b>107</b>	<b>16.36</b>	<b>259</b>	<b>39.60</b>	<b>250</b>	<b>38.22</b>	<b>124</b>	<b>18.96</b>	<b>15</b>	<b>2.29</b>	<b>6</b>	<b>0.91</b>
1. India	194	135	69.60	27	13.90	8	4.10	24	12.30	58	29.80	84	43.30	42	21.60	8	4.10	2	1.10
2. Pakistan	36	31	86.10	1	2.80	0	0.00	4	11.10	21	58.30	10	27.80	3	8.30	1	2.80	1	2.80
3. Iran	53	11	20.80	12	22.60	10	18.90	20	37.70	40	75.50	8	15.10	4	7.50	0	0.00	1	1.90
4. China	91	52	57.10	19	20.90	4	4.40	16	17.60	10	11.00	56	61.50	24	26.40	1	1.11	0	0.00
5. South Korea	52	25	48.10	8	15.40	7	13.50	12	23.00	16	30.70	22	42.30	12	23.10	2	3.80	0	0.00
6. Philippines	53	28	52.80	11	20.80	1	1.90	13	24.50	23	43.50	15	28.30	12	22.60	1	1.90	2	3.80
7. Burma	24	18	75.00	4	16.70	0	0.00	2	8.40	9	37.50	10	41.70	5	20.80	0	0.00	0	0.00
8. Thailand	53	33	62.30	9	17.00	3	5.70	8	15.10	19	35.80	26	49.10	6	11.30	2	3.80	0	0.00
9. South Vietnam	22	14	63.60	3	13.60	4	18.20	1	4.50	14	63.60	4	18.20	4	18.20	0	0.00	0	0.00
10. Jordan	45	24	53.30	14	31.10	2	4.40	5	11.10	30	66.70	7	15.60	8	17.80	0	0.00	0	0.00
11. Indonesia	31	11	35.50	5	16.10	2	6.50	2	6.40	19	61.30	8	25.80	4	12.90	0	0.00	0	0.00
<b>AFRICA</b>	<b>372</b>	<b>285</b>	<b>76.61</b>	<b>61</b>	<b>16.39</b>	<b>12</b>	<b>3.22</b>	<b>14</b>	<b>3.76</b>	<b>51</b>	<b>13.70</b>	<b>304</b>	<b>81.72</b>	<b>15</b>	<b>4.03</b>	<b>2</b>	<b>0.53</b>	<b>0</b>	<b>0.00</b>
12. Egypt	52	35	67.30	12	23.10	0	0.00	5	9.60	3	5.70	40	76.90	7	13.50	2	3.80	0	0.00
13. Ghana	40	31	77.50	7	17.50	1	2.50	1	2.50	8	20.00	31	77.50	1	2.50	0	0.00	0	0.00
14. Tunisia	32	25	78.10	6	18.80	1	3.10	0	0.00	4	12.50	28	87.50	0	0.00	0	0.00	0	0.00
15. Morocco	30	25	83.30	4	13.30	1	3.30	0	0.00	2	6.60	28	93.30	0	0.00	0	0.00	0	0.00
16. Algeria	31	24	77.40	5	16.10	0	0.00	2	6.50	3	9.70	28	90.30	0	0.00	0	0.00	0	0.00
17. Nigeria	46	35	76.10	6	13.00	3	6.50	2	4.40	10	21.70	35	76.10	1	2.20	0	0.00	0	0.00
18. Ethiopia	43	36	83.70	4	9.30	2	4.70	1	2.30	4	9.30	37	86.00	2	4.70	0	0.00	0	0.00
19. Libya	34	27	79.40	7	20.60	0	0.00	0	0.00	6	17.60	28	82.40	0	0.00	0	0.00	0	0.00
20. Liberia	34	23	67.60	8	23.50	1	2.90	2	5.90	6	17.60	28	82.40	0	0.00	0	0.00	0	0.00
21. Sudan	30	24	80.00	2	6.70	3	10.00	1	3.30	5	16.60	21	70.00	4	13.30	0	0.00	0	0.00
<b>LATIN AMERICA</b>	<b>374</b>	<b>212</b>	<b>56.68</b>	<b>100</b>	<b>26.73</b>	<b>25</b>	<b>6.68</b>	<b>37</b>	<b>9.98</b>	<b>270</b>	<b>72.19</b>	<b>83</b>	<b>22.19</b>	<b>21</b>	<b>5.61</b>	<b>0</b>	<b>0.00</b>	<b>0</b>	<b>0.00</b>
22. Brazil	52	27	51.90	13	25.00	11	21.20	1	1.90	37	71.20	15	28.80	0	0.00	0	0.00	0	0.00
23. Peru	24	13	54.20	7	29.20	1	4.20	3	12.50	20	83.30	4	16.70	0	0.00	0	0.00	0	0.00
24. Ecuador	36	11	30.60	9	25.00	2	5.60	14	38.80	22	61.10	7	19.40	7	19.40	0	0.00	0	0.00
25. Venezuela	45	25	55.60	11	24.40	2	4.40	7	15.50	29	64.40	14	31.10	2	4.40	0	0.00	0	0.00
26. Bolivia	34	22	64.70	6	17.60	4	11.80	2	5.90	19	55.80	14	41.20	1	2.90	0	0.00	0	0.00
27. Honduras	37	20	54.10	13	35.10	1	2.70	3	8.10	30	81.00	4	10.80	3	8.10	0	0.00	0	0.00
28. Nicaragua	40	28	70.00	8	20.00	1	2.50	3	7.50	31	77.50	9	22.50	0	0.00	0	0.00	0	0.00
29. Paraguay	35	21	60.00	12	34.30	1	2.90	1	2.90	21	59.90	10	28.60	4	11.40	0	0.00	0	0.00
30. Haiti	32	22	68.80	8	25.00	0	0.00	2	6.20	28	87.50	2	6.20	2	6.20	0	0.00	0	0.00
31. Dom. Republic	39	23	59.00	13	33.30	2	5.10	1	2.60	33	84.70	4	10.30	2	5.10	0	0.00	0	0.00
<b>TOTAL</b>	<b>1400</b>	<b>890</b>	<b>63.57</b>	<b>274</b>	<b>19.57</b>	<b>78</b>	<b>5.57</b>	<b>158</b>	<b>11.28</b>	<b>580</b>	<b>41.42</b>	<b>637</b>	<b>45.50</b>	<b>160</b>	<b>11.42</b>	<b>17</b>	<b>1.21</b>	<b>6</b>	<b>0.42</b>

Source: Compiled from research data of the 1,400 foreign student respondent.

\*Special students include post doctoral, intern, nurse, and students working for no degree.

5 per cent said that they arrived in 1966 and only 11 per cent reported that they had been in the United States for four years or more. The chronological distribution of foreign students in the United States reflects the J-curve pattern of attrition. It suggests that the model period for foreign students is one year of study in this country. It also suggests that the flow of students is not a relatively limited factor in "brain drain."

Approximately 77 per cent of the total African students reported that they arrived in 1968, and only 4 per cent said that they had been in this country for four years or more. Among all three continents, Asian students, 16 per cent stayed for a longer period. Only 4 per cent of the African students reported that they had been in this country for more than four years.

In terms of length of time in the United States, 38 per cent of the Iranian, 9 per cent of the Egyptian students and 39 per cent of the students from Ecuador spent four years or more in the United States. These comparisons suggest that students from developed nations spend more time in the United States than the students from less developed countries. On the whole, students from Africa spend less time than any other category. Upon completion of their studies, it appears that African students return to their home countries more often than students from other countries.

#### Academic Status of Foreign Students

A large number of foreign students (53,354 or 48 per cent) were pursuing undergraduate studies (see Table IV), 21,342 or 19 per cent students were working for the Master's degree, and 15,904 or 14 per cent were studying for the Ph.D. during the academic year 1967-68. However,

in the study sample of 1,400 students (see Table V), 46 per cent of the students were studying for the Master's degree, 41 per cent were in undergraduate study, 11 per cent were pursuing doctoral studies, and 1 per cent were special students. (Note that the present study contains a disproportionate number of graduate students due to the sampling of larger universities.) In the case of African students, 82 per cent reported that they were studying for the Master's degree whereas only 4 per cent were studying for the Ph.D. Among the Asian students, the largest proportion of students, 40 per cent, was doing undergraduate work, 38 per cent were Master's candidates, and 19 per cent were doctoral candidates. Among the Latin American students, the largest proportion of students, 72 per cent, was pursuing undergraduate work, 22 per cent Master's work and only 6 per cent doctoral work.

Of the Asian students, the largest proportion of the students, 76 per cent, enrolled in undergraduate studies was from Iran and the smallest proportion, 11 per cent, came from China. In Master's programs, the largest proportion, 61 per cent, of the students came from China and the smallest proportion, 15 per cent, was from Iran. For doctoral programs, the largest proportion, 26 per cent, was from China and the smallest proportion, 8 per cent, was from Iran.

Among the African group, the largest proportion, 22 per cent, of students for undergraduate studies came from Nigeria, a less developed country, and the smallest proportion, 7 per cent, came from Morocco, a developed country. The largest proportion for Master's degree students, 93 per cent, was from Morocco and the smallest proportion, 70 per cent, from Sudan, a less developed country. For Ph.D. studies, the largest proportion, 13 per cent, was from Egypt and not a single student came from Tunisia, Morocco, Algeria, Libya and Liberia.

Among the Latin American students, the largest proportion, 87 per cent, enrolled for undergraduate studies was from Haiti, a less developed country; and the smallest proportion, 56 per cent, was from Bolivia, a developed country. In Master's studies, the largest proportion, 41 per cent, came from Bolivia and the smallest proportion, 6 per cent, of students came from Haiti. In doctoral programs, the largest proportion, 19 per cent, of the students came from Ecuador whereas the smallest proportion came from Brazil and Peru.

#### Major Fields of Study of Foreign Students

Tables VI and VII, adapted from the annual census report of the Institute of International Education, show that the largest proportion, 22 per cent, of students was majoring in various areas of engineering. The second largest proportion, 20 per cent, of the students was pursuing studies in various branches of humanities.

The data from the present sample indicate a different pattern. In Table VIII, compiled from the research data of the 1,400 foreign students, 51 per cent of the students reported engineering as their major field of study, 16 per cent of the students were studying agriculture, and another 16 per cent were studying physical and life sciences. Only 1 per cent of the students were majoring in education, 2 per cent in humanities, and 1 per cent in technical education.

From all Asian, African and Latin American countries, the largest proportion of students was studying engineering as a major field. Among the Asian students, the largest proportion of students majoring in engineering was from Iran, 81 per cent, a developed country, and the smallest proportion was from Thailand, 34 per cent, a less developed country. The largest proportion of students, 23 per cent, pursuing

TABLE VI  
 MAJOR FIELDS OF STUDY OF FOREIGN STUDENTS--1967-68

Fields of Study	Under-graduate	Graduate	Other (Special & No Answer)	Total	Percentage
Engineering	12,536	10,394	812	23,742	21.5
Humanities	11,903	6,973	3,480	22,356	20.3
Physical and Life Sciences	6,593	11,480	575	18,628	16.9
Social Sciences	7,020	8,274	865	16,159	14.6
Business Administration	7,158	3,777	620	11,555	10.5
Education	2,610	2,792	417	5,819	5.3
Medical Sciences	2,727	2,121	290	5,138	4.7
Agriculture	1,141	2,079	196	3,416	3.1
All Other	287	120	72	479	0.4
No Answer	1,399	199	1,425	3,023	2.7
TOTAL	53,354	48,209	8,752	110,315	100.0
Percent	48.4	43.7	7.9	100.0	

Source: Adapted from Open Doors 1968, Institute of International Education, Report on International Exchange (New York, 1968), p. 6.

TABLE VII  
FOREIGN STUDENTS AND THEIR MAJOR FIELDS OF STUDY IN THE UNITED STATES

Home Country	Total	Business						Medical Sciences	Physical & Life Sciences	Social Sciences	All Others	No Answer
		Agriculture	Administration	Education	Engineering	Humanities						
Total	110,315	3,416	11,555	5,819	23,742	22,356	5,138	18,628	16,159	479	3,023	
Africa	6,901	467	772	414	1,044	855	437	1,161	1,595	47	109	
Algeria	49	1	1	-	24	3	-	12	7	-	1	
Ethiopia	361	16	55	42	46	45	30	26	93	3	5	
Ghana	374	22	33	22	65	52	36	60	76	1	7	
Liberia	299	1	71	34	27	37	14	28	80	4	3	
Libya	96	2	10	2	37	9	1	11	21	-	3	
Morocco	72	2	4	1	13	23	-	8	19	-	2	
Nigeria	1,709	171	263	79	262	159	153	298	378	5	22	
Sudan	150	20	20	12	27	13	7	20	29	1	1	
Tunisia	89	17	4	12	27	11	-	5	12	1	-	
U. A. R.	868	76	95	31	186	111	40	189	124	1	15	
Far East	37,228	999	3,769	1,638	9,759	5,410	1,632	8,725	4,511	124	661	
Near & Mid. East	13,347	373	1,105	439	4,702	1,820	519	2,114	1,918	113	224	
Burma	100	1	5	5	16	16	1	10	6	-	1	
China	6,850	226	438	218	1,967	726	116	2,383	673	24	79	
India	8,221	312	466	223	3,800	549	252	1,806	699	34	80	
Indonesia	533	35	63	28	82	93	32	111	77	-	12	
Korea	3,435	61	347	128	660	796	113	706	569	7	48	
Philippines	2,634	100	512	300	215	382	346	323	393	10	53	
Thailand	2,629	73	629	216	446	356	119	263	460	17	50	
Vietnam	657	12	61	78	151	79	29	90	125	-	32	
Iran	4,276	102	276	74	1,877	473	167	733	476	26	72	
Jordan	825	9	88	30	241	89	47	153	148	2	18	
Pakistan	1,258	88	80	53	396	102	67	267	187	7	11	
Latin America	21,908	866	2,592	909	4,259	5,894	1,101	2,523	2,983	77	704	
South America	8,844	500	1,008	325	1,944	1,817	373	1,153	1,408	40	276	
Caribbean	8,381	151	852	401	1,412	2,991	497	857	944	15	261	
Dom. Republic	711	76	79	25	295	89	20	50	65	-	12	
Haiti	326	5	43	11	60	109	26	30	23	1	18	
Bolivia	417	10	57	15	110	86	13	46	65	1	14	
Brazil	1,101	74	87	76	200	268	40	118	203	2	33	
Ecuador	521	18	76	13	146	120	26	44	60	1	17	
Paraguay	88	3	4	3	11	26	5	13	21	-	2	
Peru	1,189	64	201	25	289	201	59	144	165	8	33	
Venezuela	1,501	90	174	34	490	289	37	170	162	9	46	
Honduras	313	21	61	8	46	70	21	35	36	1	14	
Nicaragua	424	20	77	7	93	80	22	35	78	2	10	

Source: Adapted from Open Doors 1968, Institute of International Education, Report on International Exchange (New York, 1968), pp. 20-25.

TABLE VIII  
FOREIGN STUDENTS AND THEIR MAJOR FIELDS OF STUDY IN THE UNITED STATES

Home Country	Total	Agri- culture		Business Admin.		Educa- tion		Engi- neering		Human- ities		Medical Sciences		Physical Sciences		Social Sciences		Technical Education	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total	1,400	224	16.00	60	4.28	19	1.35	707	50.50	23	1.64	71	5.07	224	16.00	60	4.28	12	0.85
ASIA	654	67	10.24	26	3.97	14	2.14	356	54.43	19	2.90	24	3.66	91	13.91	46	7.03	11	1.68
1. India	194	4	2.1	4	2.1	3	1.5	141	72.7	7	3.6	4	2.1	28	14.4	2	1.0	1	0.5
2. Pakistan	36	0	0.0	1	2.8	0	0.0	23	63.9	1	2.8	1	2.8	1	2.8	4	11.1	5	13.9
3. Iran	53	2	3.8	0	0.0	1	1.9	43	81.1	0	0.0	3	5.7	3	5.7	1	1.9	0	0.0
4. China	91	18	19.8	7	7.7	7	7.7	34	37.4	2	2.2	1	1.1	16	17.6	6	6.6	0	0.0
5. South Korea	52	6	11.5	2	3.8	1	1.9	25	48.1	1	1.9	2	3.8	7	13.5	8	15.4	0	0.0
6. Philippines	53	8	15.1	2	3.8	0	0.0	20	37.7	4	7.5	5	9.4	10	18.9	4	7.5	0	0.0
7. Burma	24	3	12.5	1	4.2	0	0.0	12	50.0	0	0.0	2	8.3	3	12.5	3	12.5	0	0.0
8. Thailand	53	12	22.6	3	5.7	1	1.9	18	34.0	3	5.7	1	1.9	8	15.1	2	3.8	5	9.4
9. South Vietnam	22	4	18.2	0	0.0	0	0.0	9	40.9	0	0.0	0	0.0	3	13.6	6	27.3	0	0.0
10. Jordan	45	6	13.3	2	4.4	0	0.0	19	42.2	1	2.2	4	8.9	7	15.6	6	13.3	0	0.0
11. Indonesia	31	4	12.9	4	12.9	1	3.2	12	38.7	0	0.0	1	3.2	5	16.1	4	12.9	0	0.0
AFRICA	372	70	18.81	14	3.76	4	1.07	197	52.95	1	0.26	30	8.06	52	13.97	4	1.07	0	0.0
12. Egypt	52	9	17.3	2	3.8	0	0.0	28	53.8	0	0.0	1	1.9	11	21.2	1	1.9	0	0.0
13. Ghana	40	7	17.5	0	0.0	1	2.5	17	42.5	1	2.5	5	12.5	9	22.5	1	2.5	0	0.0
14. Tunisia	32	5	15.6	1	3.1	0	0.0	15	46.9	0	0.0	4	12.5	5	18.8	1	3.1	0	0.0
15. Morocco	30	6	20.0	1	3.3	0	0.0	17	56.7	0	0.0	3	10.0	3	10.0	0	0.0	0	0.0
16. Algeria	31	5	16.1	1	3.2	0	0.0	18	58.1	0	0.0	3	9.7	3	9.7	1	3.2	0	0.0
17. Nigeria	46	11	23.9	1	2.2	1	2.2	25	54.3	0	0.0	5	10.9	3	6.5	0	0.0	0	0.0
18. Ethiopia	43	15	34.9	3	7.0	1	2.3	17	39.5	0	0.0	1	2.3	6	14.0	0	0.0	0	0.0
19. Libya	34	5	14.7	2	5.9	0	0.0	21	61.8	0	0.0	4	11.8	2	5.9	0	0.0	0	0.0
20. Liberia	34	5	14.7	3	8.8	0	0.0	19	55.9	0	0.0	2	5.9	5	14.7	0	0.0	0	0.0
21. Sudan	30	2	6.7	0	0.0	1	3.3	20	66.7	0	0.0	2	6.7	5	16.7	0	0.0	0	0.0
LATIN AMERICA	374	87	23.26	20	5.34	1	0.26	154	41.17	3	0.8	17	4.54	81	21.65	10	2.67	1	0.26
22. Brazil	52	10	19.2	3	5.8	0	0.0	30	57.7	0	0.0	2	3.8	7	13.5	0	0.0	0	0.0
23. Peru	24	5	20.8	1	4.2	0	0.0	7	29.2	0	0.0	2	8.3	8	33.3	1	4.2	0	0.0
24. Ecuador	36	6	16.7	0	0.0	0	0.0	13	36.1	0	0.0	2	5.6	13	36.1	2	5.6	0	0.0
25. Venezuela	45	12	26.7	4	8.9	0	0.0	19	42.2	0	0.0	1	2.2	6	13.3	3	6.7	0	0.0
26. Bolivia	34	6	17.6	2	5.9	0	0.0	19	55.9	0	0.0	0	0.0	7	20.6	0	0.0	0	0.0
27. Honduras	37	10	27.0	2	5.4	0	0.0	15	40.5	0	0.0	0	0.0	10	27.0	0	0.0	0	0.0
28. Nicaragua	40	10	25.0	1	2.5	0	0.0	15	37.5	2	5.0	1	2.5	10	25.0	1	2.5	0	0.0
29. Paraguay	35	10	28.6	3	8.6	0	0.0	12	34.3	0	0.0	3	8.6	6	17.1	1	2.9	0	0.0
30. Haiti	32	11	34.4	2	6.2	0	0.0	9	28.1	1	3.1	3	9.4	5	15.6	1	3.1	0	0.0
31. Dom. Republic	39	7	17.9	2	5.1	1	2.6	15	38.5	0	0.0	3	7.7	9	23.1	1	2.6	1	2.6

Source: Computed from research data of the 1400 foreign student respondents.

Explanation of various major fields of study:

1. Engineering includes chemical, civil, electrical, industrial, mechanical and others.
2. Humanities include architecture, creative arts, languages and literature, liberal arts, theology and others.
3. Medical Sciences include dentistry, medicine, nursing, pharmacy and others.
4. Physical and Life Sciences include biological sciences, chemistry, geo-sciences, mathematics, physics, astronomy.
5. Social Sciences include economics, history, home economics, international relations, law, political science, psychology, public administration, and sociology.



studies in various branches of agriculture was from Thailand and the smallest proportion of students from India and Pakistan reported agriculture as their major field. It appears from Table VIII that large proportions of students from Asian countries were engaged in engineering, physical and life sciences and agricultural studies. This pattern is also noticed among the African and Latin American students.

In all three continents, among the students who reported agriculture as their major field of study, a large proportion came from less developed countries. Out of a total of 31 countries in our sample, only Pakistani, Indian, Thai, and Dominican Republican students reported technical education as their major field. Among the Asian students reporting social sciences as their major field of study, a large proportion came from less developed countries and a small proportion from the developed countries. But, this pattern is reversed among the African and Latin American students pursuing social sciences as a major field.

#### Marital Status of Foreign Students

Of the 1,400 international students, the largest proportion, 78 per cent, were single and only 22 per cent of the students were married. Of the married students, 87 per cent did not have children, 8 per cent of the students had one child, and 5 per cent of the students had two or more children. Of all the married students, wives of 64 per cent were living in their home country and only 36 per cent of the students had their wives with them in the United States. The largest proportion of married students, 40 per cent, solely supported their wives, 33 per cent of the students' wives worked, and 18 per cent of the students' parents supported their wives (see Table IX).

TABLE IX

## MARITAL STATUS, NUMBER OF CHILDREN, RESIDENCE OF WIFE AND FINANCIAL SUPPORT OF WIFE

Home Country	Total	No Answer	Marital Status		Number of Children			Residence of Wife		Financial Support of Wife*		
			Single No. %	Married No. %	None No. %	One No. %	Two or More No. %	Home Country No. %	U. S. No. %	Solely by Respondent No. %	She Works No. %	Respondents Parents No. %
TOTAL	1,400	3	1,087 77.5	308 22.0	1,220 87.14	113 8.07	67 4.78	198 64.28	110 35.72	122 39.61	103 33.44	57 18.50
ASIA	654	1	484 73.7	168 25.99	556 85.01	55 8.40	43 65.74	91 54.16	78 45.84	53 31.54	63 37.50	25 14.88
1. India	194		128 66.0	64 33.0	151 77.8	24 12.4	19 9.9	38 59.4	28 40.6	30 46.9	10 15.6	20 31.3
2. Pakistan	36	1	26 74.3	9 25.7	28 77.8	3 8.3	5 13.9	8 88.9	2 11.1	3 33.3	4 44.4	2 22.2
3. Iran	53		43 81.1	10 18.9	47 88.7	6 11.3	0 0.0	4 40.0	6 60.0	3 30.0	3 30.0	4 40.0
4. China	91		68 74.7	23 25.3	81 89.0	2 3.3	7 7.7	11 47.8	12 52.2	4 17.4	13 56.5	4 17.4
5. South Korea	52		41 78.8	11 21.2	49 94.2	2 3.8	1 1.9	4 36.1	7 63.9	5 45.5	4 36.4	2 18.2
6. Philippines	53		38 71.7	15 28.3	43 81.1	6 11.3	4 7.6	5 33.3	10 66.7	3 20.0	10 66.7	2 13.3
7. Burma	24		18 75.0	6 25.0	21 87.5	2 8.3	1 4.2	2 33.3	4 66.7	1 16.7	3 50.0	2 33.3
8. Thailand	53		42 79.2	11 20.8	45 84.9	4 7.5	4 7.5	9 81.8	1 18.2	1 9.1	8 72.7	0 00.0
9. South Vietnam	22		19 86.4	3 13.6	19 86.4	2 9.1	1 4.5	0 00.0	3 100.0	1 33.3	2 66.7	0 00.0
10. Jordan	45		37 82.2	8 17.8	43 95.6	1 2.2	1 2.2	4 50.0	4 50.0	1 12.5	5 62.5	2 25.0
11. Indonesia	31		24 77.4	7 22.6	29 93.5	2 6.5	0 0.0	6 85.7	1 14.3	1 14.3	1 14.3	5 71.4
AFRICA	372	2	285 76.61	84 22.58	323 86.82	35 9.4	14 3.76	68 80.95	16 19.04	46 54.26	27 32.14	11 13.1
12. Egypt	52		41 78.8	11 21.2	45 86.5	4 7.7	3 5.8	7 63.4	4 36.6	4 36.4	6 54.5	1 9.1
13. Ghana	40		27 67.5	11 27.5	34 85.0	4 10.0	2 5.0	11 100.0	0 00.0	7 63.6	3 27.3	1 9.1
14. Tunisia	32		26 81.3	6 18.8	30 93.8	2 6.2	0 0.0	4 66.7	2 33.3	3 50.0	2 33.3	1 16.7
15. Morocco	30		26 86.7	4 13.3	29 96.7	1 3.3	0 0.0	3 75.0	1 25.0	3 75.0	0 00.0	0 00.0
16. Algeria	31		25 80.6	6 19.4	27 87.1	4 12.9	0 0.0	6 100.0	0 00.0	5 83.3	1 16.7	0 00.0
17. Nigeria	46	1	36 78.3	10 21.7	38 82.6	6 13.0	2 4.3	8 80.0	2 20.0	8 80.0	1 10.0	1 10.0
18. Ethiopia	43		32 74.4	11 25.6	35 81.4	7 16.3	1 2.3	7 63.4	4 36.6	8 72.7	2 18.2	1 9.1
19. Libya	34		29 85.3	5 14.7	32 94.1	0 0.0	2 5.9	4 80.0	1 20.0	3 60.0	2 40.0	1 20.0
20. Liberia	34	1	23 67.6	10 29.4	29 85.3	2 5.9	3 8.8	8 80.0	2 20.0	2 20.0	7 70.0	1 10.0
21. Sudan	30		20 66.7	10 33.3	24 80.0	5 16.7	1 3.3	10 100.0	0 00.0	2 20.0	3 30.0	4 40.0
LATIN AMERICA	374	0	318 85.02	56 14.97	341 91.17	23 6.14	10 2.67	39 69.64	16 30.36	23 41.1	13 23.21	21 37.5
22. Brazil	52		45 86.5	7 13.5	49 94.2	3 5.8	0 0.0	6 85.7	1 14.3	3 42.9	2 28.6	2 28.6
23. Peru	24		21 87.5	3 12.5	22 91.7	2 8.3	0 0.0	2 66.7	1 33.3	3 100.0	1 33.3	0 00.0
24. Ecuador	36		30 83.3	6 16.7	32 88.9	4 11.1	0 0.0	3 50.0	3 50.0	3 50.0	1 16.7	2 33.3
25. Venezuela	45		34 75.6	11 24.4	34 75.6	6 13.3	5 11.1	4 36.4	7 63.6	8 72.7	0 00.0	3 27.3
26. Bolivia	34		28 82.4	6 17.6	31 91.2	3 8.8	0 0.0	6 100.0	0 00.0	2 33.3	1 16.7	2 33.3
27. Honduras	37		31 83.8	6 16.2	35 94.6	1 2.7	1 2.7	5 83.3	1 16.7	1 16.7	2 33.3	3 50.0
28. Nicaragua	40		36 90.0	4 10.0	38 95.0	2 5.0	0 0.0	2 50.0	2 50.0	0 00.0	2 50.0	2 50.0
29. Paraguay	35		29 82.9	6 17.1	32 91.4	0 0.0	3 8.6	5 83.3	1 16.7	2 33.3	1 16.7	4 66.7
30. Haiti	32		29 90.6	3 9.4	30 93.8	2 6.2	0 0.0	2 66.7	1 33.3	1 33.3	2 66.7	0 00.0
31. Dom. Republic	39		35 99.7	4 10.3	38 97.4	0 0.0	1 2.6	4 100.0	0 00.0	0 00.0	1 25.0	2 50.0

Source: Computed from research data of the 1400 foreign student respondents.

\*Due to the fact that there were other sources of financial support which are not shown in this table rows under the heading of Financial Support of Wife do not add to 100%.

Of the married African students, 81 per cent of their wives stayed in home countries. About 54 per cent of the married Asian students' wives stayed in their home countries, and 70 per cent of the Latin American students' wives stayed in home countries. Among the Asian students, the largest proportion, 86 per cent, of single students was from South Vietnam and the largest proportion, 33 per cent of married students was from India. Among the African students, the largest proportion, 86 per cent, of single students was from Morocco, and the largest proportion, 33 per cent, of married students was from Sudan. Among the Latin American students, the largest proportion of single students was from Haiti, and the largest proportion, 24 per cent, of married students was from Venezuela.

#### Employment Status of Foreign Students

About 995, or 71 per cent of the total 1,400 students sampled reported that they were students in their home country before coming to the United States. A very small proportion, 2 per cent, reported that they were unemployed, 14 per cent resigned from their jobs, 8 per cent of the students were granted leaves with pay to study in the United States, and 5 per cent were granted leaves without pay.

#### Sources of Financial Support of Foreign Students

Table X, adapted from the annual census report of the Institute of International Education, shows that the largest proportion, 38 per cent, of students enrolled for the academic year of 1967-68 was self-supporting. About 22 per cent of the students did not report the source of financial support, while 18 per cent of the students were receiving financial help from American institutions, 7 per cent of the students

TABLE X

## SOURCES OF FINANCIAL SUPPORT OF FOREIGN STUDENTS 1967-68

Source of Support	Undergraduate	Graduate	Other (Special & No Answer)	Total	Percentage
Self-Supporting	27,187	11,281	3,073	41,541	37.6
U. S. Institutions	5,592	13,677	686	19,955	18.1
Private Organizations	3,078	4,207	1,034	8,319	7.5
U. S. Government	2,636	3,035	658	6,329	5.7
Foreign Government	2,578	2,085	415	5,078	4.6
U. S. Institutions & Private Organizations	708	1,009	113	1,830	1.7
U. S. Government & U. S. Institutions	392	1,133	63	1,588	1.4
Foreign Government & U. S. Institutions	149	657	30	836	0.8
U. S. Government & Private Organizations	141	326	47	514	0.5
Foreign Government & Private Organizations	136	229	36	401	0.4
Support Not Known	10,757	10,570	2,597	23,924	21.7
Total	53,354	48,209	8,752	110,315	100.0
Percentage	48.4	43.7	7.9	100.0	100.0

Source: Adapted from Open Doors 1968, Institute of International Education, Report on International Exchange (New York, 1968), p. 7.

were supported by private organizations, 6 per cent of the students received financial assistance from the United States government, and only 5 per cent of the students were supported by foreign governments.

Table XI, based on research data of 1,400 foreign students, describes various sources of financial support which students received at the time of their arrival in the United States and the sources of financial support at the time of sampling these students. At the time of their arrival in the United States, the largest proportion, 51 per cent, of the students reported that they were solely supported by their parents, 18 per cent of the students said that they received financial assistance from their governments, 11 per cent of the students reported that they were awarded assistantships by American universities, 4 per cent of the students received financial help from foreign private organizations, and only 4 per cent of the students said they received financial assistance from the United States government.

Among the Asian students, the largest proportion, 67 per cent of the students, reported that at the time of their arrival in the United States they were supported by their parents, 13 per cent of the students said they had been granted assistantships by American universities, and 5 per cent of the students received loans. However, the largest proportion, 37 per cent of the students, was supported by their governments, 26 per cent of the students said they received full financial support from their parents, 12 per cent of the students were granted assistantships by American institutions, and 11 per cent of the students were sponsored by foreign private organizations.

Turning to the Latin American students in Table XI, we find that the largest proportion, 48 per cent, of the students was supported by

TABLE XI  
SOURCES OF FINANCIAL SUPPORT OF FOREIGN STUDENTS

Home Country	TOTAL	Financial Support at the Time of Arrival in the United States*															
		Foreign Government		U. S. Government		U. S. University		U. S. Private		Foreign Private		Parents		Loan**		Parents & Self	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
ASIA	654	16	2.44	23	3.51	82	12.53	21	3.21	9	1.37	441	67.43	32	4.39	19	2.90
1. India	194	1	0.5	5	2.6	35	18.0	1	0.5	4	2.1	120	61.9	9	4.6	11	5.7
2. Pakistan	36	0	0.0	4	11.1	0	0.0	8	22.2	1	2.8	22	61.1	1	2.8	0	0.0
3. Iran	53	1	1.9	0	0.0	3	5.7	0	0.0	1	1.9	45	84.9	0	0.0	2	3.8
4. China	91	4	4.4	2	2.2	20	22.0	1	1.1	1	1.1	61	67.0	0	0.0	2	2.2
5. South Korea	52	0	0.0	0	0.0	8	15.4	5	9.6	1	1.9	38	73.1	0	0.0	0	0.0
6. Philippines	53	2	3.8	2	3.8	4	7.5	3	5.7	0	0.0	38	71.7	3	5.7	1	1.9
7. Burma	24	1	4.2	0	0.0	1	4.2	0	0.0	0	0.0	21	87.5	0	0.0	0	0.0
8. Thailand	53	6	11.3	7	13.2	3	5.7	2	3.8	1	1.9	31	58.5	0	0.0	3	5.7
9. South Vietnam	22	1	4.5	0	0.0	0	0.0	1	4.5	0	0.0	20	90.9	0	0.0	0	0.0
10. Jordan	45	0	0.0	2	4.4	6	13.3	0	0.0	0	0.0	17	37.8	19	42.2	0	0.0
11. Indonesia	31	0	0.0	1	3.2	2	6.5	0	0.0	0	0.0	28	90.3	0	0.0	0	0.0
AFRICA	372	128	37.09	28	7.52	43	11.55	5	1.34	42	11.29	95	25.53	18	4.83	2	0.53
12. Egypt	52	24	46.2	6	11.5	5	9.6	0	0.0	5	9.6	10	19.2	2	3.8	0	0.0
13. Ghana	40	17	42.5	3	7.5	8	20.0	0	0.0	4	10.0	7	17.5	1	2.5	0	0.0
14. Tunisia	32	9	28.1	2	6.2	3	9.4	0	0.0	6	18.8	12	37.5	0	0.0	0	0.0
15. Morocco	30	9	30.0	1	3.3	4	13.3	1	3.3	2	6.7	10	33.3	3	10.0	0	0.0
16. Algeria	31	10	32.3	1	3.2	4	12.9	1	3.2	4	12.9	10	32.3	1	3.2	0	0.0
17. Nigeria	46	19	41.3	2	4.3	6	13.0	1	2.2	2	4.3	13	28.3	2	4.3	0	0.0
18. Ethiopia	43	17	39.5	8	18.6	3	7.0	0	0.0	8	18.6	2	4.7	5	11.6	0	0.0
19. Libya	34	8	23.5	2	5.9	6	17.6	1	2.9	4	11.8	12	35.3	1	2.9	0	0.0
20. Liberia	34	12	35.3	2	5.9	4	11.8	1	2.9	5	14.7	9	26.5	1	2.9	0	0.0
21. Sudan	30	13	43.3	1	3.3	0	0.0	0	0.0	2	6.7	10	33.3	2	6.7	2	6.7
LATIN AMERICA	374	100	26.73	6	1.60	28	7.48	5	1.33	9	2.40	178	47.59	47	12.56	1	0.26
22. Brazil	52	10	19.2	1	1.9	7	13.5	2	3.8	3	5.8	23	44.2	6	11.5	0	0.0
23. Peru	24	6	25.0	0	0.0	0	0.0	0	0.0	0	0.0	18	75.0	0	0.0	0	0.0
24. Ecuador	36	4	11.1	1	2.8	5	13.9	0	0.0	0	0.0	24	66.7	2	5.6	0	0.0
25. Venezuela	45	13	28.9	0	0.0	1	2.2	1	2.2	1	2.2	23	51.1	5	11.1	1	2.2
26. Bolivia	34	9	26.5	0	0.0	6	17.6	0	0.0	0	0.0	16	47.1	3	8.8	0	0.0
27. Honduras	37	12	32.4	0	0.0	3	8.1	1	2.7	0	0.0	18	48.6	3	8.1	0	0.0
28. Nicaragua	40	12	30.0	2	5.0	1	2.5	0	0.0	0	0.0	20	50.0	5	12.5	0	0.0
29. Paraguay	35	14	40.0	1	2.9	0	0.0	0	0.0	1	2.9	10	28.6	9	25.7	0	0.0
30. Haiti	32	12	37.5	0	0.0	1	3.1	0	0.0	3	9.4	13	40.6	3	9.4	0	0.0
31. Dom. Republic	39	8	20.5	1	2.6	4	10.3	1	2.6	1	2.6	13	33.3	11	28.2	0	0.0
Total	1400	254	18.14	57	4.07	153	10.92	31	2.21	60	4.28	714	51.0	97	6.92	22	1.57

TABLE XI (Continued)

Home Country	Present Source of Financial Support																		
	TOTAL	Foreign Government		U. S. Government		U. S. University		U. S. Private		Foreign Private		Parents		Job on Campus		Loan**		Parents & Self	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
ASIA	654	13	1.98	23	3.51	178	27.21	16	2.44	5	0.76	212	32.41	172	26.29	10	1.52	25	3.82
1. India	194	0	0.0	4	2.1	51	26.3	2	1.0	3	1.5	77	39.7	34	17.5	6	3.1	17	8.7
2. Pakistan	36	0	0.0	4	11.1	0	0.0	6	16.7	2	5.6	19	52.8	3	8.3	1	2.8	1	2.8
3. Iran	53	1	1.9	0	0.0	10	18.9	1	1.9	0	0.0	22	41.5	17	32.1	0	0.0	2	3.8
4. China	91	3	3.3	2	2.2	38	41.8	1	1.1	0	0.0	28	30.8	17	18.7	0	0.0	2	2.2
5. South Korea	52	0	0.0	1	1.9	22	42.3	1	1.9	0	0.0	13	25.0	14	26.9	1	1.9	0	0.0
6. Philippines	53	1	1.9	0	0.0	19	35.8	2	3.8	0	0.0	11	20.8	20	37.7	0	0.0	0	0.0
7. Burma	24	1	4.2	0	0.0	6	25.0	1	4.2	0	0.0	4	16.7	12	50.0	0	0.0	0	0.0
8. Thailand	53	6	11.3	8	15.1	7	13.2	2	3.8	0	0.0	20	37.7	7	13.2	0	0.0	3	5.7
9. South Vietnam	22	1	4.5	0	0.0	5	22.7	0	0.0	0	0.0	5	22.7	11	50.0	0	0.0	0	0.0
10. Jordan	45	0	0.0	3	6.7	13	28.9	0	0.0	0	0.0	7	15.6	20	44.4	2	4.4	0	0.0
11. Indonesia	31	0	0.0	1	3.2	7	22.6	0	0.0	0	0.0	6	19.4	17	54.8	0	0.0	0	0.0
AFRICA	372	136	36.55	33	8.87	53	14.24	4	1.07	30	8.06	25	6.72	69	18.54	13	3.49	9	2.41
12. Egypt	52	23	44.2	6	11.5	9	17.3	0	0.0	1	1.9	2	3.8	8	15.4	2	3.8	1	1.9
13. Ghana	40	17	42.5	3	7.5	10	25.0	0	0.0	3	7.5	1	2.5	3	7.5	1	2.5	2	5.0
14. Tunisia	32	9	28.1	2	6.2	4	12.5	0	0.0	4	12.5	1	3.1	8	25.0	2	6.2	2	6.2
15. Morocco	30	9	30.0	1	3.3	5	16.7	0	0.0	1	3.3	2	6.7	10	33.3	1	3.3	1	3.3
16. Algeria	31	10	32.3	1	3.2	4	12.9	1	3.2	3	9.7	5	16.1	6	19.4	1	3.2	0	0.0
17. Nigeria	46	19	41.3	3	6.5	7	15.2	1	2.2	2	4.3	4	8.7	10	21.7	0	0.0	0	0.0
18. Ethiopia	43	16	37.2	9	20.9	4	9.3	0	0.0	7	16.3	0	0.0	7	16.3	0	0.0	0	0.0
19. Libya	34	8	23.5	3	8.8	6	17.6	1	2.9	4	11.8	4	11.8	4	11.8	4	11.8	0	0.0
20. Liberia	34	12	35.3	2	5.9	4	11.8	1	2.9	3	8.8	1	2.9	9	26.5	1	2.9	1	2.9
21. Sudan	30	13	43.3	3	10.0	0	0.0	0	0.0	2	6.7	5	16.7	4	13.3	1	3.3	2	6.7
LATIN AMERICA	374	97	25.93	6	1.60	44	11.76	8	2.13	6	1.60	83	22.19	111	29.67	15	4.01	4	1.06
22. Brazil	52	10	19.2	1	1.9	9	17.3	2	3.8	4	7.7	8	15.4	14	26.9	3	5.8	1	1.9
23. Peru	24	6	25.0	0	0.0	0	0.0	0	0.0	0	0.0	9	37.5	9	37.5	0	0.0	0	0.0
24. Ecuador	36	4	11.1	1	2.8	9	25.0	0	0.0	0	0.0	9	25.0	12	33.3	1	2.8	0	0.0
25. Venezuela	45	13	28.9	0	0.0	2	4.4	1	2.2	1	2.2	14	31.1	12	26.7	1	2.2	1	2.2
26. Bolivia	34	9	26.5	0	0.0	6	17.6	1	2.9	0	0.0	5	14.7	10	29.4	2	5.9	1	2.9
27. Honduras	37	12	32.4	0	0.0	4	10.8	1	2.7	0	0.0	10	27.0	8	21.6	2	5.4	0	0.0
28. Nicaragua	40	12	30.0	2	5.0	2	5.0	0	0.0	0	0.0	12	30.0	10	25.0	1	2.5	1	2.5
29. Paraguay	35	11	31.4	1	2.9	5	14.3	1	2.9	0	0.0	6	17.1	9	25.7	2	5.7	0	0.0
30. Haiti	32	12	37.5	0	0.0	2	6.2	0	0.0	0	0.0	5	15.6	11	34.4	2	6.2	0	0.0
31. Dom. Republic	39	8	20.5	1	2.6	5	12.8	2	5.1	1	2.6	5	12.8	16	41.0	1	2.6	0	0.0
Total	1,400	246	17.57	62	4.42	275	19.64	28	2.00	41	2.92	320	22.85	352	25.14	38	2.71	38	2.71

Source: Computed from research data of the 1400 foreign student respondents.

\*Due to the fact that 11 students had part-time jobs on campus which is not shown in this table rows under the heading of the Financial Support at the Time of Arrival in the United States do not add to 100%

\*\*Received loan from foreign government or private organization.

their parents, 27 per cent reported that they were sponsored by their government, 12 per cent received loans from various sources, and 7 per cent received financial assistantships from American universities.

It is interesting to observe from Table XI that the picture of financial support changed considerably after the students had been in the United States for some time. At the time of their arrival in the United States, 51 per cent of the students reported that they were supported by their parents, but after having lived in this country for some time, only 23 per cent of the students reported that they were being supported by their parents. A very little change was noticed in the status of students sponsored by foreign governments. At the time of their arrival, 18 per cent of the students reported that they were sponsored by their governments and later 18 per cent said they still received financial assistance from their governments. A change was also indicated among the students who received assistantships from American institutions. At the time of their arrival, 11 per cent were granted assistantships and later 20 per cent of the students received assistantships.

Another change was noticed among the students who had part-time jobs on campus. At the time of their arrival, only 1 per cent reported that they had part-time jobs but later 25 per cent of the students worked on campus. There was no change in the groups of students who were supported by foreign and American governments. They continued to receive help from these sources at approximately the same level.

There was quite a change in the group of students who received loans from various sources. At the time of their arrival, 7 per cent of the students reported that they received loans but later this dropped to 3 per cent.



The largest proportion, 32 per cent of students, who were still being supported by their parents was from Asia, and the smallest proportion, 7 per cent, of African students reported that they were being supported by their parents. The largest proportion, 36 per cent, of students who said that they were being sponsored by their governments was from Africa, and only 2 per cent of the Asian students were still under the sponsorship of their governments. The largest proportions, 27 per cent, of the Asian students were getting assistantships from universities and the smallest proportion, 12 per cent, of the students getting assistantships was from Latin America.

As far as the government sponsorship is concerned, most of the African students who came to the United States for studies were supported either by their own governments or the United States government. A large proportion, 30 per cent, of the Latin American students worked part-time on campus whereas only a small proportion, 19 per cent, of the African students had job. As far as university assistantships, a large proportion of assistantships go to Asian students and a small proportion to Latin American students.

The chief sources of financial support among Asian students were from parents, assistantships by American universities and part-time jobs on campus. The chief sources of financial support among African students were from their own and United States governments, assistantships granted by American universities. In the case of Latin American students, the chief sources of support were part-time jobs, support from their own governments and support from their parents.

### Plans of Students after Completion of Their Studies

Table XII, compiled from the research data, tabulates the plans of foreign students at the time of their arrival, on completion of their studies in the United States, and the plans after they had lived for some time in this country. We were interested in finding the attitudes of foreign students at the time of their arrival and also in determining whether there was any change in their plans since they had been in the United States for some time.

At the time of their arrival, the largest proportion, 61 per cent, of the students reported that they planned to return home after completion of their studies in the United States. Later their plans had changed and the proportion of students who still planned to return home dropped to 41 per cent. About 25 per cent of the students said that they planned to stay in the United States for 18 months for practical training but later this increased to 30 per cent. At the time of their arrival, 10 per cent of the students reported that they wanted to stay in the United States after completion of their studies for 2 to 5 years but later this increased to 20 per cent. A very small proportion, 2 per cent, of the students initially planned to stay permanently in the United States but after some months 8 per cent of the students reported that they wanted to stay in the United States permanently.

Table XII shows that plans relative to returning home after completion of the studies or staying in the United States changed greatly in all three groups of Asian, African and Latin American students. In all three cases, the largest proportion of students at the time of their arrival, first planned to return home but later the proportions of those students who wanted to return home decreased considerably. In view of

TABLE XII

## FOREIGN STUDENTS IN THE UNITED STATES AND THEIR POST-EDUCATION PLANS\*

Home Country	TOTAL	Plans at the Time of Arrival in the U.S.								Plans After Having Lived for Some Months in the U.S.											
		Undecided		Return Home		Stay for 18 Months		Stay Permanently		Stay 2-5 Year in U.S.		Undecided		Return Home		Stay for 18 Months		Stay Permanently		Stay 2-5 Years in U.S.	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
TOTAL	1,400	17	1.21	852	60.85	353	25.21	23	1.64	147	10.50	10	0.71	570	40.38	417	29.78	118	8.42	274	19.57
ASIA	654	12	1.83	259	39.60	231	35.32	19	2.90	127	19.41	10	1.52	166	25.38	165	25.22	104	15.90	200	30.58
1. India	194	5	2.6	38	19.6	98	50.5	9	4.6	44	22.7	2	1.0	25	12.9	45	23.2	38	14.4	94	48.5
2. Pakistan	36	1	2.8	12	33.3	15	41.7	0	0.0	6	16.7	1	2.8	11	30.6	14	38.9	1	2.8	7	19.4
3. Iran	53	2	3.8	18	34.0	19	35.8	0	0.0	12	22.6	4	7.5	6	11.3	18	34.0	5	9.4	15	28.3
4. China	91	1	1.1	19	20.9	34	37.4	8	8.8	29	31.9	2	2.2	11	12.1	34	37.4	8	8.8	35	38.5
5. South Korea	52	0	0.0	30	57.7	12	23.1	0	0.0	10	19.2	1	1.9	12	23.1	17	32.7	7	13.5	15	28.8
6. Philippines	53	3	5.7	29	54.7	15	28.3	1	1.9	5	9.4	0	0.0	19	35.8	5	9.4	16	30.2	13	24.5
7. Burma	24	0	0.0	18	75.0	5	20.8	0	0.0	1	4.2	0	0.0	9	37.5	8	33.3	7	29.2	0	0.0
8. Thailand	53	0	0.0	36	67.9	15	28.3	0	0.0	1	1.9	0	0.0	31	58.5	12	22.6	5	9.4	4	7.5
9. South Vietnam	22	0	0.0	17	77.3	4	18.2	1	4.5	0	0.0	0	0.0	12	54.5	2	9.1	7	31.8	1	4.5
10. Jordan	45	0	0.0	16	35.6	11	24.4	0	0.0	17	37.8	0	0.0	13	28.9	3	6.7	13	28.9	16	35.6
11. Indonesia	31	0	0.0	26	83.9	3	9.7	0	0.0	2	6.5	0	0.0	17	54.8	7	22.6	7	22.6	0	0.0
AFRICA	372	2	0.53	312	83.87	51	13.70	3	0.80	4	1.07	0	0.0	230	61.82	107	28.76	5	1.34	30	8.06
12. Egypt	52	0	0.0	41	78.8	8	15.4	2	3.8	1	1.9	0	0.0	33	63.5	16	30.8	2	3.8	1	1.9
13. Ghana	40	1	2.5	35	87.5	4	10.0	0	0.0	0	0.0	0	0.0	25	62.5	14	35.0	0	0.0	1	2.5
14. Tunisia	32	0	0.0	27	84.4	4	12.5	1	3.1	0	0.0	0	0.0	16	50.0	12	37.5	0	0.0	4	12.5
15. Morocco	30	0	0.0	28	93.3	2	6.7	0	0.0	0	0.0	0	0.0	18	60.0	9	30.0	1	3.3	2	6.7
16. Algeria	31	0	0.0	23	74.2	8	25.8	0	0.0	0	0.0	0	0.0	16	51.6	11	35.5	0	0.0	4	12.9
17. Nigeria	46	0	0.0	39	84.8	6	13.0	0	0.0	1	2.2	0	0.0	32	69.6	8	17.4	0	0.0	6	13.0
18. Ethiopia	43	1	2.3	42	97.7	0	0.0	0	0.0	0	0.0	0	0.0	35	81.4	8	18.6	0	0.0	0	0.0
19. Libya	34	0	0.0	29	85.3	4	11.8	0	0.0	1	2.9	0	0.0	20	58.8	7	20.6	2	5.9	5	14.7
20. Liberia	34	0	0.0	27	79.4	7	20.6	0	0.0	0	0.0	0	0.0	19	55.9	9	26.5	0	0.0	6	17.6
21. Sudan	30	0	0.0	21	70.0	8	26.7	0	0.0	1	3.3	0	0.0	16	53.3	13	43.3	0	0.0	1	3.3
LATIN AMERICA	374	3	0.80	281	75.0	71	18.98	1	0.26	16	4.27	0	0.0	174	46.52	145	38.77	9	2.40	44	11.76
22. Brazil	52	0	0.0	42	80.8	9	17.3	0	0.0	0	0.0	0	0.0	23	44.2	28	53.8	0	0.0	1	1.9
23. Peru	24	0	0.0	20	83.3	4	16.7	0	0.0	0	0.0	0	0.0	13	54.2	9	37.5	0	0.0	2	8.3
24. Ecuador	36	0	0.0	21	58.3	14	38.9	0	0.0	1	2.8	0	0.0	12	33.3	16	44.4	3	8.3	4	11.1
25. Venezuela	45	1	2.2	33	73.3	8	17.8	0	0.0	3	6.7	0	0.0	26	57.8	13	28.9	0	0.0	6	13.3
26. Bolivia	34	1	2.9	32	94.1	0	0.0	0	0.0	1	2.9	0	0.0	23	67.6	10	29.4	0	0.0	1	2.9
27. Honduras	37	0	0.0	31	83.8	5	13.5	0	0.0	1	2.7	0	0.0	19	51.4	13	35.1	1	2.7	4	10.8
28. Nicaragua	40	0	0.0	29	72.5	8	20.0	1	2.5	1	2.5	0	0.0	20	50.0	15	37.5	1	2.5	3	7.5
29. Paraguay	35	1	2.9	18	51.4	12	34.3	0	0.0	4	11.4	0	0.0	11	31.4	15	42.9	3	8.6	6	17.1
30. Haiti	32	0	0.0	28	87.5	3	9.4	0	0.0	1	3.1	0	0.0	16	50.0	10	31.3	1	3.1	5	15.6
31. Dom. Republic	39	0	0.0	27	69.2	8	20.5	0	0.0	4	10.3	0	0.0	11	28.2	16	41.0	0	0.0	12	30.8

Source: Computed from research data of the 1400 foreign student respondents

\*Due to the fact that 11 students had other plans which are not shown in this table rows under the heading of Plans at the Time of Arrival in the United States and Plans After Having Lived for Some Months in the United States do not add to 100%.

earlier findings, it is noteworthy that the proportion of students wanting to return home also dropped in the case of the African students.

At the time of their arrival, 84 per cent of the African students planned to return home, whereas 75 per cent of the Latin American, and only 40 per cent of the Asian students planned to return home. Later, 62 per cent of the African students, 46 per cent of the Latin American students, and 25 per cent of the Asian students planned to return home. About 35 per cent of the Asian students, 19 per cent of the Latin American students, and 14 per cent of the African students planned to stay in the United States for 18 months when they first arrived, but later 39 per cent Latin Americans, 29 per cent Africans, and 25 per cent Asians reported that they wanted to stay for 18 months to complete practical training. It is surprising to observe that both in the cases of Latin Americans and Africans, the proportion of those who planned to stay for 18 months after the completion of their studies increased; but in the case of the Asian students the proportion decreased.

In all three cases, the proportion of those students who planned to stay in the United States for 2 to 5 years after the completion of their studies increased noticeably. This pattern is also repeated among the students who planned to stay permanently in the United States.

The proportion of those Asian students who wanted to return home after completion of their studies was higher among the students of the less developed countries and lower in the case of developed countries (see Table XII). However, the proportion of those African students who wanted to return home (compared to all other continents) was high among the students from less developed, as well as developed countries. The same is true for Latin American students.

The proportion of those students who wanted to stay permanently in the United States was almost negligible for African and Latin American students. It was higher in the case of Asian students who came from less developed countries and lower in the case of students from developed countries. The proportion of those students who wanted to stay in the United States for 18 months after the completion of their studies was higher for all three continents' students who came from developed countries but lower for less developed countries.

The proportion of those students who planned to stay for 2 to 5 years was higher for Asian students from developed countries and lower for less developed countries, but this pattern is reversed in the case of African and Latin American students.

#### Statistical Tests

A non-parametric statistic was chosen because:

The measurements were nominal and ordinal precluding the use of the more powerful parametric tests.

The model of the non-parametric statistical test does not specify conditions about the parameters of the population from which the sample was randomly drawn. Though certain assumptions are associated with most non-parametrical tests, i.e., the observations are independent and the variable under study has underlying continuity, these assumptions are fewer and much weaker than those associated with parametric tests.<sup>2</sup>

The chi-square statistic was used to test the null hypotheses of no difference. Other non-parametric statistical tests (such as

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<sup>2</sup>Sidney Siegel, Non-parametric Statistics for the Behavioral Sciences (New York, 1956), p. 31.

Pearson's contingency of coefficient, Kendall's Q-coefficient of association, and Yule's Y-coefficient of colligation) were used to measure the strength of association between two independent groups.

The level of significance was arbitrarily set at the 0.01 level for this analysis, using a one-tailed test. Siegel states "If  $H_1$  indicates the predicted direction of the difference, then a one-tailed test is called for."<sup>3</sup> Garrett states, "A null hypothesis is ordinarily more useful than other hypothesis because it is exact."<sup>4</sup>

#### Chi-Square Test

One of the great advantages of this test is that it involves no assumptions about the form of the original distributions from which the observations came.<sup>5</sup> Siegel states: "When the data of research consists of frequencies in discrete categories, the chi-square test may be used to determine the significance of differences between two independent groups. The hypothesis under test is usually that the two groups differ with respect to some characteristic and therefore with respect to the relative frequency with which group members fall in several categories."<sup>6</sup> Siegel further suggests that chi-square tests should be used when the data are in discrete categories and when the expected frequencies are sufficiently large.<sup>7</sup>

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<sup>3</sup>Ibid, p. 13.

<sup>4</sup>Henry E. Garrett, Statistics in Psychology and Education (New York, 1958), p. 247.

<sup>5</sup>Frederick C. Mills, Statistical Methods (New York, 1960), p. 212.

<sup>6</sup>Siegel, p. 104.

<sup>7</sup>Ibid., p. 59.

According to Blalock, "The chi-square test is a very general test which can be used whenever we wish to evaluate whether or not frequencies which have been empirically obtained differ significantly from those which would be expected under a certain set of theoretical assumptions. The test has many applications, the most common of which in the social sciences are "contingency" problems in which two nominal-scale variables have been cross-classified."<sup>8</sup>

Sometimes it is argued that the chi-square test is useful in cases where sample size is small. This will be true for any statistical test of significance. Snedecor and Cochran suggest that the size of the sample from which the test of significance is calculated is important. With a small sample, the test is likely to produce a significant result only if the null hypothesis is grossly in error. With a large sample, on the other hand, small departures from the null hypothesis can be detected as statistically significant.<sup>9</sup>

This does not mean that the chi-square test should not be used with large samples. Kendall,<sup>10</sup> in discussing the application of chi-square distribution, gives an example of the distribution of 6,800 males according to color of eyes and hair (this example comes from Ammon, *Zur Anthropologie der Badener*). The sample size is quite large compared to what we used in our study. Kendall finds the value of chi-square very improbable for probability being less than 0.000,001. He accordingly

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<sup>8</sup>Hubert M. Blalock, Jr., Social Statistics (New York, 1960), p. 212.

<sup>9</sup>George W. Snedecor and William G. Cochran, Statistical Methods (Ames, 1967), p. 28.

<sup>10</sup>Maurice G. Kendall, The Advanced Theory of Statistics, Vol. I (London, 1947), p. 300.

rejects the hypothesis of independence and concludes that hair color and eye color are associated. Natrella, of the United States National Bureau of Standards, also uses the chi-square test with a sample size of 1,336.<sup>11</sup>

#### Pearson's Contingency of Coefficient

Pearson's contingency coefficient C measures the extent of association or relation between two sets of attributes and is based on chi-square. Like other non-parametric statistical tests, the contingency coefficient makes no assumptions about the shape of the population of scores. It does not require underlying continuity in the variables under analysis, and it requires only nominal measurements of the variables. Because of this freedom from assumptions and requirements, C is often used to indicate the degree of relation between two sets of scores.<sup>12</sup>

Because contingency coefficient C is a function of chi-square, its limiting power distribution, like that of chi-square tends to 1 as sample size becomes large.<sup>13</sup>

#### Kendall's Q and Yule's Y

If the data are considered as a sample, there arises the question how far the positive association, which certainly exists in the sample, is indicative of real association in the parent population. The chi-square distribution provides an objective method of forming a judgment

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<sup>11</sup>Mary Gibbons Natrella, Experimental Statistics (Washington, 1963), pp. 9-2, 3.

<sup>12</sup>Siegel, p. 201.

<sup>13</sup>Ibid., pp. 201-202.



on this matter. The chi-square itself, however, does not provide an adequate measure of the intensity of association. Kendall suggests that the intensity can be measured by the coefficient of association--Kendall's Q and the coefficient of colligation--Yule's Y.<sup>14</sup>

Some important characteristics of these tests are: (a) that association shall vanish when the attributes are independent; (b) that the association shall be +1 when there is complete positive association and -1 when there is complete negative association; (c) that it should increase as the frequencies proceed from dissociation to association.<sup>15</sup>

#### Percentage Comparisons

One of the most useful procedures in sociology for determining the intensity of association between variables is the simple comparison of percentages. Blalock suggests that it is certainly possible to get a very good indication of the degree of relationship between two dichotomized variables by comparing percentages.<sup>16</sup> For example, if 53.5 per cent of the sampled foreign students who lived in the United States for less than two years plan to return home on completion of their studies, whereas only 5.7 per cent of the students who have been in the United States for more than two years are so categorized, there is a 47.8 per cent difference between the two groups (see Table XIV, page 69). Blalock raises the question why not use such a figure as a measure of difference between the two groups?

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<sup>14</sup>Kendall, pp. 310-311.

<sup>15</sup>Ibid., p. 310.

<sup>16</sup>Blalock, p. 228.

In a 2 x 2 contingency table, percentages can easily be compared in such a manner, and the widespread familiarity with percentages as contrasted with other types of measures would certainly argue for such comparisons of percentages.<sup>17</sup>

### Testing the Hypotheses

This section of the chapter deals with the statistical testing of the hypotheses. Each hypothesis is stated, tested, and discussed in terms of the indices of data prepared from the questionnaire. A computer program was developed for intensive statistical treatment of data so that hypotheses could be tested (see Table XIII).

1.  $H_0$ : There is no difference between the two groups (residence under two years and over two years in the United States) in the proportion of foreign students who return to their home country on completion of their studies.

$H_1$ : A greater proportion of students who have studied in the United States for two years or more are less likely to return to their home country than those who have spent a shorter period of time.

Since the alternative hypothesis predicts the direction of the difference between the two groups, the region of rejection is one-tailed. The chi-square table shows that for a one-tailed test, when degrees of freedom = 1, a  $X^2$  of 2.71 or larger has probability of occurrence under  $H_0$  of  $p = \frac{1}{2} (.10) = .05$ . Therefore, the region of rejection consists of all  $X^2 \geq 2.71$  if the direction of the results is that predicted by  $H_1$ .

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<sup>17</sup>Ibid.

TABLE XIII

## CHI-SQUARE TEST PROGRAM

## Part A: Main Program

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$JOB 2242-40023,KP=26 MAN SINGH DAS
C   BRAIN DRAIN PROJECT OF MAN SINGH DAS
    DIMENSION OB(10,10),EX(10,10),TR(10),TC(10),TITLE(20)
    COMMON OB,EX,TR,TC,DF,P,TT,CS
    L=0
15  READ(5,1)M,N
    IF(M.EQ.0)CALL EXIT
    1  FORMAT(2I2)
    DO 77 I=1,10
    DO 77 J=1,10
77  OB(I,J)=0.0
    2  READ(5,3)((OB(I,J),J=1,N),I=1,M)
    3  FORMAT(12F5.0)
    READ(5,16)(TITLE(I),I=1,13)
16  FORMAT(20A4)
    WRITE(6,99)
99  FORMAT(1H1)
    L=L+1
    WRITE(6,17)L,(TITLE(I),I=1,13)
17  FORMAT(34X,5HTABLE,1X,I2,3H --,20A4//)
    WRITE(6,19)
19  FORMAT(34X,18HOBSERVED FREQUENCY)
    CALL CHI
    DO 1000 I=1,M
1000 WRITE(6,1001)(OB(I,J),J=1,N),TR(I)
1001 FORMAT(/28X,7F10.1)
    WRITE(6,1002)(TC(I),I=1,N),TT
1002 FORMAT(//28X,7F10.1//)
    WRITE(6,20)
    20  FORMAT(34X,18HEXPECTED FREQUENCY)
    DO 1003 I=1,M
1003 WRITE(6,1004)(EX(I,J),J=1,N)
1004 FORMAT(/28X,6F10.1)
    WRITE(6,12)CS
    12  FORMAT(//,5X,17HCHI SQUARE TOTAL#,F10.5)
    WRITE(6,13)DF
    13  FORMAT(/,5X,19HDEGREES OF FREEDOM#,F10.5)
    WRITE(6,14)P
    14  FORMAT(/,5X,12HPROBABILITY#,F10.6)
    GO TO 15
    END

```

TABLE XIII (Continued)

## Part B: Subroutine Chi\*

```

SUBROUTINE CHI
DIMENSION OB(10,10),EX(10,10),TR(10),TC(10)
COMMON OB,EX,TR,TC,DF,P,TT,CS
TT=0.0
CS=0.0
DO 5 I=1,10
TR(I)=0.0
TC(I)=0.0
DO 5 J=1,10
5 EX(I,J)=0.0
DO 15 I=1,10
DO 10 J=1,10
TR(I)=TR(I)+OB(I,J)
10 TC(I)=TC(I)+OB(J,I)
IF(TR(I).NE.0.0)IR=I
IF(TC(I).NE.0.0)IC=I
IF((TR(I).EQ.0.).AND.(TC(I).EQ.0.)) GO TO 18
15 TT=TT+TR(I)
18 DF=(IR-1)*(IC-1)
C COMPUTE EXPECTED AND CHI SQUARE
DO 20 I=1,IR
DO 20 J=1,IC
EX(I,J)=TR(I)*TC(J)/TT
DIF=ABS(OB(I,J)-EX(I,J))
IF((DF.EQ.1.).AND.(EX(I,J).LT.5.))DIF=DIF-.5
20 CS=CS+DIF**2/EX(I,J)
P=PRBF(DF,1000.0,CS/DF)
RETURN
END

```

TABLE XIII (Continued)

## Part C: Function PRBF\*\*

```

FUNCTION PRBF(DA, DB, FR)
DIMENSION OB(10, 10), EX(10, 10), TR(10), TC(10)
COMMON OB, EX, TR, TC, DF, P, TT, CS
PRBF=1.0
IF(DA*DB*FR.EQ.0.) RETURN
IF(FR.LT.1.) GO TO 5
A=DA
B=DB
F=FR
GO TO 10
5 A=DB
B=DA
F=1.0/FR
10 AA=2.0/(9.0*A)
BB=2.0/(9.0*B)
Z=ABS(((1.0-BB)*F**(1./3.)-1.0+AA)/SQRT(BB*F**(2./3.)+AA))
IF(B.LT.4.) Z=Z*(1.0+.08*Z**4/B**3)
PRBF=.5/(1.+Z*(.196854+Z*(.115194+Z*(.000344=Z*.019527))))**4
IF(FR.LT.1.) PRBF=1.0-PRBF
RETURN
END

```

§ENTRY

---

\*Source: Adapted from Donald E. Allen, "Subroutine Chi-Square Program" (unpublished program, 1968).

\*\*Source: Adapted from Donald J. Veldman, Fortran Programming for the Behavioral Sciences (New York, 1967), p. 131.

Since our findings in Table XIV do not support the null hypothesis, the decision is to reject the null hypothesis of no difference in favor of the alternative hypothesis. If the model used was correct, and if the measurement requirement was satisfied, then we can conclude that foreign students who have been in the United States for two years or more are less likely to return to their home country than those who have spent a shorter period of time. In other words, we can say that the period of time spent in the United States significantly affects the decision making process of students whether they want to return to their homes or stay here.

2.  $H_0$ : There is no difference between the two age groups in the proportion of foreign students who return to their home country on completion of their studies.

$H_2$ : A greater proportion of students who are less than 25 years of age will return to their home country than those who are more than 25 years of age.

Since our findings in Table XV do not support the null hypothesis, the decision is to reject the null hypothesis of no difference in favor of the alternative hypothesis of significant difference. We can conclude that younger students are more likely to return to their home country on completion of their studies than the older students. In other words, age groupings and post-education plans are significantly associated.

3.  $H_0$ : There is no difference between the two categories of the developed and less developed countries in the proportion of foreign students who return to their home country on completion of their studies.

TABLE XIV  
YEARS OF RESIDENCE AND POST-EDUCATION PLANS  
OF FOREIGN STUDENTS IN THE UNITED STATES\*

Plans	In U. S. Under 2 Years		In U. S. Over 2 Years		Totals	
	No.	%	No.	%	No.	%
Return home immediately	515	53.5	55	5.7	570	59.3
Stay in U. S. permanently	282	29.3	110	11.4	392	40.7
Totals	797	82.8	165	17.2	962	100.0

Source: Computed from research data of the respondents in this study.

\*438 students had other plans such as temporary training period in the United States, tentative plans to go to other countries, or undecided relative to post-education plans.

1.  $X^2 = 55.41150$        $df = 1$        $p < 0.001$   
Result: Reject the null hypothesis of no difference since  $X_{cal}^2 > X_{tab}^2$  at 0.001 level of significance.

2. Pearson's Contingency Coefficient  $C = 0.2334$

3. Coefficient of Association--Kendall's  $Q = 0.5701$

4. Coefficient of Colligation--Yule's  $Y = 0.3131$

TABLE XV  
FOREIGN STUDENTS AND POST-EDUCATION PLANS\*  
BY AGE GROUP

Plans	Under 25 Years		Over 25 Years		Totals	
	No.	%	No.	%	No.	%
Return home immediately	424	44.1	146	15.2	570	59.3
Stay in U. S. permanently	216	22.5	176	18.2	392	40.7
Totals	640	66.6	322	33.4	962	100.0

Source: Computed from research data of the respondents in this study.

\*438 students had other plans such as temporary training period in the United States, tentative plans to go to other countries, or undecided relative to post-education plans.

1.  $\chi^2 = 38.78734$        $df = 1$        $p < 0.001$   
Result: Reject the null hypothesis of no difference since  
 $\chi^2_{cal} > \chi^2_{tab}$  at 0.001 level of significance.

2. Pearson's Contingency Coefficient  $C = 0.1967$

3. Coefficient of Association--Kendall's  $Q = 0.4058$

4. Coefficient of Colligation--Yule's  $Y = 0.2121$



$H_3$ : A greater proportion of students from the less developed nations are more likely to return to their home country than students from the more developed nations.

The findings in Table XVI do not support the null hypothesis. The null hypothesis is rejected. We conclude that students from the less developed nations are more likely to return to their countries on completion of their studies than students from the developed nations. In other words, the likelihood of return is significantly associated with the developmental state of the respondents' country of origin.

4.  $H_0$ : There is no difference between students with wives in the United States versus those with wives abroad in the proportion of students returning to their home country on completion of their studies.

$H_4$ : A greater proportion of students whose wives and children are at home are more likely to return to their home country than is the case with those whose wives and children are living with them in the United States.

The statistical findings in Table XVII do not support the null hypothesis, so the decision is to reject the null hypothesis of no difference in favor of the alternative hypothesis. We conclude that privately supported students whose wives and children are at home are more likely to return home on completion of their studies than those whose wives and children are living with them in the United States. The decision to return or remain is definitely related to the familial residence pattern.

5.  $H_0$ : There is no difference between the two income groups in the proportion of foreign students who return to their home country on completion of their studies.

TABLE XVI  
STUDENTS FROM DEVELOPED AND LESS DEVELOPED  
COUNTRIES AND POST-EDUCATION PLANS\*

Plans	Developed Countries		Less Developed		Totals	
	No.	%	No.	%	No.	%
Return home immediately	289	30.0	281	29.2	570	59.2
Stay in U. S. permanently	276	28.7	116	12.1	392	40.8
Totals	565	58.7	397	41.3	962	100.0

Source: Computed from research data of the respondents in this study.

\*438 students had other plans such as temporary training period in the United States, tentative plans to go to other countries, or undecided relative to post-education plans.

1.  $X^2 = 37.21446$        $df = 1$        $p < 0.001$   
Result: Reject the null hypothesis of no difference since  $X_{cal}^2 > X_{tab}^2$  at 0.001 level of significance.

2. Pearson's Contingency Coefficient  $C = 0.192986$

3. Coefficient of Association--Kendall's  $Q = -0.3963$

4. Coefficient of Colligation--Yule's  $Y = -0.2066$

TABLE XVII  
 RESIDENCE OF PRIVATELY SUPPORTED STUDENTS'  
 WIVES AND POST-EDUCATION PLANS\*

Plans	Residence Home Country		Residence United States		Totals	
	No.	%	No.	%	No.	%
Return home immediately	97	40.8	24	10.1	121	50.8
Stay in U. S. permanently	54	22.7	63	26.5	117	49.2
Totals	151	63.4	87	36.6	238	100.0

Source: Computed from research data of the respondents in this study.

\*721 students were single, and 3 married students were government sponsored. Other 438 students had other plans such as temporary training period in the United States, tentative plans to go to other countries, or undecided relative to post-education.

1.  $\chi^2 = 29.66891$        $df = 1$        $p < 0.001$   
 Result: Reject the null hypothesis of no difference since  
 $\chi^2_{cal} > \chi^2_{tab}$  at 0.001 level of significance.

2. Pearson's Contingency Coefficient  $C = 0.3329$

3. Coefficient of Association--Kendall's  $Q = 0.6500$

4. Coefficient of Colligation--Yule's  $Y = 0.3694$

H<sub>5</sub>: A greater proportion of students from higher income groups are more likely to return to their home country than is the case with those who come from lower income groups.

Findings in Tables XVIII and XIX do not support the null hypothesis of no difference, so the decision is to reject the null hypothesis in favor of the alternative hypothesis. We can conclude that students from lower income groups are less likely to return to their home country than students from upper income groups. Low parental income does tend to inhibit the probability of return. The decision to stay, on the part of students from low income families, is probably augmented by the economic opportunity structure of the United States.

6. H<sub>0</sub>: There is no difference between the two groups (those who resigned their jobs and those who were granted leaves) in the proportion of students who return home on completion of their studies.

H<sub>6</sub>: A greater proportion of students who have resigned their jobs in their countries are less likely to return home than those who received leaves.

Findings in Table XX do not support the null hypothesis, so we reject the null hypothesis of no difference in favor of the alternative hypothesis. We conclude that privately supported students who have resigned their jobs in their countries are less likely to return home than those who are on leave of absence from their jobs. The promised continuity of employment does significantly affect the decision to return. On the other hand, the severance occasioned by resignation of employment prior to leaving their home country tends to result in continued disassociation by the decision to remain in the United States.

TABLE XVIII

## PARENTAL INCOME GROUPS AND POST EDUCATION PLANS\* OF FOREIGN STUDENTS

Plans	\$0- \$999		\$1,000- \$2,999		\$3,000- \$4,999		\$5,000- \$6,999		\$7,000- \$8,999		\$9,000- \$10,999		\$11,000- \$12,999		\$13,000- over		Totals	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Return home immediately	47	4.9	90	9.4	142	14.8	143	14.9	82	8.5	34	3.5	11	1.1	21	2.2	570	59.3
Stay in U. S. permanently	54	5.6	81	8.4	93	9.7	71	7.4	42	4.4	21	2.2	13	1.4	17	1.8	392	40.7
Totals	101	10.5	171	17.8	235	24.4	214	22.2	124	12.9	55	5.7	24	2.5	38	4.0	962	100.0

Source: Computed from research data of the respondents in this study.

\*438 students had other plans such as temporary training period in the United States, tentative plans to go to other countries, or undecided relative to post-education plans.

1.  $\chi^2 = 19.70279$        $df = 7$        $p < 0.01$       Result: Reject the null hypothesis of no difference since  $\chi_{cal}^2 > \chi_{tab}^2$  at 0.01 level of significance.

2. Pearson's Contingency Coefficient  $C = 0.1417$

TABLE XIX  
PARENTAL INCOME CATEGORIES AND POST-EDUCATION  
PLANS OF FOREIGN STUDENTS

Plans	\$0- \$4999		\$5000 & Over		Totals	
	No.	%	No.	%	No.	%
Return home immediately	279	29.01	291	30.24	570	59.25
Stay in U. S. permanently	228	23.71	164	17.04	392	40.75
Totals	507	52.72	455	47.28	962	100.00

Source: Computed from research data of the respondents in this study.

1.  $X^2 = 7.91392$        $df = 1$        $p < 0.01$   
Result: Reject the null hypothesis of no difference since  
 $X^2_{cal} > X^2_{tab}$  at 0.01 level of significance.

2. Pearson's Contingency Coefficient  $C = 0.0900$

3. Coefficient of Association--Kendall's  $Q = -0.1836$

4. Coefficient of Colligation--Yule's  $Y = -0.0926$

TABLE XX

LEAVE STATUS OF EMPLOYED FOREIGN STUDENTS PRIOR  
TO THEIR COMING TO THE UNITED STATES AND  
POST-EDUCATION PLANS

Plans	Resigned From Job		Granted Leaves		Totals	
	No.	%	No.	%	No.	%
Return home immediately	25	8.9	132	46.8	157	55.7
Stay in U. S. permanently	100	35.5	25	8.9	125	44.3
Totals	125	44.3	157	55.7	282	100.0

Source: Computed from research data of the respondents in this study.

1.  $X^2 = 115.78320$        $df = 1$        $p < 0.001$   
Result: Reject the null hypothesis of no difference since  
 $X_{cal}^2 > X_{tab}^2$  at 0.001 level of significance.

2. Pearson's Contingency Coefficient  $C = 0.5395$

3. Coefficient of Association--Kendall's  $Q = 0.9095$

4. Coefficient of Colligation--Yule's  $Y = 0.6425$

7.  $H_0$ : There is no difference between the two groups (employment opportunities and no opportunities) in the proportion of foreign students who return to their home country on completion of their studies.

$H_7$ : A greater proportion of students will return to their home country where employment opportunities are perceived to be greater than is the case with those whose countries have fewer perceived employment opportunities.

Based on the findings (see Tables XXI and XXII) the null hypothesis is rejected. Students whose countries provide them greater employment opportunities are more likely to return to their home than those whose countries have fewer employment opportunities. The perceived opportunity structure does significantly orient the stay-return decision.

#### Summary of Findings

The main findings of the study may be summarized as follows:

5 ✓ 1. Foreign students who have studied in the United States for two years or more are more likely to stay in the United States after completion of their studies than students who have studied for less than two years (Table XIV).

✓ 2. Students under 25 years of age are more likely to return to their home country than students over 25 years of age (Table XV).

3. Students from less developed nations are more likely to return to their home countries than students from developed nations (Table XVI).

4. Privately supported students whose wives and children are at home are more likely to return than those whose wives and children are living with them in the United States (Table XVII).



TABLE XXI

## PERCEIVED EMPLOYMENT OPPORTUNITIES IN HOME COUNTRIES AND POST-EDUCATION PLANS\*

Plans	Excellent		Very Good		Good		Little		Very Little		No Chances		Totals	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Return home immediately	349	36.27	135	14.03	76	7.90	7	0.72	1	0.10	2	0.20	570	59.3
Stay in U. S. permanently	36	3.74	68	7.06	105	10.91	97	10.08	42	4.36	44	4.57	392	40.7
Totals	385	40.01	203	21.09	181	18.81	104	10.80	43	4.46	46	4.77	962	100.0

Source: Computed from research data of the respondents in this study.

\*438 students had other plans such as temporary training period in the United States, tentative plans to go to other countries or undecided relative to post-education plans.

1.  $X^2 = 417.92180$   $df = 5$   $p < 0.001$  Result: Reject the null hypothesis of no difference since  $X_{cal}^2 > X_{tab}^2$  at 0.001 level of significance.

2. Pearson's Contingency Coefficient  $C = 0.5502$

TABLE XXII  
 PERCEIVED EMPLOYMENT OPPORTUNITIES IN HOME  
 COUNTRIES AND POST-EDUCATION PLANS

Plans	Better Opportunities		Poor Opportunities		Totals	
	No.	%	No.	%	No.	%
Return home immediately	560	58.2	10	1.1	570	59.3
Stay in U. S. permanently	209	21.7	183	19.0	392	40.7
Totals	769	79.9	193	20.1	962	100.0

Source: Computed from research data of the respondents in this study.

1.  $X^2 = 292.35540$        $df = 1$        $p < 0.001$   
 Result: Reject the null hypothesis of no difference since  
 $X_{cal}^2 > X_{tab}^2$  at 0.001 level of significance.

2. Pearson's Contingency Coefficient  $C = 0.4827$
3. Coefficient of Association--Kendall's  $Q = 0.9600$
4. Coefficient of Colligation--Yule's  $Y = 0.7507$

5. Students with parental annual incomes of less than \$5,000 are less likely to return to their home country than those whose annual incomes were more than \$5,000 (Tables XVIII and XIX).

6. Privately supported students who were employed in their home country prior to their coming to the United States and resigned their jobs are less likely to return home than those who did not resign (Table XX).

7. Students whose home countries provide them greater employment opportunities are more likely to return to their home than those whose countries have fewer employment opportunities (Tables XXI and XXII).

8. Single students are more likely to return home than married students (Table XXIII).

9. The null hypothesis of no relationship between the number of children and the likelihood of returning home is accepted (Table XXIV).

10. There is a strong relationship between the mode of financial support of wife and the likelihood of returning home (Table XXV). But if we look at the percentages, we will find that a large proportion of students who send money home to support their family plan to return home on completion of their studies whereas a large proportion of students whose wives have full-time jobs and in some cases are supported solely by parents plan to stay in the United States.

11. There is a strong relationship between the academic status of students and the likelihood of their return to their home country on completion of their studies. Of all the doctoral students, 29 per cent plan to return home compared to 64 per cent of the Master's degree students. On the other hand, 70 per cent of the doctoral students plan

TABLE XXIII  
 MARITAL STATUS AND POST-EDUCATION PLANS\*  
 OF FOREIGN STUDENTS

Plans	Single		Married		Totals	
	No.	%	No.	%	No.	%
Return home immediately	446	46.6	123	12.6	569	59.2
Stay in U. S. permanently	275	28.7	118	12.1	393	40.8
Totals	721	75.3	241	24.7	962	100.0

Source: Computed from research data of the respondents in this study.

\*438 students had other plans such as temporary training period in the United States, tentative plans to go to other countries, or undecided relative to post-education plans.

1.  $\chi^2 = 8.75331$        $df = 1$        $p < 0.01$   
 Result: Reject the null hypothesis of no difference since  $\chi^2_{cal} > \chi^2_{tab}$  at 0.01 level of significance.

2. Pearson's Contingency Coefficient  $C = 0.0944$

3. Coefficient of Association--Kendall's  $Q = 0.2174$

4. Coefficient of Colligation--Yule's  $Y = 0.1101$

TABLE XXIV

## NUMBER OF CHILDREN AND POST-EDUCATION PLANS\*

Plans	Children 0		Children 1		Children 2		Children 3		Children 4 & More		Totals	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Return home immediately	489	50.8	45	4.7	19	2.0	10	1.0	7	0.7	570	59.3
Stay in U.S. permanently	329	34.2	42	4.4	16	1.7	3	0.3	2	0.2	392	40.7
Totals	818	85.0	87	9.0	35	3.6	13	1.4	9	0.9	962	100.0

Source: Computed from research data of the respondents in this study.

\*438 students had other plans such as temporary training period in the United States, tentative plans to go to other countries, or undecided relative to post-education plans.

1.  $X^2 = 5.45463$        $df = 4$        $p = 0.243429$       Result: Accept the null hypothesis since  $X_{cal}^2 < X_{tab}^2$ .

2. Pearson's Contingency Coefficient  $C = 0.0751$

TABLE XXV

## SOURCE OF FINANCIAL SUPPORT OF WIVES AND POST-EDUCATION PLANS\*

Plans	Supported by Student		Wife Works		Send Money Home		Parents		Other Source		Totals	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Return home immediately	63	26.2	41	16.8	3	1.2	11	4.5	4	1.6	122	50.4
Stay in U.S. permanently	34	14.3	44	18.4	4	1.6	34	13.9	3	1.2	119	49.6
Totals	98	40.6	85	35.2	7	2.9	45	18.4	7	2.9	241	100.0

Source: Computed from research data of the respondents in this study.

\*721 students were single. Other 438 students had other plans such as temporary training period in the United States, tentative plans to go to other countries, or undecided relative to post-education plans.

1.  $\chi^2 = 20.70724$        $df = 4$        $p < 0.001$       Result: Reject the null hypothesis of no relationship since  $\chi_{cal}^2 > \chi_{tab}^2$  at 0.001 level of significance.

2. Pearson's Contingency Coefficient  $C = 0.2797$

to remain in the United States as compared to only 36 per cent of the Master's degree students (Table XXVI).

✓ 12. There is a strong relationship between the field of study and the likelihood of returning home after completion of studies. A larger  
3 proportion of students whose major field of study is agriculture or engineering plan to return home than students from other fields (Table XXVII).

TABLE XXVI

## ACADEMIC STATUS AND POST-EDUCATION PLANS\* OF FOREIGN STUDENTS

Plans	Freshman		Sophomore		Junior		Senior		M.S.		Ph.D.		Post- Doctoral		Special		Totals	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Return home immediately	55	5.6	88	9.2	61	6.3	46	4.7	275	28.6	36	3.8	4	0.4	6	0.6	571	59.2
Stay in U. S. permanently	34	3.5	47	4.9	36	3.8	21	2.2	158	16.5	86	9.0	3	0.3	6	0.6	391	40.8
Totals	89	9.1	135	14.0	97	10.1	67	7.0	433	45.1	122	12.8	7	0.7	12	1.2	962	100.0

Source: Computed from research data of the respondents in this study.

\*438 students had other plans such as temporary training period in the United States, tentative plans to go to other countries, or undecided relative to post-education plans.

1.  $X^2 = 53.62505$        $df = 7$        $p < 0.001$       Result: Reject the null hypothesis of no relationship since  $X^2_{cal} > X^2_{tab}$  at 0.001 level of significance.

2. Pearson's Contingency of Coefficient  $C = 0.2387$



TABLE XXVII

## MAJOR FIELDS OF STUDY AND POST-EDUCATION PLANS\* OF FOREIGN STUDENTS

Plans	Agri- culture		Business Adminis- tration		Educa- tion		Engi- neering		Human- ities		Medical Sciences		Physical Sciences		Social Sciences		Technical Education		Totals	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Return home imme- diately	126	13.1	23	2.4	8	0.8	255	26.5	12	1.2	33	3.4	84	8.7	19	2.0	10	1.0	570	59.3
Stay in U.S. perma- nently	22	2.3	12	1.2	6	0.6	228	23.6	7	0.7	23	2.4	60	6.2	32	3.3	2	0.2	392	40.7
Totals	148	15.4	35	3.6	14	1.5	483	50.2	19	2.0	56	5.8	144	15.0	51	5.3	12	1.2	962	100.0

Source: Computed from research data of the respondents in this study.

\*438 students had other plans such as temporary training period in the United States, tentative plans to go to other countries, or undecided relative to post-education plans.

1.  $X^2 = 63.31371$        $df = 8$        $p < 0.001$       Result: Reject the null hypothesis of no relationship since  $X_{cal}^2 > X_{tab}^2$  at p.001 level of significance.

2. Pearson's Contingency Coefficient  $C = 0.2517$

## CHAPTER V

### ISSUES AND IMPLICATIONS OF THE STUDY:

#### THE BRAIN DRAIN IN NEW PERSPECTIVE

This chapter deals with three issues. First, why do foreign students want to stay in the United States subsequent to their graduation? In discussing this, an effort will be made to identify the related social and cultural factors which contribute to the problem of "brain drain." Second, an evaluation will be made to examine the impact of "brain drain" on the less developed and developed countries of Asia, Africa and Latin America as well as the United States as a highly developed country in terms of human resources. The information for this section will be derived from the responses of the foreign government officials in Washington, D. C., as well as the literature published on this topic elsewhere.

Finally, an attempt will be made to evaluate the concept of gain or loss inherent in the international exchange of students, scholars and researchers which is stereotypically referred to as "brain drain" but in reality might more properly be identified as "brain interchange" or "brain exchange."

#### Foreign Students' Rationale for Remaining in the United States

Tables XXVIII through XXXI suggest reasons as to why foreign students want to stay in the United States. Item 41 of the questionnaire

TABLE XXVIII

## FOREIGN STUDENTS' REASONS FOR STAYING IN THE UNITED STATES

Home Country	Total	Reasons for Staying in the United States													
		Return Home		Economic Rewards		Living Conditions		No Job in Home Country		Better Opportunities		Political Situation at Home		Married an American	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
TOTAL	1,400	950	67.85	176	12.57	137	9.78	89	6.35	36	2.57	2	0.14	10	0.71
ASIA	654	325	49.69	115	17.58	86	13.15	85	12.99	33	5.04	2	0.30	8	1.22
1. India	194	55	28.4	29	14.9	35	18.0	54	27.8	17	8.8	2	1.0	2	1.0
2. Pakistan	36	24	66.7	2	5.6	4	11.1	1	2.8	4	11.1	0	0.0	1	2.8
3. Iran	53	23	43.4	7	13.2	9	17.0	7	13.2	3	5.7	0	0.0	4	7.5
4. China	91	38	41.8	19	20.9	14	15.4	16	17.6	3	3.3	0	0.0	1	1.1
5. South Korea	52	35	67.3	6	11.5	5	9.6	5	9.6	1	1.9	0	0.0	0	0.0
6. Philippines	53	27	50.9	21	39.6	5	9.4	0	0.0	0	0.0	0	0.0	0	0.0
7. Burma	24	12	50.0	7	29.2	3	12.5	0	0.0	2	8.3	0	0.0	0	0.0
8. Thailand	53	43	81.1	5	9.4	4	7.5	0	0.0	1	1.9	0	0.0	0	0.0
9. South Vietnam	22	13	59.1	5	22.7	3	13.6	1	4.5	0	0.0	0	0.0	0	0.0
10. Jordan	45	32	71.1	10	22.2	1	2.2	0	0.0	2	4.4	0	0.0	0	0.0
11. Indonesia	31	23	74.2	4	12.9	3	9.7	1	3.2	0	0.0	0	0.0	0	0.0
AFRICA	372	314	84.4	30	8.06	23	6.18	2	0.53	3	0.806	0	0.0	0	0.0
12. Egypt	52	46	88.5	3	5.8	2	3.8	0	0.0	1	1.9	0	0.0	0	0.0
13. Ghana	40	36	90.0	3	7.5	1	2.5	0	0.0	0	0.0	0	0.0	0	0.0
14. Tunisia	32	24	75.0	7	21.9	1	3.1	0	0.0	0	0.0	0	0.0	0	0.0
15. Morocco	30	27	90.0	1	3.3	1	3.3	0	0.0	1	3.3	0	0.0	0	0.0
16. Algeria	31	23	74.2	2	6.5	6	19.4	0	0.0	0	0.0	0	0.0	0	0.0
17. Nigeria	46	38	82.6	2	4.3	4	8.7	1	2.2	1	2.2	0	0.0	0	0.0
18. Ethiopia	43	40	93.0	3	7.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
19. Libya	34	26	76.5	4	11.8	4	11.8	0	0.0	0	0.0	0	0.0	0	0.0
20. Liberia	34	25	73.5	4	11.8	4	11.8	1	2.9	0	0.0	0	0.0	0	0.0
21. Sudan	30	29	96.7	1	3.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
LATIN AMERICA	374	311	83.15	31	8.28	28	7.48	2	0.53	0	0.0	0	0.0	2	0.53
22. Brazil	52	29	55.8	16	30.8	7	13.5	0	0.0	0	0.0	0	0.0	0	0.0
23. Peru	24	22	91.7	1	4.2	1	4.2	0	0.0	0	0.0	0	0.0	0	0.0
24. Ecuador	36	28	77.8	4	11.1	4	11.1	0	0.0	0	0.0	0	0.0	0	0.0
25. Venezuela	45	39	86.7	1	2.2	3	6.7	0	0.0	0	0.0	0	0.0	2	4.4
26. Bolivia	34	29	85.3	1	2.9	3	8.8	1	2.9	0	0.0	0	0.0	0	0.0
27. Honduras	37	32	86.5	2	5.4	3	8.1	0	0.0	0	0.0	0	0.0	0	0.0
28. Nicaragua	40	36	90.0	2	5.0	1	2.5	1	2.5	0	0.0	0	0.0	0	0.0
29. Paraguay	35	30	85.7	3	8.6	2	5.7	0	0.0	0	0.0	0	0.0	0	0.0
30. Haiti	32	30	93.8	1	3.1	1	3.1	0	0.0	0	0.0	0	0.0	0	0.0
31. Dom. Republic	39	36	92.3	0	0.0	3	7.7	0	0.0	0	0.0	0	0.0	0	0.0

Source: Computed from research data of the 1400 foreign student respondents.

TABLE XXIX  
STUDENTS' RESIDENCE PLANS AND RATIONALE FOR  
THOSE REMAINING IN THE UNITED STATES

Residence Plans	ASIA		AFRICA		LATIN AMERICA	
	No.	%	No.	%	No.	%
Reasons for staying in U.S.:						
Economic rewards	115	17.6	30	8.2	31	8.2
Better living conditions	86	13.1	23	6.2	28	7.4
May not find job at home	85	13.0	2	0.5	2	0.5
Married an American citizen	8	1.2	0	0.0	2	0.5
Better opportunities	33	5.0	3	0.8	0	0.0
Unstable political situation at home	2	0.3	0	0.0	0	0.0
Return home country:	325	49.7	310	84.2	315	83.3
Total	654	100.0	368	100.0	378	100.0

Source: Computed from research data of the 1400 foreign student respondents.

TABLE XXX

## FOREIGN STUDENTS' REASONS FOR STAYING IN THE UNITED STATES

Residence Plans	ASIA				AFRICA				LATIN AMERICA			
	Developed		Less Developed		Developed		Less Developed		Developed		Less Developed	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Reasons for Staying in U.S.:												
Economic Rewards	84	17.5	31	17.7	16	8.6	14	7.7	23	12.0	8	4.3
Better Living Conditions	72	15.0	14	8.0	11	5.9	12	6.6	18	9.4	10	5.3
May Not Find Job at Home	83	17.3	2	1.1	0	0.0	2	1.1	1	0.5	1	0.5
Married an American Citizen	8	1.7	0	0.0	0	0.0	0	0.0	2	1.0	0	0.0
Better Opportunities	28	5.8	5	2.9	2	1.1	1	0.5	0	0.0	0	0.0
Unstable Political Situation at Home	2	0.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Return Home Country:	202	42.2	123	70.3	156	84.3	154	84.2	147	77.0	168	89.8
Total	479	100.0	175	100.0	185	100.0	183	100.0	191	100.0	187	100.0

Source: Computed from research data of the 1400 foreign student respondents.

TABLE XXXI

FOREIGN STUDENTS FROM LESS DEVELOPED AND DEVELOPING COUNTRIES AND THEIR REASONS FOR STAYING  
IN THE UNITED STATES

Developmental State	Reasons for Staying in U.S.															
	Economic Rewards		Better Living Conditions		May Not Find Job at Home		Married an American Citizen		Better Oppor- tunities		Unstable Political Situation at Home		Return to Home Country		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Developed Countries	123	14.4	101	11.8	84	9.8	10	1.2	30	3.5	2	0.2	505	59.1	855	100.0
Less Developed Countries	53	9.7	36	6.6	5	0.9	0	0.0	6	1.1	0	0.0	445	81.7	545	100.0

Source: Computed from research data of the 1400 foreign student respondents.

asked for their reasons for wanting to stay in this country. Tables XXVIII through XXXI are based on the information derived from item 41 of the questionnaire. The chief reasons given by foreign students for their stay in this country follows.

Taking all 1,400 respondents, a majority, 68 per cent, indicated they wanted to return home. The remainder, 32 per cent, indicated the following reasons for wanting to remain: About 13 per cent preferred to stay in the United States because of greater economic incentive and reward, 10 per cent indicated they wanted to stay because of better living conditions, 6 per cent gave dearth of job opportunity at home as the reason for wanting to stay, 3 per cent wanted to stay because of better opportunities in general, 1 per cent preferred to stay as a result of marrying a United States citizen, and only 2 students gave the instability of the political situation at home as the primary reason for staying.

Table XXIX indicates that students from all three continents, i.e., Asia, Africa and Latin America, mentioned in larger proportion that economic rewards was their chief reason for staying in the United States. A small proportion of students from Asia and Latin America had decided to stay here as they had married an American girl.

In Table XXXI, when students from developed countries were compared with those from less developed, it was observed that students from developed countries stay here in larger proportion due to economic opportunities. Though students from less developed countries also give economic opportunities as their chief reason to stay here, they are in smaller proportion than the students from developed countries.

Table XXVIII suggests that students from the Philippines, a country classified as developed, mentioned in largest proportion, 40 per cent, economic rewards and opportunities as their chief reason for staying in this country. However, only 9 per cent of the Thai students gave economic rewards as their main reason. In the case of Africans, it was found that the largest proportion, 22 per cent, of Tunisian students wanted to stay in the United States due to economic rewards and opportunities whereas only a small proportion, 3 per cent, of Sudanese wanted to stay here due to economic rewards. The same pattern is also applicable in the case of the Latin American students, i.e., students from the developed countries were more likely to indicate a desire to stay for economic rewards and opportunities.

So far, the chief reasons as to why foreign students decide to stay in this country have been mentioned. An attempt has been made to show that a large proportion of students from developed countries, when compared to students from less developed countries, gave greater economic rewards and better economic opportunities as their main reason for staying. This may suggest that students in developed countries feel greater economic pressure at home, a push factor, whereas students from less developed countries may feel greater economic opportunities at home, a pull factor, which may attract these students to their home countries. It was also found that marriage of foreign students with American girls became a compelling factor for their decision to remain in this country.

The chief characteristics of those students who want to remain in the United States are as follows:

1. Table XIV suggests that students who have lived in the United States for two or more years are more likely to stay here subsequent to their graduation.



2. Table XV indicates that students who are 25 years of age or more are more likely to remain here.

3. Table XVI reveals that students from developed countries of Asia, Africa and Latin America are more likely to remain in the United States.

4. Privately supported students who are married and whose wives and children are living with them are more likely to stay here (Table XVII).

5. Students whose parents' annual income is less than \$5,000 are more likely to stay in the United States (Tables XVIII and XIX).

6. Privately supported students who had resigned their jobs in their home countries before coming to the United States are more likely to stay here (Table XX).

7. Students whose home countries do not provide them suitable employment opportunities are more likely to stay here (Tables XXI and XXII).

8. Married students are more likely to stay in the United States (Table XXIII).

9. Married students who have no children are more likely to stay here (Table XXIV).

10. Married students whose wives have full-time jobs are more likely to stay here (Table XXV).

11. Students who are working for their doctoral degrees are more likely to stay here (Table XXVI).

12. Students whose major field of study is other than agriculture or engineering are more likely to remain here (Table XXVII).

In order to make a critical evaluation of the chief reasons which persuade foreign students to stay in this country, an effort will be made to appraise the main reasons as to why students want to return to their home countries. The information derived from item 40 of the questionnaire is tabulated in Tables XXXII through XXXV. The chief reasons given by students for wanting to return to their home countries may be summarized as follows:

1. scholarship awarded by their government or the American government requiring their return
2. due to family ties
3. due to prejudice and discrimination exhibited by Americans
4. may not be able to find a suitable job in the United States
5. may not be able to change student visa to immigrant visa
6. due to patriotism

Students from Asia, Africa and Latin America give family ties, prejudice and discrimination in the United States, and patriotism for their home countries as their three chief reasons for wanting to return (Table XXXIII). The same reasons were mentioned by the students from the developed and less developed countries (Table XXXV).

Table XXXVI shows employment opportunities in home countries. A large proportion, 38 per cent of the 1,400 foreign students sampled, reported that their chances of getting a suitable job in their home countries were excellent, 24 per cent said there would be very good chances, 21 per cent mentioned good chances. Only 7 per cent of the total students reported that their chances of getting a job in their home country were little, 2 per cent indicated that chances were very little, and 1 per cent felt that there were no chances at all.

TABLE XXXII

## FOREIGN STUDENTS' REASONS FOR RETURNING HOME

Home Country	Total	Reasons for Returning Home													
		Stay perman- ently in U.S.		Government Scholarship		Family Ties		Prejudice in U.S.		No chance for jobs in U.S.		Unable to change visa		Patriotism	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
TOTAL	1,400	122	8.71	252	18	663	47.73	277	19.78	16	1.17	11	0.10	59	4.21
ASIA	654	102	15.59	50	7.64	338	51.68	85	12.99	15	2.29	9	1.37	55	8.41
1. India	194	28	14.4	8	4.1	96	49.5	10	5.2	11	5.7	5	2.6	36	18.6
2. Pakistan	36	2	5.6	11	30.6	18	50.0	1	2.8	0	0.0	0	0.0	4	11.1
3. Iran	53	6	11.3	0	0.0	34	64.2	5	9.4	2	3.8	1	1.9	5	9.4
4. China	91	6	6.6	4	4.4	55	60.4	21	23.1	1	1.1	0	0.0	4	4.4
5. South Korea	52	8	15.4	0	0.0	24	46.2	19	36.5	0	0.0	0	0.0	1	1.9
6. Philippines	53	14	26.4	5	9.4	25	47.2	7	13.2	0	0.0	1	1.9	1	1.9
7. Burma	24	6	25.0	1	4.2	17	70.8	0	0.0	0	0.0	0	0.0	0	0.0
8. Thailand	53	5	9.4	17	32.1	19	35.8	6	11.3	1	1.9	2	3.8	3	5.7
9. South Vietnam	22	7	31.8	1	4.5	10	45.5	4	18.2	0	0.0	0	0.0	0	0.0
10. Jordan	45	13	28.9	1	2.2	27	60.0	4	8.9	0	0.0	0	0.0	0	0.0
11. Indonesia	31	7	22.6	2	6.5	13	41.9	8	25.8	0	0.0	0	0.0	1	3.2
AFRICA	372	5	1.34	124	33.33	95	25.53	146	39.24	1	0.26	0	0.0	1	0.26
12. Egypt	52	2	3.8	27	51.9	22	42.3	1	1.9	0	0.0	0	0.0	0	0.0
13. Ghana	40	0	0.0	15	37.5	1	2.5	24	60.0	0	0.0	0	0.0	0	0.0
14. Tunisia	32	0	0.0	7	21.9	9	28.1	16	50.0	0	0.0	0	0.0	0	0.0
15. Morocco	30	1	3.3	7	23.3	11	36.7	11	36.7	0	0.0	0	0.0	0	0.0
16. Algeria	31	1	3.2	8	25.8	13	41.9	8	25.8	1	3.2	0	0.0	0	0.0
17. Nigeria	46	1	2.2	15	32.6	8	17.4	21	45.7	0	0.0	0	0.0	1	2.2
18. Ethiopia	43	0	0.0	17	39.5	6	14.0	20	46.5	0	0.0	0	0.0	0	0.0
19. Libya	34	0	0.0	7	20.6	14	41.2	13	38.2	0	0.0	0	0.0	0	0.0
20. Liberia	34	0	0.0	12	35.3	9	26.5	13	38.2	0	0.0	0	0.0	0	0.0
21. Sudan	30	0	0.0	9	30.0	2	6.7	19	63.3	0	0.0	0	0.0	0	0.0
LATIN AMERICA	374	15	4.01	78	20.85	230	61.49	46	12.29	0	0.0	2	0.53	3	0.80
22. Brazil	52	0	0.0	7	13.5	39	75.0	6	11.5	0	0.0	0	0.0	0	0.0
23. Peru	24	0	0.0	5	20.8	18	75.0	1	4.2	0	0.0	0	0.0	0	0.0
24. Ecuador	36	3	8.3	3	8.3	27	75.0	2	5.6	0	0.0	0	0.0	1	2.8
25. Venezuela	45	3	6.7	12	26.7	20	44.4	8	17.8	0	0.0	0	0.0	2	4.4
26. Bolivia	34	1	2.9	8	23.5	20	58.8	5	14.7	0	0.0	0	0.0	0	0.0
27. Honduras	37	1	2.7	11	29.7	20	54.1	3	8.1	0	0.0	2	5.4	0	0.0
28. Nicaragua	40	3	7.5	8	20.0	24	60.0	5	12.5	0	0.0	0	0.0	0	0.0
29. Paraguay	35	3	8.6	7	20.0	21	60.0	4	11.4	0	0.0	0	0.0	0	0.0
30. Haiti	32	1	3.1	10	31.3	15	46.9	6	18.8	0	0.0	0	0.0	0	0.0
31. Dom. Republic	39	0	0.0	7	17.9	26	66.7	6	15.4	0	0.0	0	0.0	0	0.0

Source: Computed from research data of the 1400 foreign student respondents.

TABLE XXXIII  
STUDENTS' RESIDENCE PLANS AND RATIONALE  
FOR THOSE RETURNING HOME

Residence Plans	ASIA		AFRICA		LATIN AMERICA	
	No.	%	No.	%	No.	%
Reasons to return home:						
Scholarship Awarded by Government	50	7.6	121	32.9	81	21.4
Due to Family Ties	338	51.7	95	25.8	230	60.8
Due to Prejudice in U.S.	85	13.0	145	39.4	47	12.4
May Not Find Job in U.S.	15	2.3	1	0.3	2	0.5
May Not Change Visa	9	1.4	0	0.0	3	0.8
Due to Patriotism	55	8.4	1	0.3	0	0.0
Stay in U.S. permanently	102	15.6	5	1.4	15	4.0
Total	654	100.0	368	100.0	378	100.0

Source: Computed from research data of the 1400 foreign student respondents.

TABLE XXXIV

## FOREIGN STUDENTS' REASONS FOR RETURNING HOME BY DEVELOPMENTAL LEVEL

Residence Plans	ASIA				AFRICA				LATIN AMERICA			
	Developed		Less Developed		Developed		Less Developed		Developed		Less Developed	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Reasons to return home:												
Scholarship Awarded by Government	28	5.8	22	12.6	64	34.6	57	31.1	35	18.3	46	24.6
Due to Family Ties	252	52.6	86	49.1	56	30.3	39	21.3	124	64.9	106	56.7
Due to Prejudice in U.S.	63	13.2	22	12.6	60	32.4	85	46.4	22	11.5	25	13.4
May Not Find Job in U.S.	14	2.9	1	0.6	1	0.5	0	0.0	0	0.0	0	0.0
May Not Change Visa	7	1.5	2	1.1	0	0.0	0	0.0	0	0.0	2	1.1
Due to Patriotism	51	10.6	4	2.3	0	0.0	1	0.5	3	1.6	0	0.0
Stay in U.S. permanently	64	13.4	38	21.7	4	2.2	1	0.5	7	3.7	8	4.3
Total	479	100.0	175	100.0	185	100.0	183	100.0	191	100.0	187	100.0

Source: Computed from research data of the 1400 foreign student respondents.

TABLE XXXV

FOREIGN STUDENTS FROM LESS DEVELOPED AND DEVELOPING COUNTRIES AND THEIR REASONS  
FOR RETURNING HOME

Developmental State	Scholarship Awarded by Government		Due to Family Ties		Due to Prejudice in U.S.		May Not Find Job in U.S.		May Not Change Visa		Due to Patriotism		Stay in U.S. Permanently		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Developed Countries	127	14.9	432	50.5	145	17.0	15	1.8	7	0.8	54	6.3	75	8.8	855	100.0
Less Developed Countries	125	22.9	231	42.4	132	24.2	1	0.2	4	0.7	5	0.9	47	8.6	545	100.0

Source: Computed from research data of the 1400 foreign student respondents.

TABLE XXXVI

## PERCEIVED EMPLOYMENT OPPORTUNITIES IN HOME COUNTRY AND WORK PLANS

Home Country	Total	Perceived Employment Opportunities in Home Country										Work Plans in Home Country															
		Stay in U.S.		Excellent		Very Good		Good		Little		Very Little		Already		Government		Private		Own Business		Undecided		Other Plans		Stay in U.S.	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
TOTAL	1,400	91	6.50	534	38.14	341	24.35	297	21.21	96	6.85	34	2.42	5	0.35	721	51.50	318	22.71	119	8.50	15	1.07	112	7.99	115	8.21
ASIA	654	81	12.38	119	18.19	92	14.06	238	36.39	89	13.60	31	4.73	4	0.61	249	38.07	176	26.91	72	11.00	9	1.37	46	7.03	102	15.59
1. India	194	17	8.8	20	10.3	15	7.7	52	32.0	54	27.8	24	12.4	2	1.0	52	26.8	77	39.7	30	15.5	3	1.5	4	2.1	28	14.4
2. Pakistan	36	0	0.0	15	41.7	4	11.1	11	30.6	4	11.1	1	2.8	1	2.8	13	36.1	11	30.6	8	22.2	3	8.3	0	0.0	1	2.8
3. Iran	53	3	5.7	7	13.2	17	32.1	21	39.6	5	9.4	0	0.0	0	0.0	16	30.2	14	26.4	8	15.1	0	0.0	9	16.9	6	11.3
4. China	91	4	4.4	7	7.7	17	18.7	47	51.6	14	15.4	2	2.2	0	0.0	43	47.3	28	30.8	11	12.1	1	1.1	1	1.1	7	7.7
5. South Korea	52	8	15.4	13	25.0	6	11.5	19	36.5	4	7.7	2	3.8	0	0.0	21	40.4	15	28.8	4	7.7	0	0.0	4	7.7	8	15.4
6. Philippines	53	12	22.6	13	24.5	5	9.4	20	37.7	2	3.8	1	1.9	0	0.0	18	34.0	4	7.5	4	7.5	1	1.9	12	22.6	14	26.4
7. Burma	24	6	25.0	11	45.8	2	8.3	5	20.8	0	0.0	0	0.0	0	0.0	16	66.7	2	8.3	0	0.0	0	0.0	0	0.0	6	25.0
8. Thailand	53	5	9.4	9	17.0	13	24.5	22	41.5	2	3.8	1	1.9	1	1.9	34	64.2	8	15.1	3	5.7	1	1.9	2	3.8	5	9.4
9. South Vietnam	22	7	31.8	7	31.8	0	0.0	7	31.8	1	4.5	0	0.0	0	0.0	10	45.5	5	22.7	0	0.0	0	0.0	0	0.0	7	31.8
10. Jordan	45	13	28.9	6	13.3	10	22.2	15	33.3	1	2.2	0	0.0	0	0.0	10	22.2	8	17.8	0	0.0	0	0.0	14	31.1	13	28.9
11. Indonesia	31	6	19.4	11	35.5	3	9.7	9	29.0	2	6.5	0	0.0	0	0.0	16	51.6	4	12.9	4	12.9	0	0.0	0	0.0	7	22.6
AFRICA	372	1	0.26	228	61.29	122	32.79	19	5.10	1	0.26	0	0.0	1	0.26	265	71.23	58	15.59	15	4.09	2	0.53	28	7.52	4	1.07
12. Egypt	52	1	1.9	36	69.2	9	17.3	4	7.7	1	1.9	0	0.0	1	1.9	45	86.5	4	7.7	1	1.9	0	0.0	0	0.0	2	3.8
13. Ghana	40	0	0.0	20	50.0	19	47.5	1	2.5	0	0.0	0	0.0	0	0.0	30	75.0	8	20.0	1	2.5	0	0.0	1	2.5	0	0.0
14. Tunisia	32	0	0.0	19	59.4	13	40.6	0	0.0	0	0.0	0	0.0	0	0.0	20	62.5	6	18.8	2	6.2	0	0.0	4	12.5	0	0.0
15. Morocco	30	0	0.0	15	50.0	13	43.3	2	6.7	0	0.0	0	0.0	0	0.0	21	70.0	6	20.0	1	3.3	0	0.0	2	6.7	0	0.0
16. Algeria	31	0	0.0	20	64.5	8	25.8	3	9.7	0	0.0	0	0.0	0	0.0	21	67.7	4	12.9	2	6.5	0	0.0	4	12.9	0	0.0
17. Nigeria	46	0	0.0	26	56.5	18	39.1	2	4.3	0	0.0	0	0.0	0	0.0	31	67.4	6	13.0	2	4.3	1	2.2	5	10.9	1	2.2
18. Ethiopia	43	0	0.0	33	76.7	10	23.3	0	0.0	0	0.0	0	0.0	0	0.0	35	81.4	6	14.0	0	0.0	1	2.3	0	0.0	1	2.3
19. Libya	34	0	0.0	21	61.8	12	35.3	1	2.9	0	0.0	0	0.0	0	0.0	22	64.7	6	17.6	1	2.9	0	0.0	5	14.7	0	0.0
20. Liberia	34	0	0.0	19	55.9	11	32.4	4	11.8	0	0.0	0	0.0	0	0.0	19	55.9	5	14.7	3	8.8	0	0.0	7	20.6	0	0.0
21. Sudan	30	0	0.0	19	63.3	9	30.0	2	6.7	0	0.0	0	0.0	0	0.0	21	70.0	7	23.3	2	6.7	0	0.0	0	0.0	0	0.0
LATIN AMERICA	374	9	2.40	187	50.00	127	33.95	40	10.69	6	1.60	3	0.79	0	0.0	207	55.34	84	22.45	32	8.55	4	1.06	38	10.16	9	2.40
22. Brazil	52	0	0.0	18	34.6	27	51.9	7	13.5	0	0.0	0	0.0	0	0.0	33	63.5	15	28.8	3	5.8	0	0.0	1	1.9	0	0.0
23. Peru	24	0	0.0	17	70.8	6	25.0	1	4.2	0	0.0	0	0.0	0	0.0	12	50.0	6	25.0	4	16.7	0	0.0	2	8.3	0	0.0
24. Ecuador	36	3	8.3	10	27.8	14	38.9	6	16.7	2	5.6	1	2.8	0	0.0	17	47.2	6	16.7	5	13.9	1	2.8	4	11.1	3	8.3
25. Venezuela	45	0	0.0	28	62.2	10	22.2	5	11.1	1	2.2	1	2.2	0	0.0	23	51.1	11	24.4	6	13.3	1	2.2	4	8.9	0	0.0
26. Bolivia	34	0	0.0	18	52.9	12	35.3	3	8.8	1	2.9	0	0.0	0	0.0	22	64.7	9	26.5	3	8.8	0	0.0	0	0.0	0	0.0
27. Honduras	37	1	2.7	15	40.5	14	37.8	6	16.2	1	2.7	0	0.0	0	0.0	19	51.4	12	32.4	2	5.4	0	0.0	3	8.1	1	2.7
28. Nicaragua	40	1	2.5	21	52.5	14	35.0	4	10.0	0	0.0	0	0.0	0	0.0	21	52.5	11	27.5	4	10.0	0	0.0	3	7.5	1	2.5
29. Paraguay	35	3	8.6	21	60.0	8	22.9	1	2.9	0	0.0	1	2.9	0	0.0	19	54.3	5	14.3	1	2.9	2	5.7	5	14.3	3	8.6
30. Haiti	32	1	3.1	19	59.4	7	21.9	5	15.6	0	0.0	0	0.0	0	0.0	21	65.6	3	9.4	2	6.2	0	0.0	5	15.6	1	3.1
31. D. Republic	39	0	0.0	20	51.3	15	38.5	2	5.1	1	2.6	0	0.0	0	0.0	20	51.3	6	15.4	2	5.1	0	0.0	11	28.2	0	0.0

Source: Computed from research data of the 1400 foreign student respondents.

It is apparent from Table XXXVI that students felt that if they (whether from Asia, Africa, Latin America or from developed or less developed countries) intended to return to their home countries subsequent to their graduation, in most of the cases they would have good chances of getting jobs. Only a small proportion of students felt that their chances would be little.

It may be reasonably argued, using the classical literature from the "Polish Peasant,"<sup>1</sup> that a potent factor in the return of many of the alien students is the emotional ties they have developed through years of socialization with their parents, relatives and cultural institutions within their home society. The concept of territoriality, the longing for the soil of one's birth, also has historical precedence in sociological literature. Again, the returning students tended to be younger in age and had not been away from their families for as long a period as the non-returning group. To be sure, the family ties were not lacking among the non-returning students, but these ties were far from being a dominant factor in their deliberations about return. It was as though they had outgrown any emotional dependency which they might have had on their parents and close kin.<sup>2</sup> The condition of the society to which they did or did not prefer to return should also be considered. The more industrialized the society the greater the probability for internalization of secular norms and values.

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<sup>1</sup>William I. Thomas and Florian Znaniecki, The Polish Peasant in Europe and America (New York, 1927).

<sup>2</sup>Iraj Valipour, "Comparison of Returning and Non-Returning Iranian Students in the United States" (unpub. Ph.D. dissertation, Columbia University, 1961), pp. 116-117.



It may also be argued that an important factor in the return of many of the African students was the prevalence of prejudice and discrimination in the United States. The historical subjugation of the dark-skinned people in the United States has resulted in the world-wide erosion of the United States' image. In many cases, these color-prejudices and overt discriminatory practices also apply to many Africans and Asians, and it is not uncommon for them to suffer humiliating experiences in the United States, especially in the South. The ambiguous role in the North, i.e., the randomness of acceptance and non-acceptance, may be equally devastating to the international student of dark skin. Table XXXVIII reveals that a large proportion of African students, 39 per cent, and 13 per cent of the Asian students, planned to return to their home countries as a result of color-prejudices and discrimination.

A recent news article is illustrative. An African student at the University of Tulsa, killed in an automobile accident, was buried in a Catholic cemetery in Tulsa, although the student was a Baptist, after being refused burial elsewhere, apparently because of racial policies. The incident arose after the family of a university student offered to provide a burial plot it owned and was refused permission to transfer ownership of the plot by the cemetery management.<sup>3</sup>

Although incidents such as cited above may not be typical, the occurrence of such is frequent enough to dissuade many international students. Their perception of the American dream is viewed from such vantage points and compounded with enough frequency to suggest their return home.

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<sup>3</sup>The Daily O'Collegian, April 9, 1969, p. 7.

In most of the instances, students listed economic rewards, better living conditions, and better opportunities in this country as their chief reasons to remain here. On the other hand, the largest proportion of students from all 31 countries reported that if they desired to return to their home countries they would have promising chances of getting suitable jobs (Table XXXVI). Students from less developed as well as from African countries where employment opportunities seem to be excellent and where their growing economies can absorb foreign graduates, wish to stay in the United States due to better economic opportunities. This may suggest that these students are attracted to the United States not because they can not be gainfully employed in their home countries, but because of differential comparative considerations. It is the comparison of the foreign students' situation in his home country with the situation of persons with similar qualifications in the United States that enters into their decision. The comparison of differential factors that is made by non-returning foreign students may be either an objective or subjective comparison. Since general information is available about the economic conditions in various Asian, African and Latin American countries, and since the data indicate why students from these regions want to stay in the United States, one can assume the differential comparison that is made by these students is made in relatively objective terms. Factors such as income differential, better economic opportunities, and better living conditions influence foreign students' plans to remain here. The projected relative deprivations that they would experience subsequent to their return does not fit their new self-images and their internalized heightened expectations of the professionally trained.

This does not mean that the migration of students, scholars, and researchers is only prompted by the comparison of differential factors such as income and other economic differentials. The push and pull factors also enter into the decision of these people. Push factors would include such typical incidents as political crises, military coups, university crises, racial, religious, ideological or political persecutions, the loss of a war or a foreign invasion. According to Oteiza,<sup>4</sup> though these push factors produce a sudden increase in the emigration flow, he does not call this a problem of "brain drain." He argues that this type of situation does not result from decisions made by people on more or less rational economic grounds but these decisions may be considered accidental. However, when an important national project in some highly developed country demands many people with highly specialized qualifications and when people from less developed countries migrate, this type of situation Oteiza calls a case of "brain drain."

In this analysis it is easy to distinguish push and pull factors besides the comparison of differential factors which enter into the decision of foreign students either to stay here or return home. Table XVI shows that students from the less developed countries return to their homes whereas the students from the developed countries plan to stay in the United States. While manpower shortage exists in several of the developed countries and many technically trained people are needed to fill the available positions, the uncertainty of many students concerning job opportunities in developed countries of Asia and Latin America is not at all ill-founded. More students come out of the

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<sup>4</sup>Enrique Oteiza, "A Differential Push-Pull Approach," The Brain Drain, ed. Walter Adams (New York, 1968), pp. 131-132.

institutions of higher learning each year than the sluggish economy of many of the developed countries is prepared to absorb. However, in the case of the less developed countries, pull factors such as economic opportunities, are very attractive and students in most of the instances want to return home.

Table XXVII shows the relationship between the field of study and the likelihood of staying here or returning to home country. It appears that a large proportion of students whose major fields of study are agriculture and engineering plan to return home whereas students majoring in other fields wish to stay in the United States. This may suggest that agriculture and engineering fields are in great demand in many of the Asian, African and Latin American countries in order to build their economies and, therefore, it is easy for students to get jobs in these areas. However, students in other areas do not have marketable skills in their home countries; therefore, they are pulled to the United States.

Table XXXVII suggests a relationship between the employment status and the likelihood of staying in the United States or returning to home country. Table XXXVII indicates that a large proportion of students and government employees prior to their coming to the United States planned to return to their home countries, whereas private employees, those who owned a business and were unemployed in their home countries, intended to remain here.

Table XXXVIII shows a relationship between the number of years employed in home countries and the likelihood of returning home or staying in this country. Table XXXVIII reveals that a large proportion of students who were employed in their home countries for one or two years prior to their coming to the United States planned to stay here

TABLE XXXVII

EMPLOYMENT STATUS OF FOREIGN STUDENTS IN HOME COUNTRIES PRIOR TO THEIR  
COMING TO THE UNITED STATES AND POST-EDUCATION PLANS\*

Plans	Student		Government Employee		Private Employee		Owned a Business		Unemployed		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Return home immediately	403	42.1	119	12.4	45	4.7	2	0.7	1	0.1	570	59.6
Stay in U.S. permanently	256	26.8	52	5.4	52	4.9	25	2.6	7	0.7	392	40.4
Total	659	68.9	171	17.9	97	9.6	27	2.8	8	0.8	962	100.0

Source: Computed from research data of the 1400 foreign student respondents.

\*438 students had other plans such as temporary training period in the United States, tentative plans to go to other countries, or undecided relative to post-education plans.

1.  $X^2 = 52.50166$        $df = 4$        $p < 0.001$       Result: Reject the null hypothesis of no difference since  $X_{cal}^2 > X_{tab}^2$  at 0.001 level of significance.

2. Pearson's Contingency Coefficient  $C = 0.2273$

TABLE XXXVIII  
 FOREIGN STUDENTS' YEARS OF EMPLOYMENT IN  
 HOME COUNTRIES AND POST-EDUCATION PLANS\*

Plans	1 Year		2 Years		3 Years		4 and More Years		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Return home immediately	30	10.2	28	9.6	32	10.9	76	25.9	166	56.7
Stay in U.S. permanently	51	17.4	38	13.0	11	3.8	27	9.2	127	43.3
Total	81	27.6	66	22.5	43	14.7	103	35.2	293	100.0

Source: Computed from research data of the 1400 foreign student respondents.

\*Other 1,107 respondents are not included here because they were students in their home countries and others had other plans such as temporary training period in the United States, tentative plans to go to other countries, or undecided relative to post-education plans.

1.  $\chi^2 = 35.97226$        $df = 3$        $p \leq 0.001$       Result: Reject the null hypothesis of no difference since  $\chi_{cal}^2 > \chi_{tab}^2$  at 0.001 level of significance.

2. Pearson's Contingency Coefficient  $C = 0.3307$

whereas those who worked for three years or more wanted to return to their home countries.

Table XXXIX reveals that a large proportion of students who were satisfied with the jobs they held in their home countries, planned to return home whereas those who were less satisfied or dissatisfied planned to remain here. A large proportion of students who obtained their travel documents within a month planned to return to their home countries, whereas a large proportion of those who had delays in getting their documents decided to stay in this country (Table XL).

One must not forget the emergence of the revolution of expectations and anticipations commensurate with new statuses and the sensed deprivation that would attend many of the students, especially from the developed countries, if they return to their home countries. In other words, their new self-concept would not be fulfilled by commensurate rewards as a result of their resocialization in the United States.

The cross-cultural experiences which alien students have in the United States contribute to the revolution of expectations. The young foreign students who have spent many years in the United States and have subsequently developed a taste for its material affluence and, more importantly perhaps, for its moral and democratic traditions are bound to feel less satisfied with the status quo and, particularly, with the slow pace of economic growth and social progress in their home countries. Here enter such factors as the individuals' aspirations, attitudes, and motives besides economic, demographic, cultural and political

TABLE XXXIX

FOREIGN STUDENTS' JOB SATISFACTION IN THEIR HOME COUNTRIES  
AND POST-EDUCATION PLANS

Plans	Satisfied		Satisfied		Satisfied		Dissatisfied		Dissatisfied		Total	
	Satisfied Very Much No.	%	Pretty Much No.	%	a Little No.	%	a Little No.	%	Pretty and Very Much No.	%	No.	%
Return home immediately	82	28.0	48	16.4	25	8.5	3	1.0	9	3.1	167	57.0
Stay in U.S. permanently	57	19.5	21	7.2	26	8.9	11	3.8	11	3.8	126	43.0
Total	139	47.4	69	23.5	51	17.4	14	4.8	20	6.8	293	100.0

Source: Computed from research data of the 1400 foreign student respondents.

1.  $X^2 = 14.39736$      $df = 4$      $p < 0.01$     Result: Reject the null hypothesis of no difference since  $X_{cal}^2 > X_{tab}^2$  at 0.01 level of significance.

2. Pearsons' Contingency Coefficient  $C = 0.2164$



TABLE XL

WAITING PERIOD FOR GETTING TRAVEL DOCUMENTS IN HOME COUNTRIES  
AND POST-EDUCATION PLANS\*

Plans	Less Than 1 Month		1 Month		2 Months		3 Months		4 or More Months		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Return home immediately	250	26.2	217	22.4	88	9.2	5	0.5	10	1.0	570	59.3
Stay in U.S. permanently	154	16.1	95	9.9	91	9.5	31	3.1	21	2.0	392	40.7
Total	404	42.3	312	32.3	179	18.7	36	3.7	31	3.0	962	100.0

Source: Computed from research data of the respondents in this study.

\*438 students had other plans such as temporary training period in the United States, tentative plans to go to other countries, or undecided relative to post-education plans.

1.  $X^2 = 62.45076$        $df = 4$        $p_2 < 0.001$       Result: Reject the null hypothesis of no difference since  $X_{cal}^2 > X_{tab}^2$  at 0.001 level of significance.

2. Pearson's Contingency Coefficient  $C = 0.2467$

factors as suggested by Petersen<sup>5</sup> in the decision of foreign students as to why they want to remain here.

We have suggested that economic, personal and demographic factors are important contributors to the decision of the student to return home or remain in this country. These are based on push-pull, differential comparative considerations, and the individual's aspirations and motivations. Other variables of considerable importance would include social, cultural and political factors. The descriptive role of these phenomena in the decision making process follows.

Table XXIX shows that a very small proportion of students (8) from Asia, 1.2 per cent, and 0.5 per cent (2) from Latin America had married American girls, and this was their chief reason for staying in this country. Since 1966, immigration laws have been liberalized and now it is less difficult to get a permanent visa. Before 1966, the restrictions of the quota system made it very difficult to get an immigrant visa. One had to wait for several years before one could get his status adjusted. But, marriage to an American citizen facilitated qualification for a permanent visa.

In the study sample, intermarriages between African students and the American girls are negligible. Marriages between African students and American negroes can easily take place because of the racial identity, but such marriages are not found in this sample. Perhaps this may be due to socio-economic stereotypes that American negroes hold of Africans. Also, it may be the stereotype the African students hold of the degradation imposed on the American negro in his own country.

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<sup>5</sup>William Petersen, "A General Typology of Migration," Population and Society, ed. Charles B. Nam (Boston, 1968), pp. 288-297.

It is interesting to observe the country of origin of students reporting their marriage to an American citizen as their chief reason for staying in the United States. These students came from India, Pakistan, Iran, China and Venezuela. In all these cases, students came from the developed countries of Asia and Latin America (Table XXVIII).

The frequency of intermarriage<sup>6</sup> with American citizens has, indeed, been comparatively high among the Iranians whose Mediterranean physical features made them racially inconspicuous in the United States. There is reason to believe that marriage plays a very important role in the Iranian students' dispositions to remain in the United States, and this is perhaps the most significantly differentiating factor which is identified in the present comparison of the returning and non-returning groups. It can be reasonably argued that many non-returning students are able to develop new emotional attachments through marriage which to some degree mitigates whatever strong family ties they might have had prior to being married. Marriage with an American citizen also has the advantage of making it possible for the alien students to establish permanent residence which can relieve them from the pressure of the United States immigration requirements to maintain the status of a bona fide student.<sup>7</sup> Consequently, the married students are under no pressure to leave the United States after their course of studies is completed.

Obviously, many of the alien students who are married have added incentives to remain in the United States; more so if their American

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<sup>6</sup>Valipour, pp. 116-120.

<sup>7</sup>The U. S. Immigration and Naturalization Service requires that all alien students should carry a full load of study which is generally defined as a minimum of twelve points per semester.

wives are reluctant to live in a non-western country, still lacking in many amenities of modern life. And, even if the wives are favorably inclined to accompany their husbands back to their home countries, the husbands are still faced with the added burden of helping their wives adjust to an unfamiliar culture. Among other things, this would entail additional expenses for maintaining the minimal living standards which the average American housewives are accustomed to.

Presence of children might further complicate the return problems of married students. Sudden transfer of young children to a new cultural setting can give rise to many educational and adjustment problems which some parents may feel reluctant to face.

In some cases, alien students have an escapist attitude, that is, they want to get away from unfavorable and undesirable conditions in their home countries. They may want to remain in the United States permanently but are afraid they would be vulnerable to military service. They therefore try to prolong their attendance in colleges and universities. Prolonged school attendance can serve a good pretext for extending their sojourn in the United States.

A very small proportion of the students, 0.3 per cent, from Asia reported unstable political situations at home as their chief reason for staying in this country (Table XXIX). It is surprising to note that only 2 students, or 1.0 per cent, of the Indian students from the entire student population sampled, reported unstable political situation at home. Since India became independent, there have been no military coups, no duly elected government has ever been overthrown as has happened in many of the emerging nations of Asia, Africa and Latin America. Perhaps what these students had in mind was the dissolution of state governments

where in several states President rule had been declared. This is due to the parliamentary system that India follows. The central government has been most stable. A party under the parliamentary system can be in power so long as it enjoys the majority in the legislative assembly. Sometimes elected members do cross the floor and join other parties which weakens the majority of the ruling party and gives the majority to other parties. Perhaps this is what the Indian students meant when they stated an unstable political situation at home. In these instances, the students are belligerently critical of the order of things in their home country. The political structure may seem hopeless to them. The economic order may appear limiting to their development. Hence, they may decide to stay in this country which they perceive as providing them better economical and governmental systems in which to develop.

There is reason to believe that a good many of the foreign students in the United States may have stereotypical perceptions of the conditions that beset their home countries. They may perceive such conditions at home as: (1) widespread graft and corruption in the official circles, (2) political oppression and curtailment of individual rights and procedures, (3) nepotism and string pulling, creating unfavorable working conditions for the returnees, and (4) high cost of maintaining a decent standard of living.<sup>8</sup>

Certainly, the perceptions held by many of the foreign students, no matter how stereotypical or erroneous they may be, play an important part in the decisions they may make concerning their return to their home countries. It may be that some respondents were not fully aware of

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<sup>8</sup>Valipour, pp. 33-56.

the reasons that tended to keep them in the United States. Advancing stereotyped notions and popular explanations, such as "revolution of expectations," might simply serve to facilitate for these students the process of rationalizing their non-return behavior.

One overriding factor stands out in the decision to remain. The state of the American economy and affluent society is a potent factor which enters into the decision of many of the foreign students who want to stay here. Comparatively, the United States is a land of plenty. The need for trained and qualified people is very great. The supply of trained people is inadequate. The needs of this country for persons having specialized skills or cultural accomplishments are critical.

Some students are aware of the great opportunities that are available in this country before they come here. Other students appear to make the discovery during their sojourn in the United States. In this case, the student is in a dilemma. He knows that his own country needs him but he has discovered that the United States needs him too and rewards him better.

Some students come to the United States because they want to take a look at this country which holds such an important place in the world's affairs. Some may wish to go to school in a country which has outstanding schools in many fields of study.

Though manpower shortages exist in many of the developed and less developed countries of Asia, Africa and Latin America, the present laissez-faire approach on the part of the several of these governments regarding the process and outcome of the foreign study has contributed much to the existing manpower shortages in these countries.

### Impact of Brain Drain

Though the subject of "brain drain" in recent years has received national as well as international attention, current wide gaps in knowledge regarding international migration exist. There is wide variation in national needs and the level of development from country to country. The statistical records do not show how many students, scholars and researchers, or even people from every walk of life, have migrated from one country to another. Not a single country has complete information on the emigration of its people. Also, information is not available on the number of people returning home after their sojourn abroad. Again, data on the length of stay abroad, for what purpose, or under what visa people stay, is not available. The records are fragmentary and insufficient to draw generalizations. Various governments have now realized the problem of "brain drain" and have begun to compile information and also take restrictive remedial measures. The latter should provide some basis for accurately assessing spatial movements and the economic absorptive capacity of countries of origin. Present information is largely confined to the stories from politicians, scholars, especially the economists and public officials, that students, scholars and researchers from developed and less developed countries should return to their home countries and help build their sluggish economies.

There is a tendency to lump all countries together--developed and underdeveloped countries--and draw false conclusions. It may be assumed that the differences between countries are very great; that sufficient facts are not known regarding higher educational output and the status of professionals, especially scientists, engineers and doctors, in relation to the total economy and to the total society. This

insufficiency of knowledge relates to both the developed and the less developed countries, but especially to the latter. Therefore, there is urgent need for ongoing research on scientific manpower and the migration in order to fill the gap in our existing knowledge.

#### Less Developed Countries

Table XLI reveals that the largest proportion, 30 per cent, of the Asian students wishes to remain in the United States for a period of two to five years, 25 per cent want to stay here for 18 months on practical training, and 16 per cent wish to stay here permanently. The largest proportion, 29 per cent, of the African students wants to stay here for 18 months, and a very small proportion, 1 per cent wants to remain here permanently. The largest proportion, 39 per cent, of the Latin American students wants to stay here for 18 months, and a small proportion, 2 per cent, wants to stay here permanently. It may be pointed out here that a larger proportion of African and Latin American students plan to return home whereas a small proportion of Asian students wish to return home.

In Table XLII a large proportion, 37 per cent, of the Asian students from the developed countries plan to remain here and a small proportion, 14 per cent, want to stay here permanently. On the other hand, a large proportion, 47 per cent, of the students from the less developed countries want to return to their home countries. The African column suggests that the large proportion of students from the developed as well as the less developed countries plan to return home, and only a very small proportion of the students wish to remain here permanently. The Latin American column also reveals that a large proportion of students from the developed as well as the less developed countries plan



TABLE XLI

FOREIGN STUDENTS' PLANS EITHER TO RETURN  
HOME OR STAY IN THE UNITED STATES

Plans	ASIA		AFRICA		LATIN AMERICA	
	No.	%	No.	%	No.	%
Undecided	11	1.7	0	0.0	0	0.0
Return home immediately	166	25.4	227	61.7	177	46.8
Stay for 18 months	165	25.2	106	28.8	146	38.6
Stay in U.S. permanently	104	15.9	5	1.4	9	2.4
Go to some other country	8	1.2	0	0.0	2	0.5
Stay for 2-5 years in U.S.	200	30.6	30	8.2	44	11.6
Total	654	100.0	368	100.0	378	100.0

Source: Computed from research data of the 1400 foreign student respondents.

TABLE XLII

ASIAN, AFRICAN, AND LATIN AMERICAN STUDENTS' PLANS FOR RETURNING HOME OR STAYING  
IN THE UNITED STATES

Plans	ASIA				AFRICA				LATIN AMERICA			
	Developed		Less Developed		Developed		Less Developed		Developed		Less Developed	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Undecided	10	2.1	1	0.6	0	0.0	0	0.0	0	0.0	0	0.0
Return Home Immediately	84	17.5	82	46.9	108	58.4	119	65.0	97	50.8	80	42.8
Stay for 18 Months	133	27.8	32	18.3	62	33.5	44	24.0	76	39.8	70	37.4
Stay in U.S. Permanently	65	13.6	39	22.3	3	1.6	2	1.1	3	1.6	6	3.2
Go to Some Other Country	8	1.7	0	0.0	0	0.0	0	0.0	1	0.5	1	0.5
Stay in U.S. for 2-5 Years	179	37.4	21	12.0	12	6.5	18	9.8	14	7.3	30	16.0
Total	479	100.0	175	100.0	185	100.0	183	100.0	191	100.0	187	100.0

Source: Computed from research data of the 1400 foreign student respondents.

to return to their home countries and a very small proportion of the students want to stay in the United States.

Table XLIII suggests that a large proportion, 52 per cent, of the students from the less developed countries plan to return home whereas a small proportion, 9 per cent, wish to remain here permanently. Another 13 per cent want to stay here for a period of two to five years. On the other hand, 34 per cent of the students from the developed countries plan to return home, 24 per cent want to remain here for two to five years, and 8 per cent want to stay here permanently.

It is a very small proportion, 8 per cent, of the students from the less developed countries that plan to stay in the United States permanently. Another 13 per cent want to stay in this country for two to five years. Here, the question of gain or loss enters into the picture. Some people may argue that the students who decide to stay here permanently from the less developed countries constitute a real loss to their home countries.

One must not generalize about attitudes derived from questionnaires. Verbalized pre-dispositions (attitudes) are not always overtly expressed. It is uncertain whether the proportion of students who say they will stay will in fact actually remain in the United States. The past pattern can be obtained from the annual report of the Immigration and Naturalization Service. According to Table XLIV, based on the Immigration and Naturalization Service Report of 1967, a total of 11,372 students, scholars, researchers, and trainees holding H-1, H-3, J-1 and F-1 visas adjusted their status from temporary non-immigrants to immigrants. A larger number, 8,904, of these people came from Asian countries, whereas 254 came from Africa and 678 came from Latin America.

TABLE XLIII

FOREIGN STUDENTS FROM LESS DEVELOPED AND DEVELOPED COUNTRIES AND THEIR PLANS  
FOR RETURNING HOME OR STAYING IN THE UNITED STATES

Country	Undecided		Return Home Immediately		Stay for 18 Months		Stay in U.S. Permanently		Go to Some Other Country		Stay for 2-5 Years in U.S.		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Developed Countries	10	1.2	289	33.8	271	31.7	71	8.3	9	1.1	205	24.0	855	100.0
Less Developed Countries	1	0.2	281	51.6	146	26.8	47	8.6	1	0.2	69	12.7	545	100.0

Source: Computed from research data of the 1400 foreign student respondents.

TABLE XLIV

TEMPORARY NONIMMIGRANTS (H-1, H-3, J-1, AND F-1) WHO  
CHANGED TO IMMIGRANT STATUS UNDER SECTION 245 OF  
THE IMMIGRATION AND NATIONALITY ACT, BY COUNTRY  
OF LAST RESIDENCE, FISCAL YEAR 1967\*

Country	Total	Visas			
		H-1	H-3	J-1	F-1
ALL COUNTRIES	11,372	256	174	985	9,957
TOTAL EUROPE	1,385	96	61	230	998
TOTAL ASIA	8,904	85	87	659	8,073
1. Burma	32	1	-	4	27
2. India	1,816	16	21	70	1,709
3. Indonesia	24	-	-	1	23
4. Iran	464	-	1	64	399
5. Jordan	76	-	-	4	72
6. Korea	927	5	12	41	869
7. Pakistan	118	-	-	16	102
8. Philippines	686	8	12	267	399
9. China	2,743	13	23	78	2,629
10. Thailand	62	-	-	4	58
11. Vietnam	26	-	-	5	21
TOTAL AFRICA	254	7	2	23	222
12. Algeria	1	-	-	-	1
13. Ethiopia	-	-	-	-	-
14. Ghana	19	-	-	1	18
15. Liberia	8	-	-	-	8
16. Libya	3	-	-	-	3
17. Morocco	14	3	-	-	11
18. Nigeria	51	-	1	-	50
19. Sudan	4	-	-	-	4
20. Tunisia	1	-	-	-	1
21. U.A.R.	84	2	-	19	63
TOTAL NORTH AMERICA	507	48	16	45	398
TOTAL SOUTH AMERICA	171	5	4	17	145
22. Dom. Republic	8	1	-	-	7
23. Haiti	-	-	-	-	-
24. Honduras	13	-	-	-	13
25. Nicaragua	4	-	1	1	2
26. Bolivia	11	1	-	1	9
27. Brazil	36	-	1	-	35
28. Ecuador	5	-	-	-	5
29. Paraguay	1	-	-	-	1
30. Peru	14	-	1	2	11
31. Venezuela	30	2	1	-	27

Source: Adapted from U.S., Department of Justice, Immigration and Naturalization Service, Annual Indicator of the In-Migration into the United States of Aliens in Professional and Related Occupations, Fiscal Year 1967 (Washington, D. C., 1968), Chart 13.

- \*Explanation:
- F-1 A qualified alien student.
  - H-1 An alien of distinguished merit, coming temporarily to perform temporary service.
  - H-3 An alien coming temporarily as an industrial trainee.
  - J-1 An alien coming to the United States temporarily to participate in a program designated by the Secretary of State.

Tentatively, our findings reported in Tables XLI through XLIII confirm the above reported findings. It is the Asian students, and more so the students from the developed countries, who decide to stay in this country permanently.

It is interesting to observe that of the total holding H-1, H-3, J-1 and F-1 visas, the larger number of people, 9,957, were with F-1 (student) visa. The distribution of these students by occupation and by country of origin is tabulated in Table XLV. The largest number of students who became immigrants in this country, 2,554, were engineers by training.

Figure 1 shows that the number of students entering the United States on F-visas has been increasing sharply since 1963. In 1963, 38,991 students were admitted on F-visas and in 1967, 63,370. However, 12 per cent of the students in 1963 became permanent residents of this country and in 1967, 16 per cent of the students adjusted their status.

Table XLVI gives information about all the people, including students holding H-1, H-3, J-1 and F-1 visas who became immigrants in this country. There were 361,972 people in 1967 who adjusted their status.

After all these facts and figures have been presented, it is the students, especially the professionals from the less developed countries, that concerns many in this country. Most of the students from less developed countries do return to their home countries with the net result of "brain gain." So it is not a real concern of "brain drain" to these countries. Since most of the students from the less developed countries are sponsored either by their governments or the United States government, they do return to their home countries. Even if they want to stay here they would not be so permitted because of their government

TABLE XLV

ADJUSTMENT OF STATUS FROM F-1\* NONIMMIGRANTS TO IMMIGRANTS, BY OCCUPATION AND BY COUNTRY OF LAST RESIDENCE,  
FISCAL YEAR 1967

Country	Total	Total Natural Scientists	Total Social Scientists	Total Physi- cians, Surgeons, Dentists	Total Nurses	Total Other Medical and Related Fields	Total Engineers	Total Others Technology and Related Fields	Total Editors and Reporters	Total Lawyers and Judges	Total Professors and Instructors Natural Sciences	Total Professors and Instructors Social Sciences	Total Professors and Instructors Engineering	Total Other Professors and Instructors	Total Religious Workers	Total Social and Welfare Workers	Total Elementary & Secondary Teachers	Total Other Pro- fessional, Techni- cal & Kindred Workers	Total Students	Total All Others
ALL COUNTRIES	9,957	677	125	129	75	241	2,551	534	30	4	267	107	83	252	160	74	770	1,078	561	2,236
TOTAL EUROPE	998	39	17	33	8	7	154	41	1	-	13	5	3	29	73	7	83	68	113	324
TOTAL ASIA	8,073	603	98	105	54	212	2,276	446	27	4	231	98	75	203	60	57	587	966	332	1,639
1. Burma	27	3	1	-	-	2	5	1	-	-	2	-	1	2	-	-	-	-	-	7
2. India	1,709	129	16	15	2	25	869	67	7	1	66	26	16	40	6	13	88	171	21	131
3. Indonesia	23	2	1	-	1	3	2	-	-	-	-	-	-	1	-	-	3	3	2	4
4. Iran	399	20	2	14	1	11	108	23	-	-	1	1	2	3	-	1	27	21	22	142
5. Jordan	72	1	1	-	-	-	10	1	-	-	2	3	-	3	-	-	7	3	8	33
6. Korea	869	64	10	14	5	27	87	57	3	1	23	28	7	32	12	8	75	103	40	273
7. Pakistan	102	12	-	1	1	2	29	10	-	-	2	1	-	3	-	-	5	9	4	23
8. Philippines	399	18	3	9	18	29	60	24	4	-	4	4	-	9	14	4	35	39	20	105
9. China	2,629	224	44	19	11	47	768	145	4	2	96	22	42	73	12	9	201	465	62	383
10. Thailand	58	1	1	2	1	1	6	2	1	-	-	-	-	-	-	-	4	1	7	31
11. Vietnam	21	2	1	2	-	-	4	1	-	-	-	-	-	1	-	-	2	1	3	4
TOTAL AFRICA	222	8	5	2	4	10	32	17	-	-	4	2	-	7	7	3	18	11	24	68
12. Algeria	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13. Ethiopia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14. Ghana	18	1	1	1	1	1	-	1	-	-	-	-	-	1	1	-	1	1	3	5
15. Liberia	8	-	-	-	1	-	-	3	-	-	-	-	-	-	1	-	-	-	1	2
16. Libya	3	-	-	-	-	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-
17. Morocco	11	1	-	-	-	-	1	-	-	-	-	-	-	-	1	-	1	-	3	4
18. Nigeria	50	2	-	-	1	4	10	4	-	-	-	-	-	-	-	-	5	3	6	15
19. Sudan	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	3
20. Tunisia	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
21. U.A.R.	63	2	4	1	1	2	13	6	-	-	2	1	-	3	1	2	5	3	2	15
TOTAL NORTH AMERICA	398	22	3	6	6	8	77	22	-	-	15	2	5	9	12	3	43	19	45	101
TOTAL SOUTH AMERICA	145	3	-	2	2	2	10	6	-	-	1	-	-	1	2	1	18	6	33	58
22. Dom. Republic	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	3	2
23. Haiti	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24. Honduras	13	-	-	-	-	-	-	1	-	-	-	-	-	-	2	-	1	1	6	2
25. Nicaragua	2	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-
26. Bolivia	9	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	6
27. Brazil	35	-	-	1	-	1	4	1	-	-	1	-	-	1	1	-	3	1	11	9
28. Ecuador	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	3	1
29. Paraguay	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
30. Peru	11	1	-	-	1	-	-	1	-	-	-	-	-	-	-	-	4	-	2	2
31. Venezuela	27	1	-	-	-	-	3	1	-	-	-	-	-	-	1	1	2	-	4	14
TOTAL OCEANIA	121	2	2	1	1	2	5	2	2	-	3	-	-	3	6	3	21	8	14	46

Source: Adapted from U.S., Department of Justice, Immigration and Naturalization Service, Annual Indicator of the In-Migration into the United States of Aliens in Professional and Related Occupations, Fiscal Year 1967 (Washington, D. C., 1968), Chart 24.

\*F-1 visa stands for a qualified alien student.

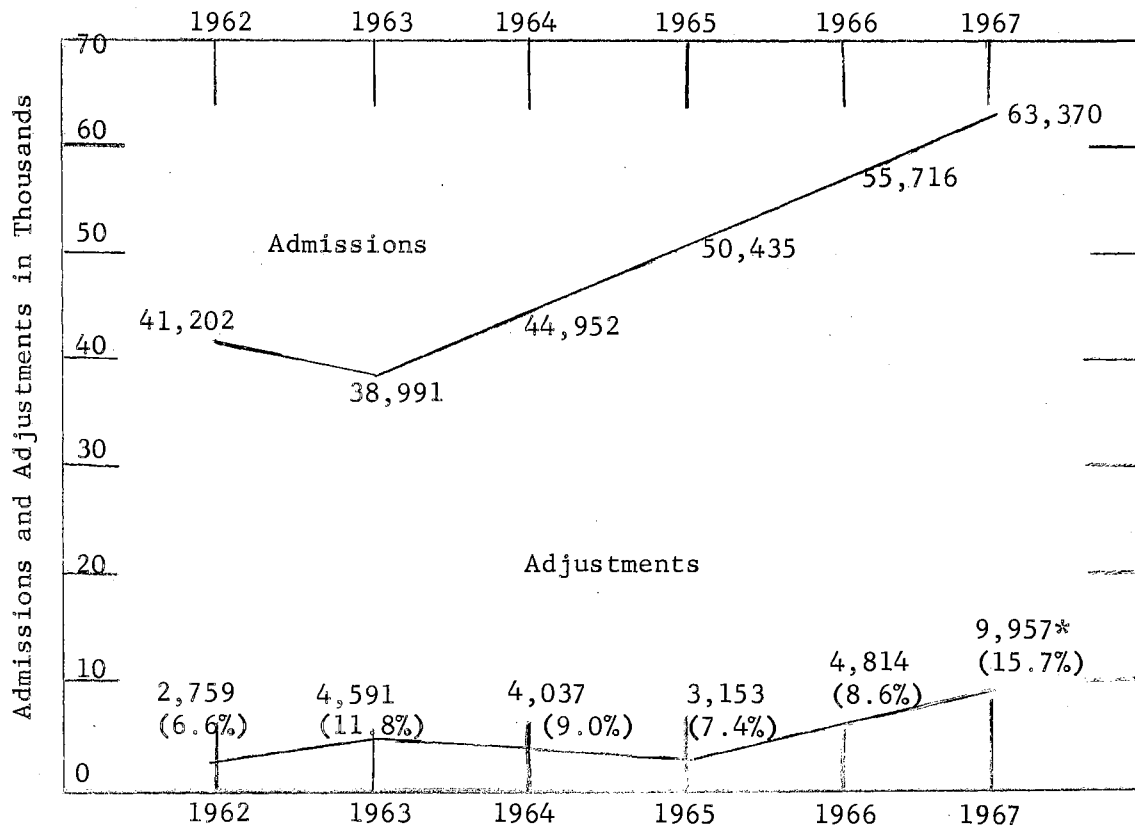


Figure 1. Number of Students ("F Visas") Admitted to the United States and Number of Students Who Adjusted Status Fiscal Years 1962 - 1967

Source: U.S., Department of Justice, Immigration and Naturalization Service, Annual Indicator of the In-Migration into the United States of Aliens in Professional and Related Occupations Fiscal Year 1967 (Washington, D. C., 1968), Chart 23.

\*Includes immigrants who entered the United States and temporary visitors who adjusted status under Section 245 of the Immigration and Nationality Act.



TABLE XLVI

IMMIGRANTS ADMITTED AS PROFESSIONAL, TECHNICAL, AND KINDRED WORKERS, AND ALL OTHER IMMIGRANTS, BY COUNTRY OR REGION OF LAST PERMANENT RESIDENCE AND OCCUPATION, FISCAL YEAR 1967

Country	Total	Total Natural Scientists	Total Social Scientists	Total Physicians, Surgeons, Dentists	Total Nurses	Total Other Medical and Related Fields	Total Engineers	Total Others Technology and Related Fields	Total Editors and Reporters	Total Lawyers and Judges	Total Professors and Instructors Natural Sciences	Total Professors and Instructors Social Sciences	Total Professors and Instructors Engineering	Total Other Professors and Instructors	Total Religious Workers	Total Social and Welfare Workers	Total Elementary & Secondary Teachers (not classified elsewhere)	Total Other Professional, Technical & Kindred Workers	Total Students	Total All Others
ALL COUNTRIES	361,972	2,369	459	3,557	4,944	1,944	8,682	5,400	268	257	607	241	140	953	1,754	355	5,280	4,442	30,188	290,132
TOTAL EUROPE	129,266	834	170	908	1,587	526	3,283	1,589	84	96	143	37	17	278	670	55	1,418	1,424	7,079	109,068
TOTAL ASIA	57,083	890	147	1,217	792	528	3,151	1,156	59	42	322	129	97	355	201	103	1,648	1,545	5,358	39,343
1. Burma	130	5	2	5	-	2	14	3	-	-	2	1	1	2	-	-	5	1	16	71
2. India	4,129	206	20	89	20	35	1,044	107	12	3	94	35	23	67	15	21	185	228	138	1,787
3. Indonesia	172	5	2	6	3	6	9	3	1	-	2	1	2	1	5	1	5	7	12	101
4. Iran	1,254	27	5	125	23	18	131	48	-	1	3	3	2	7	-	-	37	34	72	718
5. Jordan	1,390	3	1	5	5	-	20	12	-	-	2	3	-	4	-	-	29	8	205	1,091
6. Korea	3,845	69	14	75	26	43	100	73	7	1	21	28	8	45	20	14	115	132	169	2,885
7. Pakistan	330	16	1	14	2	3	56	17	1	-	2	2	1	8	-	3	12	20	15	157
8. Philippines	10,336	85	13	612	445	240	346	196	11	29	22	6	2	27	29	17	342	95	906	6,913
9. China	4,213	208	44	35	34	39	685	125	7	2	101	23	44	88	15	7	220	432	249	1,855
10. Thailand	428	1	1	8	80	2	13	8	1	-	-	-	-	-	-	1	7	2	14	290
11. Vietnam	432	3	2	2	3	-	6	2	-	-	-	-	-	6	18	1	8	3	25	353
TOTAL AFRICA	2,577	44	10	87	41	31	108	90	3	1	10	7	2	25	36	8	103	62	163	1,746
12. Algeria	25	1	-	3	-	-	-	-	-	-	-	-	-	1	-	-	3	2	1	14
13. Ethiopia	100	-	-	3	-	3	3	3	-	-	-	-	-	-	2	-	5	1	6	74
14. Ghana	111	3	1	8	5	2	4	4	-	-	1	-	-	2	3	1	6	2	6	63
15. Liberia	97	-	2	6	-	3	2	8	-	-	1	-	-	-	2	1	1	2	9	60
16. Libya	77	-	-	2	1	2	-	3	-	-	1	-	-	-	-	-	-	2	1	65
17. Morocco	266	2	-	2	-	1	5	2	1	-	-	-	-	1	1	-	6	7	24	214
18. Nigeria	143	3	-	-	15	6	17	7	-	-	1	-	-	3	2	-	14	3	7	65
19. Sudan	33	-	-	2	-	1	1	-	-	-	-	-	-	-	-	-	2	2	1	24
20. Tunisia	35	1	-	3	-	1	-	1	-	-	-	-	-	1	-	-	1	1	2	24
21. U.A.R.	560	18	4	26	1	6	31	25	-	-	2	2	2	10	2	3	17	11	48	352
TOTAL NORTH AMERICA	151,673	456	98	928	2,276	744	1,749	2,228	96	98	97	52	19	238	732	167	1,710	1,147	15,753	123,085
TOTAL SOUTH AMERICA	18,562	97	24	393	189	95	326	295	19	18	16	9	3	43	82	16	322	179	1,652	14,784
22. Dom. Republic	11,560	16	1	39	31	6	16	51	18	9	-	1	1	5	47	1	44	14	1,811	9,449
23. Haiti	3,317	3	1	41	28	15	13	45	1	13	-	-	-	4	3	1	25	14	570	2,540
24. Honduras	1,557	-	-	6	11	4	3	7	1	-	-	-	-	2	8	-	19	4	208	1,284
25. Nicaragua	723	1	-	9	8	2	1	5	-	-	-	-	-	2	8	-	9	2	124	552
26. Bolivia	615	4	2	20	11	5	15	12	-	1	-	-	1	1	1	-	16	5	74	447
27. Brazil	2,544	14	4	26	13	14	54	37	1	4	3	2	-	5	13	2	60	32	228	2,032
28. Ecuador	2,709	4	2	19	17	3	16	31	2	1	-	1	-	2	17	1	35	10	366	2,182
29. Paraguay	110	2	-	9	-	-	1	2	-	-	-	-	-	-	1	-	6	-	9	80
30. Peru	1,728	3	1	29	16	7	22	21	-	-	-	-	-	4	6	2	23	13	99	1,482
31. Venezuela	1,189	9	3	17	3	2	22	26	2	1	1	-	-	2	5	3	15	11	89	978
TOTAL OCEANIA	2,811	48	10	24	59	20	65	42	7	2	19	7	2	14	33	6	85	183	2,106	

Source: U.S., Department of Justice, Immigration and Naturalization Service, Annual Indicator of the In-Migration into the United States of Aliens in Professional and Related Occupations, Fiscal Year 1967 (Washington, D. C., 1968), Chart 3.

sponsorship and also the type of visas they hold. Also, these students have no employment problem in their home countries. The foreign trained students can easily be absorbed in their expanding economies. The ones from the less developed countries who do decide to settle down permanently in this country are those who are privately supported and those who specialized in social sciences or humanities--subjects which are not in great demand in their home countries.

Dr. Charles V. Kidd, Executive Secretary, Federal Council for Science and Technology, Office of the President, made the following statement before a Subcommittee of the Committee on Government Operations, House of Representatives, concerning the situation in less developed countries:

. . . it is misleading to generalize about the migration of skilled people from less developed countries. The differences between the extent of and causes of migration from less-developed countries are so extreme that they can not be considered as a homogenous group. Some very poor countries have no means of training people, and must depend on expatriates. They have no brain drain problem. Some are newly independent and are in the process of substituting their citizens for expatriates. They have no brain drain problem because well-paid government jobs with high prestige are available for all trained people--and more.

Nevertheless, there is a stereotype that is sometimes assumed to characterize migration from all less developed countries to the advanced countries. This stereotype is that the rich countries--primarily the United States--draw off from the poor countries the human resources that are urgently required now for development of the poor countries. This description of the migration question is simple, dramatic, easily understood, and politically appealing to many people. It is also inapplicable to many poor countries, and oversimplified with respect to all of them.<sup>9</sup>

<sup>9</sup>U.S., Congress, House, Committee on Government Operations, The Brain Drain of Scientists, Engineers, and Physicians from the Developing Countries into the United States, Hearings, before a subcommittee of the Committee on Government Operations, House of Representatives, 90th Cong., 2d sess., 1968, p. 45.

The author would like to quote some of the letters addressed to him by the embassy officials in Washington, D. C., with regard to the problem of "brain drain" as it affects their respective countries.

A letter from the Embassy of Nigeria dated February 4, 1969, stated that:

The prospects are very good especially for professionally qualified persons and for those who have achieved competence in technology. Also, the demand for trained teachers for all grades of schools has not been fully met by available Nigerian supply. You will observe from this explanation that the assertion of good employment prospects is valid.

A letter from the Royal Thai Embassy dated March 6, 1969, communicated the following message:

Employment situations are available in all fields of education either government or private positions. Nearly all students who complete their studies return home and assume positions either with the government or private firms. So far there has never been a problem on the "brain drain" with our students.

Another letter from the Embassy of Vietnam, a country classified as a less developed country, dated January 29, 1969, stated that:

The employment situation in Vietnam is excellent, since there are lots of jobs for which graduates of U. S. universities and colleges would qualify both in the government and in private sectors. Our government is very proud of trained Vietnamese and is eager for them to return home and help in nation-building efforts upon completion of their studies.

A major criticism that has been made with regard to the training of foreign students in the United States is that students become home-culture alienated after receiving their education in this country. The head of the Department of Physics of the American University of Beirut has stated the situation for the Arab world in these terms:

Some 25,000 Arab students are studying abroad. About 7,000 of these are in the United States. The rest are enrolled in Soviet and European universities. The education of these students proceeds without any regard to their

personal or historical identity. They are immersed in values and an educational system that prepares individuals to fit in an advanced country and may unfit them from developing an appropriate personality for an active life in their own community.<sup>10</sup>

Thus far, an attempt has been made to appraise the impact of "brain drain" on the less developed countries. One must not forget that this study was limited to foreign students holding F-1 and J-1 visas. Therefore, it was primarily concerned with the "untrained brain" gain or loss to the less developed countries--and not the highly trained professionals who already had attained training in their home countries before coming to this country. Interest has been focused on the most mobile segment of migrants, that is, professionals and students who can be classified as pre-professionals or untrained professionals, learning their trade in the United States. Therefore, it is safe to assume that the less developed countries do not face the problem of "brain drain." It has already been shown in the preceding pages that even the "untrained" foreign students, after completion of their studies, return to their home countries.

#### Developed Countries

Tables XLI through XLIII reveal that a very small proportion of the African and Latin American students wish to remain here permanently. This is true for the less developed and developed countries. It is the Asian students, specifically the students from the developed countries, who plan to stay in this country. Table XLIV, based on the annual

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<sup>10</sup>A. B. Zahlan, "Problems of Educational Manpower and Institutional Development" (paper presented at the Conference on Science and Technology in Developing Countries, Beirut, Lebanon, November 27 - December 2, 1967).

report of Immigration and Naturalization Service, shows that the total, 11,372, students holding H-1, H-3, J-1 and F-1 visas from all countries of the world adjusted their status and became permanent residents in 1967. Of the total, 985 were on J-1 and 9,957 were on F-1 (student) visas. Of the total students (9,957) on F-1 visas, 8,073 students from Asia adjusted their status; whereas, only 222 students from Africa and 145 students from Latin America adjusted their status.

The point being demonstrated here is that it is the Asian students, especially students from the developed countries, who, in larger proportion, want to stay in this country permanently. And, this is where manpower scholars and some politicians in the United States and abroad become disturbed and try to show that the developing countries are losing their talent to the highly advanced countries. It is true that a large proportion of students from the developed countries of Asia are seeking permanent residence in this country each year. It has already been pointed out in detail in the preceding section of this chapter as to why students from these countries want to stay here. If Tables XXXVII through XL are examined, it will be found that the students who were already employed in their home countries and who were dissatisfied with their jobs and salaries, and the ones who had great difficulty in obtaining their travel documents, and the ones who were unemployed, were the students who do not want to return to their home countries. Table XLIV shows that a large proportion of students who decide to stay in this country permanently are from China, India, South Korea, Philippines, Iran and Pakistan, and all these countries are classified as the developed countries of Asia. These are the countries that are having problems.

Dr. Charles V. Kidd made the following statement before the Subcommittee of the Committee on Government Operations with regard to the problem of "brain drain" from the developed countries:

Others encounter the well-known second generation problem, a stage of development at which all of the good government jobs are filled and there are few places for the newer generation. Others have university systems which turn out more highly trained and well-trained people in some occupations than their economies can absorb now or in the foreseeable future. They, therefore, lose people. Others have relatively high standards of living, but have experienced political changes that lead people to migrate.<sup>11</sup>

Dr. Walter Adams of Michigan State University supports this view and further argues that it is not enough for the United States to insist that foreign scholars, researchers, and students, especially high-level talent, go back to their home countries. The real question is absorptive capacity of these countries which means revolutionary changes within the society, economy, and cultures of the countries concerned to make them sufficiently attractive for people to return home.

Dr. Adams quotes a report from the London Times which pointed out that 40 per cent of the engineers trained in Burma in 1961 had not found engineering employment 18 months later. The graduates of Khartoum University were in near riotous siege of their government to provide them with jobs. The household survey in the Philippines a few years ago disclosed 35,000 college graduates without jobs. In January, 1968, there were 75,000 unemployed engineers in India.<sup>12</sup>

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<sup>11</sup>Kidd, p. 45.

<sup>12</sup>U. S., Congress, House, Committee on Government Operations, The Brain Drain of Scientists, Engineers, and Physicians from the Developing Countries into the United States, Hearings, before a subcommittee of the Committee on Government Operations, House of Representatives, 90th Cong., 2d sess., 1968, p. 78

A recent report from India said that a large number of engineering graduates and diploma holders who came out of the institutions of higher learning, particularly in 1966 and 1967, were reported to be without employment. The situation has become more acute due to the state government bureaucratic control of the technical personnel employed on projects that have been completed or nearing completion.

According to the Labor Minister of India, the number of engineers on the current register of employment agencies at the end of 1966 and 1967 were 26,389 and 27,945, respectively, against 11,115 and 7,682 vacancies during these years.

The crisis is not only confined to engineers. Employment opportunities for all groups of educated professional and technical personnel have grown at a much slower rate than the growth in the number of persons on the register of employment agencies. The registered number in 1966 was 917,487 and the number of placements was 171,326; in 1967, the educated job-seekers totaled 1,087,371 against 151,442 placements.<sup>13</sup>

According to a report released by the Scientific and Technical Personnel Division of the Council of Scientific and Industrial Research of India, about 2,000 scientific and technical personnel are migrating to Britain from India every year. The report reveals that there has been a steady increase in the number of doctors and nurses going to Britain. But, there was a gradual decline in other categories of technical personnel in recent years.<sup>14</sup>

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<sup>13</sup>The Statesman Weekly, June 1, 1968, p. 1.

<sup>14</sup>The Statesman Weekly, November 9, 1968, p. 5.

Still, persistent efforts are made by politicians and educators, both in the United States and in India and other developing countries of Asia, to the effect that Indian students and other foreign students trained in the United States and other European countries have a moral duty to return to their home countries. Efforts directed toward the students from the less developed countries, where their economies can absorb college and university graduates, would be more justifiable. Despite the prevailing circumstances in most of the developed nations of Asia, the norm persists that foreign students should return to their home countries.

Much of the current discussion on "brain drain" is based on myths and fancies. One of the myths is that since the sending country has paid, in many instances, for the early training of the scholars and researchers at home, their stay in western countries is a financial loss to the sending country. It is true that such scholars generally have some of their college education in their home countries prior to their leave, but the most expensive part of their training takes place in a western country, which, in most cases, pays all or part of the cost. An informed assessment of the different cost components would be instructive. The writer knows dozens of the students who did their undergraduate work in their home countries and later earned their doctoral degrees in American universities. The second part of their training included a total of five years work and cost approximately \$15,000. In these known cases, no part of this amount came from their home countries. Instead, these students regularly sent some money home for the support of their family members. In the preceding chapter, the sources of financial support of foreign students were discussed. Our findings



revealed that a large proportion of students were privately supported. In other words, after students had lived in the United States for some months or years, most of them had either part-time jobs on campuses or were getting assistantships in their own departments. This being the case, the developed countries would be getting good value for their money if only one out of four or five students going to western countries returned home.

In the last analysis, the fact that the developed countries can not always accommodate all returning scholars in life styles their training warrants would merely be one facet of their transitional professional status. From the traditional societies, in which nearly every son followed his father's occupation, these countries are moving towards a modern, highly differentiated society, with increasing personal and inter-generational mobility. In the course of this transformation, it is normal that collective dysfunctionality might accompany personal functionality. In societal transitions, the incongruity of social elements often parallels the increasing division of labor characteristic of increasingly differentiated societies.

#### Highly Developed Countries--United States

It has already been shown in the preceding pages that most of the African and Latin American students plan to return to their home countries. It is the Asian students, specifically the students from the developed countries, who wish to remain in this country permanently (see Tables XLI through XLIII). Table XLVI reveals that a total of 361,972 people were admitted into the United States from all countries of the world as immigrants during the fiscal year 1967. About 129,266 came from Europe, 57,083 from Asia, 2,577 from Africa, and 2,811 from

Oceania. There were 11,372 people, holding nonimmigrant visas, admitted into the United States as permanent residents during the fiscal year 1967. Of these, 9,957 were students from all countries who adjusted their status. A large number of students were admitted from Asia (see Table XLIV). Table XLV suggests that a large proportion of students admitted into the United States during the fiscal year 1967 came from the developed countries of Asia.

It is apparent, from information available, that the proportion of students adjusting their status to permanent residents has been increasing considerably every year (see Figure 1, page 126). This may suggest that the United States has been gaining manpower from other countries classified as less developed and developed countries of the world and, more specifically, from the developed countries of Asia.

There is no doubt that demands generated by space expenditures, by the expansion of the higher education system, by the tremendous expansion of demand for physician services, and other health personnel, have accentuated migration to the United States from all over the world. De Tocqueville pointed out in 1832, in Democracy in America, that:

To build a house, to run a ship, to manufacture an object, or to produce wheat, the American people always found a way to use half the manpower needed in Europe. Hence, salaries are twice as high and this in turn draws large groups of immigrants.<sup>15</sup>

Kidd raises some questions with regard to the migration of professional students to the United States. In the first place, he questions whether reductions in research and development, in medical programs and other projects that now employ foreign scientists, engineers and

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<sup>15</sup>Kidd, p. 49.

physicians, would result in reduced migration to this country. He feels it is possible that it would result in reduced migration to this country. It is also possible that the reduction in migration would not be proportionate to the cutback in American programs at home because of the vast differential between incomes in the United States and in less developed and developed countries. Secondly, he suggests that it should not be assumed that all migration to this country is bad for the individuals concerned and for their home countries.<sup>16</sup>

Bayer,<sup>17</sup> in a recent study of international interchange, suggests that the United States incurs short-run losses in educational costs, but gains in the long run in the numerical supply of trained manpower. He concludes that the proportionate contribution of foreign stock to the high-level manpower tool of the United States is small, and the consequences of manpower losses to other nations are largely unknown.

Bayer's study explores the contributions of foreign sources of manpower to the high-level occupations in the United States. He divides foreign high-level manpower into two main sectors: the "trained brain gain," those receiving advanced education prior to immigration to this country; and the "untrained brain gain," those coming to the United States for advanced education and then remaining here subsequent to their graduation. He shows that in the former group, the country of origin has incurred a significant portion of the economic costs of advanced training; in the latter, the United States has often absorbed

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<sup>16</sup>Ibid., pp. 43-44.

<sup>17</sup>Alan E. Bayer, "The Effect of International Interchange of High Level Manpower on the United States," Social Forces, XLVI (1968), pp. 465-477.

considerable training costs. A third manpower gain to the United States, supported by Bayer, is the aggregate of the American citizens who receive advanced education in some foreign countries with considerable expense often incurred by the host country who subsequently return to the United States' manpower pool.

Bayer also mentions three components of manpower "loss" to the United States: (1) foreign nationals who receive advanced training in the United States and then leave for their home countries; (2) United States citizens, trained in this country, who subsequently emigrate ("trained brain drain") to other countries; and (3) United States scientists who were not trained in this country, reside outside of the United States and are not employed by United States firms ("untrained brain drain").

It is difficult to quantify the nature of many of the intrinsic societal benefits and societal costs resulting from gains or losses in manpower through international migration. Simply, there is a loss only if there is no exchange or return. Bayer suggests that the economic gains to the United States may be partly offset by a depreciation in international goodwill, for example, but the magnitude of these effects can not be measured adequately. Highly trained manpower provides cultural and political leadership in many emerging nations and their loss is a blow to national prestige. However, a person may continue to serve his own country while residing in another country. In addition, the pool of high-level talent is to some degree an international as well as a national resource; new discoveries and advancements in scientific knowledge are readily transmitted across political boundaries.

Since this study is primarily concerned with the students of Asia, Africa and Latin America, one can safely say that the numerical gain of trained manpower from these less developed and developed regions to the United States pool of high-level manpower has been considerably increasing every year. This has been especially true since 1965 (see Figure 1, page 126) when the new immigration laws were enacted which completely terminated the quota system by the middle of 1968. This has resulted in an estimated increase of 50,000 in the annual immigration stream. This will also tend to increase the magnitude of immigration of high-level manpower in the future.<sup>18</sup>

Since the annual report of the Immigration and Naturalization Service does not contain the mode of financial support of students holding non-immigrant visas but later becoming permanent residents in this country, it is difficult to assess the educational costs incurred by American institutions and colleges. However, the 1968 census report of the Institute of International Education on international exchange, indicates that during the academic year 1967-68, 22 per cent of all students included in the census, or about 24,000 foreign students, were receiving full or partial support from the American institutions of higher learning. This was the same proportion as in 1966-67 and represents an increase of about 2,000 students.<sup>19</sup> The findings (see Table XI) suggest that a large proportion of foreign students worked on campuses and also were granted graduate assistantships. If this is the

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<sup>18</sup>U. S., Congress, House, Amendments to the Immigration and Nationality Act, Pub. L. 89-236, 89th Cong., 2d sess., 1965, H.R. 2580.

<sup>19</sup>Open Doors 1968, Institute of International Education, Report on International Exchange (New York, 1968), p. 6.

case, we can say that the foreign students who later decide to stay in this country permanently, the educational costs for them were provided by the United States. In this way, the United States incurs short-run losses in educational costs, but in the long-run makes gains in the numerical supply of trained manpower.

In summary, to evaluate the impact of "brain drain" on the less developed and developed countries of Asia, Africa and Latin America, and the highly developed countries--in this case, the United States--perhaps the most difficult area in any analysis of this world-wide phenomenon is to find out whether the loss by immigration of scholars, researchers and students has in any way retarded the development of a country. In the opinion of the author, the element of retardation of development as a consequence of international migration should be an essential ingredient in any definition of "brain drain." If the loss of a part of the existing stock of manpower does not in any way affect a country's development, then it should not be considered a case of "brain drain." It is true that no country would like to incur educational costs on training manpower for meeting the demands of other countries and, if a surplus of trained manpower exists, it may lead to changes in the pattern and direction of its investment in education. It would be pointless to lament the departure of persons who have entered the labor market but can not be gainfully utilized in their home country.

This type of determination of usefulness can not, for practical reasons, be made for each individual abroad nor should it be influenced unduly by temporary difficulties which a country may be facing at a given time. The contribution an individual is capable of making during his entire productive career should also be kept in mind. In other

words, in any discussion on "brain drain," the qualitative discussion of the problem is as important as the quantitative one. At the same time, the evaluation of the qualitative characteristics of the emigrants is beset with serious difficulties. As pointed out in the Report of the Working Group on Migration in Britain, the loss may arise also on account of the fact that "the emigrants include some of our brighter scientists whose loss detracts from the liveliness of the climate of science here and reduces the strength of the intellectual influence that bears on the younger generation in our universities and our industries."<sup>20</sup>

One must not forget that development of a country depends upon not one, but a combination of factors. The latter includes political stability, commitment to development and education, organization of natural resources and capital, technical assistance, and a host of other factors. If a single important condition is not met, development will be retarded to a greater or lesser extent.<sup>21</sup>

Eugene Staley, a well-known development economist at Stanford University, has stated that:

Any approach to development theory that, explicitly or implicitly, builds around some 'crucial variable,' or even several such, is likely to be not only inadequate but positively misleading. This is the trouble with most of the mathematical models that economists have tried to apply to development processes. The favorite central factor is capital investment, which is related to economic growth through a capital/output ratio. But, the capital/output ratio is a way of sweeping under the rug most of the really important determinants of economic development, which include not only the amount of investment but the interactions and combinations of different specific investments with each other and with many other factors.

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<sup>20</sup>Working Group on Migration, Report of the Group, The Brain Drain (London, 1967), p. 9.

<sup>21</sup>Kidd, p. 45.

No 'crucial variable' approach to development theory can be adequate. To shift from the centrality of capital investment to the notion that education, or administration, or achievement motivation, or something else is really the 'key factor' would get us nowhere. The effectiveness of each factor in development depends on interactions and combinations with many other factors. It is, above all, on the interactions and combinations that development theorists ought to focus their attention.<sup>22</sup>

Therefore, it is suggested that the relevance of these views of economic development to the migration of people lies in the fact that at some times in some countries, manpower is a limiting factor on the rate of development, and at other times it is not. Kidd gives an example of Latin America where migration has not been a major factor retarding the development. He mentions chief reasons of retardation which include political instability, fluctuating basic commodity prices, rigid social structure, rising population, export of capital, fragmented markets, and concentrated or otherwise inappropriate landholdings. He further adds that some countries of Asia, Africa and Latin America have, for various reasons, trained more people in universities than they can utilize. This is true of India and is probably becoming true in Nigeria. It is true of physicians in the Philippines and in Columbia.<sup>23</sup>

#### Brain Drain, Brain Interchange, or Brain Exchange

The phenomenon popularly known as "brain drain" has, in recent years, attracted growing attention and scrutiny of many people in the United States and abroad. As in the past, overly general statements of sympathy by politicians and educators are heard that impoverished

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<sup>22</sup>Economic Development: Issues and Policies (Bombay, India, 1966), Chapter 1.

<sup>23</sup>Kidd, p. 46.



nations have been robbed of their talent and stripped of their human resources. Cries are heard in this country that foreign students who have completed their education should go back to their home countries. Many would like to see them returned forcefully and restrictive remedial measures taken to prevent other students from coming to the United States.

The concept has been described as a loaded and emotional phrase. It has also been accused of implying pre-judgment that the phenomenon or process it describes is undesirable. Attention will be focused here on neutralizing this phrase--"brain drain"--which has aroused the emotions of many all over the globe, and stimulated the ambitions of political figures. Subsequently, the phrase will be presented here as being an erroneous term, dangerously defined and subject to demagogic generalization.

Professor Neal, in the speech before the International Students' Conference at Austin, described the phrase which has caught our imagination as follows:

Consider its onomatopoeia character. It rhymes, uses common words, and is easily recalled and remembered. In addition, its components are reverse arranged. The "brain," is a vital part of our body, one which we admire, feature, respect. It is associated with superior persons, with visitors from outer space. It is a socially desirable, always acceptable and polite term.

Contrast this with "drain." This word relates to a sink, a sewer, the flow of wet garbage. There is a need for rubber gloves to prevent cracked fingernails, for deodorants and countering chemicals, such as Tide, Glow, Joy and other pleasant names describing grease cutting agents. To combine the good word brain and the bad word drain produces a phrase which revolts a native speaker of current English. I do not know who coined the phrase but he deserves an office on Madison Avenue. For seldom has such a term caught the imagination of those who would be commentators on the contemporary educational scene.

Under the influence of this loaded phrase many institutions and individuals who are basically in favor of student exchange, cross cultural education, sharing of skills, international education, freedom of movement, open doors, and two way streets, suddenly have turned against a liberal and desirable feature of our society . . . the intellectual independence of the individual . . . and have joined the fanatical crowd clamoring against that skeletonized specter known as the "Brain Drain."<sup>24</sup>

Sometimes it appears as if the term "migration" has lost its meaning and is being replaced by the more emotional phrase "brain drain."

However, there are some scholars who interpret the phenomenon as a welcome step towards the internationalization of the professional market. Harry Johnson has characterized some of the factors that motivate current concern about "brain drain" as "emotional nationalistic nonsense."<sup>25</sup>

Grubel and Scott<sup>26</sup> have argued that the emigrants improve their own income conditions and very often increase the social welfare of their former countrymen in several important respects as well. Therefore, they advocate the free movement of human capital throughout the world.

The expression "brain drain," as it is operationalized in this study has been defined in the first chapter, as "a flow of skilled and talented people out of countries where they can make the greatest contribution to human welfare, to the highly industrialized countries which are well-supplied with trained, skilled and talented people."

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<sup>24</sup>Joe W. Neal, "The Brain Drain: Or, The Complex International Migration of Talents and Skills" (paper presented at the International Students Conference, Austin, Texas, March 2, 1968), pp. 1-2.

<sup>25</sup>Harry G. Johnson, "The Economics of the 'Brain Drain': The Canadian Case," *Minerva*, III (1965), pp. 299-311.

<sup>26</sup>Herbert G. Grubel and A. D. Scott, "The International Flow of Human Capital," *American Economic Review*, LVI (1966), pp. 268-274.

If the migration of persons possessing certain minimum levels of qualifications and skills from one country to another is not bad for the individuals concerned and does not retard the economic development of their home countries, the author suggests that the use of the phrase "brain drain" is rather ambiguous. The international migration of talents and skills (that is, "the trained brain") even of the students (the students coming for training "the untrained brain") going to the highly developed countries for advanced education and later remaining in those countries subsequent to their graduation, may be eufunctional to both the sending and receiving countries as well as to the individuals concerned. This positive function of the phenomenon would more appropriately be identified as "brain interchange" or "brain exchange."

However, if the migration of persons as stated above is dysfunctional for the sending country in the sense that it retards the development of a society, but it is eufunctional for the receiving country as well as the individuals concerned, the phenomenon may be appropriately characterized as "brain drain."

In order to apply the expression of "brain drain" interchangeably, it is essential to have the qualitative, as well as quantitative, information about the emigrants who may be considered either a gain or a loss to a certain country. In demographic terms, one is not always equal to one birth, one death, one migration. This qualitative dimension is difficult to assess. In some cases, one brighter scientist may be worth more than a hundred scientists.

To make the concept of "brain drain" more meaningful and readily understandable, the author wishes to narrate the following example.

Suppose there is a less developed or developed country in the Asian, African or Latin American continent. Some topmost scholars, researchers and students ("the trained brain" or professionals) who received their education and training in their home countries and their governments incurred heavy expenses on training manpower in order to meet the pressing demands of their countries, may decide to migrate to some highly developed countries for differential comparative considerations. Again, the "untrained brain," (pre-professionals) or the students who did or did not do their undergraduate work in their home countries where their governments incurred the initial educational cost, may later go to some highly developed country, for example, the United States. In this case, American universities or colleges incurred educational costs for advanced training through the award of assistantships or fellowships. Now, after their graduation in this country, these students decide to settle down here permanently. If the persons of this category just mentioned can be gainfully employed in their home countries, though they may not be earning the same salary as they might in a comparable position in the United States, and their countries badly need the services of such talents in order to meet the pressing demands for the developments of their countries, and if such persons decide to migrate to other advanced countries, it might be called a case of "brain drain." In other words, the country is losing its scholars due to differentials in comparative positions. A report from Pakistan recently indicated that in some less developed countries, recent appraisals show development programs have received a great setback due to the imbalance

created by the loss of trained manpower and the bottlenecks arising there from.<sup>27</sup> This is a case of "brain drain."

One must not be doctrinaire about development in the newly emerging countries. The development depends upon not one, but a combination of factors and if a single important condition is not met, development of a country will be retarded to a greater or lesser extent. Therefore, the shortage of qualified manpower as a 'crucial variable' is being considered, though it may not be a cause of retardation of development. If this is the case, then it may be considered a bonafide example of "brain drain."

The research findings and the annual report of the Immigration and Naturalization Service, cited in the preceding sections show that most of the scholars, researchers and students who come to the United States for advanced training from the less developed countries of Asia, Africa and Latin America return to their home countries subsequent to their graduation. Only a very small proportion of Asian students from the less developed countries decide to stay in the United States permanently. If one insists on using the expression of "brain drain" in this situation, it can be said that at present there is no problem of "brain drain" in the less developed countries. In some cases, where a small proportion of the students want to stay in this country permanently, their specialized training is of little value to the developmental program of their home country. For example, a student from a less developed country who received his training in this country in nuclear physics may not be employable in his home country. On the other hand,

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<sup>27</sup>The Asian Student, February 24, 1968, p. 3.

an engineer or an agriculturalist may have no employment problem in his home country. International students unable to find jobs due to the lack of preparation or poor preparation in the fields suited for their home countries may want to stay here permanently. This also would not be a case of "brain drain."

There may be other students who could not successfully complete their education in this country. They may be ill-prepared and poorly equipped for advanced training and may decide to become residents in the United States, working for a chemical company for example.

The case of "brain drain" may also be classified as either "temporary brain drain" or "permanent brain drain." Both "temporary or permanent brain drain" may be either impelled or free brain drain. By the expression "impelled brain drain," we mean that the intellectuals still retain, in spite of mild societal pressures, some power to decide whether or not to migrate to some highly developed country. In its temporary form, the "impelled brain drain" means "temporary flight." In this situation, scholars, researchers and students leave their home countries temporarily for positions such as visiting professors, exchange doctors, etc. Later, they return to their homes after a certain period with various benefits from professional experience and contacts abroad. "Impelled brain drain" in its permanent form suggests a choice and mild but coercive societal pressures to migrate and relocate residence without thought of return.

The term "free brain drain" in its temporary form refers to "ambition." Individual students may go abroad for advanced education and training, work for a few years, and return to their home countries when they are offered attractive jobs and salaries. "Free brain drain"

in its permanent form refers to "higher ambition." In this case, students or "untrained brain" go to some highly developed countries with the intention of settling down there permanently as they are attracted by differential income and standard of living (see general typology of brain drain on page 22).

A hypothetical example will be illustrative of what the author means by "brain interchange" or "brain exchange." Take the case of an individual engineer from a developed country who received his training in his home country prior to his coming to the United States or did his advanced studies in this country in which case the United States incurred educational costs. Now, this qualified young man returns to his home country out of a sense of duty to serve his "motherland." He returns to his home country with uncertainty and at a high risk. After all his training and education abroad, this young man may be hired for a clerical-level position for the next ten years.

Here is the case where a developed country is unable to utilize the qualified professionals. It is clear in this case that a country is not gaining from his services. On the other hand, he has become an economic burden for the planners in his home country. Conversely, suppose this young man decides to accept an offer of a job suited to his qualifications and his taste either in Canada or in the United States where he will be paid \$10,000 a year.

What should be said about this case? One is sure to hear platitudes by politicians and educators in home countries about the moral duty and obligation that this young person should return home and serve his country. Cries of sympathy may be heard in this country that an impoverished nation has been robbed of its talent and stripped of its

human resources. Complaints will be made that all foreign students should return to their home countries after the completion of their studies. Many would be happy to see these young men returned forcefully and remedial measures taken to prevent others from coming to this country.

Has the home country been deprived of talent because this young man decided to stay permanently in a highly developed country? The answer is obvious. It is apparent from this hypothetical example that a sending country has not incurred any losses because the country is unable to utilize this young man. On the other hand, the individual concerned has been gainfully employed and has made financial and professional advancements, and the receiving country has also been benefited from the increase in his productive capacity and output. It appears that all three categories have benefited; the sending country, the receiving country and the individual. The sending country benefits from one less unemployed or underemployed plus the economic resources the migrant will return to assist his family. The receiving country benefits from utilization of skills. The individual benefits from a fulfilling position that permits professional expression. This should not be called a case of "brain drain." It is not "brain drain." It may be more appropriately called "brain interchange" or "brain exchange." The sending countries have not incurred any short-run or long-run losses. On the other hand, the sending countries are able to benefit in several ways by encouraging their surplus of trainable manpower to go abroad. Some sending countries have discovered that currency remissions from citizens living abroad, even after they have taken out citizenship in other countries, constitute one of the most important sources of hard currency income which a country can receive.



If the governments concerned do not raise their voices (sometimes the protests are politically motivated rather than realistic) and do not take steps to prevent the outflow of human resources at home, their silence may be assumed as an indication of no real problem in spite of the continued protestations to the contrary.

On the other hand, when the countries concerned are really affected by the outflow of human resources to other countries, they do take remedial measures to prevent it. For instance, Kidd points out that:

A few non-communist countries also restrict emigration. Egypt has controlled emigration. India has forbidden the administration of the test required for entrance of physicians to the United States. Turkey is seriously considering a requirement that university graduates work for a certain time in Turkey before going abroad, and then issuing passports valid only for limited periods.<sup>28</sup>

Other countries, including China,<sup>29</sup> Britain,<sup>30</sup> and Burma<sup>31</sup> which have realized the effect of "brain drain" are now considering restrictive remedial measures. On the other hand, where countries can not absorb human resources in their economies, such as Barbados and the Philippines, deliberately train people for export.<sup>32</sup>

Here is a country (eg. Philippines) classed as developed by economic and political standards--a type of nation over which the "brain drain" complainers agonize, and yet departure of the professionals, especially physicians and nurses, is actually encouraged. The answer

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<sup>28</sup>Kidd, p. 51

<sup>29</sup>The Asian Student, February 22, 1969, p. 3.

<sup>30</sup>Tulsa Daily World, November 19, 1967, p. 18.

<sup>31</sup>The Asian Student, October 5, 1968, p. 1.

<sup>32</sup>Kidd, p. 45.

is obvious. In this case, the wastage of those who stay home may be as great or greater than those who leave for the highly developed countries.

In summary, it can be stated that though "brain drain" is the case for the less developed countries it is less likely to occur because high-level manpower is always in great demand and can always be utilized in developmental programs. Though "brain interchange" or "brain exchange" can also occur in these countries, it is less likely that it will happen. If it does, it will be in the cases where students have specialized in the fields, such as nuclear physics, which may not be in great demand in the less developed countries, and as a result these students may have difficulty in finding a right kind of job. It will not be advisable for these countries to spend their national resources to provide facilities for such individuals to carry out research involving hundreds of millions of dollars when countries can hardly benefit from these sacrifices. In such cases, a case of "brain interchange" or "brain exchange" may occur.

Under normal economic and political conditions, a case of "brain interchange" or "brain exchange" rather than "brain drain" will occur in the developed countries. Since the economies of the developed countries can not absorb all manpower, some are more likely to emigrate. On the other hand, if governments want to control the emigration of certain categories of personnel, they can, and in such cases the problem of "brain drain" is less likely to occur.

No evidence has been found where the high-level manpower is in shortage in the developed countries and that their development programs have been affected due to emigration. On the other hand, these countries have a surplus of human resources in certain categories which can not be absorbed in their sluggish economies.

There is evidence that several of the less developed countries, as classified in this study, have a shortage of trained people for all sorts of positions and they are even prepared to hire people from other countries. Representatives of these governments do not complain that their students do not return to their home countries subsequent to their graduation in the United States. It is the politicians and educators in this country who complain about the shortage of high-level manpower in these countries.

One can not categorize all the countries of Asia, Africa and Latin America under a single concept such as "brain drain." The phenomenon of "brain drain" or "brain interchange" or "brain exchange" varies from country to country, region to region, continent to continent, and less developed to developed countries. The popular assumption of "brain drain" needs further empirical study that would include an analysis of the developmental potential of the individual, the effect on the country of settlement. In a shrinking world, perhaps the fulfilling life of the individual should be assigned the top priority. Theoretically, the trained individuals will increasingly make contributions that follow human-developmental orientations rather than narrow nationalistic orientations. A greater specificity of terms, the development of more sophisticated research and the net utilization and development of the individual should be accorded primary consideration.

## CHAPTER VI

### SUMMARY AND DISCUSSION

In the beginning, it was stated that the study was primarily concerned with the attitudes of alien students toward returning to their home countries subsequent to their graduation in the United States and the effect of their attitudes on the national loss of professional skills. Since the loss of highly qualified and trained manpower by the less developed to the more developed parts of the world has, in recent years, attracted national as well as international attention, the study empirically examined the general protestations both in the United States and abroad. The investigation was needed both for the development of the scientific fund of knowledge and as some standard by which to assess the frequently stated notion that impoverished nations have been robbed of their talent and stripped of their human resources. Furthermore, the research evaluated the concept of gain or loss inherent in the international exchange of scholars, researchers, and students which is ambiguously referred to as "brain drain." This phrase is subject to demagogic generalization.

#### Summary

It was assumed that foreign students who have stayed in the United States for two years or more are more likely to remain here. The empirical findings supported this hypothesis.

When students first arrived in this country, 61 per cent, stated their intention of returning home immediately after graduation. But having lived in this country for some months or years, the proportion of students who still planned to return home dropped to 41 per cent.

Most of the Asian, African and Latin American societies are primarily agrarian and exhibit a familial system of close knit family ties. This strong familial identification was evidenced in their early pro-return attitude. When they first arrive they are nostalgically identified with their home culture. Some students know of the great opportunities which are available in this country before they arrive. Other students appear to make the discovery during their sojourn in the United States. However, after they have lived here for several months they become assimilated in the host culture and are keenly aware of differential rewards of an affluent society. In this case, the student is in a dilemma. He knows that his own country needs him but he has discovered that the United States needs him too.

Moreover, the emergence of "the revolution of expectations and anticipations" commensurate with new statuses and the sensed deprivation that would attend many of the students, especially from the developed countries, curtailed their early desire to return to their home countries. In other words, their new self-concept would not be fulfilled by meaningful rewards as a result of their resocialization in the United States.

The cross-cultural experiences which foreign students have in this country contribute to the "revolution of expectations." The young alien students who have spent many months or years in the United States and have subsequently developed a taste for its material affluence and, more

essentially perhaps, for its moral and democratic traditions are bound to feel less satisfied with the status quo and, particularly, with the slow pace of economic growth and social progress in their home countries. Moreover, these students do not want to take a risk of returning home and be without a job,<sup>1</sup> or after receiving a master's degree in engineering, to be confined to a clerical-level employment.

A second presumption was that younger students (students under the age of 25) are more likely to return to their home countries than the older students. The findings supported this hypothesis. It appears from this study that the older students, by definition are a specialized group who have attained higher levels of training, professional skills, and adaptation in the United States which gives them a unique status among international students. By this long process they have accrued socio-economic benefits. This is not true of the younger students who have not achieved the socio-economic benefits that root one socially, economically, and politically. This may make it easier for the younger students to return home.

It may be reasonably argued, using the classical literature from the "Polish Peasant"<sup>2</sup> that a potent factor in the return of many of the alien students is the emotional ties they have developed through years of socialization with their parents, relatives, and cultural institutions within their home society. The concept of territoriality, the longing for the soil of one's birth, also has historical precedence in

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<sup>1</sup>See: Indian Witness, January 25, 1968; China News, February 3, 1968; and Hong Kong Standard, February 8, 1968.

<sup>2</sup>William I. Thomas and Florian Znaniecki, The Polish Peasant in Europe and America (New York, 1927).

sociological literature. Again, the returning students tended to be younger in age and had not been away from their families for as long as a period as the non-returning students. This does not mean that the family ties are lacking among the non-returning students, but these ties were far from being a dominant factor in their deliberations about return. It was as though they had outgrown any emotional dependency which they might have had on their parents and close relatives.

Contributory to the above, the younger students were most often single and wanted to get married in their home countries with the consent of their parents and close kin; therefore, they planned to return. Most of the younger students hoped to accept prestigious government jobs on their return, and felt it was necessary for them to return home prior to their 35th birthday. In Asian and African countries inheriting the British civil administration system, most of the governmental positions are offered to younger people who are less than 35 years of age. The "socialization into independence" characterized the older students while the younger students tended to be more idealistically bound to their own native culture.

It was hypothesized that students from the less developed nations are more likely to return to their countries than students from the developed countries. Our findings supported this assumption.

The data revealed that most of the students from the less developed countries wanted to return to their home countries. A very small proportion, 9 per cent, of the students from these regions wanted to remain here. Most of the students who wanted to stay in the United States were

from the Asian continent. A similar conclusion is drawn from the annual report of the Immigration and Naturalization Service.<sup>3</sup>

Since most of the students from the less developed countries return to their homes, the allegation of "brain drain" seems tenuous. Most of the students from these countries are sponsored by their governments which require their return subsequent to their graduation. Also, these students have very few unemployment problems in their countries. They can easily be absorbed in their growing economies. The ones who decided to settle down permanently in this country were those who were privately supported and those who specialized in subject matter areas of little functional consequences to their transitional societies. Examples of non-functional disciplines, non-functional from an economic developmental orientation, would be humanities, social sciences, and such highly specialized areas as nuclear physics.

On the other hand, students who are increasingly immigrating to the United States every year are in large proportion from the developed countries and specifically from the Asian continent.<sup>4</sup> The findings reveal that the students who wanted to remain here after completion of their studies were those who were unemployed in their home countries, those who were dissatisfied with their jobs and salaries, and the ones who had great difficulty in getting their travel documents. A large proportion of students who decided to remain here were from China, India, South Korea, Philippines, Iran, and Pakistan. All these countries

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<sup>3</sup>U. S., Department of Justice, Immigration and Naturalization Service, Annual Indicator of the In-Migration into the United States of Aliens in Professional and Related Occupations Fiscal Year 1967 (Washington, 1968), Chart 3.

<sup>4</sup>Ibid.



are classified as developed countries and are facing unemployment problems. Most of the good government jobs are filled in these countries and there are few places for the newer graduates. In some of these countries, indigenous universities already produce more highly qualified and technically trained people in some occupations than the national economies can absorb now or in the foreseeable future. They therefore lose people to the growing immigration stream.

Since there is racial prejudice and discrimination against Negroes in the United States, African students are more likely to become victims of this situation than Asian or Latin American students. As a result of this, most of the African students wanted to return to their homes where they would not experience the loss of respect and dignity which the black man so typically experiences in American society. It is interesting to note the attitudinal dimension on the part of African students. Most of them reported that there is prejudice and discrimination against Negroes in the United States. This subjective feeling undoubtedly oriented their decision to return to their homes and the parallel avoidant orientation to the normative role of blacks in the United States. The cognitive understanding on the part of African students is reaffirmed by their knowledge of discrimination and prejudice against Asians in their own countries. In the latter case, they are the functional beneficiaries of the dominant group in their society. The Asian Student recently reported that "about 100,000 Asians in Kenya, mostly of Indian and Pakistani origins, were asked by the Kenya government to leave the country,"<sup>5</sup> as they are oriented to the Africanization of their country.

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<sup>5</sup>The Asian Student, March 23, 1968, p. 4.

It was assumed that privately supported students whose wives and children are at home are more likely to return to their countries than those whose wives and children are living with them in the United States. The results supported this hypothesis. Obviously, many of the alien married students, particularly if their wives and children are living with them in the United States, have added incentives to remain in this country. The dearth of the amenities considered "essentials" in modern Western countries adds to their pro-United States stance. Again, if the students are married to American girls, their American wives may be reluctant to live in a non-western culture. Even if the American-born wives are favorably inclined to accompany their husbands back to their home countries, the husbands are still faced with the added burden of helping their wives adjust to an unfamiliar culture.

Presence of children might further complicate the problem of returning for married students. Sudden transfer of young children to a new cultural setting (though they may have been born in their home countries, but later raised in the United States) can give rise to many educational and adjustment problems which some parents may face with reluctance.

Students whose wives and children are at home may want to return home because of strong family ties. Also, they may not want to bring their wife and children to this country due to the relatively untrammelled behavior patterns of American adolescents. Many of the normative styles current in the United States, such as dating freedoms and filiararchical tendencies, are most incongruous with the family patterns of Asia.

It may also be that once a student has found a job, even a part-time job, he begins to appreciate the earning power of his talents and skills, and the longer he stays in this country the less likely he is to return home. Once he has a good job he may try to bring his brothers, sisters, wife and children to this country. Their presence and the establishment of their sub-cultural enclaves, complete the decision to remain.

The hypothesis that students from lower socio-economic classes are more likely to stay in the United States than those from upper socio-economic classes was supported by the findings. It is obvious that people migrate to improve their conditions of life. Because of the unemployment situation in many of the developed countries, ambitious people from lower socio-economic classes considerably see more opportunity in this country to raise their standard of living. For these students returning home may involve risk-taking incompatible with their new western norms and values.

The non-return of students from lower socio-economic classes may also be due to the fact that most of the non-returning students in the study sample were being supported by their parents or relatives. In several cases, parents either have to borrow money or spend from their savings in order to send their children for higher education in the United States. The student feels he must later compensate for these sacrificial investments even though his father or relatives do not expect him to do so. The excellerated earning power occurring to the marketability of skills in this country will enable not only the return of borrowed funds, but will also enable the students to aid their

families to a considerable extent. The non-return of the student from the lower socio-economic families is thus functionally and economically sound.

Students from upper socio-economic classes, due to their family names and connections, may have no problem in finding a suitable job. Most of the students who reported the upper income bracket of their parents may afford to be without a job in their countries, for their parents could provide them a decent standard of living. On the other hand, students from the lower socio-economic level may have to depend on their own resources.

It was hypothesized that privately supported students, those resigning from their jobs in their home countries, are more likely to remain in the United States than those granted leaves by their employers. This was found to be true. Students who said that they resigned their jobs reported that they were dissatisfied with their jobs and salaries and they felt that there was little hope for upward mobility in their home countries. In the traditional societies nearly every son followed his father's occupation. Although this trend is changing toward increasing personal and inter-generational mobility, the residual effects are still operative.

Since these students perceived a better opportunity to raise their standard of living by remaining in the United States, they felt they should stay here and continue the severance begun with their pre-migration resignation. On the other hand, those who were granted leaves by their employers had good jobs and were earning attractive salaries. They were quite satisfied with what they were doing in their home countries. At the same time they had some moral obligation toward their

employers. So, it is quite natural for these students to return to their homes.

The hypothesis that students whose home countries provide them employment opportunities are more likely to return than those students whose countries do not provide employment opportunities was supported by the findings.

It is true that most of the students who decide to stay here are from the developed countries of Asia and Latin America. Students from African countries return to their homes where they have no unemployment problem. Added to plentiful opportunity that "pulls" is the discriminatory patterns that "push." The students' individual perception of opportunity does correlate with the objective factors of varying developmental characteristics of their home societies.

Statistical findings in this study supported the assumption that single students are more likely to return to their homes subsequent to their graduation than the married students. Table XXIII shows that 46.6 per cent of the single students wanted to return home whereas 28.7 per cent wanted to remain here. On the other hand, 12.6 per cent of the married students planned to return to their homes and 12.1 per cent decided to stay in this country. The findings are confirmed by the fact that most of the younger students (under the age of 25) planned to return home. The reasons already have been discussed in detail on page 96. Since most of the single students are younger, their home-ward orientation was probably related to marital aspirations as well as closer emotional ties to family and kin.

There is not very much difference among the married students who wanted to return home and those who wanted to remain here. This may be

due to the fact that students whose wives and children were at home planned to return whereas students whose wives and children lived with them in this country wanted to remain here. This was confirmed under the hypothesis number four.

Table XXIV indicates that the null hypothesis of no relationship between the number of children and the likelihood of return is tenable. However, the percentage columns in Table XXIV, page 83, show that a large proportion of students who have children plan to return to their home country on completion of their studies whereas those without children tend to remain in the United States. This also confirms hypothesis number four.

Table XXV suggests a strong relationship between the mode of financial support of wife and the likelihood of returning home. The percentage columns in Table XXV reveal that a larger proportion of students who send money home to support their family plan to return home whereas a large proportion of students whose wives have full-time jobs, and in some cases are supported solely by parents, plan to stay in the United States.

This is obvious if students have either part-time or full-time jobs (especially if a student is on 18 months practical training). If he sends money home to support his family he may not be wanting to stay in this country, otherwise if he has means to support his family he would plan to bring his family over. It may also be the case that a student who sends money home may not yet be sure about his plans relative to returning or staying in this country. It may also be possible that the student is waiting to get a permanent visa and a good job before he finally calls his wife to this country. This may also be the case that

it is easy for a student to send a few dollars home for the support of the family rather than call the wife here and not be able to support his family adequately.

Table XXVI indicates that there is a strong relationship between the academic status of students and the likelihood of their return to their home country after graduation. A larger proportion of students working for their master's degrees plan to return home rather than remain in the United States. Conversely, a larger proportion of students working for doctoral degrees plan to stay in this country.

It has already been pointed out that younger and single students plan to return to their homes subsequent to their graduation, whereas, older and married students want to remain here. These assumptions were supported by our findings. If this is true, then it is natural for the students working for doctoral degrees to remain in this country as most of these students are older and married.

The other reason may be the differential opportunity operative for master's versus doctoral graduates. The data suggests that in the less developed societies training in various fields at the master's level is fully appropriate and competitive opportunities for those trained at the doctoral level are often lacking. Potential employers have competitive salaries for personnel trained at the master's level than for the ones at the doctoral level. On the other hand, those with a doctorate due to their highly specialized professional skills are able to compete freely in the professional labor market in the United States.

Table XXVII suggests that there is a strong relationship between the field of study and the likelihood of returning home. A larger

proportion of students whose major fields of study are agriculture and engineering plan to return home (see Table XXVII, page 87).

It is obvious that agriculture and engineering fields are in great demand both in the less developed and developed countries. Hence, students who have specialized in these areas should have no problem in finding a job, as a result they want to return to their homes. Students with other specializations may encounter some problem in finding a job. Though agriculture and engineering subjects are in great demand, the annual report of the Immigration and Naturalization Service shows that a large number of engineers immigrate every year to the United States. This may be due to the fact that more specialized engineers are needed in the more advanced societies and can pay better salaries whereas the more generally trained engineers can be absorbed in the economies of developing countries.

The findings in Table XXXVII show a strong relationship between the employment status of foreign students before coming to the United States and the likelihood of returning home or staying in this country. It appears from Table XXXVII that a large proportion of people who were students and government employees prior to their coming to the United States planned to return home. On the other hand, privately employed students, those who owned a business and were unemployed in the private sector of their economies, intended to remain here.

This supports our earlier findings cited in the preceding pages that the younger and single students are more likely to return than the older and married students. So, it is obvious that those who were students in their home countries before coming to this country were still young and single. It is no surprise that government employees plan to



return to their home countries. In most cases, students who worked for their governments were sponsored, requiring their return to their countries. Also, if they want to stay here they may not be allowed to do so because in most cases they are issued exchange visas which require visa holders to leave the United States after completion of their work for two years before they can apply for re-entry into the United States.

Findings in Table XXXVIII indicate a strong relationship between the number of years employed in home countries and the likelihood of returning home. Table XXXVIII reveals that a large proportion of students who were employed in their home countries for one or two years prior to their coming to the United States planned to remain here subsequent to their graduation whereas those who worked for three years or more wanted to return home.

This may suggest that students who worked for a shorter period were probably dissatisfied with their job and salary and did not see a future in the job they were holding. So, they wanted to come to this country and stay here permanently. On the other hand, those who worked for a longer period were well established and liked their job and status they were holding. In most cases, they were government sponsored students and were obligated to return to their homes.

#### Conclusions

The following conclusions may be drawn from our inductive study of foreign students from the less developed and developed countries of Asia, Africa and Latin America, enrolled in American universities for the fall semester of 1968-69:

1. Foreign students who have studied in the United States for two years or more are less likely to return to their homes after their graduation than students who have spent a shorter period of time.

2. Younger students are less likely to remain in the United States after completion of their studies than the older students.

3. Students from the less developed nations of Africa, Asia and Latin America are more likely to return to their homes than students from the developed countries of these continents.

4. Privately supported students whose wives and children are at home are less likely to remain in this country than those whose wives and children are living with them in the United States.

5. Students with parental annual incomes of less than \$5,000 are more likely to remain in this country than those whose annual incomes are more than \$5,000.

6. Privately supported students who were employed in their home country prior to their arrival in the United States, and resigned their jobs, are more likely to stay here permanently than those who did not resign.

7. Students whose countries provide them greater employment opportunities are less likely to remain here than those whose countries have fewer employment opportunities.

8. Single students are more likely to return to their homes than the married students.

9. Married students who have children tend to return to their homes whereas those students without children tend to remain in the United States.

10. Married students who send money home to support their family are more likely to return to their homes whereas students whose wives have full-time jobs or are supported by their parents may tend to remain in this country.

11. Students working for their master's degree may tend to return to their countries more than students working for doctoral degrees.

12. Students whose major fields of study are agriculture and engineering are more likely to return to their homes than students from other fields.

13. Students whose status before coming to the United States was either student or government employee are less likely to remain here than those who were unemployed or private employees.

14. Students who were employed in their home countries for one or two years prior to their arrival in this country are less likely to return to their homes than those who were employed for three years or more.

15. Students who were satisfied with their job and salary in their countries are more likely to return to their homes than the students who were dissatisfied.

16. Students who received their travel documents within a month when they applied in their home countries are more likely to return to their homes than those who had delays in getting their documents.

17. A large proportion of students, after having lived for several months or years in the United States, still tend to return to their homes after the completion of their studies. Only a small proportion of students reported that they wanted to stay in this country permanently.

Though students do not remain here permanently, they still want to stay here for two to five years subsequent to their graduation.

In general, most foreign students do not plan to return immediately to their home countries on completion of their studies. However, they do plan to return eventually after obtaining practical training and experiences in this country. Therefore, on the basis of this research, it may be concluded that there is no real empirical basis to determine the extent of loss of students who are actually leaving their home countries. To the contrary, it would seem that the less developed and developed nations would benefit from the practical experience these students plan to receive subsequent to their graduation in the United States and before returning to their homes.

However, we must emphasize that this research has considered attitudes of foreign students rather than actual behavior and a discrepancy may exist here. If a discrepancy does exist, it may be in terms of "expectations sets." The students may say they expect to return because they feel they ought to verbalize such an attitude. If more stay than the attitudinal profile indicates, some validity may attend the "brain drain" accusation.

The actual behavior of students about whether they finally stay in this country or not may be seen from the annual report of the Immigration and Naturalization Service discussed in the preceding chapter. The report shows that the number of students holding "F visas" who adjust their permanent status every year has been increasing sharply. A large number of scientists, engineers, and physicians who come to this country, especially from the developed countries decide to stay here permanently. This is where politicians and educators become alarmed. It is here,

one finds the actual number of people who are immigrating to this country. But this does not indicate the actual loss to the countries concerned other than the countries are losing so many scholars, researchers, and students annually.

Information on immigration to the United States is available but the actual number of people who return to their home countries is not known. The acquisition of permanent residency in the United States does not mean they never return to their home countries. In some instances, people return to serve in their countries after a certain period of time in the United States. Unfortunately, this record is not available. No country keeps the record of those who return to their homes. A passport does not show whether a person has returned to his country. Even the passport issuing authorities do not keep track of those who are issued passports.

Taking all these problems into consideration, it is difficult to determine the actual loss of manpower to a certain country.

In order to evaluate the impact of "brain drain" on the less developed and developed countries, as well as the United States, it can safely be said that the numerical gain of trained (professionals) and untrained (pre-professionals) manpower from the less developed and developed regions to the United States pool of high-level manpower has been increasing considerably every year. This has been especially true since 1965 when the new immigration laws were enacted which completely terminated the quota system.

The United States is not only attracting the "trained brain" (scientists, engineers and physicians who received specialized training in their home countries in whose education the United States did not

have to spend any amount directly or indirectly), but is also drawing "untrained brain" (that is, the students who did their high school or undergraduate work in their home countries and came to the United States for higher education and training and later decided to stay permanently in this country). In this case, the United States incurs short-run losses in educational costs, but gains in the long-run in the numerical supply of trained manpower. At the same time, American citizens who received their advanced education in other countries return to this country.

This high-level manpower is essential for the United States. The demands for such manpower have been generated in this country due to space expenditures, the expansion of the higher education system, the tremendous expansion of demand for physician services, and other health personnel. Should the United States restrain the growth of these various activities because the American citizens are not available for these jobs?

As far as the less developed countries are concerned there seems to be no real problem of "brain drain." Most of the students who come to this country return to their homes after their graduation. In most cases, the students are sponsored by their governments requiring their return. Also, highly trained people have no problem in finding suitable jobs in their countries. In some countries they have more jobs than their own human resources, so they have to depend on outside help to fill in the various positions.

Those who decide to stay here permanently are fewer in number, especially the ones who specialized in such fields which are not in great demand in their home countries.

Regarding the effect of high-level manpower outflow from the developed countries, one can say that the scholars, researchers, and students are leaving their countries because the sluggish economies of these countries cannot absorb all of their graduates. In this case, the migration of these people is considered eufunctional for the sending and receiving countries as well as the individuals concerned. Since no voices of concern and protestation, other than the political verbage have been heard, it can be said that these countries do not have the problem of "brain drain." If these countries realize the shortage of high-level manpower in some category of personnel they take restrictive remedial measures to prevent the emigration of such people. In other cases, some governments indirectly encourage the emigration because it is good for their country.

The comparison of government sponsored students with those who were privately supported reveals that the government sponsored students return to their home countries. Even if the students want to stay in this country, they are not allowed to do so because of the restrictions put on these students by their governments.

This may suggest that the outstanding scholars have the option of being sponsored and supported by their governments. It is true that various governments select students on a competitive basis. This means that the best people are selected and sent abroad for advanced education. After the completion of their education they are required to return home. If this is the case, one can say that less developed and developed countries are not losing outstanding people. It is the privately supported students who in the eyes of their government may not be outstanding. Since the government does not need them urgently, their stay abroad may not be a real loss to the country of origin.

No person would want to borrow or spend his own money if he can get help from some other sources. It may be that students try to come to this country at their own expenses only after every other avenue has been exhausted. These are the ones who, in most cases, decide to remain here permanently. So, it may be argued that their stay in this country is neither a loss to the sending country nor to the receiving country.

With respect to the phenomenon popularly known as "brain drain," the position taken by this author is that the expression commonly used is an erroneous term. It is dangerously defined and is subject to demagogic generalization.

If the migration of persons possessing certain minimum levels of qualifications and skills from one country to another is not dysfunctional for the individuals concerned and does not retard the economic development of their home countries, the author suggests that the use of the phrase "brain drain" is rather ambiguous and misleading. The international migration of talents and skills (that is, "the trained brain") and even of the students (or the students coming for training, "the untrained brain") going to the highly developed countries for advanced education and later remaining in those countries subsequent to their graduation, may be eufunctional to both the sending and receiving countries as well as to the individuals concerned. This positive function of the phenomenon may more appropriately be identified as "brain interchange" or "brain exchange" or "brain gain" because such a connotation is not negatively stated.

However, if the migration of persons as stated above is dysfunctional (for the sending country in the sense that it retards the



development of a society, but is eufunctional for the receiving country as well as the individuals concerned), the phenomenon appropriately may be characterized as "brain drain." This approach is closer to the original definition of "brain drain" where "brain drain" was defined as a flow of skilled and talented people out of countries where they can make the greatest contribution to human welfare, to the highly industrialized countries which are well-supplied with trained, skilled and talented people."

The concept of gain or loss depends on several components such as: migration of "trained brain," that is, people who received advanced training in their home countries prior to their going abroad, migration of "untrained brain," that is, students went to highly advanced countries for higher education and decided to stay there permanently, and students from some countries who go to another country (either to a less developed or developed or highly developed) for higher education and training and subsequent to their graduation decide to return home. It will also depend on the nature of many of the intrinsic societal benefits and societal costs resulting from gains or losses in manpower through international migration.

Some of the factors that enter in the decision of foreign students as to why they want to remain in this country permanently are economic, demographic, cultural, and political factors at home. In addition to these, individuals' aspirations, attitudes, and motives also enter into the final decision making process whether a student wants to return home or stay in this country.

The scholars, researchers, and students from the less developed as well as developed countries may still want to migrate to other highly

developed countries although they may have excellent employment opportunities in their home countries. This may suggest that these people go to other highly developed countries not because they cannot be gainfully employed in their home countries, but because of differential comparison considerations. It is the comparison of the foreign students' situation in their home country with the situation of persons with similar qualifications in highly developed countries that enters into their decision.

#### Recommendations for Action

Originally, this study was not intended as a "programmatic study." Sociologists try to conduct inductive studies and leave the application and interpretation of their inquiries for others. Since Moynihan's study<sup>6</sup> came under fire by both scholars and leaders of various action agencies, certain recommendations seem appropriate in order to avoid the deterioration and misinterpretation of the findings.

This study has exemplified the attitudes of foreign students toward returning to their home countries on completion of their studies in the United States. Some of the basic reasons which students perceive as to why they want to stay in this country or why they want to return to their homes have already been mentioned. An effort was made to exhibit some of the characteristics such as age, income level, marital status, employment status in their home countries, etc., of those students who want to stay in this country. Since some of the socio-economic-political factors related to the problem of "brain drain" as

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<sup>6</sup>Patric Moynihan, The Negro Family: The Case for National Action (Cambridge, 1967).

perceived by students themselves are known, one can draw a plan that will focus on the students' aspirations, motives, and attitudes toward returning to their home countries. An effective program should consider individual aspirations, along with national as well as international interests. A one sided program which will satisfy one group and ignore other groups is not feasible.

Any humanistic program that is suggested for action by organizations must be based on the assumption that the individual is more important than the organization, and that the national or international objective should be to the fullest possible development of man's intellectual capacities, and to see that good will flows from a free movement in terms of benefit to all the peoples of the world. One should be concerned about the welfare of the people in all societies of the world and this can best be promoted by the widest possible development and free exchange of knowledge and information.

The problem is that most of the economists who suggest programs for the effective control of migration of high-level manpower are based on the assumption that human beings are commodities. They take economic and demographic factors into consideration but they forget to deal with individuals' aspirations, attitudes, and motives that enter into the decision of people whether they should migrate or not.

Adams and Dirlam<sup>7</sup> suggest an agenda for the solution of the problem of "brain drain." Their agenda for action may be summarized as follows:

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<sup>7</sup>Walter Adams and Joel B. Dirlam, "An Agenda for Action," Brain Drain, ed. Walter Adams (New York, 1968), pp. 247-263.

1. Salary scale for professionals should be raised in other countries proportionately to what professionals are paid in the United States. Salary scales can easily be revised in Western European countries but it is difficult for many of the less developed and developing countries of Asia, Africa and Latin America to pay higher salaries to their professionals. Professionals, in comparison to others, still get higher salaries though they may not be getting an equal amount of what is paid in the United States. At the same time, one must remember that living standards are lower in these countries.

2. Salary structures should be revised. In several of the countries, especially the countries that have inherited the bureaucratic structure from the British administration, the salary and status gap between a junior and senior officer is very large. There are only a few top positions that may open up here and there, and usually go to the person next in line. Since the salary and status gap between one job to another is very large, professionals find it convenient to emigrate and earn better salaries in highly developed countries.

3. There is lack of professional opportunities in many of the less developed and developed countries, especially India and the Philippines. It was pointed out in the preceding chapter that a large number of engineering graduates from Indian institutions and doctors in the Philippines, are unable to find a suitable job. If a country produces a large number of graduates, it should also provide professional opportunities for these people to absorb them in the country's economy. This would appear that the countries that are losing their scientists, engineers and doctors to other countries should increase professional opportunities in their countries to encourage their stay.

4. Most of the less developed and developed countries are still traditional and agrarian. They are slow to change. On the other hand, the educated people in these countries are creating a new "class" or new "elite" of human capital which refuses to conform to the traditional norms. In turn, the masses are unwilling to give proper status and adequate recognition generally accorded to scientists and technicians. Many professionals leave their country, not because of lack of employment, but because they resent the attitude of indifference which prevents their ideas from being put into practice. In some cases, (India is an example) rigid civil service rules and antiquated bureaucratic public administration procedures prevent the efficient use of professionally trained people in appropriate positions in which their specialized training would be most productive. The important thing that can be done in these countries is to encourage people to the receptivity of change. This is difficult, but at the same time it has to be done if one wants to prevent the outflow of high-level manpower from these countries.

5. Some countries like India and the Philippines produce more engineers and doctors than their sluggish economies can absorb. This would mean the countries that are facing this problem will have to restructure their investment procedures in education and specialized training and rationalize manpower policies.

6. It is essential to eliminate discrimination and bigotry if countries want to aspire to economic development and growth. In some cases, one finds discrimination against individuals on grounds of national origin, caste, tribe, political affiliation, family connection, etc.

Charles V. Kidd,<sup>8</sup> Executive Secretary, Federal Council for Science and Technology suggested that:

The heart of the problem is that both poverty and migration stem from basic problems that are most difficult to deal with and that can be dealt with ultimately only by the countries themselves. And some of these fundamentals are: A tradition that bases access to many good jobs on capability rather than influence. Salary structures that provide excessive rewards to a few people at the top and miserable salaries to the people below, thus generating aspirations that can be fulfilled only for a few people. Traditions which center authority in a few and deny opportunity and initiative to many.

It is not enough to say that foreign students should go back to their countries after completion of their studies or they should only be allowed to come to this country with the approval of their government and with the understanding that they would return to their country or they should be allowed to enroll only in those courses which will best prepare them for their countries. The United States alone cannot solve this problem. The initiative has to be taken by foreign governments that are adversely affected by the outflow of high-level manpower from their countries.

Some countries have realized the problem and are considering remedial measures. Take for instance, the case of the Indian Council of Scientific and Industrial Research which is considering a plan to induce scientists to return to India. The plan is contemplated outside the existing scientists' pool which could at best attract mediocre scientists abroad. Eminent scientists would not like to join the scientists' pool and wait for a job for a number of years as it is at

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<sup>8</sup>U. S. Congress, House, Committee on Government Operations, The Brain Drain of Scientists, Engineers, and Physicians from the Developing Countries into the United States, Hearings, before a subcommittee of the Committee on Government Operations, House of Representatives, 90th Cong., 2d sess., 1968, p. 42.

present. It is realized that returning scientists would not like to work in subordinate positions governed by the formalities of government regulations which, it is widely conceded now, impede freedom of research and its progress. If these scientists choose to return, the government will have to find independent positions or research facilities to utilize their services.<sup>9</sup>

This whole scheme is designed to bring eminent scientists back to India. It is provisionally estimated that about 100 outstanding Indian scientists are currently working abroad. There is no plan to attract engineers or social scientists as yet.

Another positive action has been initiated by the Indian government to reverse "brain drain." It is reported that the Indian Union Public Service Commission sent a team on a six-week tour of Europe last year to interview and select Indian scientists, doctors, engineers desirous of returning to India. This is said to be its first practical step to reverse the "brain drain" from India. The Commission plans to undertake similar expeditions to the United States and Canada in May this year.<sup>10</sup>

It is reported that several government agencies of Nationalist China held a joint meeting in Taipei on February 13, 1969, to review the "brain drain" problem in preparation for formulation of counter-measure.<sup>11</sup>

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<sup>9</sup>The Asian Student, November 2, 1968, p. 3.

<sup>10</sup>See: The Asian Student, November 30, 1968, p. 4, and The Statesman Weekly, January 11, 1969, p. 2.

<sup>11</sup>The Asian Student, February 22, 1969, p. 3.

The best solution to check the "brain drain" would be to consider an international agreement rather than individualistic approach. A report prepared by the United Nations Educational Scientific and Cultural organizations suggests that "brain drain" is by its very nature an international phenomenon. Hence the search for solutions to the problem can not be limited to the national measures. A joint action at the international level must also be planned. The report points out that the migration of specialists must be regulated. This should be done with due regard to the principles of international cooperation and in particular to that of reciprocal benefits for the countries concerned.<sup>12</sup>

As this author suggested earlier, the problem of "brain drain" can best be solved by countries themselves that are seriously affected by the outflow of high-level manpower. Remedial measures should first begin in home countries. One way to do this would be for educational institutions in the home countries themselves to keep track of the employment and utilization of their alumni so that they themselves will become aware, in however imperfect a way, of the adequacy and relevance of the educational preparation in the context of the conditions of the labor market. If this is done, the information gap that now exists in one vital area of manpower information will effectively be bridged.

Foreign students in this country need continuing information about the employment prospects in their home countries. This can be initiated by various embassies in the United States. There are likely to be many persons (as our findings show that a large proportion of students would like to return to their homes, at least this is their attitude) who may

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<sup>12</sup>India News, January 3, 1969, p. 3.



wish to return to their countries subsequent to their graduation, but are reluctant to face the uncertainties of the labor market in their countries, when it is much easier to obtain a satisfactory job in this country. The institutional arrangements in some foreign countries, such as Indian scientists' pool, the Indians' Abroad Sector of the National Register, are no doubt important and useful, but what is lacking is an agency at home and in foreign embassies located in the United States which keeps continuous contact with at least those categories of manpower which are considered as the key manpower resources required for national development. For example, the Embassy of Nigeria has an office for students' affairs located in their Consulate-General in New York, and this office keeps in touch with the Nigerian students. Most of the African governments try to keep in touch with their students and not only do they try to keep them informed of employment situations, but their representatives visit this country on recruitment drives for qualified students.

This writer strongly feels that there is an urgent need for an agency located in various embassies which will be in a position to give advice regarding the specializations which are in short supply in their countries, the pattern of job opportunities in their countries, etc. At the same time, effective arrangements for maintaining a liaison with qualified foreign students, on a regular and continuous basis, should be built up in various embassies located in the United States.

## Contributions of the Study

### Substantive contributions

Recently there have been several discussions and articles on the problem of "brain drain" from less developed and developing countries to the highly developed parts of the world. Those who have written on this phenomenon have been natural scientists, engineers, educators, or politicians. They wrote on a situation they considered serious for their countries. Therefore, a large majority of these works reflect a valuable personal and in some instances institutional experience, but very few of them are supported by inductive analysis.

This study, based on empirical analysis, was an attempt to study the attitudes of foreign students toward returning to their home countries on completion of their studies in the United States, and the effect of their attitudes on the national loss of professional skills. The findings have revealed some of the basic reasons as they are perceived by foreign students themselves as to why they want to stay in the United States. At the same time, the study has shown as to why some of the foreign students want to return to their home countries. It has revealed variation in migration from continent to continent, from country to country, and from one developmental state to another. One cannot categorize all the countries of Asia, Africa and Latin America under a single concept such as "brain drain."

The study has tried to appraise the effect of "trained or untrained brain," (professionals or pre-professionals) migration of people from less developed and developed countries to the more developed parts of the world, in this case the United States. We have also attempted to evaluate the concept of gain or loss inherent in the international

exchange of scholars, researchers, and students, and suggested that the applicability of the expression "brain drain" should be restricted.

It was not intended to make this inquiry as a "programmatic study." The substantive findings of this study are helpful in understanding the nature and the severity of the problem of "brain drain." Implications have been stated regarding the cause, which can be used by various governments that are seriously affected by the outflow of high-level manpower from their countries and effective remedial measures to reduce the problem of "brain drain" can be initiated. The findings of this study might be useful for any "action agency" interested in promoting the international exchange program.

#### Methodological contributions

The information that was used for statistical analysis was obtained through the questionnaire. This study has demonstrated that if respondents are convinced that the study being conducted is a worthwhile project, that the research has practical value, and if repeated efforts are made, it is possible to receive a large return from mailed questionnaires.

The study has measured the individual's personal aspirations, motives, and attitudes for migrating to highly developed parts of the world which have not been measured so far. In most cases, we take economic, demographic, and political factors into consideration when studying the problem of migration.

The study has shown that the use of chi-square test is not limited only to small samples but can also be used with large samples as well.

### Theoretical contributions

So far there are theories of international migration which deal with economic, demographic, cultural and political factors but do not include individual's aspirations, attitudes, and motives as suggested by William Petersen.<sup>13</sup> This study used push-pull, differential comparative factors, and individual's aspirations, attitudes, and motives as theoretical frameworks, all three factors were related to the problem of "brain drain." The massive outcome of exchange of international students and professionals is that of "brain gain." The country that is sending students abroad for higher studies is also gaining socially and economically in the long run. But somehow this factor is ignored. This study operationalized the phenomenon of "brain drain" in an exploratory manner. If this study can be replicated in several of the highly developed countries in Europe using the differential comparative theoretical framework, our inquiries may lead toward generating a sociological theory of "middle range" if not a "grand theory" of international "brain drain" or "brain gain."

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<sup>13</sup>William Petersen, "A General Typology of Migration," Population and Society, ed. Charles B. Nam (Boston, 1968), pp. 288-297.

## CHAPTER VII

### RECOMMENDATIONS FOR FURTHER INVESTIGATIONS

#### Limitations of the Study

The limitations have to do mostly with the nature of the sample used and the nature of the data collected.

1. Since many of the questions that were asked of the foreign students in the United States dealt with the matter of attitude and personal opinion, the element of subjectivity, and consequently a possible distortion of "reality" in the answer given might have loomed large in the response made to the questions.

Certainly the perceptions held by the students, no matter how stereotypical or erroneous they may be, play an important role in the decision-making process concerning whether or not they should return to their home countries. It may be that some respondents are not fully aware of the reasons that kept them in the United States. Advancing stereotyped notions and popular explanations might simply serve to facilitate, for these respondents, the process of rationalizing their non-return behavior. Therefore it is possible that the answer given by the respondents may be considered biased.

2. About 85 per cent returns from mailed questionnaires were received. If research grants had been made available, an even greater return might have been possible. Again, personal interviews might have precluded some bias inherent in a self-administered questionnaire.

Also, the quality of replies might have increased if respondents had been compensated. Some questionnaires had incomplete information which could not be used for statistical treatments.

3. Since some of the foreign student advisors were not cooperative it was not possible to get student directories in any form from two campuses. Once the universities had been selected randomly interest was focused on collecting data from every university in the sample. After repeated efforts, we failed to get either the foreign students' directory or the general directory of students from two universities. In that case the help of international students organizations was sought. The students that were present at various organizational meetings filled the questionnaires. Thus, in these two cases the process of randomization could not be applied. Therefore 107 questionnaires received from two campuses were filled by those students who were not chosen randomly.

4. Students who were on F-1 (student) visa and had secured full-time jobs as a part of their practical training were included in the sample. Information, such as names, and local addresses of these students were only available from five universities and the information from fifteen other campuses was not available on students on practical training.

5. Human attitudes and behavior are subject to change. When students first arrived in the United States, 61 per cent wanted to return to their homes subsequent to their graduation but after having lived here some months or years the proportion of those who were still wanting to return dropped to 41 per cent.

This would suggest that those who have obtained an immigrant visa with the intention of settling down in this country cannot be taken as

an indicator of "brain drain." In other words, this does not mean that these people will stay for their whole life in this country. Some students do return to their home countries after some of their aspirations have been fulfilled.

#### Recommendations for Further Study

Wide gaps in our current knowledge regarding international migration exist. Therefore, there is a great need for research in order to be able to answer even the basic question whether there is a problem of "brain drain" at all. All that is known at present is the numerical gain of trained manpower that the United States is making every year. However, the consequences of manpower losses to other nations, especially less developed and developed countries of Asia, Africa and Latin America are not known. To bridge the gap that exists in our basic information, the following suggestions are made:

1. Information on scholars, researchers and students who migrate from one country to another should be compiled. It is easy to tell from the Immigration and Naturalization Service reports how many people have immigrated to the United States. But in most cases, the sending countries do not know where their people have gone. It was clear from the replies that were received from most of the embassies located in Washington, D. C., that they did not know the number of students who were in this country. Therefore, it is suggested that the countries which are losing manpower compile information on those who are leaving their homes.

2. Information is available on the number of people entering the United States annually and those who become permanent residents, but

it is not known how many leave the United States after their sojourn, and whether these people return to their home countries or go to some other country.

3. Foreign countries that are affected by "brain drain," manpower needs must be measured more systematically. Better information on these countries should be made available with regard to the general outflow of power, stated in terms of their needs, carefully and realistically defined.

4. United States statistical records are not adequate. These records were not set up to measure the "brain drain" from other countries or the technological gap with which it is frequently associated.

5. This study included only those foreign students who were enrolled in American colleges and universities. The best thing would be to study those students who already have become permanent residents in this country. The information on permanent residents is not available because the Immigration and Naturalization Service files on individuals who have become permanent residents are not open to the public. One cannot even get an address of his own relative from the Immigration office for emergency purposes.

6. Very often studies on foreign students are conducted while they are in the United States, but it would be a worthwhile project to study the students once they have returned to their home countries with regard to their attitudes and the problems they have to face often on their return. This is again difficult to know who has returned to his home country and who has not returned. Even the countries where students return do not keep records on the returnees. Once authorities concerned know the problems faced by the returnees they may implement



ameliorative measures that would encourage others to return to their homes. Also, this will prevent the returnees from going back to the United States or to other highly advanced countries in case they were dissatisfied.

7. There is a need for longitudinal study on foreign students who go to highly developed countries. The information should first be compiled on each individual student in his home country when he applies for a visa either to enter the United States or to some other highly developed country. This information is recorded in the files of various embassies but is not open to the public. After a student has entered the United States, there should be a record of the college or university he attends, the length of time he stays at one place and his transfer to some other university. Also, data on practical training should indicate the specific place and nature of training plus his immigrant status subsequent to his practical training. Again, the follow-up information should record applications for permission to re-enter the United States. Some of this information is in Immigration and Naturalization Service files, other information can be systematically compiled.

If this kind of information is available, perhaps a researcher may be able to study actual behavior over a period of time. One may be able to detect a discrepancy between attitudes and actual behavior of those who return to their home countries and those who decide to stay in the United States permanently. Christensen's "record linkage" as a research technique may be a promising approach to this problem.<sup>1</sup>

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<sup>1</sup>Harold T. Christensen, "The Method of Record Linkage Applied to Family Data," Marriage and Family Living, XX (1958), pp. 38-42.

## Issues Requiring Further Study

The phrase "brain drain" is an emotional one and it has attracted national as well as international attention of both the educators and politicians. Though a vast amount of literature has appeared on the subject in recent years the controversy has not been resolved. There are still divergent views which both educators and politicians hold. Some of the basic views on the problem of "brain drain" are summarized in a study of the Research and Technical Programs Subcommittee of the Committee on Government Operations. Further research is needed in this area before one is in a position even to answer the basic question whether there is a problem of "brain drain" at all. If the answer to this question is in the affirmative then one may be able to formulate an active policy in dealing with this problem.

Findings of the above-cited study are summarized as follows:<sup>2</sup>

1. "One view holds that the brain drain is just so much 'hulla-baloo.' Scholars have been moving around for centuries to places which attract them. They just happen to be coming now in greater numbers to the United States because this country offers opportunities to the most talented that other countries do not or cannot give. The world of scholarship is clearly of enduring importance, transcending shorter term political or national considerations. What is good for the scholars is, therefore, good for the world, and the United States should not be misled into treating scholarly migration as a problem."

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<sup>2</sup>U.S., Congress, Subcommittee of the Committee on Government Operations, The Brain Drain into the United States of Scientists, Engineers, and Physicians, Committee Print (Washington, 1967), pp. 13-16.

2. "A related view holds that the brain drain is not a problem; it is a boon. The migration of talent does not cause one nation to lose and another to gain; instead there is a mutual gain."

3. "The present United States official view distinguishes between brain drain from the developed countries and the developing countries. With respect to the former, a net outflow of talent to the United States should not be regarded as a problem for this country. Developed countries have the resources, should they choose, to draw back a compensating inflow of talent, whether their own or from third countries. . . . If the brain drain from the developing countries does get worse, these countries and not the United States should assume the burden of restrictive action."

4. "A fourth view holds that there is a brain drain problem, particularly serious for developing countries. The flight of talent constitutes aid from the poorer to the richer countries in the amount of previous investment in the education and training of emigrants, substantially reversing United States efforts to help developing countries."

In spite of the vast amount of information that was flooded before a Subcommittee Hearing on January 23, 1968,<sup>3</sup> these issues still remain unresolved. In most cases they are valuable personal and institutional experiences based on situations that people have witnessed rather than based on substantive findings. Therefore, there is a felt need to acquire more information on the subject.

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<sup>3</sup>U. S., Congress, House, Committee on Government Operations, The Brain Drain of Scientists, Engineers, and Physicians from the Developing Countries into the United States, Hearings, before a subcommittee of the Committee on Government Operations, House of Representatives, 90th Cong., 2d sess., 1968.

Finally, the most important issue that is confronting us in the United States and abroad is that foreign students who come to this country for higher education and training should go back to their home countries subsequent to their graduation. Let us assume that a policy in this country has been formulated that would forcefully send these alien students out of the United States and restrictive measures taken to prevent others from coming to this country. What guarantee is there that these students will not go to Canada or some other advanced countries in Europe where they are needed once they leave the United States? What assurance do these students have that they will be able to find a job in their home countries on their return? The issue of gain or loss inherent in the international exchange of scholars, researchers and students is an emotional one and needs further investigation before an active policy can be formulated to prevent the outflow of these people from one country to another country.

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APPENDIX A

LETTER WHICH WAS SENT TO THE FOREIGN STUDENT  
ADVISORS AT TWENTY MAJOR AMERICAN  
UNIVERSITIES RANDOMLY SELECTED



**OKLAHOMA STATE UNIVERSITY • STILLWATER**

Department of Sociology  
372-6211, Exts. 7020, 7021

74074

September 19, 1968

Dear Foreign Student Advisor:

A doctoral dissertation attempting to measure the degree of "brain drain" relating to foreign students coming to the United States from less developed and developing countries of Asia, Africa and Latin America is now in preparation. It is hoped that this study would lead to a better understanding of foreign student exchange programs.

The source of data for this research will be derived from a questionnaire which I propose to administer by mail to a statistically controlled sample of foreign students at twenty major American universities. Your university has been chosen as one of them as your reputation all over the world is well known, and for the large number of foreign students that enroll every year for advanced studies at your university.

I would be grateful if you could assist me in the following ways:

- (1) Kindly send me a latest directory of foreign students currently enrolled in your university. (Names and addresses of all foreign students.)
- (2) Please send me names and addresses of Presidents of various foreign students' organizations on your campus.
- (3) The most important information required for this study is the obtaining of the (a) names of students on student visas (F-1), (b) that are currently on practical training, (c) and the current address of these students. (If the student's local address is not available, the names and address of the employer would be helpful.)

I am hoping that the proposed research will lead toward generating a theory of international "brain drain." I am sure that the practical outcome of this research will help the governments of the United States and the developing countries to take necessary emergency remedial measures.

The success of this research is dependent on the cooperation of professionals such as yourself, who are carrying out the foreign students program. I will be very happy to send you a copy of my research findings which may be of some value to you in your program. I fully appreciate the degree of work that would be involved in compiling this information.

I shall look forward to hearing from you in the near future. Thanking you for your kind cooperation and help.

Gratefully yours,

Man Singh Das  
Teaching and Research Associate  
Department of Sociology

MSD:am

APPENDIX B

QUESTIONNAIRE SENT TO 1500 FOREIGN STUDENTS FROM  
ASIA, AFRICA AND LATIN AMERICA ENROLLED FOR  
THE FALL SEMESTER OF 1968-1969 AT TWENTY  
MAJOR AMERICAN UNIVERSITIES



Dear Fellow Foreign Student:

In the interest of making things easier for foreign students I am conducting sociological research on problems which we must face while studying abroad. Your ideas and honest opinions would be of great value in making an accurate analysis of foreign students' attitudes.

I would greatly appreciate your cooperation in filling out this questionnaire. It should take only 15 minutes to complete.

Your answers to all items will be kept confidential. Please do not sign your name on the questionnaire. Thank you very much for your time and cooperation.

Gratefully yours,

MAN SINGH DAS

Instructions: Please answer all the questions. Please circle the number of the most appropriate answer to each question or fill in the blank.

- |   |  |
|---|--|
| 1. What country are you a citizen?<br>_____                             | 5. Your sex:<br>1 male<br>2 female   |
| 2. Name of your continent:<br>1 Asia<br>2 Africa<br>3 Latin America     | 6. What is your marital status?<br>1 single<br>2 married<br>3 widowed<br>4 divorced<br>5 separated |
| 3. Date of your arrival in the United States:<br>month _____ year _____ | 7. How many children do you have?<br>0 none<br>1 one<br>2 two<br>3 three<br>4 four or more         |
| 4. What was your age at your last birthday?<br>_____ years              |  |

8. Where is your wife living now?
- 0 am not married
  - 1 in home country
  - 2 in the United States
9. What were you doing in your home country prior to your coming to the United States?
- 1 student
  - 2 employed by the government
  - 3 employed by a private firm
  - 4 owned a business
  - 5 unemployed
10. What did you actually do for a living? Please specify the work that you did.
- 
11. What is or was your father's main occupation? (What does or did your father do for a living?)
- 
12. Which category comes closest to representing your parents' annual total income?
- 0 under \$500
  - 1 \$500-\$999
  - 2 \$1,000-\$2,999
  - 3 \$3,000-\$4,999
  - 4 \$5,000-\$6,999
  - 5 \$7,000-\$8,999
  - 6 \$9,000-\$10,999
  - 7 \$11,000-\$12,999
  - 8 \$13,000 or more
13. How many years were you employed before coming to the United States?
- 0 student
  - 1 unemployed
  - 2 employed for \_\_\_\_ years
14. How long did you work with the last employer before coming to the United States?
- 0 was a student
  - 1 was unemployed
  - 2 less than a year
  - 3 one year
  - 4 two years
  - 5 three years
  - 6 four years or more

15. Were you satisfied or dissatisfied with your job?
- 0 was a student
  - 1 was unemployed
  - 2 satisfied very much
  - 3 satisfied pretty much
  - 4 satisfied a little
  - 5 dissatisfied a little
  - 6 dissatisfied pretty much
  - 7 dissatisfied very much
16. Were you satisfied or dissatisfied with your salary?
- 0 was a student
  - 1 was unemployed
  - 2 satisfied very much
  - 3 satisfied pretty much
  - 4 satisfied a little
  - 5 dissatisfied a little
  - 6 dissatisfied pretty much
  - 7 dissatisfied very much
17. If your wife and/or children are presently living in your home country, do you expect them to join you in the United States?
- 0 I am not married
  - 1 my wife and/or children are already living with me in this country
  - 2 not expect them to join me
  - 3 within a year
  - 4 after one year
  - 5 after two years
  - 6 after three years
  - 7 after four or more years
18. Are there any people in your country that you would like to sponsor for studies in the United States?
- 0 none
  - 1 brother or brothers
  - 2 sister or sisters
  - 3 other relatives
  - 4 friends
19. Have you visited your home country since coming to the United States?
- 0 no
  - 1 yes

20. If you have visited your home country, please mark the most appropriate reason:

- 0 have not visited home
  - 1 just for a visit
  - 2 exchange visa expired
  - 3 sponsored by my government
  - 4 lack of money support
  - 5 any other reason, please specify \_\_\_\_\_
- 

21. What is your class rank in American university?

- 1 freshman
- 2 sophomore
- 3 junior
- 4 senior
- 5 masters candidate
- 6 doctoral candidate
- 7 post-doctoral
- 8 any other, please specify \_\_\_\_\_

22. What is your major field of study in the United States?

---

23. How much education did you have before coming to the United States?

- 0 grade school
- 1 high school
- 2 attended college or university for few years
- 3 B.A. or B.S. degree
- 4 M.A. or M.S. degree
- 5 Ph.D. degree
- 6 any other degree, please specify \_\_\_\_\_

24. What degree do you plan to earn in this country?

- 0 none
- 1 B.A. or B.S.
- 2 M.A. or M.S.
- 3 Ph.D.
- 4 any other degree, please specify \_\_\_\_\_

25. What financial arrangements were made for your coming to the United States?

- 1 scholarship awarded by my government
- 2 scholarship awarded by the American government
- 3 fellowship or assistantship awarded by an American university
- 4 sponsored by a private American organization or firm
- 5 sponsored by a private organization or firm in my country

- 6 fully supported by my parents or relatives
  - 7 got part-time job on the campus
  - 8 received a loan from my government or private group
  - 9 any other means of support, please specify \_\_\_\_\_
26. Since you have been in the United States for several months, how are you supporting yourself now?
- 1 receiving a scholarship from my government
  - 2 receiving a scholarship or grant from the American government
  - 3 receiving a fellowship or an assistantship from an American university
  - 4 receiving financial help from a private American organization or firm
  - 5 receiving financial help from a private organization or firm in my country
  - 6 receiving full support from my parents or relatives
  - 7 working part-time on the campus
  - 8 receiving a loan from my government or private group
  - 9 any other means of support you are receiving, please specify \_\_\_\_\_
27. How is your wife supported?
- 0 not married
  - 1 solely by me
  - 2 she works
  - 3 I send her money
  - 4 our families help support her
  - 5 she receives help from some other source
28. Do you help support any of your relatives in your home country?
- 0 none
  - 1 parents
  - 2 brother or sister
  - 3 other relative
  - 4 unrelated person
29. How long did it take you to get your travel documents?
- 1 less than a month
  - 2 one month
  - 3 two months
  - 4 three months
  - 5 four months or more
30. Which of the travel documents did you have the most delay in getting?
- 0 none
  - 1 passport
  - 2 visa
  - 3 foreign exchange permit

- 4 international vaccination certificate
  - 5 income tax clearance
  - 6 any other document, please specify \_\_\_\_\_
31. If you were employed in your country before coming to the United States:
- 0 was a student
  - 1 was unemployed
  - 2 resigned from my job
  - 3 got leave with pay
  - 4 got leave without pay
32. What type of visa did you get to come to this country?
- 1 student visa
  - 2 exchange visa
  - 3 visitor's visa
  - 4 immigrant visa
  - 5 any other type of visa, please specify \_\_\_\_\_
33. Since you have been in this country have you ever changed your visa?
- 0 no, I have never changed my visa
  - 1 changed from a visitor's visa to student
  - 2 changed from student to practical training
  - 3 changed from student to permanent
  - 4 changed to any other visa, please specify \_\_\_\_\_
34. When you first arrived in this country, what were you planning to do on completion of your studies?
- 1 return to home country immediately on completion of schooling
  - 2 stay for 18 months for practical training
  - 3 stay permanently in the United States
  - 4 go to some other country for a job
  - 5 stay in this country for 2 to 5 years and then return home
35. Since you have been in this country for several months, what are your plans now?
- 1 return to home country immediately on completion of schooling
  - 2 stay for 18 months for practical training
  - 3 stay permanently in the United States
  - 4 go to some other country for a job
  - 5 stay in this country 2 to 5 years and then return home
36. If you have plans to return to your home country on completion of your studies, what type of job would you like to do? Please specify:
-

37. If you have plans to return to your country on completion of your studies, do you plan to work for?
- 1 your government
  - 2 private firm or concern
  - 3 run your own business
38. If you wish to return to your country on completion of your studies, what are your chances in finding a suitable job?
- 1 excellent chances
  - 2 very good chances
  - 3 good chances
  - 4 little chances
  - 5 very little chances
  - 6 no chances
39. If you are unable to find a suitable job in your country while trying from the United States, what do you plan to do then?
- 1 return home and stay there whether or not I find a job
  - 2 return home and try to find a job there and, if unsuccessful try to come back to the United States or go to some other country
  - 3 stay in the United States till I find a job in my country
  - 4 stay in the United States permanently
  - 5 any other plans, please specify \_\_\_\_\_
40. If you plan to return to your country on completion of your studies, please indicate your reason:
- 1 scholarship awarded by my government or the American government requiring my return
  - 2 my family and relatives are at home
  - 3 due to prejudice and discrimination exhibited by Americans
  - 4 unable to find a suitable job in the United States
  - 5 unable to change my visa requiring my return
  - 6 any other reason, please specify \_\_\_\_\_
41. If you plan to remain in the United States, what is your reason?
- 1 greater economic rewards in the United States
  - 2 better living conditions in this country
  - 3 may not find a suitable job in my country
  - 4 married an American
  - 5 any other reason, please specify \_\_\_\_\_
42. If you plan to remain in the United States on completion of your studies, what type of job would you like to do? (What would you do for a living?) Please specify \_\_\_\_\_
-

43. Now that you have filled the questionnaire, how do you feel about it?

- 1 I felt it was worthwhile
  - 2 I was glad to answer it.
  - 3 I was willing to answer it but not happy
  - 4 it annoyed me
  - 5 it took up too much of my time
  - 6 I felt some of the questions were too personal
  - 7 any other comments that you would like to make
- 
- 

NOTE:

The questionnaire was generally understandable by the respondents. However, the wording of question number 31 might have been more clearly stated.



APPENDIX C

A LETTER SENT TO INTERNATIONAL STUDENT ORGANI-  
ZATIONS ALONG WITH QUESTIONNAIRES



**OKLAHOMA STATE UNIVERSITY • STILLWATER**

Department of Sociology  
372-6211, Exts. 7020, 7021

74074

November 2, 1968

Dear Friend:

In connection with my research, I need some information with regard to foreign students currently enrolled at various American universities.

As I have not been able to obtain a directory from the foreign students office at your university, I will be grateful for your kind help and cooperation in getting the enclosed questionnaires filled and mailed back to me. Your university has been randomly selected as one of the samples for my research.

It might be helpful if you could get these questionnaires filled at your various association meetings, as then you will be sure of getting back the questionnaires and it will also save you the botheration of chasing after students.

Thank you for your kind consideration.

Fraternally yours,

*Man Singh Das*

Man Singh Das

APPENDIX D

A FOLLOW-UP LETTER SENT TO THOSE FOREIGN  
STUDENTS WHO DID NOT RETURN THE QUES-  
TIONNAIRE AT THE FIRST REQUEST



**OKLAHOMA STATE UNIVERSITY • STILLWATER**

Department of Sociology  
372-6211, Exts. 7020, 7021

74074

November 25, 1968

Dear Friend:

A few days ago I mailed you a questionnaire inquiring about your attitudes and your views on higher studies abroad. If you have already completed and returned the form, please accept my thanks for your kind cooperation.

If you have not as yet completed and returned the questionnaire, may I urge you to do so at your earliest convenience. Since this questionnaire was sent to such a small number of carefully selected persons it is important that each individual responds. Your response is essential to the ultimate worth of this survey.

Thank you again for your help.

Gratefully yours,

*Man Singh Das*

Man Singh Das

APPENDIX E

SECOND FOLLOW-UP LETTER SENT TO THOSE FOREIGN  
STUDENTS WHO DID NOT RETURN THE QUESTIONNAIRE  
AT THE SECOND REQUEST ALONG WITH A SECOND  
COPY OF THE QUESTIONNAIRE IN CASE THEY  
HAD LOST THE FIRST ONE



**OKLAHOMA STATE UNIVERSITY • STILLWATER**

Department of Sociology  
372-6211, Exts. 7020, 7021

74074

December 7, 1968

Dear Friend:

Some weeks ago I sent you a questionnaire followed by a second personal request. I am wondering whether you received the questionnaire.

I am enclosing a second copy and I hope you will kindly take a few minutes to fill it. Since this questionnaire was sent to such a small number of carefully selected persons, you being one of them, it is important that each individual responds.

Thanking you for your time and cooperation.

Faternally yours,

*Man Singh Das*

Man Singh Das

APPENDIX F

A LETTER SENT TO THIRTY-ONE EMBASSIES OF ASIA,  
AFRICA AND LATIN AMERICA LOCATED IN  
WASHINGTON, D. C.



**OKLAHOMA STATE UNIVERSITY • STILLWATER**

Department of Sociology  
372-6211, Ext. 7020, 7021

74074

January 20, 1969

Dear Sir:

A doctoral dissertation attempting to measure the degree of "brain drain" relating to foreign students coming to the United States from less developed and developing countries of Asia, Africa and Latin America is now in preparation.

The source of data for this research will be derived from a questionnaire which I propose to administer by mail to a statistically controlled sample of students from thirty-one foreign countries currently studying at twenty major American universities. Your country has been chosen as one of them as a large number of students enroll every year for advanced studies in this country. I will be grateful if you could assist me in the following ways:

(1) Please send me any data or information that your embassy might have related to my research project which would be used with proper citation and appreciation. I want the study to be as exhaustive as possible.

(2) Please let me know approximately how many students from your country are currently studying in the United States. And also if it is possible, please give us some figures of those students who have been sponsored by your government for study in this country.

(3) Can you give us a rough idea of the employment situation in your country?

(4) Kindly let me know what job opportunities your students would have when they return to their homes on completion of their studies in the United States.

(5) Could you please tell us the policy of your government toward those students who decide to stay in this country permanently. Does your government or private concerns make any effort to persuade students to return home after completion of their studies in this country? Do you have any job recruitment program for your students in this country?



I am hoping that the proposed research will lead toward generating a theory of international "brain drain." I am sure that the practical outcome of this research will help your government to take necessary emergency remedial measures.

The success of this research is dependent on your cooperation. I will be very happy to send you a copy of my research findings which may be of some value to your government. I fully appreciate the degree of work that would be involved in compiling this information.

I shall look forward to hearing from you in the near future. Thanking you for your kind cooperation and help.

Gratefully yours,

Man Singh Das  
Teaching and Research Associate  
Department of Sociology

Mr. Das is doing outstanding work. We do urge your cooperation in any way possible. In several years of experience, Mr. Das tops all in scholarship, grace, and humanness. Your help will be appreciated.

Gene Acuff, Ph.D.  
Head, Department of Sociology

MSD/ss

APPENDIX G

CODING AND TABULATING PROCEDURES  
OF THE QUESTIONNAIRE

CODING AND TABULATING PROCEDURES

OF THE QUESTIONNAIRE

Question	Card Column	Frequency	Percentage
Respondent Number	1-4	1400	
1. What country are you a citizen?	5-6		
01 India		194	13.9
02 Pakistan		36	2.6
03 Iran		53	3.8
04 China		91	6.5
05 South Korea		52	3.7
06 Philippines		53	3.8
07 Burma		24	1.7
08 Thailand		53	3.8
09 South Vietnam		22	1.6
10 Jordan		45	3.2
11 Indonesia		31	2.2
12 Egypt		52	3.7
13 Ghana		40	2.9
14 Tunisia		32	2.3
15 Morocco		30	2.1
16 Algeria		31	2.2
17 Nigeria		46	3.3
18 Ethiopia		43	3.1
19 Libya		34	2.4
20 Liberia		34	2.4
21 Sudan		30	2.1
22 Brazil		52	3.7
23 Peru		24	1.7
24 Ecuador		36	2.6
25 Venezuela		45	3.2
26 Bolivia		34	2.4
27 Honduras		37	2.6
28 Nicaragua		40	2.9
29 Paraguay		35	2.5
30 Haiti		32	2.3
31 Dominican Republic		39	2.9
2. Name of your continent:	7		
1 Asia		654	46.71
2 Africa		372	26.57
3 Latin America		374	26.71

## APPENDIX G (Continued)

Question	Card Column	Frequency	Percentage
✓ 3. Date of your arrival in the United States:	8-9		
01 one year (1968)		890	63.6
02 two years (1967)		276	19.7
03 three years (1966)		85	6.1
04 four years (1965)		87	6.2
05 five years (1964)		35	2.5
06 six years (1963)		10	0.7
07 seven years (1962)		6	0.4
08 eight years (1961)		3	0.2
09 nine years (1960)		4	0.3
10 ten and over (1959 and before)		4	0.3
✓ 4. What was your age at your last birthday?	10		
1 under 25 years		968	69.14
2 25-29 years		340	24.29
3 30 and over		92	6.57
✓ 5. Your sex:	11		
1 male		1400	100.00
2 female		0000	00.00
✓ 6. What is your marital status?	12		
0 no answer		1	0.07
1 single		1087	77.64
2 married		307	21.93
3 widowed		3	0.21
4 divorced		0	0.00
5 separated		2	0.14
7. How many children do you have?	13		
0 none		1220	87.14
1 one		113	8.07
2 two		43	3.07
3 three		15	1.07
4 four or more		9	0.64
8. Where is your wife living now?	14		
0 am not married		1092	78.00
1 in home country		198	14.14
2 in the United States		110	7.86

## APPENDIX G (Continued)

Question	Card Column	Frequency	Percentage
✓ 9. What were you doing in your home country prior to your coming to the United States?	15		
0 no response		5	0.36
1 student		997	71.21
2 employed by the government		219	15.74
3 employed by a private firm		145	10.24
4 owned a business		29	2.10
5 unemployed		5	0.36
6 student and part-time work		0	0.00
10. What did you actually do for a living? Please specify the work that you did.	16-17		
00 unemployed		10	0.7
01 student		997	71.2
02 professional		175	12.5
03 semi-professional		6	0.4
04 proprietor, manager, official (except farm)		169	12.1
05 farmer or farm manager		1	0.1
06 clerical, sales		17	1.2
07 craftsman, foreman		13	0.9
08 operative		4	0.3
09 domestic service work		0	0.0
10 protective service work		4	0.3
11 other service work		4	0.3
12 laborer (farm or non-farm)		0	0.0
13 no opinion		0	0.0
11. What is or was your father's main occupation? (What does or did your father do for a living?)	18-19		
01 unemployed		0	0.0
02 professional		234	16.7
03 semi-professional		3	0.2
04 proprietor, manager, official (except farm)		813	58.1
05 farmer or farm manager		284	20.3
06 clerical, sales		27	1.9
07 craftsman, foreman		9	0.6
08 operative		18	1.3
09 domestic service work		0	0.0
10 protective service work		5	0.4
11 other service work		0	0.0
12 laborer (farm or non-farm)		0	0.0
13 no opinion		7	0.5

## APPENDIX G (Continued)

Question	Card Column	Frequency	Percentage
12. Which category comes closest to representing your parents' annual total income?	20		
0 under \$500		51	3.64
1 \$500 - \$999		87	6.21
2 \$1,000 - \$2,999		255	18.21
3 \$3,000 - \$4,999		330	23.57
4 \$5,000 - \$6,999		321	22.93
5 \$7,000 - \$8,999		180	12.86
6 \$9,000 - \$10,999		86	6.14
7 \$11,000 - \$12,999		33	2.36
8 \$13,000 or more		54	3.86
9 not known		3	0.21
13. How many years were you employed before coming to the United States?	21		
0 student		997	71.21
1 unemployed		8	0.64
2 employed for one year		114	8.14
3 employed for two years		95	6.79
4 employed for three years		64	4.57
5 employed for four years		35	2.50
6 employed for five or more years		87	6.21
14. How long did you work with the last employer before coming to the United States?	22		
0 was a student		997	71.21
1 was unemployed		8	0.57
2 less than a year		58	4.14
3 one year		75	5.36
4 two years		99	7.07
5 three years		61	4.36
6 four years or more		102	7.29
15. Were you satisfied or dissatisfied with your job?	23		
0 was a student		997	71.21
1 was unemployed		8	0.57
2 satisfied very much		176	12.57
3 satisfied pretty much		100	7.14
4 satisfied a little		69	4.93
5 dissatisfied a little		21	1.50
6 dissatisfied pretty much		18	1.29
7 dissatisfied very much		11	0.79

## APPENDIX G (Continued)

Question	Card Column	Frequency	Percentage
16. Were you satisfied or dissatisfied with your salary?	24		
0 was a student		997	71.21
1 was unemployed		8	0.57
2 satisfied very much		137	9.79
3 satisfied pretty much		85	6.07
4 satisfied a little		92	6.57
5 dissatisfied a little		39	2.79
6 dissatisfied pretty much		16	1.14
7 dissatisfied very much		26	1.86
17. If your wife and/or children are presently living in your home country, do you expect them to join you in the United States?	25		
0 I am not married		1097	78.36
1 my wife and/or children are already living with me in this country		105	7.50
2 not expect them to join me		107	7.64
3 within a year		52	3.71
4 after one year		25	1.79
5 after two years		13	0.93
6 after three years		1	0.07
7 after four or more years		0	0.00
18. Are there any people in your country that you would like to sponsor for studies in the United States?	26		
0 none		1118	79.86
1 brother or brothers		167	11.93
2 sister or sisters		38	2.71
3 other relatives		42	3.00
4 friends		32	2.29
5 both brother and sister		3	0.21
6 any other people		0	0.00
19. Have you visited your home country since coming to the United States?	27		
0 no		1279	91.36
1 yes		121	8.64

## APPENDIX G (Continued)

Question	Card Column	Frequency	Percentage
20. If you have visited your home country, please mark the most appropriate reason?	28		
0 have not visited home		1279	91.36
1 just for a visit		110	7.86
2 exchange visa expired		2	0.14
3 sponsored by my government		3	0.36
4 lack of money support		0	0.00
5 any other reason, please specify		6	0.57
✓21. What is your class rank in American university?	29		
0 not known		6	0.43
✓1 freshman		120	8.57
✓2 sophomore		186	13.29
✓3 junior		162	11.57
✓4 senior		116	8.29
5 masters candidate		637	45.50
6 doctoral candidate		156	11.14
7 post-doctoral		5	0.36
8 special student		11	0.79
9 intern, nurse--exchange		1	0.07
✓22. What is your major field of study in the United States?	30		
0 no answer		1	0.07
1 agriculture		224	16.00
2 business administration		60	4.29
3 education		19	1.36
4 engineering		707	50.50
5 humanities		22	1.57
6 medical sciences		71	5.07
7 physical and life sciences		225	16.07
8 social sciences		60	4.29
9 technical education		11	0.79
✓23. How much education did you have before coming to the United States?	31		
0 grade school		15	1.07
1 high school		191	13.64
2 attended college for few years		378	27.00
3 B.A. or B.S. degree		670	47.86
4 M.A. or M.S. degree		130	9.29
5 Ph.D. degree		2	0.14
6 diploma		10	0.71
7 medical degree		3	0.21
8 vet. medicine degree		0	0.00
9 any other		1	0.07



## APPENDIX G (Continued)

Question	Card Column	Frequency	Percentage
24. What degree do you plan to earn in this country?	32		
0 none		13	0.93
1 B.A. or B.S.		263	18.79
2 M.A. or M.S.		818	58.43
3 Ph.D.		289	20.64
4 medical degree		11	0.79
5 diploma		1	0.07
6 any other		5	0.36
25. What financial arrangements were made for your coming to the United States?	33		
0 no answer		0	0.00
1 scholarship awarded by my government		254	18.14
2 scholarship awarded by the American government or U.N.		57	4.07
3 fellowship or assistantship by an American university		153	10.93
4 sponsored by an American organization		31	2.21
5 sponsored by a private organization in my country		60	4.29
6 fully supported by my parents or relatives		714	51.00
7 got part-time job on the campus		12	0.86
8 received a loan from my government or private group		97	6.93
9 partially parents and partially my own savings or my own savings		22	1.57
26. Since you have been in the United States for several months, how are you supporting yourself now?	34		
0 no answer		1	0.07
1 receiving a scholarship from my government		246	17.57
2 receiving a scholarship or grant from the American government or U.N.		62	4.43
3 receiving a fellowship or an assistantship from an American university		275	19.64
4 receiving financial help from a private American organization or firm		28	2.00

## APPENDIX G (Continued)

Question	Card Column	Frequency	Percentage
5 receiving financial help from a private organization or a firm in my country		41	2.93
6 receiving full support from my parents or relatives		320	22.86
7 working part-time on the campus		352	25.14
8 receiving a loan from my government or private group		38	2.71
9 partially parents and partially my own savings or my own savings		37	2.64
27. How is your wife supported?	35		
0 am not married		1081	77.21
1 solely by me		122	8.71
2 she works		103	7.36
3 I send her money		10	0.71
4 our families help support her		75	5.36
5 partially my family and partially I help her		6	0.43
6 she receives help from some other source		2	0.14
7 no answer		1	0.07
28. Do you help support any of your relatives in your home country?	36		
0 none		1303	93.07
1 parents		63	4.50
2 brother or sister		21	1.50
3 other relatives		8	0.57
4 unrelated person		4	0.29
5 parents and brother and/or sister		1	0.07
29. How long did it take you to get your travel documents?	37		
0 no answer		10	0.71
1 less than a month		592	42.29
2 one month		432	30.86
3 two months		267	19.07
4 three months		52	3.71
5 four months or more		47	3.36
30. Which of the travel documents did you have the most delay in getting?	38		
0 none		748	53.43
1 passport		352	25.14
2 visa		125	8.93
3 foreign exchange permit		139	9.93

## APPENDIX G (Continued)

Question	Card Column	Frequency	Percentage
4 international vaccination certificate		7	0.50
5 income tax clearance		9	0.64
6 passport and visa		19	1.36
7 I-20 Form		1	0.07
8 permission from the government		0	0.00
9 any other document		0	0.00
31. If you were employed in your country before coming to the United States?	39		
0 was a student		997	71.07
1 was unemployed		24	1.71
2 resigned from my job		190	13.71
3 got leave with pay		111	7.93
4 got leave without pay		77	5.50
5 no answer		1	0.07
32. What type of visa did you get to come to this country?	40		
0 no answer		10	0.71
1 student visa		1308	93.43
2 exchange visa		42	3.00
3 visitor's visa		27	1.93
4 immigrant visa		10	0.71
5 F-2 (dependent) visa		3	0.21
6 diplomatic visa		0	0.00
7 any other		0	0.00
33. Since you have been in this country have you ever changed your visa?	41		
0 no, I have never changed my visa		1319	94.21
1 changed from a visitor's visa to student		40	2.86
2 changed from student to practical training		8	0.57
3 changed from student to permanent		25	1.79
4 changed from diplomatic to any other		7	0.50
5 changed to any other visa		1	0.07
34. When you first arrived in this country, what were you planning to do on completion of your studies?	42		
0 undecided		17	1.21
1 return home immediately on completion of schooling		852	60.86

## APPENDIX G (Continued)

Question	Card Column	Frequency	Percentage
2 stay for 18 months for practical training		352	25.21
3 stay permanently in the United States		23	1.64
4 go to some other country for a job		7	0.50
5 stay in the United States for 2 to 5 years and then return home		147	10.50
6 any other plan		2	0.07
✓ 35. Since you have been in this country for several months, what are your plans now?	43		
0 undecided		10	0.71
1 return home immediately on completion of schooling		570	40.71
2 stay for 18 months for practical training		417	29.79
3 stay permanently in the United States		118	8.43
4 go to some other country for a job		10	0.71
5 stay in the United States for 2 to 5 years and then return home		274	19.57
6 any other plan		1	0.07
✓ 36. If you have plans to return to your home country on completion of your studies, what type of job would you like to do? Please specify:	44-45		
00 stay in the United States permanently		124	8.9
01 professional		541	38.3
02 semi-professional		6	0.4
03 proprietor, manager, official (except farm)		495	35.6
04 farmer or farm manager		79	5.7
05 clerical or sales		2	0.1
06 craftsman, foreman		0	0.0
07 operative		0	0.0
08 domestic service work		0	0.0
09 protective service work		0	0.0
10 other service work		6	0.4
11 laborer (farm or nonfarm)		2	0.1
12 no opinion		36	2.6
13 go to some other country		4	0.3
14 stay in the United States 2 to 5 years		105	7.5

## APPENDIX G (Continued)

Question	Card Column	Frequency	Percentage
37. If you have plans to return to your country on completion of your studies, do you plan to work for?	46		
0 stay in the United States permanently		115	8.21
1 your government		721	51.50
2 private firm		318	22.71
3 run your own business		119	8.50
4 undecided		15	1.07
5 go to some other country		4	0.29
6 stay in the United States 2 to 5 years		106	7.57
7 no answer		2	0.14
38. If you wish to return to your country on completion of your studies, what are your chances in finding a suitable job?	47		
0 stay in the United States permanently		91	6.50
1 excellent chances		534	38.14
2 very good chances		341	24.36
3 good chances		297	21.21
4 little chances		96	6.86
5 very little chances		28	2.00
6 no chances		7	0.50
7 already have a job in my country		5	0.36
8 difficult to tell the situation in my country		1	0.07
9 go to some other country for a job		0	0.00
39. If you are unable to find a suitable job in your country while trying from the United States, what do you plan to do then?	48		
0 undecided		12	0.86
1 return home and stay there		748	53.43
2 return home and try to find a job there and, if unsuccessful try to come back to the United States or go to some other country		124	8.86
3 stay in the United States until I find a job in my country		343	24.50
4 stay in the United States permanently		129	9.21

## APPENDIX G (Continued)

Question	Card Column	Frequency	Percentage
5 already have a job in my country		41	2.93
6 go to some other country		2	0.14
7 any other plans		1	0.07
✓40. If you plan to return to your country on completion of your studies, please indicate your reason:	49		
0 stay in the United States permanently		122	8.71
1 scholarship awarded by some government		252	18.00
2 my family and relatives are at home		663	47.36
3 due to prejudice and discrimination in the United States		277	19.79
4 may not find a suitable job in the United States		16	1.14
5 may not be able to change my visa		11	0.79
6 due to patriotism		59	4.21
7 any other reason		0	0.00
✓41. If you plan to remain in the United States, what is your reason?	50		
0 return to my country		950	67.86
1 greater economic rewards in the United States		176	12.57
2 better living conditions		137	9.79
3 may not find a suitable job in my country		89	6.36
4 married an American citizen		10	0.71
5 greater economic rewards, better living conditions and greater opportunities		36	2.57
6 due to political situation at home		2	0.14
7 like the American government system--greater freedom in the United States		0	0.00
8 any other reason		0	0.00
✓42. If you plan to remain in the United States on completion of your studies, what type of job would you like to do? (What would you do for a living?)	51-52		
00 return to my country		954	68.1
01 professional		338	24.2
02 semi-professional		2	0.1

## APPENDIX G (Continued)

Question	Card Column	Frequency	Percentage
03 proprietor, manager, official (except farm)		98	7.0
04 farmer or farm manager		1	0.1
05 clerical or sales		1	0.1
06 craftsman, foreman		0	0.0
07 operative		1	0.1
08 domestic service work		1	0.1
09 protective service work		0	0.0
10 other service work		0	0.0
11 go to some other country		2	0.1
12 no opinion		2	0.1
✓43. Now that you have filled the ques- tionnaire, how do you feel about it?	53		
0 no opinion		3	0.21
1 I felt it was worthwhile		575	41.07
2 I was glad to answer it		615	43.93
3 I was willing to answer it		71	5.07
4 it annoyed me		12	0.86
5 it took up too much time		16	1.14
6 some questions were too personal		75	5.36
7 good project and results should be sent to various governments along with the recommendations		33	2.36
8 other comments		0	0.00

VITA

Man Singh Das

Candidate for the Degree of

Doctor of Philosophy

Thesis: EFFECT OF FOREIGN STUDENTS' ATTITUDES TOWARD RETURNING TO THE COUNTRY OF ORIGIN ON THE NATIONAL LOSS OF PROFESSIONAL SKILLS

Major Field: Sociology

Biographical:

Personal Data: Born in Mainpuri, Uttar Pradesh, India, May 6, 1932, the youngest son of the late Bhagwan Das and late Sona Bhagwan Das.

Education: Attended Christian High School in Farrukhabad, India, 1940-1949; completed High School from Christian Inter College, Etah, Uttar Pradesh, India, in June, 1951; passed Intermediate examination of Uttar Pradesh Board of High School and Intermediate, India, in June, 1953; completed requirements for the Bachelor of Science degree from University of Allahabad, India, in June, 1955, with majors in chemistry, zoology, and botany; completed requirements for the Bachelor of Divinity degree from Serampore University, India, in April, 1958, with a major in theology; received the Master of Theology degree from Princeton Theological Seminary in June, 1960, with a major in Comparative Religions; received the Master of Arts degree from Morehead State University in August, 1961, with a major in Education and a minor in Sociology; received the Master of Arts degree from University of Illinois in June, 1963, with a major in Sociology; entered Oklahoma State University, Stillwater, Oklahoma, in September, 1967, specializing in Demography, Industrial Sociology, and Sociology of the Family; completed requirements for the Doctor of Philosophy degree at Oklahoma State University in August, 1969.



Professional experience: Research assistant, Department of Organized Research, Jabalpur, India, 1956-1958; Pastor and industrial evangelist, North India Synod of the United Church of Northern India, May, 1958, to August, 1959; graduate assistant, Morehead State University, 1960-1961; research associate, Blue Cross and Blue Shield, Chicago, 1963-1964; Minister of Christian Education, Neighborhood Methodist Church, Maywood, Illinois, 1964-1967; graduate teaching associate, Department of Sociology, Oklahoma State University, September, 1967, to January, 1969; instructor, College of Arts and Science Extension, Oklahoma State University, September, 1968, to May, 1969; instructor, Department of Sociology, Oklahoma State University, February, 1969, to August, 1969; assistant professor of Sociology at Northern Illinois University, DeKalb, Illinois, beginning September, 1969.

Membership in professional organizations: Southern Sociological Society; American Sociological Association; Full member, Northern Illinois Annual Conference, The United Methodist Church.

Publications: Author and co-author of the following publications:

1. Man Singh Das, "Community Role of the Churches in India," The United Church Review, XXXVI (1965), 274-278. Also appeared in Indian Witness, XCV (1965), 1-2.
2. Man Singh Das, "The Indian Church and Converts," The United Church Review, XXXVII (1966), 81-84. Also appeared in Indian Witness, XCVI (1966), 1-2.
3. Man Singh Das and F. Gene Acuff, "The Caste Controversy in Comparative Perspective: India and the United States," will appear in the International Journal of Comparative Sociology, XI (March, 1970).
4. Man Singh Das, Donald E. Allen and F. Gene Acuff, "The Attitude of Foreign Students Toward Returning to Their Home Countries on Completion of Their Studies in the United States." Paper presented at the National Association of Student Affairs Conference, Boston, April 30, 1969.