



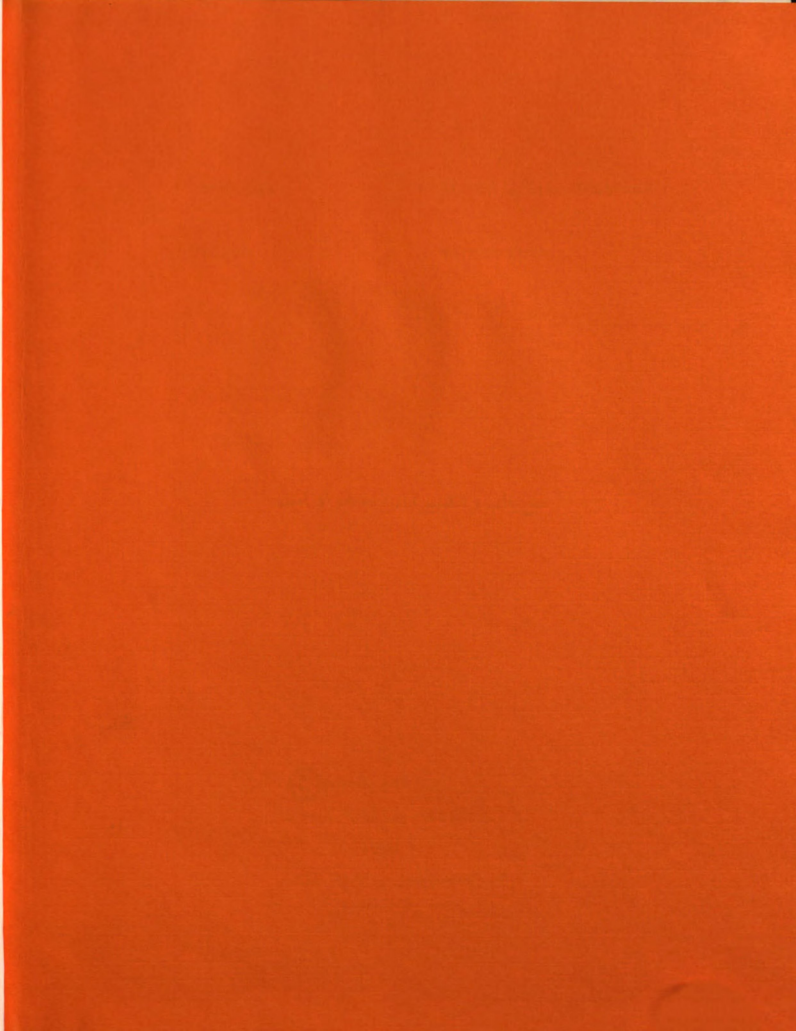
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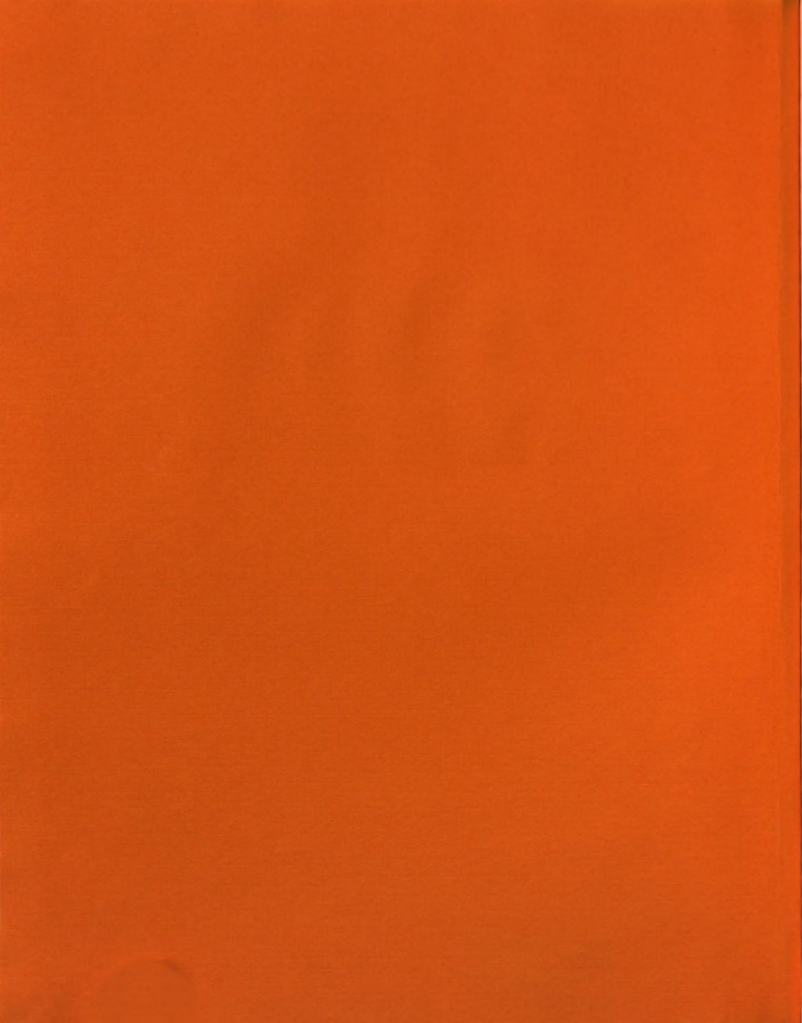
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PROJECTION OF POPULATION AND ENROLLMENTS IN HIGHER
EDUCATION AND ANALYTICAL EVALUATION OF
HIGHER EDUCATION AND MANPOWER DEVELOPMENT
PLANNING IN IRAN (1976-1991)

By

Firooz Jalili-Khiabani

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1980

ABSTRACT

PROJECTION OF POPULATION AND ENROLLMENTS OF HIGHER EDUCATION AND ANALYTICAL EVALUATION OF HIGHER EDUCATION AND MANPOWER DEVELOPMENT PLANNING IN IRAN (1976-1991)

By

Firooz 'Jalili Khiabani'

During the past 25 years, the population of Iran has increased substantially and in the future Iran's population will grow even faster. The consequences of population growth in combination with social, economic and technological developments in the country will create increasing social expectations and high demand for socio-economic services, such as education.

Several social-economic factors, particularly population growth and increase in the standard of living have created serious problems. On one hand, annual demand for education, particularly higher education, has increased dramatically, while on the other hand, there is high demand for well-educated and skilled manpower to render the socio-economic services of a modern society. The worsening imbalance between the large pool of unskilled high school graduates and their demands for higher education, and the limited capacity in higher educational institutions has created and will continue to heighten domestic tensions in

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Iran. At this time, no adequate solutions to this dilemma have been put forth by the ruling central government.

Purpose of Study

This study has the following objectives:

1. To project the population of Iran for 1976-1991.
2. To project enrollments in higher education for 1976-1991, in Iran.
3. To investigate current and future development plans for higher education institutions and facilities in Iran.
4. To investigate current and future manpower development plans in Iran.

Methodology

The following instruments and methods were employed to accomplish the purpose of this study.

1. Nathan Kifitz's population projection model was used for projecting Iran's population (1976-1991).
 2. Ronald Thompson's enrollment projection model was used for projecting higher education enrollment in Iran (1976-1991).
 3. Planning documents and data, round table discussion and interviews were employed to analyze manpower planning in Iran.
- .

Findings

1. Population of Iran compared to the base year 1976 will increase by 15.25 percent in 1981, 30.84 percent by 1986, and 56.41 percent by 1991.
2. Based on past and current trends, future enrollment in higher education will increase from 36,882 in the fall 1966 to 413,539 in the fall 1991. The rate of enrollment increase will be 5.954 percent of the college age population.
3. Analysis of national development plans indicates central government realization of the necessity for increasing higher education (qualitatively and quantitatively), however, these plans do not indicate how, when, where and in what fields, areas or levels of higher education these increases should occur. As such, they do not represent specific planning for increased higher education, merely an indication of need.
4. Analysis of national development plans in relation to manpower development indicates that only recently has the central government concerned itself with this vital area. Like the stated concern for increased higher education, manpower plans are generalized and non-specific and deal with manpower development only as a by-product of higher education.

It is the recommendation of this researcher that the worsening imbalance between demand and supply in higher education and the critical manpower needs of the country can

Firooz 'Jalili Khiabani'

best be met through innovative creation of community level
junior colleges.

Dedicated To

My

Father AND Mother

Whose love and generosity have always helped so much;
Who first instilled in me the desire to know and to accept
challenges.

And to, most importantly,

Masreen

I love you,
Not Only for What You are,
But for what I am
When I am with you.

And, also to my daughter

Armanjan

Firooz

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I have not reached this point alone. There are many people who have kindly and consciously encouraged, supported and provided me helpful assistance along the way from my first year of college to completion of my Ph.D study. Only now, as I look backward, can I accurately identify the role these many people have played along the way. Without them this great success would not have been possible. Therefore, these acknowledgements are for this study as well as for experience before it.

First, to my outstanding committee members:

Dr. James Nelson, chairman, whose enthusiasm for this research study eclipsed my own and repeatedly carried me from problem to solution. It was a high privilege for me when he accepted my request and became chairman of my committee in 1979 when my former advisors and chairman retired. His sincere help and guidance in my work extended to the finish line of my study. Without Dr. Nelson's help I would not have had the courage to finish.

Dr. Max Raines has made this study come from theory and thought to reality. During his course ED 822A he directed me toward previously unknown way of education, which was the community college, as future occupation for myself and a new system of higher education for my country.

Dr. Cole S. Brembeck's deep and comprehensive knowledge about international education were constructive and fundamental in the early steps of this study for locating sources, organizations and institutions which could be helpful in this research.

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There are others who cannot be named here, but who will be remembered forever by me. My education and success have been an accumulation of experiences from and with others, resulting in change in myself. I am grateful for that and have to continue.

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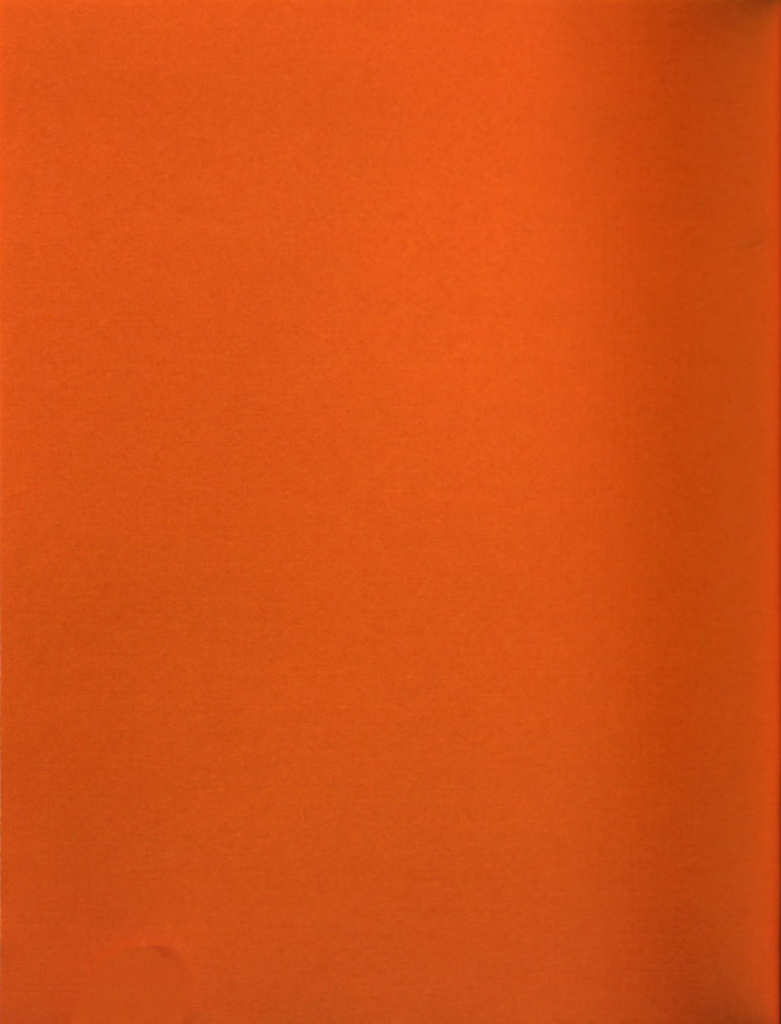
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**Chapter
One
Statement
and
Background
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CHAPTER ONE

INTRODUCTION

Statement and Background of the Problem

During the second half of the 20th Century, Iran's population growth has paralleled that of the world as a whole. The growth has not been evenly distributed, however, among different provinces and regions throughout the country. Colleges, universities and other post high school institutions are also widely scattered. The development of higher education, of the Western type, in Iran since the founding of the first college in 1852 (Dar al Funun)¹ has been phenomenal. Democratic ideals and expanding educational opportunities, particularly in lower post-secondary education, to meet society's rapidly changing population, economy, and technology have not, however, been realized. The serious and worsening imbalance between the supply of unskilled high school graduates and the availability of higher education

¹Joseph S. Szyliowicz, Education and Modernization in the Middle East. (Ithaca: Cornell University Press, 1973). p. 170. See also Arastch. Rez. "Education and Social Awakening in Iran 1850-1950." Leiden. E.J. Brill. Netherlands, 1969.

for them has and will heighten domestic tensions in Iran.

The burden of a rapidly growing population will present a further challenge to the central and provincial governments. Every year, for various socio-economical reasons, especially population growth and increases in the standard of living, there is greater demand from the people and a stronger inclination of the youth toward higher education. All these reasons render that challenge inevitable. Though the facilities and the number of higher education institutions have also been growing, their rate of growth has been much slower and more disproportionate to demand every year. The number of student candidates who are unable to secure admission to institutions of higher education represents more than 80% of the total registered applicants every year, simply because the secondary schools in Iran prepare and graduate more students than there are placements. Though many may fulfill the qualifications for entry, few can be admitted due to the limited vacancies and admission capacity of higher education institutions. Those who are not admitted to post-secondary institutions constitute a political and social force against government, not always constructive, not prepared for professions, a force of unemployment and unrest.

There has not been any effort toward integrating higher education and its goals and objectives with national needs and interests, conveniences and necessities of the country.

Today, because of rapid and continuous social-economic development in the past decade, Iran faces a complexity of modern life that requires preparation for a much greater variety of professions and occupations. On the other hand, the increasingly diverse population from which the candidates are drawn brings forth a greater variety of talents and capacities. As democratization and industrialization grow, the areas as well as the range of occupations must necessarily expand.

One of the reasons for the increase in aspirants to higher education is the fact that secondary education in Iran still adheres to predominantly traditional forms of education which result in most of the country's youth being educated without preparation for practical skills or a profession. Consequently, much greater cooperative levels for the expansion and the enrichment of facilities for higher education. This is the cornerstone of any sound policy in this field--and is needed not merely to solve or mitigate the problems of access to higher education and growing demand for post-secondary education, but also to meet the rising requirements of national welfare and social development.

Every form of development and progressive change, in a very real sense, the whole bright future of Iran and Iranians is conditioned by the availability, in sufficient numbers and adequate quality, of graduates of institutions of higher education able to assume the growing responsibility of modern life in Iran. This calls for a

greater diversification of offerings at lower levels of higher education through innovation and transformation of higher educational structure in order to achieve greater rationalization and differentiation. The primary goal is to train students in needed middle manpower skills at various levels and in different fields through an optimum structure. What is needed, above all, is a strong urge for quantitative expansion, and qualitative and structural reforms in Iran's higher education through establishment and development of community colleges all across the country.

Population Growth and Increasing Demand
for Higher Education

Providing higher education facilities for a mounting number of young Iranian people of college age poses, perhaps, one of the most serious problems in the period immediately ahead. In 1966 the total population of Iran was 26,042,000². It increased to 30,020,000 in 1970³ and 33,662,176 by 1976⁴. It is estimated that in 1991, the population will be 52,650,157 persons.

The phenomenal growth in population and school enrollment is, in part, a result of a sharp rise in births which began after World War II and continued through the sixties and into the seventies. The rate of population growth is unusually high in Iran, as in other Asian countries, because advances in medicine has brought about a reduction in mortality rates. The increasing number of young people in Iran is not the only factor generating pressure on the capacity of Iranian colleges, universities and advanced school institutions. The proportion of young people who graduate from high school is higher than ever before and this is going

²Plan and Budget Organization (PBO) Statistical Year-Book of Country, 1973, P.B.O.: Statistical Center of Iran. Tehran, 1974. p. 32 (Persian) = Farsi

³Ibid, p.33

⁴Plan and Budget Organization (PBO). National Census of Population and Housing, November 1976. Based on 75 sample total country. P.B.O. Statistical Center of Iran. Tehran, 1977, p.1.

to increase yearly in future decades. In 1963 nearly 29,702 Iranian students graduated from high schools, technical high schools and teacher training schools.⁵ Six years later in 1968, the number of high school, technical high school, and teacher training center graduates increased to 58,113.⁶ It further increased to 121,128 in 1974⁷ and 138,764 in 1977.⁸

Like high school diplomas in past years, a college degree is rapidly coming to be regarded as necessary for personal and social success.

And, as family incomes rise, more and more Iranian families find it financially and socially feasible to send their children to college. At the very least, they are able to support themselves without the aid of their college age children.

The increased enrollment, and anticipated future enrollments because of population growth, pose a common problem for public and private colleges, universities and advanced school institutions. Every year the number of potential applicants for higher education and continuing education is climbing sharply.

⁵P.B.O. Statistical Facts and Socio-economic Development of Iran During Pahlavi Dynasty. Statistical Center of Iran, Tehran, 1975 p. 44 (Persian = Farssi).

⁶Ibid.

⁷Ibid

⁸Ministry of Education: Educational Statistic, 1978
Ministry of Education: Bureau of Statistic, Tehran p. 37-38

Demand and Capacity for Higher Education Institutions

The increasing number of applications for admission to colleges, universities and other institutions of higher education and the growing number of colleges reflect the increased demand. How much this demand represents a thirst for knowledge is questionable, because in Iran much of this demand arises from a desire for a "white collar" career. Hence, while there undoubtedly exists a genuine and widespread desire for greater enlightenment, the demand for collegiate education for the average student is generally associated with the desire for a career and should be recognized as such.

Iran's educational statistics show that during the past fifteen years the number of applicants for higher education has increased very sharply. These figures show a "growth-ratio" of applications and/or demand for high-school education as "74 percent higher"⁹ than the anticipated figure projected by D.J. Vickery in his 1971 study for "group B, Asian Model."¹⁰ This study, which included Iran, forecast that the Ratio Σ_x of "high school students population (H_{SP})"

⁹Anticipated rate for Group B, Asian Model was 13.5 percent while the demand rate in Iran is 23 percent which is 74 percent more.

¹⁰D.J. Vickery, Educational Building Space and Norms for Educational Planners (Colombo: Asian Regional Institute for School Building Research, 1971).

in a given Asian country, to the "total student population (TSP)" in the same country would be 13.5%

$$\sum_x = \frac{H_s SP}{TSP}$$

$$\sum x_{\text{group B}} = 13.5\%^{11}$$

Despite that forecast, the ratio for Iran has been more than 23 percent, which is a result of higher demand for higher education among high-school aged youth in Iran. (Since the ratio is for 1973-1974, the percent now is much higher). Table 1.1 shows the increased demand for "high-school" education in Iran.

It may be observed that in a broad sense, as a result of changes which occurred in Iran during late sixties, the secondary educational system has moved to become a resource available to 50 percent or more of relevant age groups.¹² However, despite the vast demand, higher education in Iran has not undergone marked change since 1968. Few new public or private post secondary institutions have been established and while some new programs and/or major fields of study have been introduced and added, quantitatively their growth

¹¹Ibid, p.37

¹²In 1968, for the first time in Iran's educational history, rural children in some parts of the country were able to go to secondary school in their own villages or in neighboring villages.

TABLE 1.1 NUMBER OF HIGH SCHOOL STUDENTS IN IRAN (1963-77)

Year	Counselling	High School (General)	Vocational School	Teacher Train- ing School	Changes	
					Decrease	Increase
1963		300855	9117	7587		+
1964		326856	9198	5779		+
1966		369069	10467	3773		+
1967		493735	15224	4738		+
1968		579716	15956	5692		+
1969		674058	16273	6093		+
1970		781507	19059	6059		+
1971		897443	23335	9275		+
1972		1012920	30579	13358		+
1973	259218a	1140995b	47561	20676		+
1974	571465	942523	65723	26058		+
1975	907368	747242	69682	34298		+
1976	1151456	666867	133445	37799		+
1977	1184165	618754	180996	46025		+

SOURCE: Statistical Statement about Social and Economic Change in Iran During the
Pahlevi Dynasty (Tehran: Plan and Budget Organization, Statistical Center of Iran;
1977) p. 41

^aIn 1973 secondary education changes and a new system called "Counselling Guiding Cycle" which starts with the 5th grade and ends with the 11th replaces the old.

^bAfter 1973 the number of students in the old type of high schools decreases because those who entered secondary school went into the "Counselling Guiding Cycle."

^cThe author added the figures for the 1977 academic year from Educational Statistics 1978 (Tehran: Ministry of Education, 1978)

is not comparable with the population growth rate and consequently the growth ratio-demand for higher education in Iran. Qualitatively their curriculum, level of education, major fields of study and content are not consistent with the needs and demand of the society for manpower.

Therefore, in contrast with demand and the vital needs of country, the system of higher education is not moving toward becoming mass education. It's uneven expansion has been producing a situation in which the number of placements in higher education has actually diminished relative to the number of applicants for higher education.

Despite industrial, economic, social and demographic changes which have occurred in Iran, the country has not improved its educational system. Every year hundreds of thousands of young energetic Iranians graduate from high schools without any practical skills or work experience, almost all of them seek higher education. Because of a "best come, first served" policy based on a nationwide qualifying entrance examination given once a year in August, actually less than 20 percent of all applicants are accepted in post secondary education. The remaining 80 percent, most without any skills or practical experience, remain unemployed and actually unproductive, useless citizens of the country, meaning that the energies, human resources, public investments and expenditures which have been spent to educate them have been largely wasted.

The complexity of modern life requires preparation and demands a much greater variety of professions, occupations and skills at the middle manpower level.

Inability of High School Education to Prepare Graduates for Employment

The general problem of higher education in Iran--both secondary and post-secondary--is that it lacks practicality and Iranian high schools fail to give their students the practical knowledge that would suit them for employment.¹³

First of all, general high schools are incapable of providing an appropriate curriculum and the proper preparation for employment after high school. Secondly, Iranian high schools are unable to make realistic and reliable judgments about the quality of their training programs, their curriculum and its content. Even judgements about the ability of students to proceed with advanced studies that might make them employable after graduation are faulty.¹⁴

The organization of secondary education in Iran is far from complex, but there are internal problems within the organizational structure of the high school system and

¹³Arasteh. A. Reza. Education and Social Awakening in Iran. 1950-1968 (Second Edition). Leiden, E.J. Brill. 1969. Netherland, Chapter 5 - Norman Jacobs. Sociology of Development, Iran as an Asian Case Study. Fredrick A. Praeger Publishers - New York, 1966, Chapters 4, 11 and 12. International Labour Office. Problems of Employment Creation in Iran, 1970 Geneva, Part 2.

¹⁴Ibid.

external problems in the organizational structure of the national system of education and its components.¹⁵

An examination of the literature indicates that there are varied tasks for secondary education in various countries, but each deals with a certain function for rendering a social service and achieving a goal. In Iran, however, there are no real practical goals for education. Only the traditional goal of "granting a degree" and "issuing a diploma." However, secondary education in Iran prepares and graduates more students than can be admitted to post-secondary instruction. At the present time neither secondary nor higher education is sufficiently diversified to offer the education many students need and the country requires.

One of the reasons which may underlie the increase in those aspiring to higher education is that secondary education in Iran still follows predominantly traditional channels and is directed to traditional forms of higher education. Studies have shown that the problems of higher education originate in the early stages of elementary, and particularly secondary, education.¹⁶

¹⁵Ibid

¹⁶Tabari, Geeta Comperative Search of Social Knowledge from Urban, rural and tribes. Institute for Research and Planning in Science and Education (IRPSE), Feb. 1963, Tehran. (Persian = Farsi).

Lack of Comprehensive Two-Year Institutions of Higher Education

There are different levels of higher education available in different colleges and universities in Iran. Compared with the vital need for junior college level higher education, there are a very limited number of two-year colleges with these types of vocational programs.

General Two-Year Colleges

The number of this type of higher education institution in Iran can be counted on the fingers of one hand. Usually they do not have technical and/or scientific courses but offer programs in humanities, arts and social sciences, since science and technical subjects need more investment, special instructors for each field and laboratories and workshops. All of these institutions are private and they can not afford the annual expenditures which are necessary for scientific technical and industrial fields of study.¹⁷
(See Table 1.2).

¹⁷The System of Higher Education in Iran. (Tehran: Institute for Research and Planning in Science and Education, 1973), p. 28.

TABLE 1.2 . Two Year Institutions of Higher Education in Iran

	CLASSIFICATION	PRIVATE	PUBLIC	
			INDEPENDENT	AFFILIATE
1	General	4	4	-
2	Technical	-	-	38
3	Special	-	-	25
4	Teacher Training	-	-	52
	TOTAL	4	4	115

SOURCE: (For figures) Institute for Research and Planning in Science and Education, 1973.

Technical Institutions

There is another type of two year college which only offers technical and industrial programs, all of them directly or indirectly related to public institutions and/or governmental offices. These two-year colleges have limited capacities and their programs are outdated. They are unable to apply modern methods of technology because they do not have technologists and instructors appropriately educated. The majority of these two-year institutions are affiliated with the Ministry of Education.¹⁸

¹⁸Ibid, p. 26.

Specialized Institutions

This group of Iranian two-year institutions offers very limited programs of study and admits a limited number of applicants. All these two-year institutions are directly related to public and private (a very recent development) offices and institutions. Their duties are to recruit and train personnel for their sponsors. A comparable institution in the U.S. is the General Motors Institute of Flint, Michigan.

According to results of evaluations made by the Ministry of Science and Higher Education, through the Institute for Research and Planning in Science and Education and the Vocational Training Center of Iran, most of these two-year institutions, which now exist in Iran, do not meet the criteria for institutions for higher education. Their curriculum is poor, inefficient, nonproductive and out-of-date. They do not have expert instructors who are technically knowledgeable and competent. It is clear what the end product will be. Graduates of these two-year colleges cannot be depended upon to respond to the needs of society.¹⁹

¹⁹Vocational Training Center. Study of Vocational Training Study of Iran, 1976, Iran.

Heterogeneous Character of Applicants
for Admission to Higher Education

Iran's system of compulsory mass education gives every child and adult some instruction in a formal school system, regardless of the "sociological approach"²⁰ of the education.

Iran is a large country, nearly equal in size to all of Western Europe; there is diversity in culture, language and dialect, as well as in education and social values. This variation in quality/quantity of education, and this variation in culture and language requires an understanding of their nature, their interaction, and their purposes before considering the social characteristics of the Iranian educational system.

In Iran the basic problem is that education is not concerned with teaching the members of the society how they are expected to behave in a variety of situations. This means that it does not deal with developing changes in a citizen's behavior. In Iranian educational philosophy, much of education involves transmitting to the young skills, beliefs, attitudes, and other aspects of behavior, which they have not previously acquired, consistently all across the country, regardless of any differences.

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A. J.C. Ottoway, "Emile Durkhime and Educational Sociology," British Journal of Sociology II (1953): 153-56

Among applicants for admission to higher education in Iran, those cultural and social difference are very important. This is not only true of Iran but of most developing nations of the world. Iran's vast development of technology, rapid economic and population growth, mass secondary education and rapid changes among socio-economical classes has increased the demand for higher education among Iranian youth, with different backgrounds and different mental, intellectual, and educational abilities.

Perhaps this is the most important problem in Iranian higher education which has never been considered by those who are deeply involved in it. Each student who comes from a certain province, city or community brings a set of emotional and mental characteristics which, in a sense, are the raw materials for the colleges and universities to process. Obviously, this is an important issue in higher education in Iran and a basis for research. Diversity of student characteristics prevails, not only in academic ability, but also in social and cultural backgrounds, attitudes, beliefs, values and basic personality. The present system of higher education, which is traditionally oriented, cannot respond to the heterogeneous abilities and diverse characteristics of the incoming applicants.

Geographical Distribution and the Location of Institutions of Higher Education.

The major problem of geographical distribution has become a basis for some other problems. In Iran centralized and decentralized components of higher education are

not based on a projected plan, criteria or standard because, in the first place, "each educational body is operated on an ad hoc basis, outside the framework of any predetermined plan and independently of other sectors, regardless of any relationship which existed between different education planning."²¹

Another problem, as shown in Figure 1.1, is that Iranian colleges, universities and post-secondary institutions are established in a limited number of cities, usually the capital of a province. Geographical distribution of all Iranian colleges, universities and post-secondary institutions is such that there are some provinces which do not have any college and/or university at all. Yet, there are some provinces and cities which have several.

Table 1.3 shows the number of colleges and universities in each province and its percentage of the total post-secondary institutions. Tehran, the capital city has 38.95 percent of the total. Of 17 universities 7 are in Tehran Province; more than 38 percent. Also, of the 86 colleges (offering bachelor's degrees) more than 59 percent are in the capital city or cities around Tehran. There are other cities and provinces which have a high share: Esfahan with 17 institutions (6.85 percent); Mash-had with 12 institutions (4.82 percent) and Tabriz with 9 institutions (3.61 percent);

²¹ Education in the Third Development Plan (Tehran: Plan Organization of Iran, Bureau of Information and Reports, 1968), p.3.

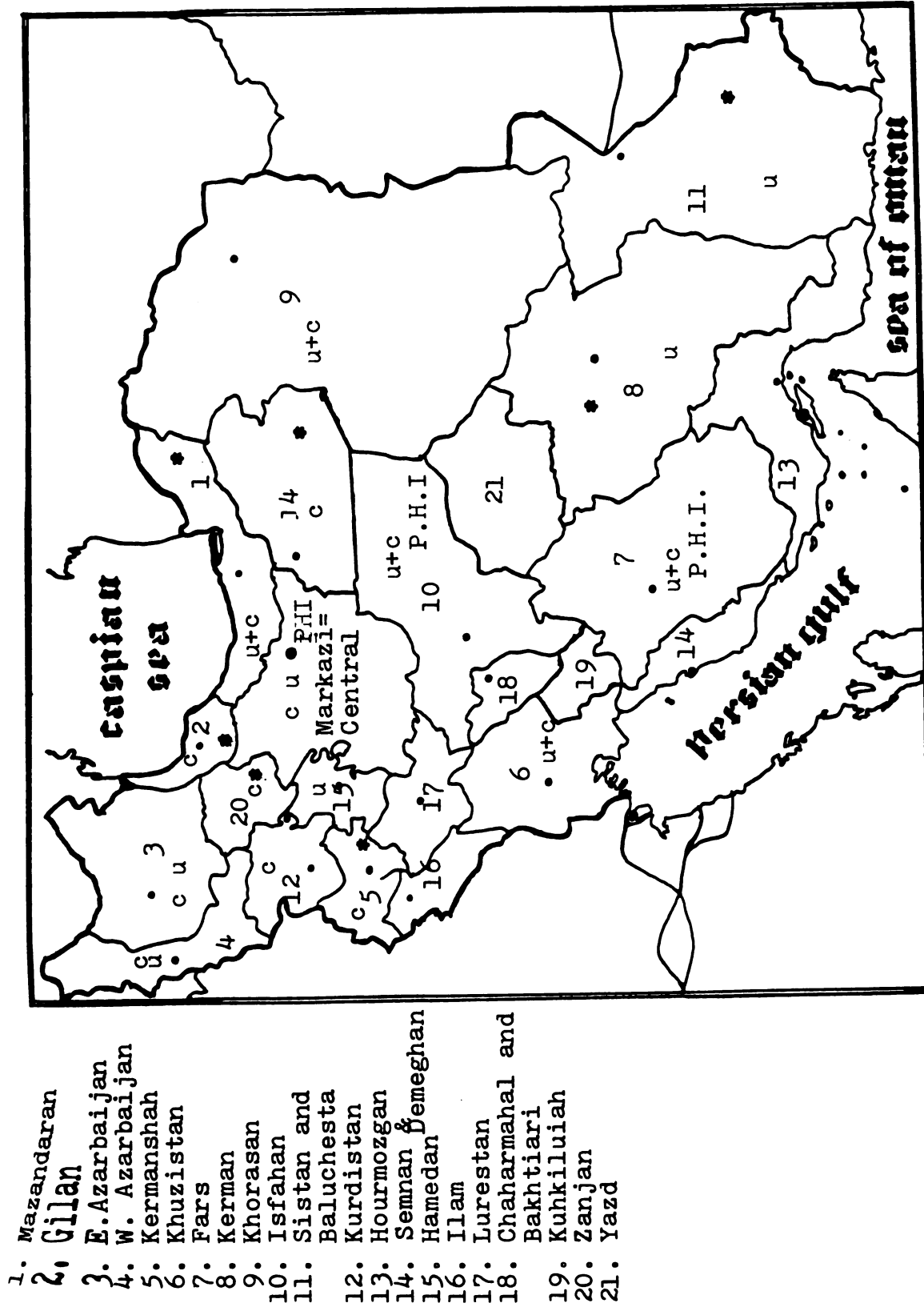


FIGURE 1.1 Geographical Distribution of Institutions of Higher Education in Iran until 1977

TABLE 1.3 GEOGRAPHICAL DISTRIBUTION OF IRANIAN INSTITUTIONS OF HIGHER EDUCATION, ACADEMIC YEAR 1975-76^a

Location	Total No.	Universities	Institutions Offering Bachelors Degree	Institutions ^b Offering Associate Degree	Percent
Abadon	4	0	2	2	1.60
Arak	2	0	1	1	0.80
Esfahan	17	1+1 *	5	10	6.82
Ahwaz	5	1	0	4	2.00
Eabol	4	0	1	3	1.60
Babolsar	1	0	1	0	0.40
Tabreez	9	1	0	8	3.61
Tehran	97	7	51	39	38.95
Rasht	8	1	1	6	3.21
Rezaeiah	9	0	2	7	3.61
Saree	6	0	1	5	2.49
Sanandaj	3	0	0	3	1.20
Sheraz	8	1	0	7	3.21
Ghazween	5	0	2	3	2.00
Qhoum	1	0	1	0	0.40
Karaj	1	0	1	1	0.40
Kerman	8	1	3	4	3.21
Kermanshah	6	1	1	4	2.49
Gorgan	3	0	1	2	1.20
Lahejan	1	0	1	0	0.40
Mash had	12	1	2	9	4.82
Varamean	1	0	0	1	0.40
Hamedan	5	1	1	3	2.00
Zahedan	3	1	0	2	1.20
Semnan	2	0	0	2	0.80
Kashan	6	0	2	4	2.49
Shahrood	2	0	0	2	0.80
Neeshaboor	1	0	0	1	0.40
Brojerd	1	0	0	1	0.40
Zanjan	2	0	1	1	0.80
Sabzawar	4	0	2	2	1.60
Shemiran	2	0	1	1	0.80
Shahrkourd	1	0	0	1	0.40
Shahre Ray	2	0	0	2	0.80
Fassa	1	0	0	1	0.40
Total	249	18	86	145	100

SOURCE: Statistics of Higher Education in Iran (Tehran: Institute for Research and Planning in Science and Education, 1977) p.5

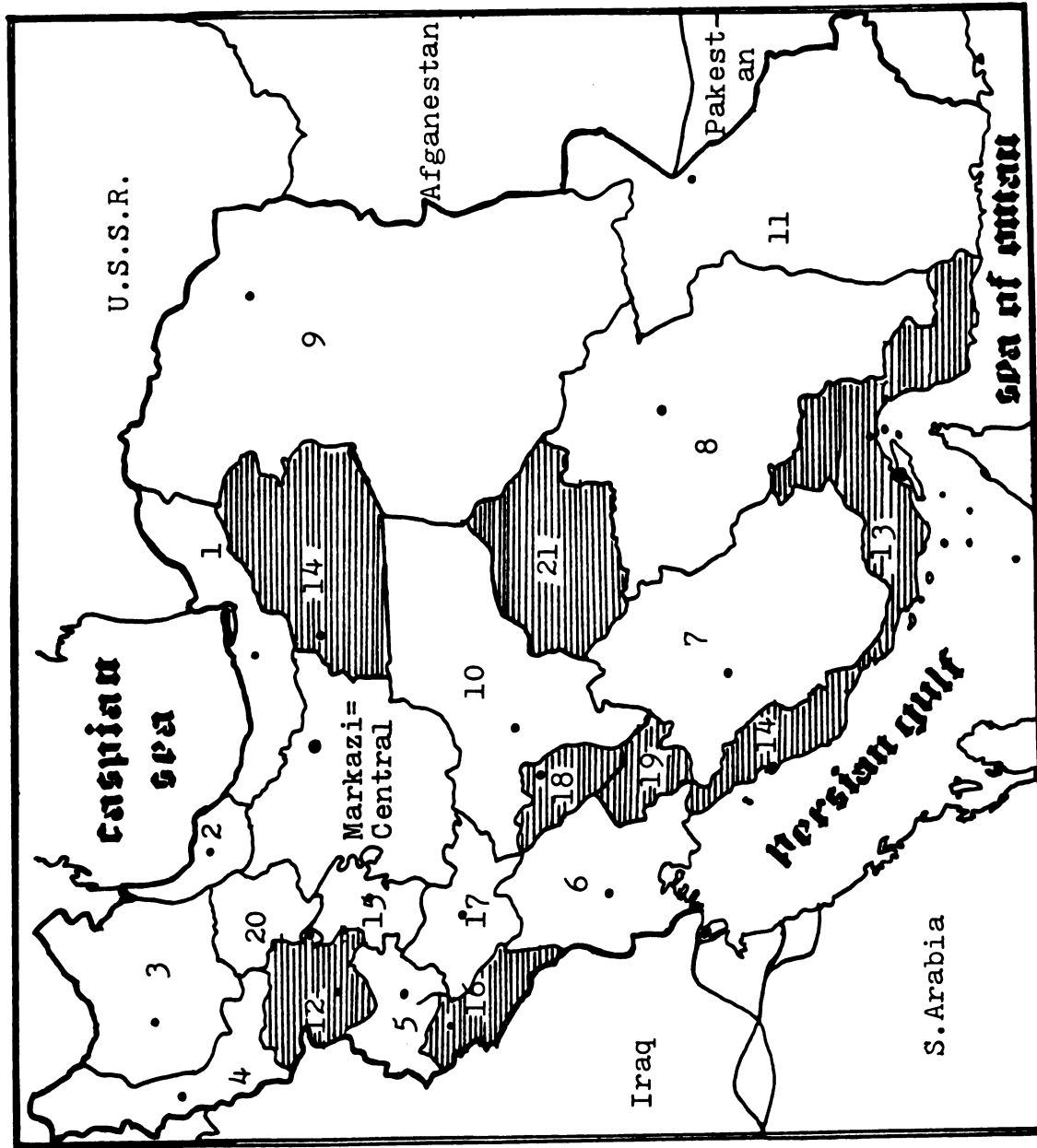
a Table originally in Farsi, translated by author who added percentage column

b There are no two-year colleges with a comprehensive educational program. 98 percent are two-year programs for teacher-training, advanced health education for public school or nurse-training.

have the highest percentage of post secondary schools.²² There are still some provinces which don't have any institutions of higher education at all despite their socio-economic importance.

Figure 1.2 shows those provinces which do not have any colleges, universities or advanced schools. These provinces have a high number of high school graduates who are interested in continuing their education, but if there is no college within the province what do they do? Some who are financially, intellectually and educationally able to withstand the strong challenge and competition, apply for the "qualifying entry examination" for admission to institutions in other provinces and cities across the country. Others, who are financially able, but intellectually and educationally unable to compete go abroad to continue their higher education. The rest, who have the intellectual and educational capability but are financially unable to continue their higher education, either stay in the province or move elsewhere to find a job.

Since 1968, students of average ability from different provinces have migrated and caused an imbalance in the university populations. For example, nearly 34 percent of the total higher education student population is from the



1. Mazandaran
2. Gilan
3. E. Azarbaijan
4. W. Azarbaijan
5. Kermanshah
6. Khuzistan
7. Fars
8. Kerman
9. Khorasan
10. Isfahan
11. Sistan and Baluchesta
12. Kurdistan
13. Hourmozgan
14. Semnan & Memeghan
15. Hamedan
16. Ilam
17. Lurestan
18. Chaharmahal and Bakhtiari
19. Kuhkiluiyah
20. Zanjan
21. Yazd

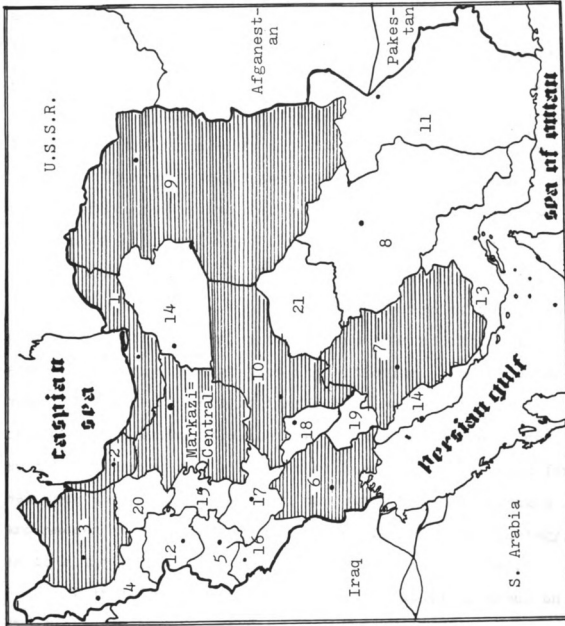
FIGURE 1.2 Provinces Which Do Not Have Any Colleges And/Or University (1977)

Central Province. Among the total Central Province students, 73 percent were born in Tehran. Nearly 10 percent of the total student population of Iran's colleges and universities was born in Esfahan. Gilan and Mazandaran Provinces together provide 12 percent of the total students.²³

Overall, 82 percent of the students in higher education in Iran are from the following provinces listed in descending order: Central (Markazi), Esfahan, Eastern Azarbayejan, Khorasan, Gilan, Mazanadaran, Fars and Khuzestan. The lowest percent is that of Khuzestan which has 4.9. The other fourteen Iranian provinces (See Figure 1.3) have 18 percent of the total student population.²⁴

²³A Combined Perspective of Iran's Higher Education Students (Tehran: Institute for Research and Planning in Science and Education, 1975), pp. 1-2.

²⁴Ibid, p.2.



1. Mazandaran
2. Gilan
3. E. Azarbaijan
4. W. Azarbaijan
5. Kermanshah
6. Khuzistan
7. Fars
8. Kerman
9. Khorasan
10. Isfahan
11. Sistan and Baluchesta
12. Kurdistan
13. Hourmozgan
14. Semnan
15. Hamedan
16. Iliam
17. Lurestan
18. Chaharmahal and Bakhtiari
19. Kuhliluiah
20. Zanjan
21. Yazd

FIGURE 1.3 82 Percent of Total Higher Education Student Population are From Following Provinces

Need for the Study

It is commonly known that Iran today is experiencing a more rapid transformation than at any time in its long history. Iran despite her past which, in reality, has been politically weak, socially static, and economically stagnant is now afire with zeal for growth and development to bring the country the prosperity and standing of the more developed nations. Iran sees the opportunity to take advantage of its rich underground natural resources and employ the massive advances that have been achieved in science and technology and the new strengths which industrialization can bring.

On one hand there is an intensive rate of population growth which brings increasing demands for education in general, and higher education in particular. On the other hand, there is a generally inefficient system of post-secondary education (qualitatively and quantitatively) despite high demand for higher education and a vital need for well-educated and well trained manpower. Trained workers are needed at the middle manpower levels and in technology, in both the public and private sectors of the economy.

With this situation in mind, this study is based on the following considerations.

1. There is no published material available projecting Iran's future population in general and college age population in particular, to provide data on the demand for higher education.

2. There is no published material available which projects the future capacity of higher education institutions based on past trends, population growth rates and demand for higher education.

3. In Iran there are no planning documents which can be used to evaluate the existence and implementation of plans or master plans in regard to:

- A. Higher education institutions' development objectives;
- B. Development of higher education facilities or institutions based on the demands of the college age population.
- C. Development of middle manpower based on the socio-economic needs of the country as an adjunct to higher education development planning.
- D. There are no overall productive solutions to the problem of higher education based on modern knowledge and democratic methods and techniques.

Purpose of the Study

The purposes of this descriptive study are :

- 1. To project demographically the future population trends in Iran by sex and age groups in urban and rural areas as well as the country as a whole, until 1991, particularly the college age population.

2. To project future enrollment rates for all post secondary institutions in Iran, based on past trends, and projected college age population figures.

3. To determine whether there are adequate plans, programs and budget forecasts for providing higher education facilities, capacities and services for the future development of higher education in keeping with projected college age population growth rates and demands for higher education.

4. To investigate the existence of middle manpower plans and their adequacy which needs to be closely associated with higher education planning and development. As economic and social development proceeds, modern Iran with a much larger population requires personnel with various kinds and levels of knowledge and increasingly specialized types of skills. It would be desirable for the numbers of students completing their education at various levels to correspond with the demand for their abilities. In order to approximate this goal, there must be appropriate planning and program implementation so that Iran does not produce, for example, an overabundance of elementary teachers and a scarcity of computer programmers as is currently the situation in the United States.

Assumptions

The assumptions underlying this study are based on Iranian conditions existing before the February 1979 Revolution. They do not reflect the upheaval and condition that has come about since February 1979.

1. An effective government.
2. Rapid social and economic development.
3. Internal and external peace.
4. Continuing sound progress on all fronts.
5. There will be no major change in the projected trends due to wars or economic or social crises. (international, national or local).
6. There will be no major alteration in the economic structure of any of the provinces.
7. The birth rate for each of the population categories will approach the 1976 rate.
8. The death rate will also approach the 1976 rate.
9. Abridged life tables of 1973-1976 are valid for the projection period.
10. There will not be any significant decrease or change in the economic development rate of the country in comparison with the 1970's.
11. The yearly population growth rate will be relatively the same as it was in 1972, 73, 74 and 75.
12. Society's general struggle for modernization, industrialization and the general development of the country will continue toward a progressively better life.
13. There will be no unexpected significant changes in the system, organization, admissions policies, body and social understanding of higher education.

Limitations of the Study

This descriptive research study is restricted by the following limitations:

1. Forecasts of future population are limited to the years 1976-1991. (done on a 5-year basis)
2. Higher education, in the context used in this study, does not include continuing adult education or other non-formal educational programs for adults.
3. The maximum age for college students considered in this study is 24 years.
4. Historical data is limited to that available for the years since 1960.
5. The assumption upon which this study is based reflects conditions in Iran prior to February 1979.

Definitions

ADVANCED SCHOOL INSTITUTIONS (MADRASA-YE-ALEE):

This category of institution grants the Associate and Bachelors degrees, and in some cases the Master's degree. These institutions emphasize practical or professional training in specialized subjects and are sponsored by ministries or public organizations, usually for training to meet their own specific manpower needs.

ADVANCED TECHNICAL INSTITUTIONS (HONAR-SAERA-YE-ALEE):

An Iranian post-secondary baccalaurate institution offering instruction in a number of applied sciences and practical arts.

COLLEGES (DANESHKADEH):

These are small independent and affiliated agency-bodies offering courses in a limited number of fields usually leading to a Bachelor's degree, although in some cases a Masters degree may be obtained. Colleges, like universities, are academically oriented.

COLLEGE AGE POPULATION:

This group includes, in any given year, all those Iranian citizens who are aged 18-24 years who hold high school diplomas and are seeking post-secondary education.

COUNSELING GUIDING CYCLE (DAORA-YE-RAHNE-MAIE):

A period of formal education in Iran which usually starts after the completion of elementary education (age 12-18).

This cycle is a part of a new system of education and comprises two periods. The first period is defined as including grades 6 to 8 in guiding school; the second period includes grades 9 to 11 as a part of high school. (The last section of Iran's high school and secondary education). The final year of high school, which is 12th grade, is an addition. (See Appendix A)

ECONOMICALLY ACTIVE:

All persons eighteen years of age and over who were fully employed, seasonally employed or seeking work were considered economically active.

ECONOMICALLY INACTIVE:

All persons eighteen years of age and over who were not employed and were neither seasonally unemployed nor seeking work during the seven days preceding the enumeration. The economically inactive population was classified into four sub-groups: (1) Homemakers, (2) Students, (3) Income Recipients (4) Others.

EDUCATIONAL RATIO:

The percentage enrollment in school, college or university of any age and sex in Iran.

ELEMENTARY SCHOOL (DABESTAN):

A period of formal education beginning in early childhood, usually at the age of 5 to 7 years, and ending approximately 5 years later. In Iran's new system these years are defined as grades 1 to 5, (in the former system grades 1 to 6), and in some systems they include kindergarten. Elementary or

primary education in Iran is less specialized in content and less selective as to students than later periods of education. (See Appendix A)

FACULTY (DANESHKADAH):

As a sub-unit of the university, each faculty offers courses in closely related fields. There are both academic and administrative units (Syn = college), providing such courses as literature, communication, engineering and law.

HIGHEST CERTIFICATE RECEIVED:

All literate persons six years of age and over were classified according to the highest educational certificate received. For non-students among the literate population, the last grade completed was recorded.

HIGHER EDUCATION QUALIFYING ENTRY EXAMINATION (KUNKOURE):

This is a nation wide examination required of all applicants to public and private colleges, universities and post high school institutions all across Iran. The results of this examination are an important criteria for the higher education institutions to use in selecting their students. Admissions policy is "best come, first served." The content and questions for high school diploma holders were different under an old system because they were specialized according to the field in which the applicant had graduated. These fields included Natural Science, Mathematics, Literature and Home Economics. Under the new system the examination covers general information and knowledge, Persian literature and

language, foreign languages, and a test of IQ, plus some questions in the applicant's major area of study.

HIGH SCHOOL (DABEERESTAN):

In the new system, high school is the division following the Iranian elementary school and the first period of the counselling and guiding cycle comprising grades 9, 10, 11 and 12. In the former system it followed the Iranian elementary and middle school and comprised grades 10, 11 and 12 in the five major areas of study mentioned above. (See Appendix A)

HUMAN RESOURCES:

All the intellectual, physical and spiritual energies, abilities, capacities, and ideas of an Iranian individual or the society as a whole.

ILLITERACY:

Strictly speaking, illiteracy implies complete inability to read and write.

LITERACY:

Reading and Writing

Literacy implies the ability to read a simple text in Persian or in any other language and to write, regardless of whether or not persons have an educational certificate. Students who are in the first year of elementary school or beyond, in adult education classes, or in literacy campaign classes were included in this category.

Reading Only:

All persons six years of age and over who could read a simple text in Persian/(Farsi) or in any other language but could not write it were included in this category.

Cannot Read or Write:

All persons six years of age and over who could neither write nor read a simple text in any language were included in this category.

MIDDLE MANPOWER:

An occupation ordinarily requiring, as preparation, a course of training for all fields of two years in length, with a high school diploma or its equivalent as a prerequisite. It is a middle-level occupation intermediate between a trade and a profession.

PUPIL:

One who attends a kindergarten or a school of the elementary level or the first period of the counselling guiding cycle, and is under the close supervision and tutelage of a teacher(s).

RETENTION RATE:

The percentage of those enrolled at a given grade/level in an academic year in Iran who move to the next grade in the following year.

SCHOOL ATTENDANCE:

All persons attending schools that adhere to the official curriculum of Iran, or of a foreign country, were

enumerated as students. Persons enrolled in unaccredited programs, such as private language centers or tutorial services from private teachers, were not included in this category.

SCHOOL (MADRASAH):

A collective group of pupils pursuing defined studies at defined levels (kindergarten to university) and receiving instruction from one or more teachers, with or without additional employees and officers. Occasionally used to designate a group of subjects organized to a definite end.

SECONDARY EDUCATION (DAORA-YE-MOTAVESETEH):

A period of formal education in Iran planned especially for young people aged 12 to 18, in which the emphasis philosophically tends to shift gradually from mastery of the basic tools of learning, expression, and understanding to the use and extension of the tools in exploring areas of thought and living, and in exploring and acquiring information, concepts, intellectual skills, attitudes, social, physical, and intellectual ideals, and habits, understanding, and appreciation; often differentiated to varying degrees according to the needs and interests of the pupils, but based on regulations, provisions, and policies. There are 5 branches of high school education in Iran: a) Natural Science Branches (NS); b) Mathematics Branch (M); c) Literature Branch (Lit); d) Home Economic Branch (HE) for girls only; e) Vocational and Technical Branch (V&T). Currently another system, the Counselling Guiding Cycle, exists. (See Appendix A).

STUDENT:

One who attends an educational institution of secondary or higher level and engages in serious study.

TEACHER TRAINING SCHOOL (DANESHSARA-YE-ALEE):

Specialized schools which grant high school diplomas in education.

TECHNICAL HIGH SCHOOL (HONARESTAN):

A school offering instruction in practical arts, usually below the level of higher education.

TECHNICAL INSTITUTION (HONAR-SAERA):

These institutions offer technical training in a wide variety of fields to a limited number of students. Training lasts two years and the associate degree is conferred. These institutions are mainly under the sponsorship of the Ministry of Education or other Ministries.

TECHNICIAN:

An Iranian worker at a level between technical high school and associate degree engineer. The workers' technical knowledge permit them to perform many of the duties formerly assigned to experienced skilled workers who did not have an education.

TOTAL POPULATION:

All persons in private, mobile, tribal or collective households, whether Iranians or foreigners, whose usual places of residence were located in Iran at the time of

enumeration, were considered part of the total population. Foreign delegations, diplomatic corps and their families were excluded. In addition, travellers staying in hotels whose duration of stay was less than six months were excluded. However, Iranians who were members of Iranian diplomatic corps or Iranian Embassies in foreign countries and their families were considered part of the total population. (National Census of Population and Housing, 1976, p.6.).

UNIVERSITY (DANESHGAH):

These institutions, made up of several faculties, are the largest educational units and are independent bodies. They offer degrees from the Bachelors to the Doctorate in various fields of study and usually include faculties for Literature and Humanities, Science and Medicine. The minimum requirement to take the qualifying entrance examination for higher education and study in a university is a high school diploma. Teaching is the major service rendered by universities in Iran.

URBAN:

All city (Shahrestan) areas, regardless of size, and all places with a population of 5,000 or more at the time of enumeration were considered urban; the rest were considered rural areas.

Overview of the Study

Given the problem as outlined in the foregoing pages, the first step in its resolution is to review the available related literature. The results of this review will be recorded in Chapter Two and will be followed by a discussion of the design and methodology in Chapter Three. In Chapter Four results and findings will be presented. A summary of the study, conclusions and recommendations will be discussed in the final chapter.

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Two
Review
Of
Related
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CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

In this chapter a review of literature and research related to this study is presented. Three main areas are of primary interest. First, because of a lack of published information about the current and future college age population, an overview of the population age, sex and growth will be presented.

The second area of interest is current and future demand, enrollment, capacity, input and output for higher education institutions across Iran.

Finally, the writer will investigate available documents about Iran's future planning, programming, budgeting and evaluation systems for handling higher education demand, on one hand, and development of human resources, particularly middle manpower, on the other.

Generally speaking, in the past no one has correlated Iranian demographic data and related it to higher education, possible democratization planning avenues for higher education and human resources development, in a scientific

manner. It is hoped that this research may prepare the way for innovations in higher education in Iran. It is also anticipated that it will assist in bringing this matter to the attention of Iranian scholars in various areas of study, such as economics, labor, health, welfare, sociology, social science, manpower development, agriculture and education.

Important Population Growth Factors

Populations of all countries have certain demographic characteristics which may be analyzed from two points of view: structure and movement. The dynamic aspects of population studies usually encompass fertility, mortality and migration, for these are the three main elements of population change.¹ The structural elements, "consist of sex, age, marital status, household size, education, occupation, income, nationality, language and religion which both affect and are affected by the dynamic aspects of population."² Although these two are continuously interwoven, for purposes of analysis they may be examined separately and their interrelationships discussed. As Setoudeh-zand writes in his book:

¹J.E. Jayasuriya, Population Change and Educational Development. Journal of International Social Science. Vol. XXVI, No. 2, 1974.

²Setoudeh-zand, Demography. Text book. Tehran, Pars College, 1970.

The most basic of the structural factors are sex and age, for there is hardly a phase of social and economic life which is not influenced by them. For example, the sex and age distribution restricts participation in reproduction and fixes the limits of the babies born.³

This is especially relevant for future family formation, since legal births in monogamous societies, depend upon the sex ratio approaching unity. When the sex ratio differs in different age groups, it may affect age-at-marriage patterns and the age gap between males and females.

Figure 2.1 shows

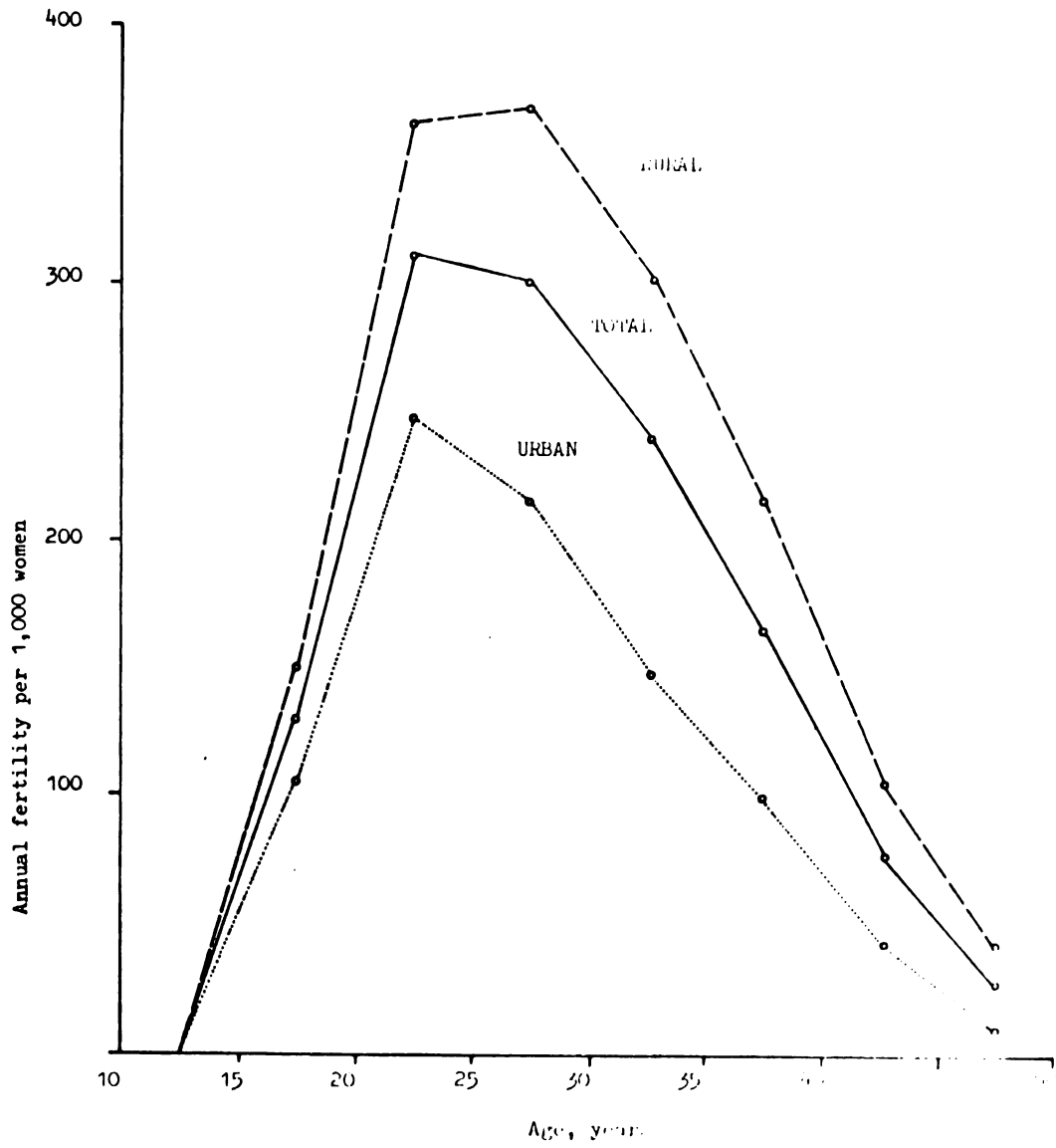
Age-specific fertility rates per 1,000 women of each age for urban and rural areas and the entire country (1973-1976). The peak age of fertility in both urban and rural areas is between the ages of 20 and 29 years which is a broad peak. In urban areas this peak is much lower than in rural areas, and it drops off with increasing age rather rapidly. The rural fertility declines only slowly after its peak and remain very high up to the age of 40.⁴

The sex and age distribution establish the maximum limits of the number of persons who can participate in economic activity, can drastically affect labor force efficiency and is useful in understanding problems of unemployment and underemployment. Researchers from the

³Amos Hawley, Population Composition, Philip M. Hauser and Otis Dudley Duncan, The Study of Population. Chicago; Chicago University Press, 1959, p. 369.

⁴Statistical Center of Iran. Population Growth Survey of Iran, Final Report. 1973-1976. Serial No. 777. Plan and Budget Organization of Iran: Statistical Center of Iran, June 1978, p. 69.

FIGURE 2.1 Age Specific fertility rates, 1973-1976



International Labor Office (ILO) in their 1970 report about Iran wrote:

However, the impact on Iran's labour market of the rapid population increase was less than is suggested by the rate of this increase, for two important reasons:

1. the relatively greater rate of population growth in the age group below labour force age (i.e. under ten years);⁵
2. the decline in the rate of labour force participation among persons aged ten years and over.

Thus, as against the 35.7 percent growth in population between 1956 and 1966, the labour supply expanded by only 28.4 percent.⁶

A particular age-sex structure in the population may affect plans for economic development. For example, when a large proportion of the population is in the younger age groups, a greater proportion of national income must be allocated for education.

⁵Although a small number of children below ten years of age are in reality economically active, they are not recorded as such by government surveys and are not included in this report.

⁶ILO. Problems of Employment Creation in Iran.
International Labour Office, Geneva, 1970, p. 4.

In 1965, the budget of the Ministry of Education, including that for all institutions of higher education, was over 13,100 million rials (184.5 million dollars)⁷ or 22% of the total national budget. For some educational activities a sum in the form of investment is allocated to the Ministry of Education from the National Development Budget. In 1965, the total budget for education was equal to 3.8 percent of national income.⁸

Nearly ten years later the percentage of the national budget allocated for education was a great deal higher. The Ministry of Education in its annual Educational Statistics for 1975 indicated the following:

In 1973 the allocated ordinary and development budget for the Ministry of Education amounted to 56,623,412,000 rials (nearly 797.5 million dollars). In addition, the expenditure by private schools is estimated at Rials 1.5 miliaird (Rls) (21.2 million dollars) for elementary schools, 839 million Rla (11.81 million dollars) for Guidance Cycle schools and about 1,388 million Rls (19.55 million dollars) for secondary schools.

Individual contributions, estimated at a sum exceeding 589 million Rls (8.3 million dollars) in either real estate or cash, were also made over to the Ministry of Education during that year.⁹

⁷Now each dollar is equal to 71.0 Iranian rials (\$1 = 71 Rials).

⁸UNESCO. "Abstracts of County Progress Reports." Bulletin of the UNESCO Regional Office for Education in Asia. Vol. 1, No. 1 Sept. 1966, p. 53

⁹Ministry of Education. Educational Statistics, 1975. Ministry of Education. Department of Coordinator for Educational Plans. Bureau of Statistics. Tehran, p. 3. Higher Education Budget is not included in these figures because these were from the budget of the Ministry of Education. The Ministry of Higher Education and Science is another ministry with an independent budget and organization.

For 1978, the same Ministry of Education publication states:

In 1976, the allocated ordinary and development budget for the Ministry of Education amounted to 135,910,051,000 Rls (1,915 million dollars).

Individual contributions, estimated a sum exceeding 1,998,188,283 Rls (28.2 million dollars) in either real estate or cash, were also made to the Ministry of Education during that year.¹⁰

When a large proportion of the population are in their older years, there will be increased demand for medical welfare facilities. A proportionately smaller group in their productive years will have a heavy burden of support for the remainder of the population. Therefore, age structure will influence how the roles and responsibilities are distributed in society. It may affect the values and attitudes of a population, for the ideas of the youth of a nation in a rapidly changing world will be a generation apart from the elderly, and may force the society to recognize new ideas. It will determine demand for recreational facilities, health facilities, housing, employment opportunities and educational institutions and affect military regulations.

What Burki wrote about Pakistan is true for Iran. He wrote that, "In demographic terms, children and older people constitute the dependent age groups. For the most part, these groups contribute little to national or family income and must be supported by the actual wage earners."¹¹

¹⁰Ibid, 1978, p.3

¹¹Shahid Javad Burki, Population Bulletin. Pakistan: Demographic Report. Vol. 29, No. 4 (Paris, 1973), p. 9.

In Iran the number of both old and young dependents increased as a result of better living conditions which result in declining mortality rates and increasing fertility rates. Numbers of young adults and children under 15 years inevitably mean further rapid growth. Burki believed that, "The burden of support becomes tremendous, especially in cities, where fewer productive chores can be assigned to the young than in agrarian settings."¹²

According to Statistical Results of Human Resources, 1972:

From a 29.5 million population in the country in 1972, 26 percent were economically active and/or productive, while this ratio was 30 percent in 1966. The 74 percent non-productive and/or non-active in the population of the country in 1972 included children less than 12 years old, 36%, housekeepers 33%, students 26%, retired citizens 5%, unable/handicapped 5%, others 4%.¹³

In addition, the sex-age structure affects consumption patterns because different sexes at different ages have varying tastes, and the demand for goods and services will likewise vary.

¹²Plan and Budget Organization and Ministry of Labour and Social Affairs. Statistical Results of Human Resources. P.B.O. Statistical Center of Iran. Publication No. 357. Aug. 1974 (Mordad 1353, Farsi) P. Sheen.

¹³Plan and Budget Organization of Iran and Ministry of Labour and Social Affairs. Statistical Results of Human Resources. P.B.O. M.L.S.A. Publication #357 (Tehran, 1972) P. Sheen - Farsi.

For example, the proportion of females and males in the population will influence the types of consumer goods in demand. If the culture emphasizes education for males, of whom there is a high sex ratio among the younger age groups, more schools will be in demand. Age may also have an effect on savings and investment. A productive younger generation may be interested in investing money for the future or may prefer to use all capital for consumer goods, depending on the society's orientation. Therefore, the impact on savings and investment is related significantly to the accumulation of capital. The older generation may be more concerned about their retirement and less prone to spending.

Generally, "rapid growth of the population may complicate the problem of economic and social development in under-developed countries" ¹⁴ in different ways. One of the principal ways is as follows:

¹⁴For further discussion see United Nations, The Determinants and Consequences of Population Trends. Population Studies. Publication No. 17 (UN. publication Sales No. :1953.XIII.3). Chap. XV, and the Summary in Population Growth and the Standard of Living in Under-Developed Countries. Population Studies No. 20 (United Nations Publication Sales No. 1954, XIII. 7).

Accelerating population growth can aggravate the problem of capital shortage which is one of the most important obstacles to economic development of nearly all under-developed countries. The faster the population grows, the larger the share of each year's income which must be invested in increasing the stock of productive equipment merely to maintain the existing level of equipment per worker.¹⁵

In Iran, which is located on an ocean of oil, natural gas, coal, copper and other natural resources, population growth will help bring about socio-economic changes. The age and sex of the population play an important role in that change and progress toward better living conditions. With a dynamic economy the demand for capital investment in Iran serves as a stimulus to continuing economic growth, but because of the youthfulness of the population and a lack of reliable socio-economic planning, high level experts and well trained middle-manpower, the country's money and natural resources, as well as its own young people, are being wasted. The relationship between age-sex differences and saving-consumption patterns, however, needs separate research and is outside the scope of this study.

Sex and age are considered basic givens in human existence and therefore their implications should be understood,

¹⁵United Nations. Processes and Problems of Industrialization in Under-Developed Countries. (United Nations Publication Sales No.:1955. II.B.1), p.15.

as well as the implications of movement in a society. Often sex differences are forgotten in analyses of demographic data, but in Iran, where females have different roles than males, sex structure is important. Until recently women have not played a major role in the formal labor market. Education for women was deemed unimportant and today many schools are still segregated by sex.

Reza Arasteh in his book, Education and Social Awakening in Iran, writes:

Employment figures from the 1956 Tehran Census reveal certain rural-urban differences. More than 60 percent of all women in that district are not employed outside the home, although urban women are more likely to hold outside jobs. Strong differences appear in some occupations between urban and rural male wage earners. Thirty-two percent of urban men hold professional, managerial, or sales jobs, as compared to 13 percent of the men in rural areas, where farming constitutes the main occupation. Agricultural employment also explains why a large number of rural household have no family member employed outside the home. Household industry is found in less than one half of one percent of the homes in both urban and rural area; however, these figures are undoubtedly lower than for other regions of the country. The most common household industries are: processing yarn, weaving rugs, and making clothes and shoes.¹⁶

¹⁶Reza A. Arasteh. Education and Social Awakening In Iran, 1850-1968. E.J. Brill (Leiden. Netherland 1969) p. 195.

Nearly ten years later, with other social and economic changes of the sixties and early seventies, women in Iran took on more social, governmental and public responsibilities outside their homes.

Despite flawed information from ancient Persian times, Iranian women had always occupied a worthy place in society, without discrimination because of sex or race. Under Islam, they enjoyed even greater freedoms including economic independence and the right to private ownership. Only the trends of later centuries changed all this and made the veil a symbol of women's inequality. Because of changes during the 1960s, however, Iranian women regained equal rights. In a book called Decade of the Revolution, a chapter about women reads:

Official estimates by the Iranian Statistics Center show that in 1969-70 some 45 percent of the male population (10 years and older) and 7 percent of the female population were economically employed.

The Fifth Development Plan will place greater emphasis on women's employment and of 1,250,000 new jobs during the 5th Plan, about 700,000 will be for women.

The proportion of women employees in the civil service has risen to 24.5 percent of the total, most of them in the Ministry of Education and the Ministry of Science and Higher Education where the proportion is 36.2 percent. There are also large numbers in the Ministry of Health, the P.T.T. and the Ministry of Housing and Development.

In Government service in 1956, out of a total 450,787 employees, 30,678 were women. In 1966, out of a total of 662,664 there were 56,831 women.¹⁷

An Iranian politician wrote:

Women are thus taking an increasingly more important and more effective part, both quantitatively and qualitatively, in the great social and economic activities of the country as well as in the reconstruction of Iranian society. This is an essential requisite of any progressive and developed society today.¹⁸

Social and constitutional changes were followed by greater demand for education at all levels, for health and social services, and even industrial jobs by women, particularly in urban areas. These changes, in turn, increased fertility rates and population growth. As for the educational aspects, increasingly more urban and rural families are sending their girls, as well as their boys, to school.

Table 2.1 indicates the literate population in both urban and rural areas, by sex, for selected years. Percentage increase among males is higher than the increase for females. According to the 1956 census only 8.0 percent of the females in Iran had some kind of education and were literate members of society. In the same census male literacy was 22.4 percent. Ten years later male literacy had increased to 40.1 percent, an 80% increase over 1956 but female literacy

¹⁷Central Insurance of Iran. Decade of the Revolution 1963-73 Central Insurance of Iran (Tehran 1973) p. 76.

¹⁸An Iranian politician who must remain anonymous.

TABLE 2.1 LITERATE POPULATION OF IRAN BY SEX AND RESIDENCE FOR SELECTED YEARS

Census Year	Sex	Population		Urban Areas		Rural Areas	
		Number	Percent	Number	Percent	Number	Percent
1956	Male	1,647,855	22.4	1,111,414	45.9	536,441	10.9
	Female	562,009	8.0	506,456	22.4	55,553	1.2
	Total	2,209,864	15.4	1,617,870	34.6	591,994	6.1
1966	Male	3,905,725	40.1	2,442,446	61.5	1,463,279	25.4
	Female	1,626,628	17.9	1,390,113	38.9	236,515	4.3
	Total	5,532,353	29.4	3,832,559	50.4	1,699,794	15.1
1968 Sampling	Male	5,028,500	44.6	3,018,900	66.5	2,009,600	29.8
	Female	2,262,100	21.14	1,894,700	44.1	367,400	5.8
	Total	7,290,600	33.4	4,913,600	55.6	2,377,000	18.3
1971 Sampling	Male	5,440,400	47.7	3,363,000	68.7	2,077,400	31.9
	Female	2,784,500	25.5	2,272,500	48.1	512,000	8.3
	Total	8,224,900	36.9	5,635,500	58.6	2,589,400	20.4

*The base age literacy in 1956 and 1966 was 7 years of age. In later years the base age for attending elementary school was lowered to 6 years. Therefore in 1971 and 1968 the literate population included those 6 years and older.

SOURCE: Statistical Center of Iran.

reached only 17.9 percent, only a 12.4% increase. In 1971, however, the number of literate females was 25.5 percent and male literates were 47.7 percent of the total population. These facts indicate women are increasingly seeking education.¹⁹

According to the 1956 census, 17.3 percent of the population of Iran was attending school; 16.1 percent were full-time and 1.2 percent were part-time students. Most part-time students were working and continuing their education too.

In 1966, the 7-14 age group represented 15.2 percent of Iran's total population, of which 47.9 percent were enrolled in school. The sex ratio of students aged 7-14 years was 191:100, 191 male students for every 100 female students.²⁰ Table 2.2 shows the sex ratio of these students in 1966 by residence location.

TABLE 2.2 SEX RATIO OF STUDENTS (AGE GROUP 7-14 in 1966).

Location	Boys x 1000	Girls x 1000	Sex Ratio $\frac{\text{Boy}}{\text{Girl}}$
All areas	1677	875	191
Urban	913	968	130
Rural	764	177	431

SOURCE: Statistical Center of Iran.

¹⁹Plan and Budget Organization. Forecasting School Age Population in Iran. Statistical Center of Iran (Tehran 1975). p. 2 (Farsi) The Table was in Persian (Farsi) language. Author translated it to English.

²⁰Ibid., p.7.

By the 1976 census all the earlier figures had increased sharply. Of the total 33,662,176 population, 8,394,935 or 24.93 percent were age 6-14. Among this age group 17.61 percent (5,930,618) were enrolled in school, 59.3 percent boys and 31.7 percent girls. The sex ratio of boys to girls was 151:100.²¹

Because of the still prevalent segregation by sex in education, population sex ratios may affect the number and types of facilities needed and the consequent labor skills available in various sectors.

Precise measurement of specific age groups is difficult in a society where illiteracy is high. However, large sample groupings can provide a good picture of age structure and clues to problems age structure may present in the future.

Population Trends: Past and Present

The major settlement of Persia (Iran) was begun in 500 B.C. and grew at a rapid pace, through history and into the 20th century.²² Population tallies have been done from

²¹Plan and Budget Organization. National Census of Population and Housing, November 1976. Based on 5% sample of total country. Statistical Center of Iran (Tehran) Table 14, p. 43. Calculations made by this author.

²²Talking and writing about 2500 years of history of Persian Empire (Iran) is not the subject of the research.

time to time by the central government, foreign officials or missionaries, especially during the 18th and 19th centuries. However, none of these enumerations have been done by scientific methods.²³

In 1873 the population of Iran was estimated at about 11.5 million of whom 13 percent (1.5 million) lived in urban areas and 43.5 percent (5 million) lived in rural areas. The other 43.5 percent of the country's population was made up of nomadic tribes which moved from place to place by season.²⁴

TABLE 2.3 POPULATION DISTRIBUTION OF IRAN IN SOLAR YEAR 1252 (1873).

Residence	Population x 1000	Percent
Urban	1,500	13.0%
Rural	5,000	43.5%
Nomadic	5,000	43.5%
TOTAL	11,500	100.0%

SOURCE: Future and Past Population of Urban and Rural Areas in Iran, 1991.

²³For more information see these documents: (a) Statistical Publication of Country. Ministry of Interior. Office of Statistics and Personnel Affairs Registration. Feb. and March 1951 (b) Mojal-la-dat Majmo-Ai Nasser Eight volumes of hand written documents in the Imperial Library of Tehran - quoted from Dr. Shapour Rasekh in his paper, "Population and Ethnic Groups of Iran" Iranshahr Series. Vol. 1 Book 1. National Association of UNESCO in Iran. Tehran, 1963. (c) Year book of Iran by 'Sany-o-Doulah' 1873.

²⁴Sany-o-Doulah - Yearbook of Iran 1873. Tehran

In 1884 General A.H. Schindler reported the population of Iran as shown in the following table:²⁵

TABLE 2.4: Population Distribution of Iran in Solar Year 1263 (1884)

Residence	Population x 1000	Percentage
Nineteen Cities	1,964	25.6%
Rural	3,780	49.5%
Nomadic	1,910	24.9%
TOTAL	7,654	100.0%

SOURCE: Future and Past Population of Urban and Rural Areas in Iran, 1991.

Later Abbott Payson Usher criticized these figures and rejected them.²⁶

The early 20th Century population of Iran was slightly less than 10.0 million, increasing during the next 50 years to well over 15 million. This rapid population growth resulted from low mortality and a high birth rate.

²⁵General A.H. Schindler. Lived from 1892 to 1908 in Iran. He wrote many books about the geography and history of Iran.

²⁶Abbott Payson Usher. The History of Population and Settlement in Eurasia: Demographic Analysis. Second Edition, October 1963.

The growth of Iran's population in the late 20th Century has been slow, gaining about 3 percent from 1941 to 1956 and about 4.9 percent from 1956 to 1966 (See Table 2.5).²⁷

TABLE 2.5 THE ESTIMATED POPULATION OF IRAN AND THE GROWTH RATE FROM 1881 TO 1956.

Year	Population	Period	Yearly Growth Rate Per 1000
1881	7,654,000	1881-1891	6
1891	8,124,000	1891-1901	6
1901	8,613,000	1901-1911	6
1911	9,143,000	1911-1921	6
1921	9,707,000	1921-1926	14
1926	10,456,000	1926-1931	14
1931	11,185,000	1931-1935	14
1936	11,964,000	1936-1941	14
1941	12,833,000	1941-1946	20
1946	14,159,000	1946-1951	28
1951	16,237,000	1951-1956	29
1956	18,955,000	1956-1961	
1961		1961-1966	

SOURCE: Figures compiled from Future and Past Population Projections of Iran, 1991 and the National Census of Population and Housing, 1956.

The major exception to this trend was in the 1960s when a population increase of 3.5 percent occurred.²⁸ This provided for an increase from 16.3 million in 1956 to 25.8 million

²⁷Plan and Budget Organization. Future and Past Population Projection of Iran, 1991. Statistical Center of Iran. (Tehran, 1973), p. 9.

²⁸Plan and Budget Organization. Population Growth Survey of Iran, 1976, p. 109.

in 1966.²⁹ The 1971 population was estimated by the Census Bureau to be 30 million, a gain of 5 million in five years. The rate of increase rose slightly from 2.5% for the decade from 1956 to 1966 to about 3% per decade. Population growth in Iran has been considerably less than the growth rate for most of Asia during most of this period. The lower rate of increase results from birth rates lower in comparison with other Asian nations. Out-migration was a factor but did not account for much population loss as it was off-set by immigration. A net loss of 14,000 in the period 1973-76 was revealed in a population growth survey. In this period 48,000 Iranians migrated to foreign countries but 34,000 persons immigrated from foreign countries to Iran.³⁰

Trends in Distribution

The early settlements in Iran (Persia) were along the banks of the Caspian Sea north, north-west, west and south-west of current population centers. These settlements spread from those areas which are now Iraq, to other parts of the country. Over the centuries the "Persian Empire" borders were constantly changing, but generally extended from Romania

²⁹Plan and Budget Organization. Future and Past Population Projections of Iran.p. 23.

³⁰Population Growth Survey of Iran, 1976, p. 102.

to India.³¹ In the late 19th Century Russia took some of the land by force and the British divided the remaining area into countries such as: Afganistan, Iraq, Kuwait, parts of Pakistan, the Persian Gulf Emrates, some parts of Saudia Arabia and, very recently, Bahraein. By the early 20th Century, the current map and political boundaries were drawn.

The agrarian population was distributed over the entire area and there were few cities of any size. The majority of these rural countries were only sparsely populated until the first half of the current century and have made continuous gains since that time.

Even in the comparatively short period from the mid-1950's to the mid-1960's, there was considerable change in the distribution of the population.³² In the 1950's the Iranian population increased faster in the cities than in rural areas but nearly 75 percent of the country's population was still rural (See Table 2.6).³³ Most of the 1950's rural population was found in small villages; most cities did not have large populations.³⁴ By the late 1960's and

³¹Shamem. History of Iran. Amer Kabeer. Tehran 1968.

³²For this section various historical, governmental and statistical documents and data were studied.

³³National Census and Housing 1956, p.33

³⁴A rural area is a town of less than 5,000 persons and an urban area is a town of 5,000 persons or more (in 1956).

TABLE 2.6 NUMBERS AND AVERAGE POPULATION GROWTH OF IRAN
BETWEEN 1956 and 1966

Area	Number of Increased Population	Average Growth Rate
Total Population	6,834,018	3.1
Urban	3,840,983	5.1
Rural	2,993,335	2.1

SOURCE: Past and Future Population Projections. Planning and Budget Organization. (p.23).

early 1970's only 50.84 percent of Iran's population was living in rural areas and 39.16 percent were urban dwellers.³⁵ At the present time these proportions have probably increased to 53.1 percent rural and 46.9 percent urban.

Among provinces (OSTANS) in Iran the Central Province, Khurasan, Espahan, East Azarbijan, Khuzestan, Mazandaran, Gilan and Kermanshah and their respective capital cities currently contain the majority of the population (See Tables 2.7 and 2.8).³⁶ This concentration of population in certain provinces and cities is expected to prevail in the future. This is demonstrated graphically in Figure 2.2. The provinces are numbered to correspond to the proportion of the population residing in each province.

³⁵Population Growth Survey of Iran, p. 32.

³⁶National Census and Housing 1956, p.31.

TABLE 2.7 URBAN AND RURAL POPULATIONS OF IRAN BY PROVINCES
IN 1966

Provinces	Total Population	Urban		Rural Population
		Population	Percentage	
All areas	25,788,722	9,794,246	38%	15,994,478
Markozi (Central)	4,984,828	3,505,970	70.3%	1,478,858
Khurasan	2,520,779	726,690	28.8%	1,794,089
E.Azarbayejan	2,636,089	755,458	28.7%	1,880,631
Esfahan	1,424,457	751,811	52.8%	672,646
Khuzestan	1,706,758	883,057	51.7%	823,710
Mazandaran	1,845,270	440,997	23.9%	1,404,273
Farss	1,584,539	580,848	36.7%	1,003,691
Gilan	1,293,835	303,694	23.5%	880,141
E.Azarbayjan	1,087,411	277,646	25.5%	809,765
Kerman	841,982	196,476	23.3%	645,506
Kermanshahan	818,685	278,539	34.0%	540,146
South Coastal	349,820	53,000	15.2%	296,820
Sistanand Bluches	502,626	72,149	14.4%	430,477
Kurdestan	619,700	102,398	16.5%	517,302
Hamedan	889,892	230,833	25.9%	659,059
Lurestan	767,374	165,634	21.6%	601,740
Zanjan	461,597	82,598	17.2%	378,999
Yazd	281,160	124,542	44.3%	156,618
Bushehr	259,101	54,623	21.1%	204,478
Chaharmahal & Bakhtiari	301,359	78,552	29.1%	213,807
Semman	207,907	84,182	40.5%	123,725
Illam	213,011	20,190	9.5%	192,821
Bayer Ahmad & Kohgiluyah	190,542	15,359	8.1%	175,183

SOURCE: Statistical Year book of 1974, page 31 and 32.

TABLE 2.8 URBAN AND RURAL POPULATION OF IRAN BY PROVINCE
(OSTAN) in 1976

Provinces	Total	Urban		Rural
		Population	Percent	Population
Total	33,662,176	15,797,225	46.93%	17,864,951
Markazi (Central)	5,389,798	3,988,774	74.00%	1,401,024
Gilan	1,748,207	622,935	35.63%	1,125,272
Mazandaran	2,293,355	794,485	34.64%	1,498,870
E.Azarbayjan	3,699,841	1,636,792	44.24%	2,063,049
W.Azarbayjan	1,421,784	474,701	33.39%	947,083
Kermanshahan	1,060,936	469,050	44.21%	591,886
Khuzestan	2,012,399	1,160,124	57.65%	852,275
Farss	2,059,016	899,018	43.66%	1,159,998
Kerman	1,110,092	382,078	34.42%	728,014
Khorasan	3,392,837	1,362,187	40.15%	2,030,650
Espahan	2,086,941	1,356,656	65.00%	730,285
Sistan & Baluchestan	731,064	166,838	22.82%	564,226
Kordestan	793,590	201,425	25.38%	592,165
Hamedan	1,294,532	510,662	39.45%	783,780
Charmahal and Bakhtyiari	461,758	179,686	38.91%	282,072
Lorestan	1,019,936	360,231	35.32%	659,705
Illam	232,071	49,110	21.16%	182,961
Boyer Ahmad and Kohgiluyah	248,015	24,165	9.74%	223,850
Buchehr	333,937	117,308	35.13%	216,629
Zanjan	661,794	222,872	33.68%	438,922
Semman	561,493	281,499	50.09%	280,443
Yazd	423,123	275,214	65.04%	147,919
Hormozgan	440,513	103,349	23.46%	337,164
Foreign Countries	184,685	158,066	85.59%	26,619

SOURCE: National Census of Population and Housing, 1976
pages 7, 8 and 9.

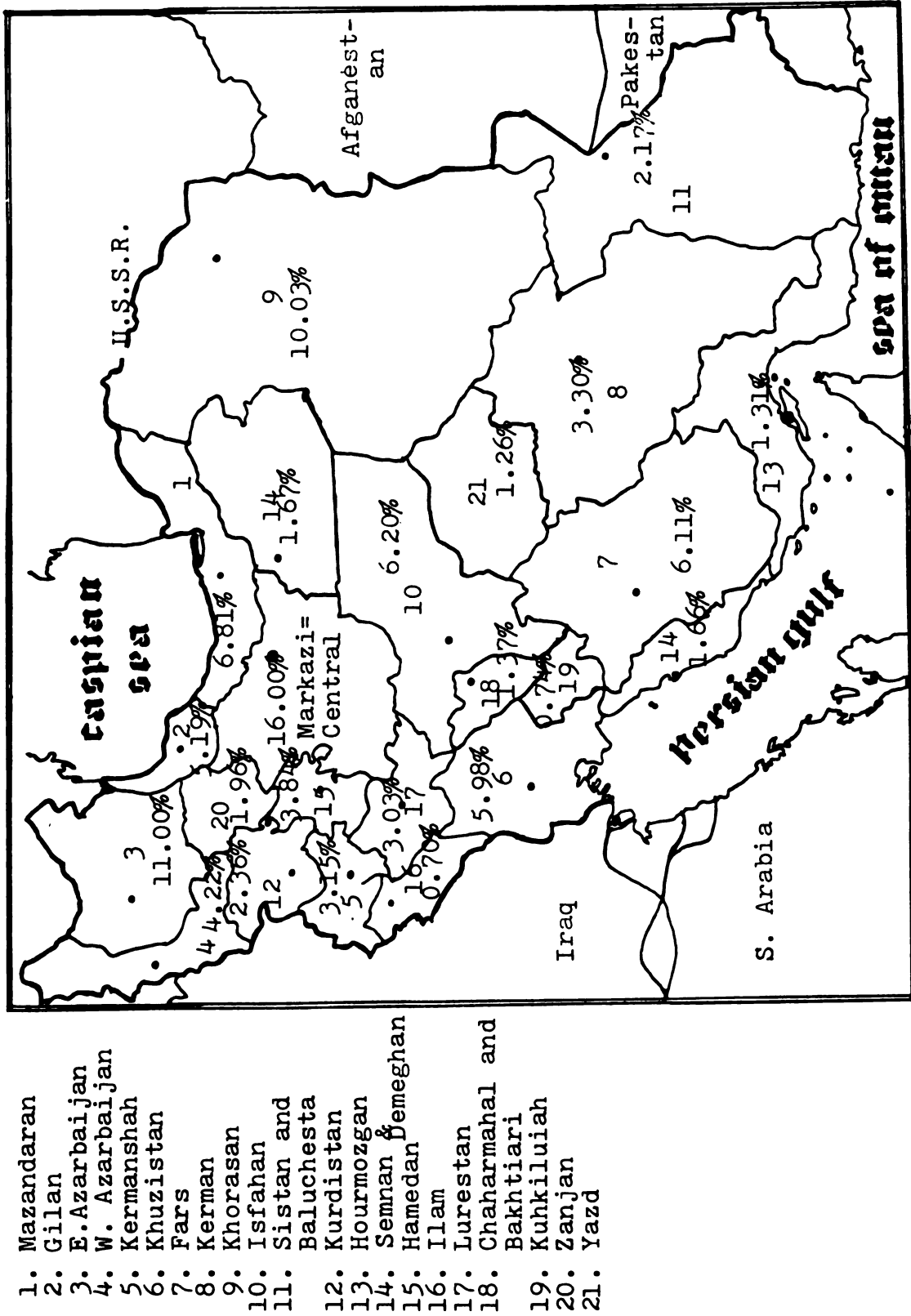


FIGURE 2.2 Percentage Share of the Total Population by Province (Ostan)

Even outside the few major metropolitan areas the population has become more concentrated (See Figure 2.3).³⁷ If a city had over 50,000 population in 1956, it was likely to have a higher rate of population increase than cities of a smaller size. The smaller cities and towns were likely to maintain their populations if their size in 1956 was above 5,000. Smaller towns frequently experienced a slow population decline after 1956. This decline resulted largely from declines in the agricultural communities.³⁸

The open country areas of some provinces have been declining rapidly in population. This has resulted, for the most part, from unreliable and miscalculated land reforms and agricultural plans and programs all across the country, and also from agricultural corporations and the consolidation of farms. Losses of population from 1963 to the mid 1970's ranged from 10 to 25 percent in some rural or agricultural areas and as high as 30 percent in others. The 1972 sample census and the 1976 national census indicated that this trend is continuing or may have even increased in some sections of the country because of industrialization. Therefore, continued relatively large losses of population can be expected in the primarily agricultural and less developed sections of the provinces and the country in general.³⁹

³⁷Dr. A. Farhang, Economical Life of Iran, Tehran College of Mass Communication. Tehran 1972 (Persian)

³⁸M.R. Behneya, Social Life of Iran. College of Mass Communications. Tehran 1971 (Persian)

³⁹See Dr. Farhang

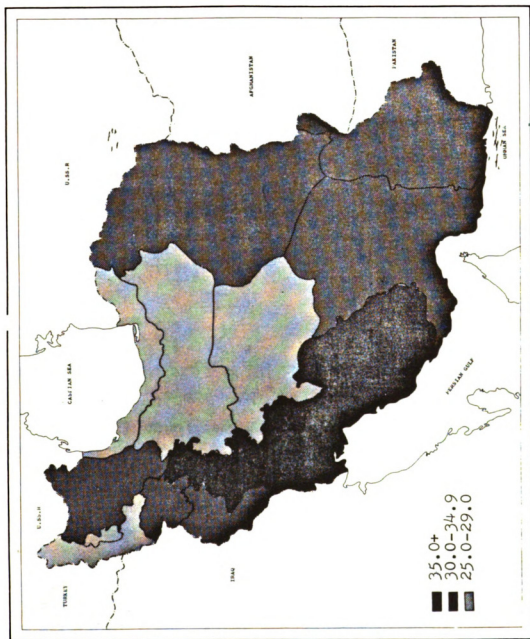


FIGURE 2.3 Rate of Natural Increase and Population Concentration

In 1976 the provinces varied widely in population distribution. East-Azərbayejan in the north, had 2.63 million, or nearly 10.2 percent of the population, and Sistan and Baluchestan in the south-east had only 502,626 or nearly 1.94 percent (See Table 2.9). The wide variations in total population are becoming even greater over time since it is the provinces with the smallest populations which had the greatest percentage losses; some of the provinces with the greatest populations in 1966 increased the largest proportion by 1976 (See Figure 2.3).⁴⁰

Trends in Characteristics

The number of people in a country changes by three processes, birth, death or migration into or out of the country.

Death Rate With the reduction of infant and childhood deaths in Iran, the death rates for children from birth to college age are very low compared with other Asian and developing countries (See Tables 2.10 and 2.11).

The Statistical Center of Iran in publication No. 777 indicated that:

⁴⁰For additional information. Kohli. L.L.; An Estimation of Infant and Child Mortality in Iran From Survey Data. Plan and Budget Organization. Statistical Center of Iran. Report No. 3, March, 1978. Also: Population Growth Survey of Iran. Final Report 1973-1976. Plan and Budget Organization. Statistical Center of Iran. Serial No. 777 June 1978, Tehran.

TABLE 2.9 POPULATION DISTRIBUTION IN IRAN BY PROVINCE AND DENSITY (1966-1976)

Provinces	Era Km ²	Population	Density	Population	Density
All Provinces	1,648,000	25,788,722	15.6	33,662,176	20.43
Markazi	91,519	4,984,828	54.5	5,389,798	58.89
Khorasan	313,337	2,520,779	8.0	3,392,837	10.83
Esfahan	94,902	1,424,457	15.0	2,086,941	21.99
E. Azarbajejan	67,102	2,636,089	39.3	3,699,841	55.14
Khuzestan	64,654	1,706,758	26.4	2,012,399	31.12
Mazandaran	47,365	1,845,270	39.0	2,293,355	48.42
Farss	133,298	1,584,539	11.9	2,059,016	15.45
Gilan	14,709	1,293,835	88.0	1,748,207	118.85
W.Azarbajejan	43,660	1,087,411	24.9	1,421,784	32.56
Kerman	192,978	841,982	4.4	1,110,092	5.75
Kermanshahan	24,549	818,685	3.3	1,060,936	43.22
South Coastal*	66,557	349,820	5.3	440,513	6.62
Sistan and Bluchestan	181,578	502,626	2.8	731,064	4.03
Kordestan	24,998	619,700	24.8	793,590	31.75
Hamedan	20,172	889,892	24.1	1,294,532	64.17
Lorestan	31,383	767,374	24.5	1,019,936	32.50
Zanjan	21,848	461,597	21.1	661,794	30.29
Yazd	56,896	281,160	4.9	423,133	7.44
Bushehr	27,653	259,101	9.4	333,937	12.07
Chaharmahal & Bakhtiari	14,820	301,359	20.3	461,758	31.16
Semnan	81,598	207,907	2.5	561,942	6.92
Ilsom	18,162	213,011	11.7	232,071	12.78
Boyer Ahmad & Kohgeluyeh	14,261	190,542	14.3	248,015	17.39

*Name of this province changed to Hormozagan.

SOURCE: National Census of Population and Housing 1966 and 1977 (Compiled and calculated by the author).

TABLE 2.10 INFANT MORTALITY 1973-1976, BY SEX, IN URBAN
AND RURAL AREAS

Year	Urban	Rural	Male	Female	Total
1973-74	58.5	120.6	94.9	105.6	100.1
1974-75	61.3	127.1	102.5	107.0	104.6
1975-76	66.4	130.9	102.0	116.1	108.7

SOURCE: Statistical Center of Iran: Population Growth
Survey of Iran 1973-1976.

TABLE 2.11 DEATHS BY AGE AND SEX FOR URBAN AND RURAL AREAS, 1973-1976

Age at Beginning of Year	Total Sample		Urban		Rural		
	Total	Male	Female	Male	Female	Male	Female
Total	3289	1682	1607	497	415	1185	1192
Born during same year	863	430	433	72	76	358	357
0	362	177	185	31	37	146	148
1-4	506	234	272	43	43	191	229
5-9	116	54	62	10	10	44	52
10-14	48	24	24	12	10	12	14
15-19	54	23	31	7	9	16	22
20-24	32	14	18	6	8	8	10
25-29	26	12	14	4	4	8	10
30-34	40	15	25	4	8	11	17
35-39	39	23	16	7	4	16	12
40-44	79	34	45	11	11	23	34
45-49	76	54	22	26	9	28	13
50-54	111	66	45	28	15	38	30
55-59	91	54	37	27	14	27	23
60-64	177	83	94	42	43	41	51
65-69	117	76	41	35	6	41	35
70-74	220	119	101	52	47	67	54
75-79	102	59	43	29	27	30	16
80-84	111	63	48	23	14	40	34
85+	119	68	51	28	20	40	31

SOURCE: Statistical Center of Iran (1976).

The rates for the three successive years show, first of all, certain general tendencies. First, an overall infant mortality rate a little over 100 per 1000 live births; a rural rate about twice as high as the urban rate and female mortality higher than male mortality. Nevertheless, there is reason to question the validity and reliability of the results.

The increase in the rates from year to year would not, in itself, be altogether implausible because annual fluctuations of this magnitude may occur and conceal the underlying trend, which is no doubt a declining one. However, during these same years, general mortality has declined as shown earlier.⁴¹

Given these mortality rates, it can be predicted that almost 90 percent of the babies born in Iran each year will live to attain college age. Measles, diphtheria, chicken pox, bloody flux (in some parts of the country) and small-pox have been greatly reduced as potential threats to the lives of children in Iran.

As an I.L.O. report stated:

...death rates in Iran have fallen considerably as a consequence of improvement in the provision of water supplies (mainly in the urban areas) and large-scale disease control programs (such as mass inoculation and spraying campaigns) mounted by the government. See Figure 2.4) ⁴²

⁴¹ Population Growth Survey of Iran, Final Report 1973 p.93.

⁴² International Labour Office. Problems of Employment Creation in Iran. p.4. National Census of Population and Housing (1956), also same publication for 1966 and 1976. For more information see Population Growth Survey of Iran 1973-1974-1975- and (1973-76). An Estimation of Infant and Child Mortality in Iran From Survey Data. All published by Statistical Center of Iran. Tehran, Iran.

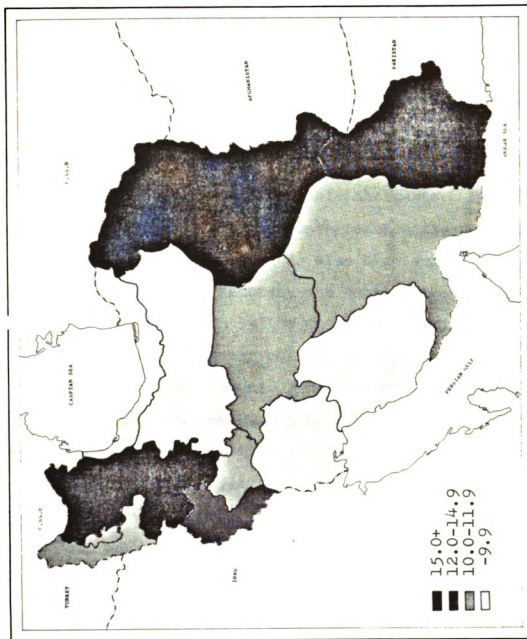


FIGURE 2.4 Crude Death Rate by Province (Ostan)

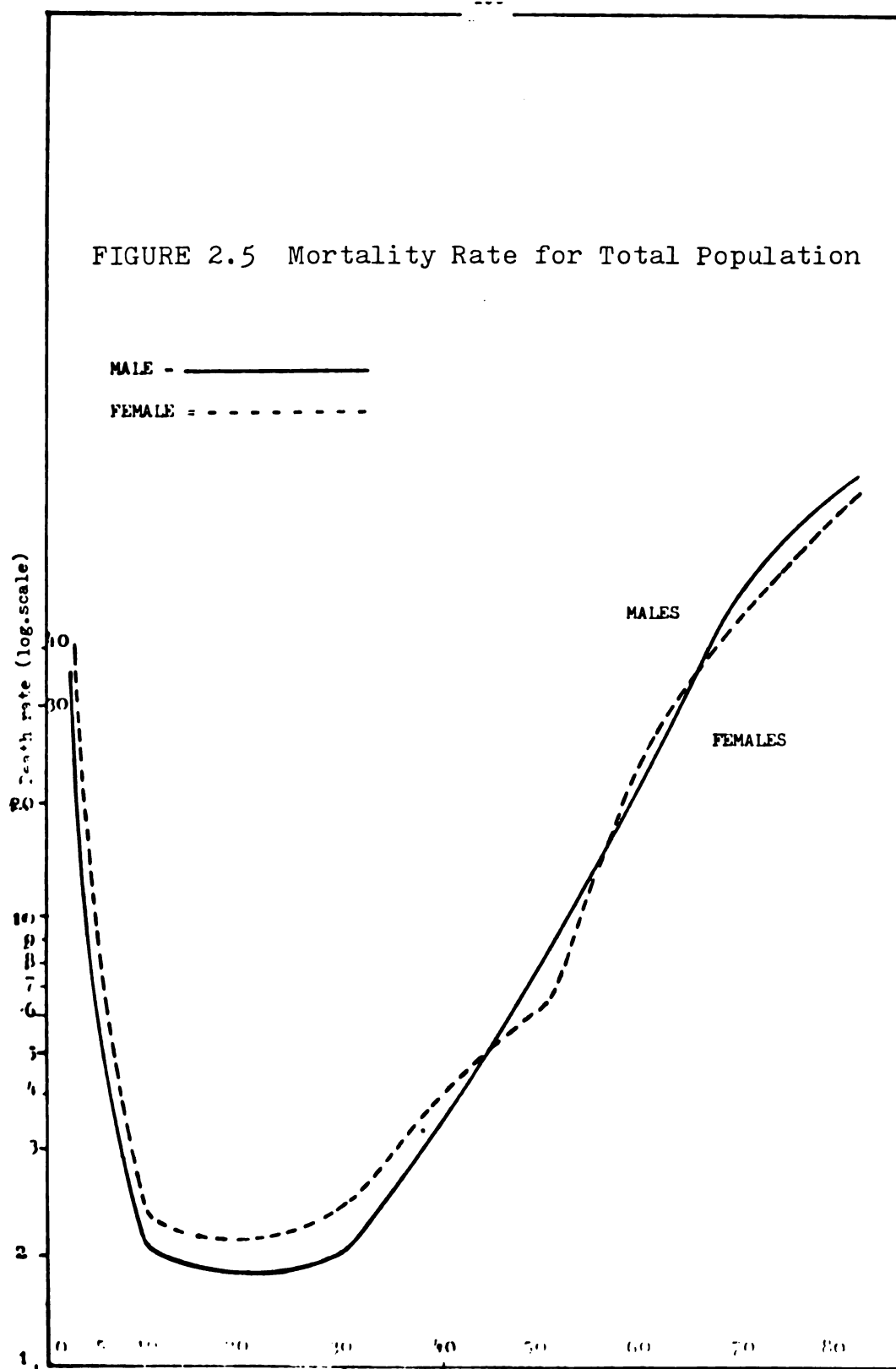
On the basis of Figure 2.5, we can accept the Iranian Statistical Center statement that indicates:

...a higher mortality of girls than boys in all age groups with few exceptions, a phenomenon which has been observed in a few countries, particularly in Western Asia. A female Sur-mortality is noticeable through the child-bearing age, after which male mortality is generally higher.⁴³

Other major threats to children are a lack of adequate health programs and health centers, particularly in rural areas. An increasing hazard to young people is death from accident, especially motor vehicle accidents. The mortality rate from motor vehicle accidents reaches its peak for youth of college age (18-24). It is also high among 15 to 18 year olds. Despite these hazards, the death rate for the pre-college age population is low and no major changes which would influence the total college age population will be assumed in the near future. (See Figure 2.5 for mortality rates for the total population).

Birth Rate The time lag between birth and college entrance is about 18 years (i.e.: 1976 entering freshmen were born in 1958). From this viewpoint, birth rates are important figures for higher education institutions in the near term. However, such institutions change slowly. It has been established that the time lag between the recognition of the need for a building

⁴³Population Growth Survey of Iran 1973-76. Tehran, p.96.



SOURCE: Statistical Center of Iran

and completion of the building averages almost 10 years. This suggests that plans for capital improvements or new campus construction must be long-term and is the basis for the following discussion of Iranian birth rates.

The rate of birth in Iran has increased gradually. The lowest rates were during the early 1950's and the highest (since 1900) were reached shortly after the 1976 census in 1979.⁴⁴ When these will level off and what the future average Iranian birth rate will be are still matters for speculation. Two influential factors should be noted. The first is the increased standard of living because of economic improvements in Iran. The second is the large population of females born in the 1960's and now in or approaching their reproductive years. The current average age of first marriage for females is 20 years. The first child usually arrives a year or two later and the highest birth rates range around 20-29 years of age. The age for peak birth rates is different in rural and urban areas. In urban areas, the peak is much lower than in rural areas and drops off with increasing age rather rapidly.⁴⁵ Overall, by age 30 most women have had all the children they desire. This means, then, if the

⁴⁴Ibid, (See Footnote, #41)

⁴⁵Population Growth Survey of Iran, 1976, p.69.

highest birth rates were attained in the late 60's and early 70's, these "post revolutionary" babies will have children themselves in the largest numbers in the mid-1980's and will undoubtedly increase the presently moderate birth rates.

Figure 2.6 shows the fertility rates for women of each parity.

The Statistical Center states:

The rates decline with increasing parity as is natural because the ages also increase concurrently...(there are) wide differences between urban and rural women, particularly those who have two to seven children. For higher parities, the differences narrow considerably.⁴⁶

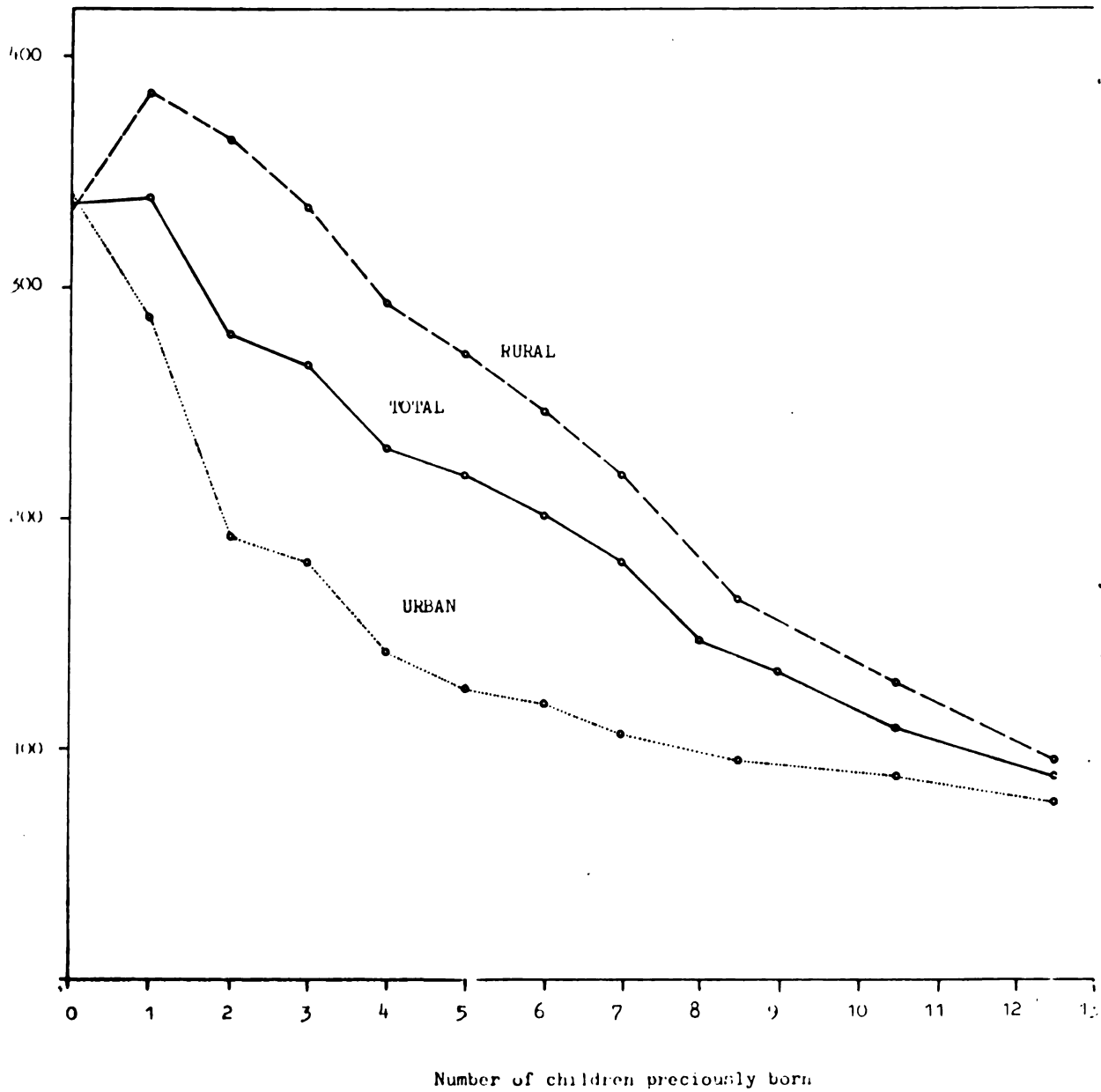
Urban and rural fertility are presented in Figure 2.7.

It is evident that at ages below 25 years the probability of childbirth is lower the more children the mother already has. "One reason for this probably is that many of the younger mothers who have had many children, have had their latest one so recently that they have not given birth to another child yet."⁴⁷

⁴⁶Ibid, p. 84

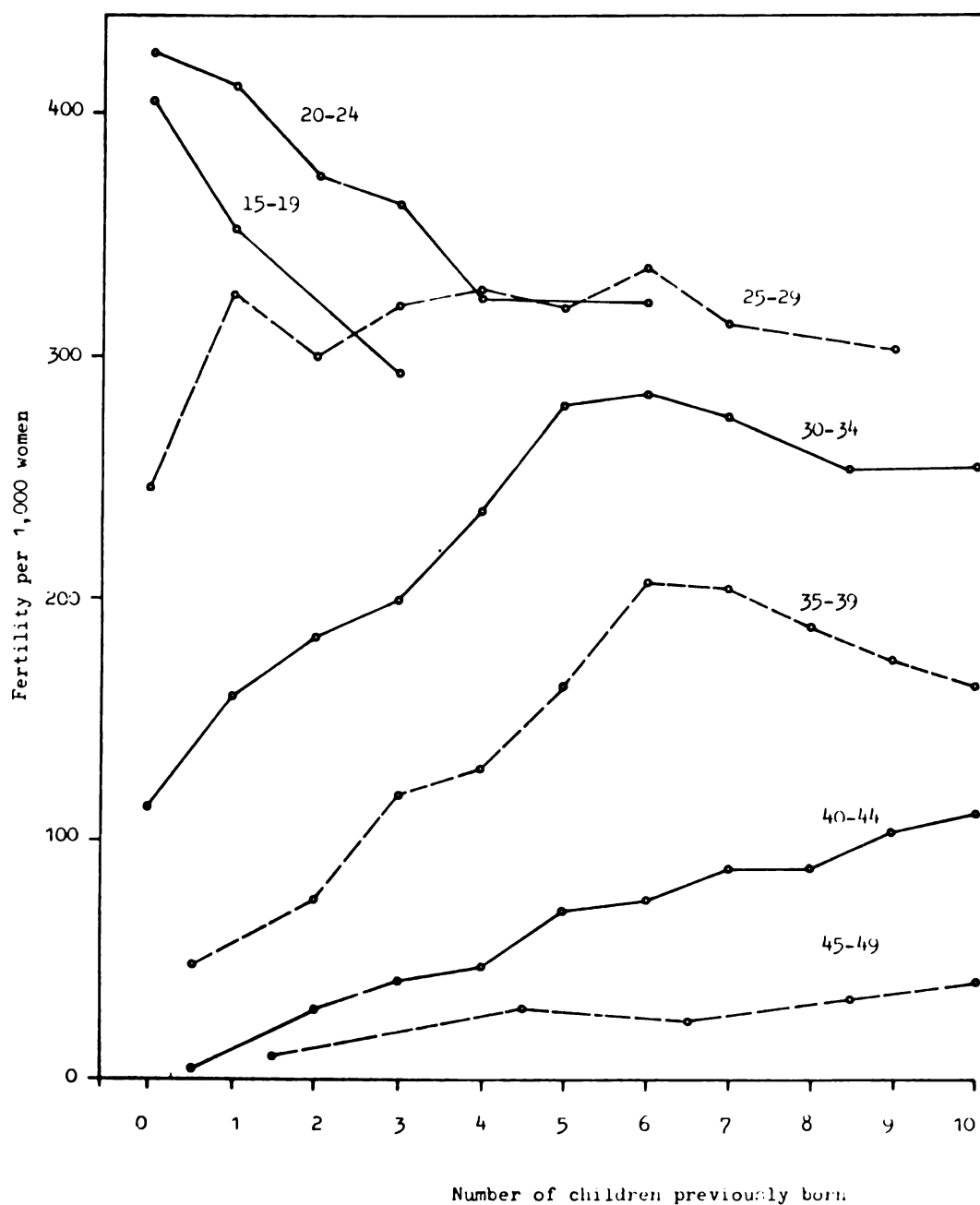
⁴⁷Ibid, p. 84

FIGURE 2.6 Annual fertility rate for ever-married women of 10-49 years
by number of children previously born, urban and rural,



SOURCE: Statistical Center of Iran 1976

FIGURE 2.7 Annual fertility rates specific for age of mother and number of children previously born.



SOURCE: Statistical Center of Iran, 1976

Information from the Statistical Center indicates:

After age 25 the fertility of women who have had no child yet drops well below that of women who have already had one or more children. The reason for this is that as age increases, the group of women without offspring is increasingly composed of sterile women or of wives of sterile men.

While the women under 25 years show approximately equal fertility at all parities, except for childless women, those of 30 years and over show generally higher fertility at higher parities. After age 35, the women with few children have a much lower incidence of childbirth than those with many children; at ages over 40, the women with the highest number of offspring continue to be the most prolific.⁴⁸

The only certain statement that can be made concerning future birth rates is that the size of the Iranian family is determined by choice, and this choice is influenced by fads which vary in different sections of Iran. In the past two decades the ideal family was considered to be three or four children in urban families and a few more than this in rural families. At present the ideal is two or three children in the urban family and five or six in the rural family. This could change in the future but the socio-economic condition of the country indicates that a high birth rate is going to continue. I.L.O. report states:

⁴⁸Ibid., p. 84 and 85.

High fertility rates have been maintained as a result of continued marriage at an early age for females, almost universal incidence of marriage among females of marriageable age, and a virtual absence of birth control practices, particularly in the villages.⁴⁹

Migration

The population of Iran is very mobile. No longer is it the custom for a person to live in the same house for an entire lifespan, especially among urban residents. Rather, the typical Iranian family moves every four or five years. Some never move and others move yearly or even more frequently, to the house next door and across the country. People who reside in the cities are more mobile than those in rural areas. Younger people are more mobile than older persons. Those with higher education or white collar jobs or those seeking higher education are more mobile than those with less education, blue collar jobs at less skilled occupations and those who are not interested in post-secondary education.⁵⁰

The movement of people between communities, cities and provinces is a balancing act to some extent. There are vast numbers of people moving out of one province or city and even larger numbers moving in.

⁴⁹International Labour Office. "The Problems of Employment Creation in Iran." p.4.

⁵⁰National Census of Population and Housing 1966 (Persian) Statistical Year Book 1974. Plan and Budget Organization, p. 64-67 (Persian). Also: Population Growth Survey 1973-1976 (p.100-108). National Census of Population and Housing, p. 13-15.

The migrants are estimated in Table 2.12 by age and sex. From this table is derived Table 2.13 which shows the recorded incidence of out-migrants over in-migrants by age and sex for 1973-1976. The discrepancies are thought to reflect record-keeping problems.

This table gives important insight into the problem of presumably not recorded in-migration. The problem is serious among young persons between 10 and 19 years of age, and even more serious among males than females. The fact that the relative excedent of out-migrants is very high already in the 10-14 years age group, highest in the 15-19 age group and quite low among the 20-24 year olds, pinpoints the problem to school age children rather than to persons who move because of work or in search of work. It is fairly obvious that many students who go to school or a university outside of their home place are recorded as having left their family but are not recorded as having moved into their place of study.⁵¹

Figure 2.8 shows out-migration rates per 1000 person-years by age and sex both in urban and rural areas.

It shows the children under the age of 10 and persons over 35 years are relatively stationary. Their migration rates are stable at about 2 to 3 percent a year and almost equal for males and females which show that they usually move as complete families. The evidence indicates that mobility is approximately equal in urban and rural areas.⁵²

⁵¹Population Growth Survey of Iran, 1973-76, p. 106.

⁵²Ibid, p. 106-107.

TABLE 2.12 ESTIMATED ANNUAL VOLUME OF MIGRATION IN IRAN
1973-1976

Category and Area	Out Migrants	In Migrants	Net Gain or Loss
Internal migration:			
Tehran	145,000	203,000	+ 58,000
Other Urban	453,000	707,000	+254,000
Total Urban	598,000	910,000	+312,000
Rural	919,000	607,000	-312,000
Total Iran	1,517,000	1,517,000	-
International migration:			
Tehran	27,000	20,000	- 7,000
Other Urban	13,000	10,000	- 3,000
Total Urban	40,000	30,000	- 10,000
Rural	9,000	3,000	- 6,000
Total Iran	49,000	33,000	- 16,000
Total migration:			
Tehran	172,000	223,000	+ 51,000
Other Urban	466,000	717,000	+251,000
Total Urban	638,000	940,000	+302,000
Rural	928,000	610,000	-318,000
Total Iran	1,566,000	1,550,000	- 16,000

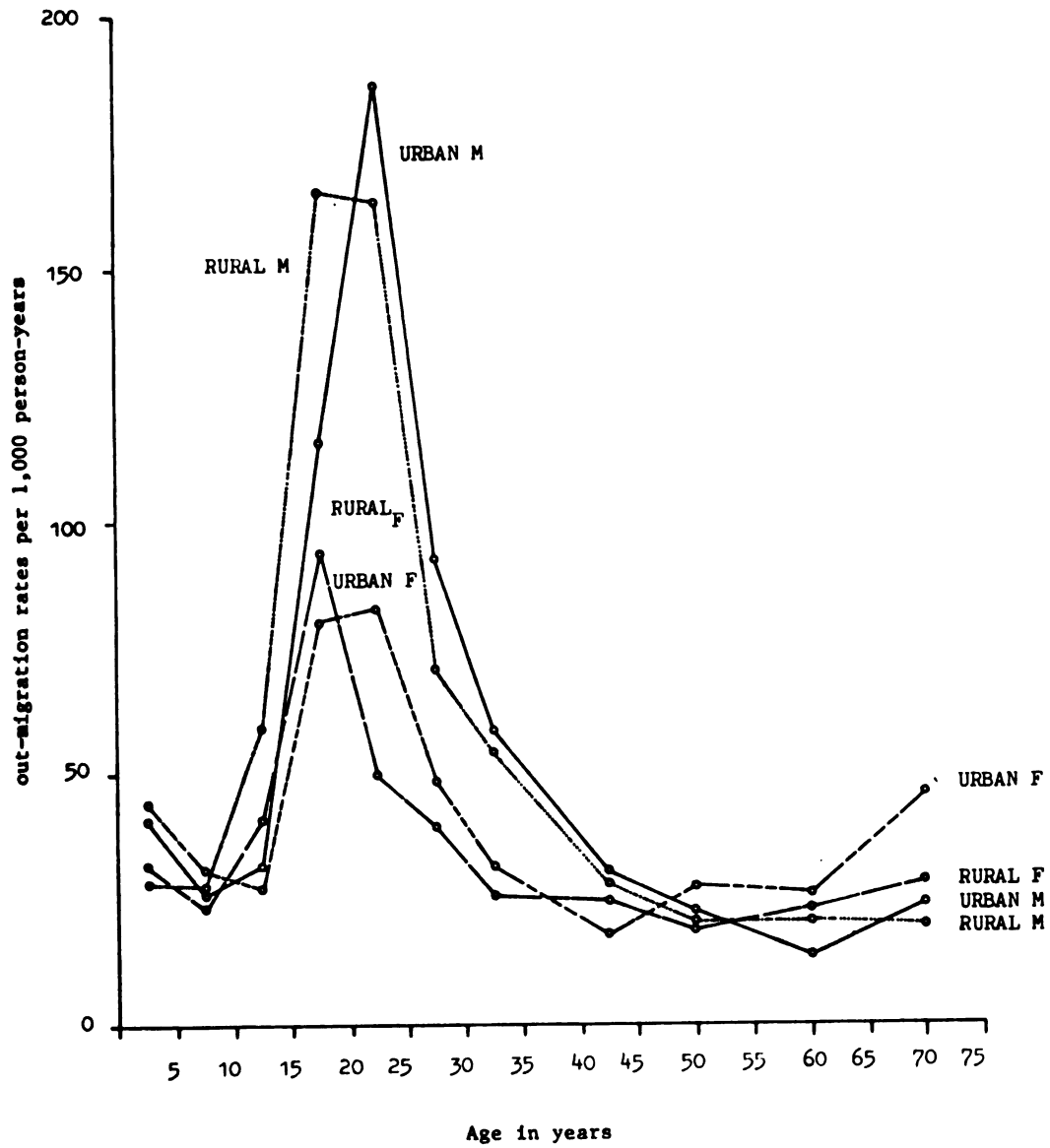
SOURCE: Statistical Center of Iran: Population Growth 1976

TABLE 2.13 RECORDED INCIDENCE OF OUT-MIGRANTS OVER IN-MIGRANTS, BY AGE AND SEX, 1973-1976

Age	<u>Absolute Incidence</u>		<u>Relative Incidence, %</u>	
	Male	Female	Male	Female
Total	2,551	1,166	32.3	20.7
0- 9	231	223	16.1	16.7
10-14	455	214	47.7	35.0
15-19	1,433	399	68.2	29.6
20-24	197	116	13.3	13.8
25-44	118	115	8.2	12.0
45-	117	99	23.5	18.2

SOURCE: Statistical Center of Iran, 1976

FIGURE 2.8 Out-migration rates per 1,000 person-years



SOURCE: Statistical Center of Iran, 1976

Migration usually first occurs during or after high school or after college has been completed. These facts have implications both for the national economy and for higher education institutions.

Heavy emigration, undoubtedly because of school, begins in rural areas around age 10 but in cities only by age 15, boys moving in much larger numbers than girls. After age 15 employment becomes an important reason for moving and after age 20 it is undoubtedly the principal reason. However, the migration of women of aged 15-24 years is to a large extent caused by marriage.⁵³

Table 2.14 shows the highest emigrant group was children of 14 years or less who are moving from one place to another with their parents. This group, however, includes a greater range of ages than any other group. After age 14 two groups (ages 20-24 and 25-29) show the greatest mobility as they moved to go to college or find a job.

It is the age groups from 10 to 24 years which participate most heavily in migration; and this migration is mostly motivated by study or search for employment. It seems therefore that these young persons, who mostly move without their families, are recorded as having moved away, but in the place of arrival they in many cases are not considered permanent residents.⁵⁴

⁵³Ibid, p. 106-108.

⁵⁴Population Growth of Iran: First Survey Year 1973-74 (Tehran: Plan and Budget Organization, Statistical Center of Iran, 1976), p. 40.

TABLE 2.14 Emigrant Population by Residential Location
(1972)

X = 1000

AGE GROUPS	TOTAL	RURAL	URBAN
All age groups	4277	422	3850
14 years and less	713	83	630
15-19	425	49	375
20-24	448	52	395
25-29	465	47	417
30-34	422	43	379
35-39	432	45	388
40-44	348	26	321
45-49	297	26	271
50-54	237	16	221
55-59	139	9	129
60-64	138	10	127
65 years and over	213	16	197

most mobile
adult groups

SOURCE: Plan and Budget Organization. Statistical Year Book, 1974. Tehran (Tables 33 and 34 on pages 64 and 65 combined).

Tables 2.15 and 2.16 give the out-migration rates per 1000 person - years by age and sex in urban and rural areas.

TABLE 2.15 RECORDED EXTENT OF IN-MIGRANTS (+) OR OUT-MIGRANTS (-) BY AGE AND SEX

Age, years	Total	Male	Female
0 - 4 years	- 25	- 6	-19
5 - 9 years	+ 14	- 25	+39
10 -14 years	-298	-236	-62
15 -19 years	-600	-519	-81
20 -24 years	-138	-119	-19
25 -29 years	+ 11	+ 5	+ 6
30 -34 years	- 9	- 35	+26
35 -39 years	- 11	+ 27	-38
45 -54 years	- 17	- 10	- 7
55 -64 years	+ 24	0	+24
65 - years	+ 13	- 6	+19
TOTAL	-1036	-924	-112

SOURCE: Population Growth of Iran: First Survey Year 1973-74. (Tehran: Plan and Budget Organization, Statistical Center of Iran, 1976) p. 41.

Migration is most intense at ages 15-24, but while the peak among rural youths is under the age 20, in cities it is just above this age.⁵⁵

Iranian families who have young children who want them to continue their education usually emigrate from a city or

⁵⁵Ibid.

TABLE 2.16 Urban and Rural Out-Migration Rate Per 1000 Person-Years, By Age and Sex (1973-74)

Age, Years	TOTAL			URBAN			RURAL		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
0 - 4	32.9	32.5	33.3	38.9	36.8	41.2	30.1	30.6	29.6
5 - 9	29.8	32.3	27.1	28.2	27.3	29.3	30.7	35.2	25.8
10 -14	53.7	66.0	40.0	32.5	34.0	30.9	69.2	89.9	46.6
15 -19	132.5	173.7	91.6	114.1	131.2	95.4	147.3	211.4	88.9
20 -24	125.7	187.1	76.1	138.6	205.4	82.0	115.6	172.1	71.6
25 -29	64.1	78.5	52.3	70.7	90.0	64.3	55.1	69.2	44.4
30 -34	46.6	66.3	29.0	46.1	66.6	27.1	46.9	66.1	30.2
35 -44	28.5	28.9	28.1	23.1	27.9	18.3	32.1	36.3	35.0
45 -54	24.5	23.9	25.3	27.9	24.6	31.3	22.3	23.5	20.7
55 -64	22.7	22.0	25.7	20.2	14.8	25.8	24.4	23.3	25.7
65+	27.4	22.5	31.5	35.7	25.8	48.3	21.7	20.2	23.7
TOTAL	52.1	61.6	42.0	51.6	58.2	44.5	52.2	63.8	40.4

SOURCE: Population Growth of Iran: First Survey Year 1973-74 (Tehran: Plan and Budget Organization, Statistical Center of Iran, 1976), p. 41.

a province which does not have a baccalaureate degree institution to one that does. This is a very popular solution for government employees since they can transfer from one city to another city easily. In those families which are not able to emigrate, their adult children may emigrate themselves for access to higher education. Table 2.17 shows the results of a series of surveys about population growth in Iran during 1974-75.

Results of the 1976 national census of Iran show that the number of migrants in certain age groups and in certain locations is very high. In Table 2.18 migrants between 10-19, 20-29 and 30-39 years of age are the most mobile in comparison with other ages. In the age group 10-19 years, usually ages 17, 18 and 19 are the most mobile ages. The frequency in different provinces varies. In the provinces in which there are colleges and universities the immigration rate is higher, as noted in Table 2.18.

If every province and large city had a college this would reduce sharply, but not entirely eliminate, this movement. The same statement can be made concerning employment locations.

Central (Markazi) province which has seven universities and many colleges and post high school institutions, attracts the highest number of immigrants (See Table 2.18) for two important reasons:

TABLE 2.17 Urban and Rural Out-Migration Rates Per 1000 Person -Years, By Age And Sex. First and Second Survey Years Combined (1974-75).

Age in Years	Total			Total			Total		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Total	48.0	55.5	40.1	50.1	57.0	42.8	46.5	54.5	38.4
0 - 4	31.8	31.2	32.4	40.3	39.5	41.1	28.0	27.6	28.4
5 - 9	27.0	27.8	26.1	29.1	27.5	31.0	25.9	28.2	23.4
10 -14	45.1	54.2	35.0	30.6	33.0	28.0	55.6	69.9	40.0
15 -19	121.9	153.5	91.1	104.6	121.4	86.6	135.9	182.1	94.6
20 -24	118.7	172.5	76.0	133.3	193.0	82.9	107.2	155.4	70.2
25 -29	59.4	77.4	44.3	73.0	93.8	53.3	49.2	63.6	38.2
30 -34	40.5	54.3	28.2	42.8	56.3	30.0	39.0	52.8	27.0
35 -44	25.5	27.6	23.4	24.8	30.7	18.9	26.0	28.9	23.1
45 -54	23.1	21.8	24.7	24.7	22.6	27.2	22.1	21.4	23.0
55 -64	22.2	18.3	26.5	20.3	13.8	26.9	23.5	21.2	26.2
65 -	27.5	23.9	30.9	34.9	26.8	44.8	22.4	21.9	23.1

SOURCE: Population Growth of Iran: Second Survey Years 1974-75 (Tehran: Plan and Budget Organization, Statistical Center of Iran, 1967) p. 43.

TABLE 2.18 IMMIGRATION OF THE SETTLED POPULATION 5 YEARS OF AGE AND OVER, BY AGE AND PROVINCE (OSTAN) OF USUAL RESIDENCE IN 1971.

Ostan & Residence Both Sexes	5-9	10-19	20-29	30-39	40-49	50-59	60-64	65 years & over	Total	Has college or University
Markazi (Central) Pr.	6644	99669	138350	61990	28032	14463	4033	6947	430227	Yes
Gilan Pr.	5607	20850	34882	6642	3177	1196	467	608	73195	No
Hazandaran Province	11167	30641	41982	10735	5289	2796	626	1064	104300	No
Eastern Azarbajejan Province	15055	39785	53447	15781	10186	4709	1100	1758	141821	Yes
Western Azarbajejan Province	5113	17952	20842	5570	3566	1336	362	558	55286	Yes a
Kermanshahan Province	5544	14669	19880	5953	3786	1858	414	730	52834	No b
Khuzestan Province	19172	33615	47818	17613	8725	4789	1503	2240	135575	Yes
Fars Pro.	7871	18980	34248	7717	3543	1666	564	814	75402	Yes
Kerman Pro.	3703	10703	17075	3610	18940	939	264	366	38554	No c
Khorasan Province	13836	36601	49200	14925	8484	4243	1420	1909	130608	Yes
Esfahan Pro.	8123	20389	27907	8325	3904	1306	604	1155	72813	Yes

TABLE 2.18 (Cont)

Ostan & Res- idence Both Sexes	5-9	10-19	20-29	30-39	40-49	50-59	60-64	65 Years & over	Total	Has College or Univer- sity
Sistan & Baluchestan Province	4222	9820	12071	4471	2400	1238	283	446	34961	No. d
Kurdestan Pr	2345	9189	10347	2945	1527	590	144	229	27316	No
Hamadan Pro.	4927	14283	15625	4671	2754	1674	354	849	45136	Yes e
Chaharmahal L. Kakhtiari Province	1603	4567	4646	1651	912	486	141	323	14329	No
Lorestan Pr	4443	10354	12583	4027	2818	1231	410	632	36098	No
Ilam	760	1960	2087	742	378	48	40	134	6139	No
Boyer Ahmad & Kohgiluyeh Province	721	1514	2140	562	283	222	22	61	5525	No
Bushehr Pro.	1341	3137	4672	1540	674	204	41	181	11790	No
Zanjan Pro.	2543	7107	8278	2662	1341	778	106	487	23302	No
Semnan Pro.	2865	8602	11950	2923	1451	750	347	532	29420	No f
Yazd Pro.	1146	4678	6103	1281	603	604	164	166	14745	No
Hormozgan Pr	1521	3261	5251	1699	852	488	121	124	13317	No
Foreign Countries (Abroad)	17259	22291	35911	32072	15473	6921	1302	2811	134040	Yes g
Not reported	1783	4051	5483	2245	1591	694	202	451	16500	-

SOURCE: National Census of Population and Housing. (Tehran: Plan and Budget Organization, Statistical Center of Iran, 1976), p. 13 Based on 5 percent sample.

- a. This province has a small agriculture college
- b. In 1975-76, private sector established a small science college, which in 1977 the government announced would be a part of Razi University which is under construction.
- c. Kerman University is under construction.
- d. Sistan and Baluchestan University is under construction but has admitted students in some majors (1978-1979).
- e. BoOAli University established in 1975 is based on a small agriculture college and modeled on the French System.
- f. A small college is under construction
- g. The majority of young immigrants are students who have gone abroad to continue their higher education and 69 percent are applicants for under-graduate education.

1. A lack of colleges, universities and other post-high school institutions in their home provinces or city.
2. The desire of students to attend colleges offering courses or areas of study not available locally.

Another reason may be the traditional desire of students to leave the home community. This movement suggests some caution in planning higher education.⁵⁶

Internal migration affects about 1.05 million people each year and results in a net rural-to-urban movement of about 280,000 persons. The bulk of the migrants are young persons in the age range of 10 to 34 years. Particularly mobile are the young men 15 to 24 years of age.⁵⁷

There are a number of reasons for migration as the statistics in Table 219 indicate. The largest group follows the family. The second largest group are those either changing or looking for a better job or those officially transferred. Transfers are frequency related to education since those parents who wish their children to have access to better education may request employment moves to cities or provinces where their college or university chances are better. The next

⁵⁶

Ladan Moghandam. . "The Profitability of Investment In Six Selected Fields of Higher Education in Iran", unpublished M.A. degree thesis. Columbia University (no year)

⁵⁷Population Growth of Iran: Second Survey Year 1974-75
(Tehran: Plan and Budget Organization, Statistical Center of Iran, 1977) p.45.

category, "looking/searching for job", covers those who move to large cities where there is a good employment market. They may also take qualifying entry exams for higher education in conjunction with a job. (In other words, the author sees this category as persons seeking and preparing for a career).

TABLE 2.19 NUMBER AND PERCENTAGE OF COUNTRY'S MIGRANTS
ACCORDING TO CAUSE OF MIGRATION, 1971

Excuse/Cause for Migration	Number	Percentage
Following Family	2,664,663	62.3
Changing job/looking for better job	692,902	16.2
Marriage	326,542	7.6
Official Transfer	209,982	4.7
Looking/Searching for job	182,216	4.2
Other reasons	177,660	4.2
Education	27,839	0.7
Total Number of Migrants	4,274,805	100.0

SOURCE: Sadat Darbandi, A.G., Specification of Migration in Iran. (Tehran: Plan and Budget Organization, Statistical Center of Iran, 1977), p. 13.

Sex and Age

Iran, like most moderate developing nations, has a comparatively large number of persons under age 19 and smaller numbers in the age 65 and older group. The slightly lower percentage of persons in the working years between age 17 and

65 is the net result of a gradual annual increase in the birth rate. More than fifty-five percent of Iran's population was under 19 in 1976; 51.75 percent of these were boys and the rest girls. In the same year 63.5 percent of the population in Iran was under 25 years; nearly 51.3 percent of them were males. In other words, 63.5 percent of the population was college age or younger. At the other end of the age scale, Iran had only 3.22 percent of its population 65 years and over (See Figure 2.9).⁵⁸

The percentage of the population in the older age group varies widely over the country. The rural provinces especially the west and central portions of the country (East-Azarbayejan, Khozestan, Markazi and Esfahan provinces) have very heavy loadings in the upper age ranges while the suburbs, capital cities and metropolitan areas have a larger proportion in the middle and younger age groups (See Figure 2.10).⁵⁹

The number of males generally exceeds the number of females in the same age group. Even in the older groups there are higher numbers of males than females.

Since this research is primarily concerned with the pre-college age population the remainder of this discussion will focus on those under 24 years. In 1976 they represented

⁵⁸Plan and Budget Organization. National Census of Population and Housing, Nov. 1976. Statistical Center of Iran, p. 1 and Statistical Year book of Country (1972). Statistical Center of Iran, 1972, p. 32 (Persian).

⁵⁹Ibid, p. 7 and p. 30-32 and Also: Measuring Population Growth in Iran. Plan and Budget Organization of Iran. Statistical Center of Iran, 1976. Publication Serial No. 628 Index II, p. 60-68 (Persian).

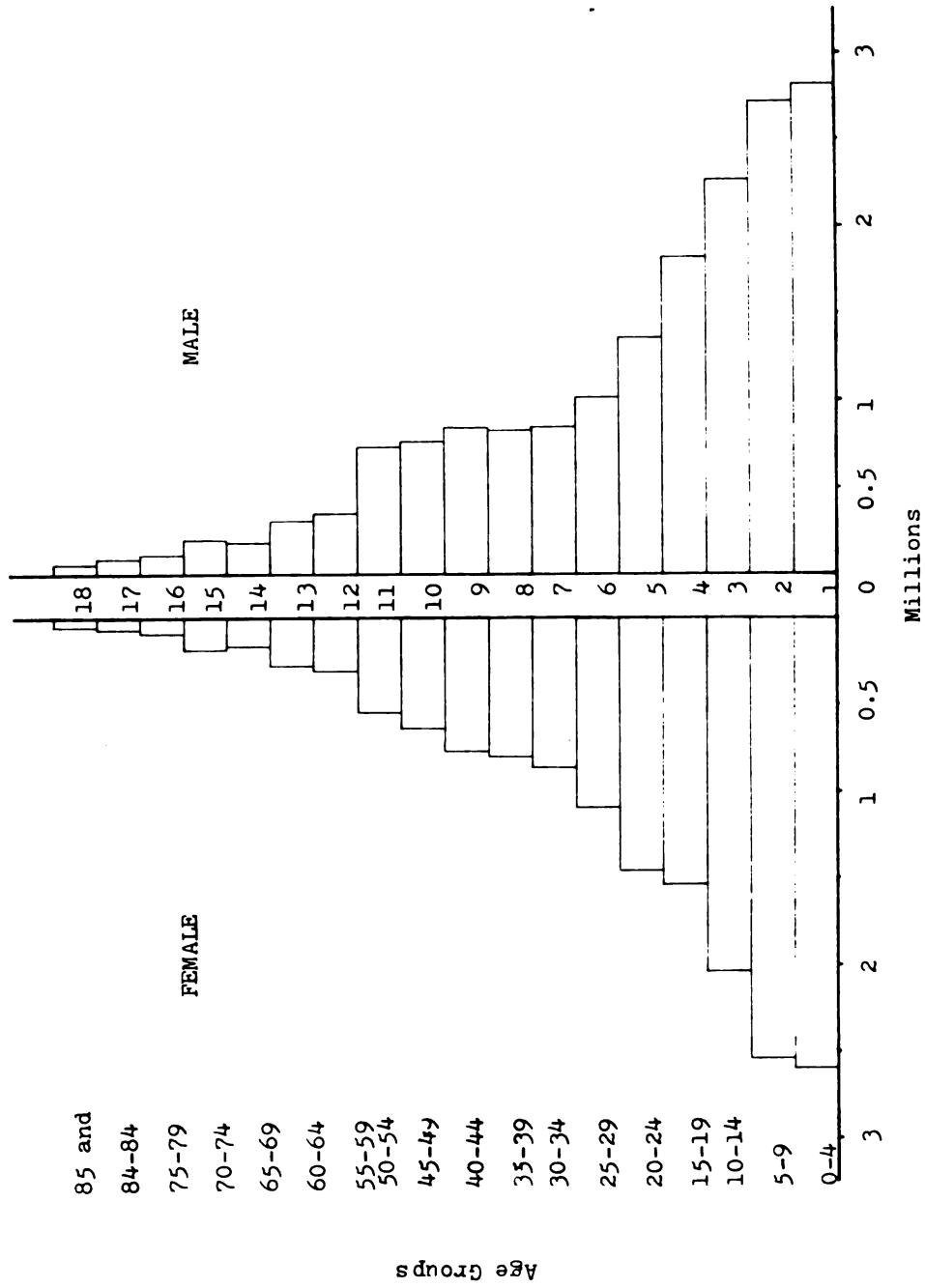
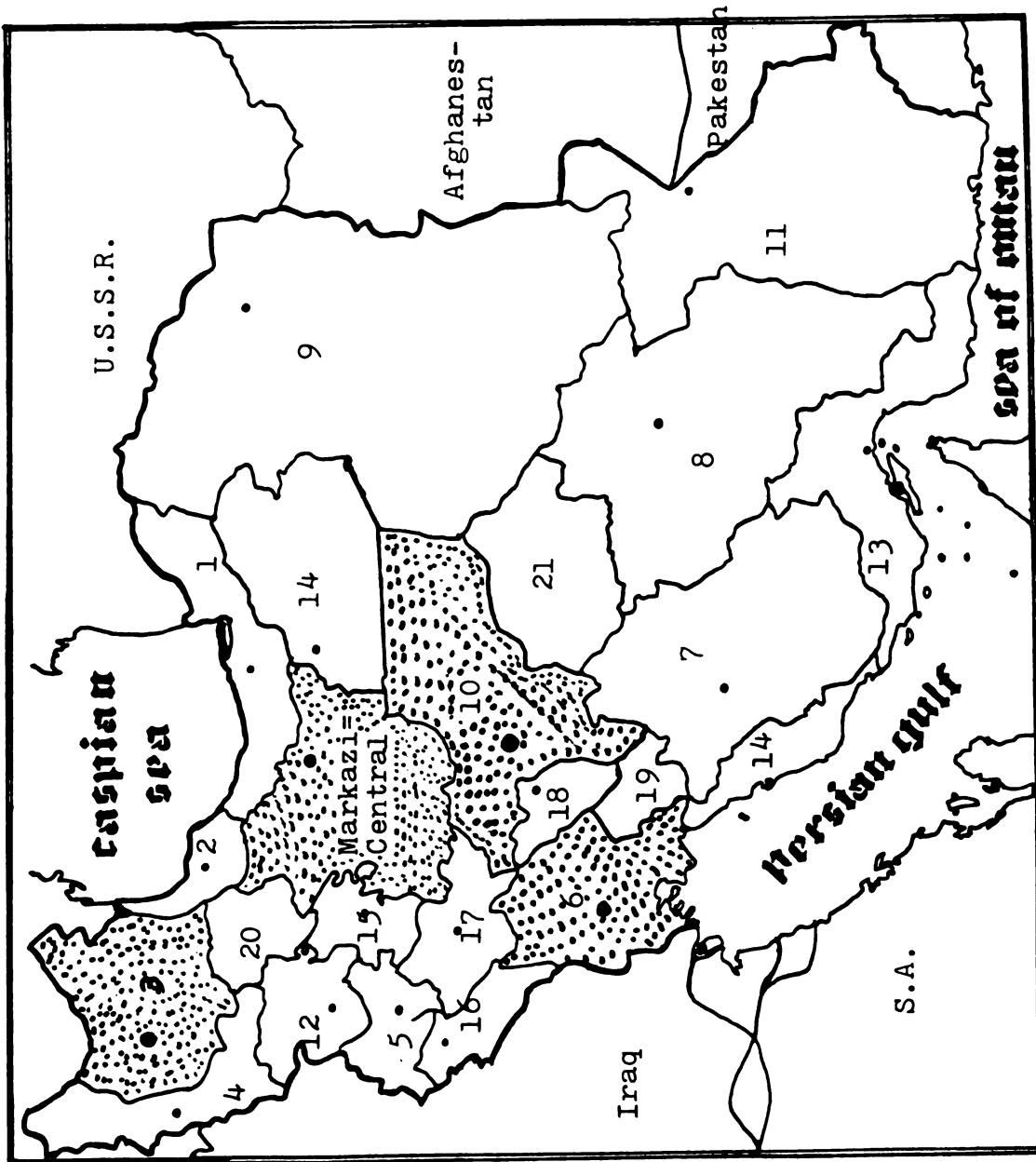


FIGURE 2.9 Pyramid of Population of Iran by Sex Based on Census 1976



1. Mazandaran
2. Gilan
3. E. Azarbaijan
4. W. Azarbaijan
5. Kermanshah
6. Khuzistan
7. Fars
8. Kerman
9. Khorasan
10. Isfahan
11. Sistan and Baluchesta
12. Kurdistan
13. Hourmozgan
14. Semnan & Memeghan
15. Hamedan
16. Ilam
17. Lurestan
18. Chaharmahal and Bakhtiari
19. Kuhkiluiyah
20. Zanzan
21. Yazd

FIGURE 2.10 Provinces with Large Proportional Populations in Upper Age Group

nearly 55.17 percent of the population. Males of this age accounted for 28.55 percent of the population and females represented 26.62 percent.⁶⁰ In 1966 the pre-college age population represented 56.08 percent of total population; 28.89 percent were males and 27.2 percent were females.⁶¹ The majority of the pre-college age population was living in the rural areas but, the number of applicants for higher education was higher among urban than rural residents.⁶²

In considering these facts an I.L.O. report may be helpful:

The rate of population increase has been much greater in the urban areas (defined as including localities of 5,000 and more population in November 1956), than in the rural areas during this period. As against an average annual compound rate of population growth of 4.52 percent in Iran's towns and cities, the rural population grew by an average of only 1.94 percent. This great disparity in rates of growth, as between town and villages, is attributable to two factors: a higher natural rate of increase of the urban population (3.14 percent as compared to 2.64 percent); and a significant level of (net) rural-to-urban migration over the 1956-1966 period and also during 1966-1977 period.^{63, 64}

⁶⁰National Census of Population and Housing Nov.1976 p. 1-3. Percentage calculation is made by the author.

⁶¹National Census of Population and Housing Nov. 1966 p. 30. Percentage calculation is made by the author.

⁶²National Census of Population and Housing. Also Statistics of Higher Education 1976, 77, 78.

⁶³The November 1956 census considered as urban the 186 places with 5,000 or more inhabitants each at that date. To ensure comparability, only these same localities are being treated as urban in the 1966 population figures, although 94 of the localities had reached a population of 5,000 by that date. This is also true for the 1977 population census.

⁶⁴International Labour Office Report, Problems of Employment Creation in Iran, p. 4

Sex Structure

Research findings from other countries indicate that there are usually more males conceived, although there is also higher mortality among males at birth.⁶⁵ Overall there seems to be a male sex ratio greater than 100 at birth which tends to decline through higher male mortality in later years.⁶⁶

Hawley reported that when living conditions improve, a higher sex ratio may be found but unfavorable conditions lead to higher mortality among male children.⁶⁷ From this it may be anticipated that developing countries with large rural populations, high illiteracy, a lack of electricity, sanitation facilities, water supply, adequate housing, medical facilities and poor communication and transportation, may be considered as having unfavorable conditions and, therefore, conducive to high infant mortality.

Generally speaking, normal ratios range between 90 and 113 and when deviations occur, irregular sexual behavior may result.⁶⁸ For example, when there is a great deal of male

⁶⁵William Peterson, Population, N.Y., The Macmillan Co., 1967, p. 72

⁶⁶Ralph Thomlinson, Population Dynamics., N.Y., Random House, 1965, p. 427.

⁶⁷Hawley, op.cit., p.362

⁶⁸Ibid, p. 363.

migration to certain areas it may create problems of finding adequate sexual outlets. This problem may be intensified in a traditional society where families are extremely protective toward womens' physical freedom.

Sex ratios may also indicate errors in census data. Hawley found that when the sex ratio of an age group for one year differs extremely from the remainder of the age groups, it provides presumptive evidence of census errors which could be useful in future census enumerations.⁶⁹

Age Structure

Previous research done by the United Nations and demographers have compared the age structure of highly industrialized countries to developing countries, and found it can be used as an indication of movement toward economic development.

The United Nations reported that technologically advanced countries have 22 to 30 percent of their population in age groups under 15 years, 10 percent over 65 years, and 60 to 65 percent adult population of 15 to 64. Underdeveloped countries tended to have about 40 percent of their youth under 15 years, only two to four percent of their population in the age group 65 years and over and less than 60 percent of their population in the productive years 15 to 64.⁷⁰

⁶⁹Amos Hawley, Population Composition, p. 363.

⁷⁰The Determinants and Consequences of Population Trends, N.Y., United Nations, 1953, ST/SOA/Jer. A/17, p.265

Thomlinson noted that marked aging occurred only after a decrease in fertility,⁷¹ and Hawley mentioned that the type of age structure found in developing countries was due to high birth and death rates.

It should be noted that a high proportion of children in the population creates problems of heavy dependency for the productive and economically active parts of the society. When a country is predominantly agricultural, persons in the younger years are absorbed in this sector, as in Iran, where 773,331 (25.6 percent) of the age group 10-14 were reported as economically active in the 1966 Census. However, an industrial society needs more skills, and early entrants into the labor market have limited industrial skills.

When labor begins to move off the land to urban areas, but industrial development has not advanced at the same pace, a low ratio of persons in their productive years does not present an immediate problem since there may not be many jobs available. However, when the industrial sector does gain momentum but the ratio of persons in the productive age group remains static, there tends to be continued exploitation of future generations by forcing their early entrance into the labor market and stifling development of skilled labor.

⁷¹Thomlinson, op.cit., p. 431.

Full time employment of children is also incompatible with a satisfactory standard of living, particularly since such employment is only possible at the expense of neglecting education. In addition, the economic contribution of an employed child to the family income is usually less than that of the adult so that an increasing large proportion of children in the population is a factor contributing to lower per capita output.⁷²

Population and Education

Like the fact that education is the process by which a society transmits its culture from generation to generation, the theory of population is concerned with the process by which a society either maintains, increases, or decreases its number from generation to generation. Thus, both educational and demographic processes in Iran are involved in ensuring the continuing existence of society. Indeed, the survival of Iran's society, as well as that of any other, depends on its capacity to evolve processes of both these types--educational and demographic--which comply with certain minimum conditions. In general, in Iran the joint processes of education and population are parallel. What accounts for the many inter-relations between them are the fact that they co-exist in the same society.

⁷²The Determinants and Consequences of Population Trends, op.cit., p. 265.

The most obvious relation between population and education is directly concerned with the peculiar function of both processes in maintaining a society. Indeed, the effort imposed on a generation of parents to transmit its culture to their sons and daughters is quite often affected by the relative numbers of two generations involved.

This is only one aspect of the many relationships between education and population in Iran. Methods of forecasting the school-age population are based on the existence of a relationship between population and education, in which the demographic trends are the cause and educational facilities are the effect.

However, Helmut V. Musham has another view:

Most of the relations between education and population apparently act in an opposite direction: education becomes the "cause" and demographic behavior the "effect." ⁷³

Factors Determining The Growth of College Enrollment

College enrollment is expected to grow in any dynamic situation in which the population is continually increasing or the educational system is progressively expanding (even if not in a productive, efficient manner), or where both

⁷³Helmut V. Musham. "The Effect of Population on the Change in Educational Characteristics of the Labour Force" (Belgium: International Union for the Scientific Study of Population, 1971).

developments are taking place. Where population growth or school expansion is arrested, the number of those attending school may increase or remain unchanged. Thus the two factors which will determine the future number of students in higher education in Iran are: the expected growth of the college-age population; and the anticipated expansion of the school system which may result from developments other than population growth.⁷⁴ In Iran and elsewhere:

Increase in school enrollment does not necessarily mean that the educational situation is improving. We can not determine, except through such limited indicators as pupil-teacher ratio, whether the quality of education has remained constant, improved or declined.⁷⁵

Iran's demographic and educational data, on which estimates of future higher education enrollment must be based, have been available only in recent years. Two annual volumes of educational statistics have been compiled by the Ministry of Education of Iran.⁷⁶ Also, parts of the final report of the third population census (1976) and the second population census (1966), of Iran, some sections of which

⁷⁴Ta Nagu Chau Demographic Aspects of Educational Planning (Paris: UNESCO, International Institute of Educational Planning, 1969).

⁷⁵United Nations The Report on the World Social Situation (New York: United Nations, 1957).

⁷⁶Educational Statistics (Tehran: Ministry of Education, Bureau of Statistics, 1975 and 1978), 2 volumes for each year in English and Farsi.

concern the educational status of the population,⁷⁷ and some UNESCO reports about higher education in Iran may be useful.⁷⁸

It appears, however, that no systematic forecasts of future school or higher education enrollment in Iran have been published. Some retrospective data on enrollment in public elementary and secondary schools may be found in international studies such as The World Survey of Education, published by UNESCO,⁷⁹ but they are not in a form suitable for this study.

The goal of a majority of Iranian high school students is to continue their education. The decade from the 1960's to the 1970's was marked by notable efforts toward educational expansion. Millions of people realized their long-recognized right to education and higher education. This was possible because the old notion that education in Iran, especially at the higher level was confined to an elite minority, had been largely superseded by more egalitarian social theory.

⁷⁷Plan and Budget Organization, Statistical Center of Iran, Tehran, Iran (Aryameher Ave)

⁷⁸From the Ministry of Science and Education, Institute for Research and Planning in Science and Education, Tehran (Shah Reza Ave)

⁷⁹UNESCO, World Survey of Education, 1959-1861, (UNESCO: Paris) Vol. 2: Primary Education; Vol. 3: Secondary Education.

SOME CHARACTERISTIC FEATURES OF THE
EDUCATIONAL SYSTEM AND POLICIES IN IRAN

In terms of education, Iran is one of the well developed areas in Asia and the Middle East, even though the 1976 literacy rate was only 47.5 percent (there are differing rates for males and females and urban and rural dwellers).

Though the enrollment rate is high, the retention rate (students finishing a given level of education) is only fair in relation to Asia and the Middle East: about 85.81 percent for ninth grade and 56 percent for twelfth grade (final comprehensive examination).⁸⁰ If "at least four years of full-time schooling is required to make a pupil literate,"⁸¹ then the wastage in education at the primary level in the urban areas is very low but in the rural areas it is high, because more children are needed to help their parents in agriculture. The situation in high school is different, because both the human and economic resources for training these pupils are substantial. Even so, students often struggle to finish high school only to become useless members of society because they are unskilled. As A. Reza Arastah says:

⁸⁰UNESCO, Perspective of Educational Development in Asia: A Draft Asian Model. (Bangkok: UNESCO, 1967).

⁸¹United Nations, Economic Survey of Asia and the Far East, 1965. (Bangkok: United Nations, 1966) p. 85.

The majority of high school graduates, however, are left to make other plans. Many of them hopelessly seek employment in the already over-crowded government agencies.

It is obvious that the present high school curriculum does not properly prepare Iranian youth for the society in which they live. One reason for this is that office work, no matter how routine and poor in pay, has always carried prestige in Iran.

High school graduates generally refuse to perform any kind of manual labor (Even those who are offered teaching positions or clerical work in rural or for-cities areas hesitate to leave the urban centers).⁸²

A high fertility rate and declining mortality and dropout rates are adding to the size of the potential high school graduate population who have diplomas in hand.

Another educational problem related to population in Iran is a much lower literacy and enrollment rate for females than males. In the 1976 population census only 35.6 percent of the literates were female (See Table 2.20). The number of females enrolled at the primary, secondary and higher education levels in Iran is lower than for males, especially in the very religious areas. Arasteh described this as follows:

The degree of literacy is undoubtedly higher among men than women--the lack of proper training and education of women and, in general, the attitude of men toward women as a source of "manpower" makes the task of social improvement still more difficult.⁸³

⁸²A. Reza Arasteh, Education and Social Awakening in Iran 1850-1966, p. 97-8.

⁸³Ibid, p. 190.

TABLE 2.20 Education of Total Population By Sex and Location (6 years and over)

Location	Sex	Cannot read and write	Read Only	Read and Write Percent	Number
Total	Male	5,588,176	143,223	58.8	8,196,053
	Female	8,385,574	101,689	35.6	4,684,367
	Total	13,973,750	244,912	47.5	12,880,420
Urban	Male	1,712,901	57,708	74.4	5,138,758
	Female	2,701,933	61,102	55.7	3,480,779
	Total	4,414,849	118,811	65.5	8,619,537
Rural	Male	3,875,275	85,515	43.6	3,057,295
	Female	3,683,636	40,586	17.4	1,202,588
	Total	9,558,911	126,101	30.6	4,260,883
Total	Male	13,927,452			
	Female	13,171,630			
	Total	27,099,082			
Total Rural	Male	7,018,085			
	Female	6,927,810			
	Total	13,945,895			
Total Urban	Male	6,909,367			
	Female	6,243,820			
	Total	13,153,187			

SOURCE: National Census of Population and Housing (Tehran: Plan and Budget Organization, Statistic Center of Iran, 1976) pp. 25-27. Based on a 5 percent sample.

Like many developing countries in Asia, Iran is committed to eliminating illiteracy and to providing universal compulsory education at the elementary level and adult education at night at the secondary and high school levels. Non-demographic factors are required for improving quality as well as quantity. As an Iranian politician (who the author wishes not to identify) wrote:

However, a mere quantitative increase in educational facilities is by no means enough. At the same time that we (Iranians) are striving mightily to increase the number of schools, teachers and students, we must rediscover the meaning of education in its broadest sense.

Some other non-demographic factors such as the enforcement of compulsory education, policies leading to a rapid increase in the enrollment of females, reduction of drop-outs, and an improvement in the economic situation of Iranian families will act favorably to increase enrollment rates in the future, particularly in post-secondary education. Since population and enrollment will increase, instead of continuing a traditional mode of higher education Iran must change its system and establish democratic types of colleges to answer its future needs to increase educational opportunities for all young adults who want to enroll in post-secondary institutions.

Arasteh had similar ideas, he wrote:

Thus Iran's potential for further industrial advancement is enormous. To actualize it will require technical and skilled workers of all kinds. The Ministry of Education's present vocational program is still inadequate in technical training at both the higher and lower educational levels.⁸⁴

Despite government encouragement and vast investments in education, "the students have made little real progress, due to the poorly coordinated program, coupled with the political unrest of the last (1950's) decade."⁸⁵

T.M. Beck also discussed the situation of education in developing countries:

The educational implications of population growth are less obvious in a developing country than in a country which already has universal education, although if we assume that education for all is a good thing, the implications are probably more serious. In a developing country it becomes immediately obvious when the population of an area outgrows its educational facilities, and the government is virtually obliged to provide whatever is necessary without delay.⁸⁶

Proving "whatever is necessary" must be based on pre-planned criteria, and on local, provincial and national goals.

⁸⁴Arasteh, Education and Social Awakening in Iran, 1850-1968, p.66

⁸⁵Ibid,

⁸⁶T.M.Beck, "Educational Implications of Population Growth in the Territory of Papua and New Guinea." Paper delivered to International Union for the Scientific Study in Population, Sydney, Australia, pp. 210-11 (Paris: Organization for Economic Cooperation Development, 1967).

In the past, "whatever is necessary" for the regime or central government was provided instead of serving the "public interest, convenience, (needs) and necessity" of the community, province and entire nation.

Werner Z. Hirsch discusses population and education:

What is the optimum population for any given society with its education budget? Economies of scale for larger populations may improve resource use in some cases, and diseconomies may work the other way. Clearly, this would depend, among other things, on the desire and conditions of the education system itself. For example, one would expect different results for a system of small, locally controlled classes than for nationwide television-size classrooms.⁸⁷

In Iran, as in some other developing nations, while it is not known to what extent some of the sources of growth included in "others" (e.g. advances of knowledge) could indirectly be a function of higher education, the statistics establish a presumption that the latter can not be relied upon as the major growth-generating factor. The correlation between the growth rates of national income of Iranians and the relative contribution of education is unknown. In all but one instance the contribution of investment in physical capital exceeded that of education and higher education. This experience relates to developing countries, and it is possible

⁸⁷Werner Z. Hirsch, Population and Education: Meeting Change with Change, p. 197.

that conclusions need not necessarily be valid for developing nation's whose stock of education and higher education embodied in the labor force is much smaller than that found in the former, and whose scarcity may conceivably make for higher return.⁸⁸ One cannot, however, discover a systematic variation, among them, in terms of the rates of school and university attendance with G.N.P. per capita growth rate in Iran, and if such co-variance does exist it may still be the economic magnitudes which represent the predetermined variable. For, at least in a developing country, the rate of return on real investment was found to be considerably higher than on investment in education.⁸⁹ Taking into consideration the existence of labor surpluses, under-employment and the meager endowment of capital per head of the population, this is probably true in Iran as in most developing economies.. It is common that however well equipped the labor force might be educationally, it would be of little avail if the co-operant

⁸⁸Leon Tabah. "An Overview of the Problem of the Relationship between Population and Development," in Population Growth and Economic Development in the Third World (Belgium: International Union for the Scientific Study of Population, 1975), pp. 15-47.

⁸⁹A.C. Harberger, "Investment in Man versus Investment in Machines: The Case Study of India," paper delivered at conference on Education and Economic Development, University of Chicago, 1963.

factors of production are lacking. It has, in fact, been maintained that a good deal of school/college education could be dispensed without prejudicing productivity.⁹⁰

Higher Education

College Enrollment⁹¹

According to Iran's Institute for Research and Planning in Science and Education, in July 1977 the country had 207 institutions of higher education (See Table 2.21 and 2.22)⁹² with total enrollments of 154,215 of whom 99,071 were males and 55,145 were females.⁹³ The IRPSE in their annual report about the number of faculty members at those institutions of higher education during the same year wrote:

⁹⁰J. Sandee "Comments on Denison's Paper" in The Residual Factor and Economic Growth (Paris: Organization for Economic Cooperation and Development, 1964) p. 76.

⁹¹This has not been limited to colleges in the strict sense of the word but includes all types of institutions engaged in higher education. For this reason and for sake of brevity, the term "college" in some previous or following pages of this research connotes all institutions of higher education; college age; college population; college enrollment; and so on.

⁹²Institute for Research and Planning in Science and Education: Statistics of Higher Education in Iran (Tehran IRPSE, July 1977) Vol. I, p.4.

⁹³Ibid, p. 15.

The number of full-time faculty members of colleges, universities and post high school institutions in Iran during the Fall semester of 1976 reached 7,596, the number of part-time faculty members was 6,356, and the number of lecturers and instructors reached 4,864 persons. Nearly 29.8% of full-time faculty members of all institutions of higher education were from Tehran University, Shiraz University with 11.9%, Azarabadegan University with 10.5%, National University with 10% and finally Esfahan University with 7.1% followed Tehran University.

Also, 72% of all full-time faculty members were teaching and doing research in Universities, 24% in public post-high school institutions and 4% in other institutions of higher education.⁹⁴

TABLE 2.21 NUMBER OF IRANIAN INSTITUTIONS OF HIGHER EDUCATION (1972) BY GENERAL CATEGORIES

CATEGORY	NUMBER
1. Universities	17
2. Institutions of higher education	
A. Independent Institutions of Higher Education	5
B. Institutions of Higher Education Affiliated With the Ministry of Education	94
C. Institutions of Higher Education Affiliated With Other Ministries and/or Public Offices	70
3. Private colleges and advanced school institutions	21
TOTAL (1972)	207

SOURCE: Institute for Research and Planning in Science and Education.

⁹⁴ Institute for Research and Planning in Science and Education. Planning for Providing Faculty for Higher Education Institutions (I.R.P.S.E) Tehran July 1973). p. 125 (Persian).

TABLE 2.22 STUDENT DISTRIBUTION BY TYPE AND AFFILIATION OF INSTITUTIONS OF HIGHER EDUCATION (FALL SEMESTER 1976-77).

Type and Affiliation of Institutions	Numbers		
	Institutions	Student	Percent
1. Universities	17	68,693	44.14
2. Independent Institutions of Higher Education	5	10,797	7.00
3. Colleges and Institutions of Higher Education affiliated with Ministries and Public offices	164	56,799	36.83
A. Affiliates of Ministry of Education	94	29,781	
B. Affiliates of Ministry of Health	29	3,426	
C. Affiliates of Ministry of Art and Culture	4	770	
D. Affiliates of Ministry of Agriculture and Natural Resources	3	2,235	
E. Affiliates of Ministry of Defense	3	501	
F. Affiliates of National Oil Companies	3	1,401	
G. Affiliates of Plan and Budget Organization	3	1,465	
H. Affiliates of Ministry of Road & Transportation	2	1,661	
I. Affiliates of Red Leone	4	549	
J. Affiliates of Other Ministries and Public Offices	19	15,010	
4. Other Institutions of Higher Education	21	17,926	
TOTAL	207	154,215	100.0

SOURCE: Institute for Research and Planning in Science and Education.

The Institution for Research and Planning in Science and Education summarized data for 113 Iranian colleges, universities and advanced school institutions for the 1973-1974 academic year. Since then, five new universities and a few other institutions of higher education (affiliated to the Ministries or public offices) have been added. The I.R.P.S.E.'s report for 1976 showed a total enrollment of 151,905 for the school year 1975-1976. This was an enrollment increase of 1.89 percent over 1975. The greatest growth was 23.25 percent in 1971-72 over the previous academic year.⁹⁵

The majority of the country's college students attend one of the four year public institutions. Among the country's four year colleges and universities, Tehran University is the largest single facility. However, it is gradually declining in its relative proportion of the students. In 1969-70, Tehran University enrolled 25.39 percent,⁹⁶ in 1972-73, 15.17 percent and in 1975-76, 12.42 percent of the four year students.⁹⁷ In the academic year 1976-77, over 18,183 students or 12.68 percent of the total F.T.E. college students were in the University of Tehran.⁹⁸

⁹⁵I.R.P.S.E. Statistics of Higher Education in Iran (I.R.P.S.E, Tehran, 1976), Vol. 3, p.6.

⁹⁶Statistical Center of Iran, Statistical Yearbook of Country, 1974, p. 99 (Calculations were made by the author).

⁹⁷Statistics of Higher Education in Iran (1976), Vol. III, P. 12. (Calculations were made by the author).

⁹⁸FTE is a method of equalizing for part-time students. By this technique, all enrollments are converted to the equivalent of full-time enrollment (FTE).

The majority of enrollment increases have been at the non-university institutions, such as two-year technical colleges and other independent or affiliated institutions of higher education. The greatest increase has been at Jondi Shapour University but most other campuses are increasing with few decreasing. Table 2.23 shows the increases or decreases during the periods 1975-76 and 1976-77.⁹⁹

Junior colleges which were affiliates of Ministries, public offices and national organizations, particularly the Ministry of Education, also varied widely in enrollment during the 1975-1976 and 1976-1977 school years. The relatively new colleges and the few new universities had increases of 53 to 100 percent, while some of the older junior colleges experienced slight decreases or remained relatively stable.¹⁰⁰

The number of freshman admissions in Iran in the fall of 1977 was 40,166 persons. It was found when adjusted, that 28.99 percent of that year's high school, technical and teacher training school graduates, who numbered 138,564, were able to pass the nation-wide higher education qualifying

⁹⁹For a more detailed description of the private colleges, affiliate and independent colleges and post high school institutions, the reader should refer to Higher Education Systems in Iran, and Statistics of Higher Education in Iran From 1969 to 1978. (Institute for Research and Planning in Science and Education, Tehran)

¹⁰⁰Statistics of Higher Education in Iran 1976 Vol. III, and 1977 Vol. V.

TABLE 2.23 STUDENT ENROLLMENT IN COLLEGES AND UNIVERSITIES AND THEIR INCREASE OR DECREASE

Name of Institutions	No.	Type	Total	Two- Years	Four- Years	Gradu- ate	No.	Type	Total	Two- Year	Four Years	Gradu-Percent ate Change
A.Universities	11		65372	4166	45952	15254	17		68693	4401	48859	15433 4.92%
U.of Esfahan		4	5035	--	3946	1098			5863	372	4292	1199 14.12%
U.of Shiraz		4+2	4719	411	2112	2196		4+2	5129	432	2280	2417 7.99%
U.of Azarbayejan		4	7102	--	5891	1212		4	7628	--	6543	1085 6.90%
U.of Tehran		4+2	18866	521	10971	7374		4+2	18183	530	10662	6991-3.76%
U.of Jondishapor		4	3371	--	2880	491		4	3424	108	2677	639 1.54%
Tehran Tech.U.		4	3086	--	3007	79		4	3228	--	3099	129 3.40%
Pardousi U.		4+2	5085	49	3937	1094		4+2	5647	38	4538	1073 9.95%
National U.		4+2	8135	250	6258	1627		4+2	8185	245	6194	1746 0.61%
Balochestar U		4	89	--	89	--			206	--	206	-- 56.80%
Teacher Training U.		4	3760	--	3674	86		4	2957	--	2868	1946-27.15%
Education Corps		4+2	4348	2935	1404	09		4+2	4278	2676	1591	11-1.64%
Farah Pahlavi U. *									1430	--	1430	-- 100
BoAliSina Un.								4	206	--	206	-- 100
Razi Un.								4	1445	--	1445	-- 100
Gilan Uni.								4	757	--	757	-- 100
Kerman Un.								4	277	--	277	-- 100
Parabi								4	38	--	38	-- 100
Esfahan Tech.U.								--	--	--	--	--
B.Autonomous Public Institutions	9	--	8904	1132	7727	45		10	10797	2182	8490	125 17.53%
Tehran Poly Tech Col		4	1252	--	1207	45			1455	--	1378	77 13.95%
Col.of Science & Techn. Teh.		4	4497	--	4497	--			4642	--	4642	-- 3.12%
Rezaieh Col. of Agr.		4	518	--	518	--		4	565	--	517	48 8.32%
Col. of Comm. Tehran		4						4	1565	--	1565	-- 100
Tehran Complex of Ind.		2	236	236	--	--		2	246	246	--	-- 4.06%
Education												
Khorasan Complex		2	260	260	--	--		2	345	345	--	-- 24.64%
Industrial Ed.		2	384	384	--	--		2	383	383	--	-- -0.26%
Esfahan Com.Ind.Ed.		2	100	100	--	--		4	116	--	116	00 13.79%
Kashan Com.Ind.Ed.		2	52	52	--	--		2	93	93	--	-- 44.09%
Sabzavar Com.Ind.Ed.		--	--	--	--	--		2+4	1387	1115	272	-- 100
Coll. of Construction		--	--	--	--	--						
C.Affiliate Inst. (2)111	2+4	2+4	29716	23383	5623	810	140	2+4	27851	551	2039	325 -6.83%
D.Others (3)	41	2+4	37813	5874	31581	358	21	2+4	17926	13	17500	413

examination.¹⁰¹ However, the number of freshman students admitted represented only 10.5 percent of all applicants for higher education in that year.

Not all, but many of the academically able and interested students are currently going to college. However, many bright persons in the rural areas and far provinces are not going to college. These areas need development programs to encourage college attendance and establish community-based colleges.

Most of the higher education increases will result from increases of college age persons and high school graduates who are able to pass the nation-wide qualifying examinations and enter colleges and universities at the freshman level. These high school graduates who are seeking to go to college will continue to increase, perhaps even more sharply, in the future. The extent to which they can be accommodated will largely depend on the following factors:

1. The increase in college applicants
2. The development of vocational and technical education and continued increasing demand for "middle manpower".

¹⁰¹Educational Statistic of 1978, by Ministry of Education, pp. 37-38.

3. The provision of adequate financial support.
4. The impact of a college degree on the future life of the degree holder.

Not to be overlooked is the need for improvement and greater development of the primary and secondary school systems all across the country, particularly in rural areas. It is recognized that such improvement will add to the demand for higher education facilities. Frank Bowles, in a unique and comprehensive international research study through UNESCO, discussed this point as follows:

The increasing number of student candidates who are unable to secure admission to higher education, though some of them may fulfill the qualifications for entry, is in large measure due to the wide and rapid expansion of pre-university education, and particularly of secondary education. Though the facilities for higher education have also been growing, their rate of growth has nearly everywhere been much slower and the disproportion is increasing with the years. Consequently, much greater efforts should be expended at the national level--for the expansion, and enrichment of the facilities for higher education. This is the cornerstone of any sound policy in this field--and it is needed not merely to solve or mitigate the problems of access to higher education, but also to meet the rising requirements of national development and international welfare.¹⁰²

¹⁰² Frank Bowles. "Access to Higher Education" Vol. I. The International Study of University Admission, UNESCO and the International Association of Universities, (Belgium 1963), p. 14.

Past Trends in Demand
and Enrollment

The following graphs are presented to provide the reader with a historical perspective on the growth of selected institutions and combinations of institutions in Iran and to compare this growth with college age population growth in the same period of time. The basic data used to prepare these charts were total head-counts which are not available for most institutions for the years prior to 1968.

The growth patterns of most institutions of higher education reflect an increase of students after the early 1960's. Increases in the mid-sixties and after reflected even more rapid growth (See Figure 2.11). This year to year perspective must be considered when the projections are examined. An I.L.O. report stated that:

There has been rapid expansion....., more rapid even than was contemplated in the projections of the Fourth Plan, and in spite of a selective university entrance examination. In 1968-69, 106,000 (qualified applicants) took the entrance examinations for university education, and 16,000 were accepted.¹⁰³

The University of Tehran has a pattern of growth which has not paralleled the overall growth curve and the overall increasing demand by applicants for higher education. An I.L.O. report states that:

¹⁰³I.L.O. "Employment and Income Policies for Iran." p.66.

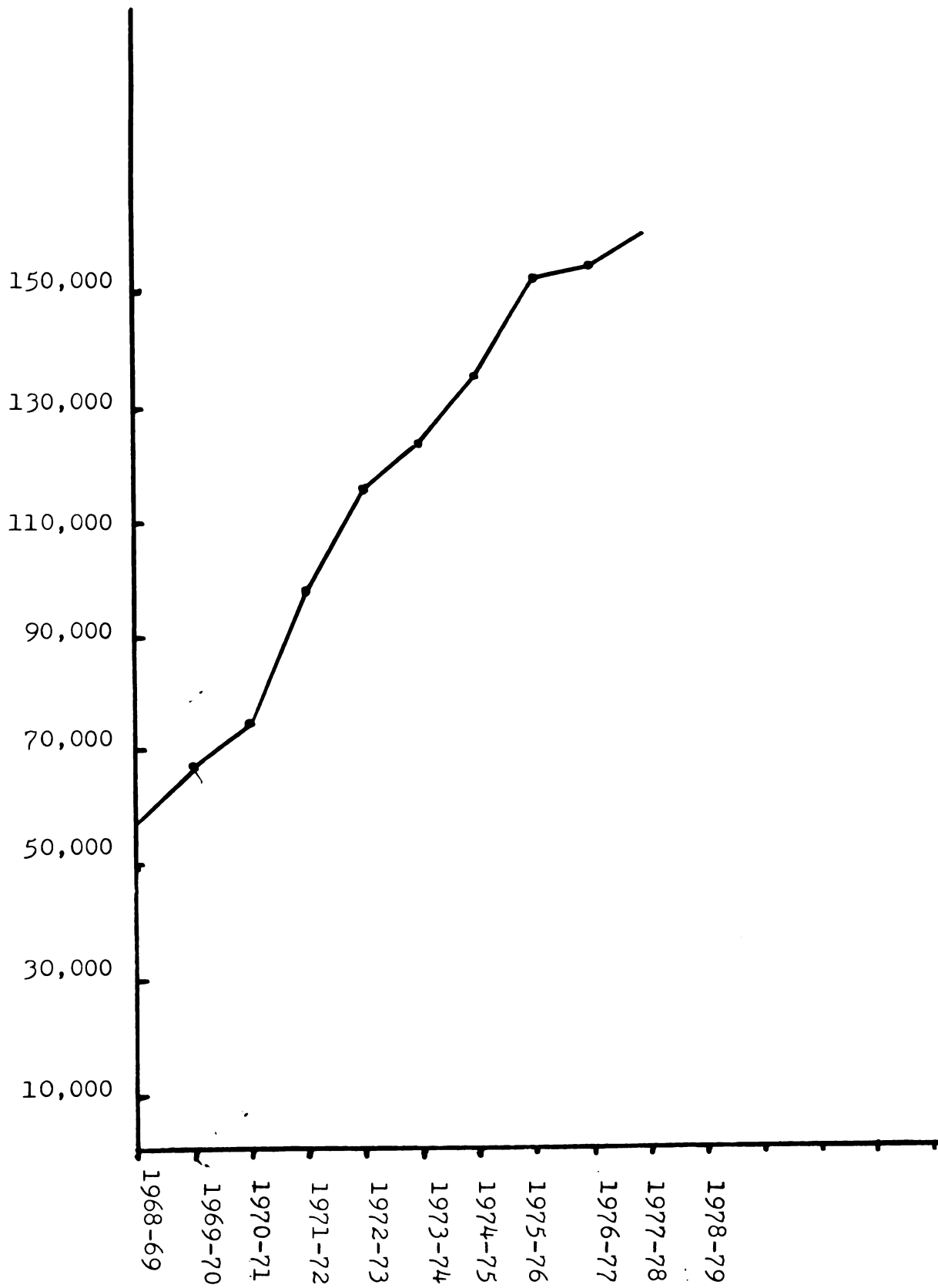


FIGURE 2.11 Enrollment in All Colleges and Universities in Iran (1968-1978).

The figures for Tehran University were 32,330 applications and 3,370 admissions; in 1970 the applicants numbered about 63,000, of whom just over 12,000 were admitted to full-time undergraduate courses.¹⁰⁴

The other autonomous, affiliated two and four-year private and public colleges have grown at an even faster rate. Two-year technical advanced school institutions, teacher training schools, industrial schools and similar two-year local institutions with very limited capacity experienced more growth during the late 1960s and the 1970s (perhaps as a result of lack of community colleges with their comprehensive instructional programs).¹⁰⁵ Among public universities, the University of Esfahan and the Ferdousi University in Mashhad Province had the largest gains, perhaps because both are in close proximity to historical and religious cities growing rapidly as two industrial poles of the country. The slowest growing public university has been Tehran University primarily because there is no room left for development.

What is important is the fact that high school graduates from all areas have been increasing and their growth rates are out of balance with enrollment growth in colleges, universities and higher education institutions in Iran.

¹⁰⁴Ibid, p. 66-67.

¹⁰⁵Statistics of Higher Education in Iran. Vol. 2 1976, 1977 and 1978.

Despite the increase in college and universities and advanced school institutions, the proportion of high school graduates who apply to higher education institutions is skyrocketing annually, and those allowed to enter are less than 20% of the total qualified applicants.¹⁰⁶ Therefore, every year, despite high demand for skilled middle-manpower, the pool of potential higher education students who are turned away grows larger. This proportion is compounded by the development of secondary education in urban and rural areas and by population growth. A. Reza Arasteh wrote:

The crucial issues confronting secondary education in Iran are...the inability of colleges to accept all high school graduates, and the weakness of an impractical curriculum.

Iranian universities can accept only about 10 percent of those who apply for admission. It is apparent that only those individuals who are academically outstanding or who come from influential families gain admission.¹⁰⁷

Bowle's opinion from an international point of view is very close to this author's views about Iran. He states:

¹⁰⁶ Ibid

¹⁰⁷ A. Reza Arasteh. Education and Social Awakening In Iran. (Leiden, E.J., Brill. Netherlands, 1969), p. 96-97.

...we note the tremendous expansion of pre-university education which is bringing forth each year ever larger numbers of aspirants seeking entrance to universities and thereby submitting them to all sorts of pressures. This situation is complicated by yet another fact, namely, that the expansion in quantity has not, to say the least, been accompanied by a corresponding improvement in quality. As a result, universities are almost everywhere faced not only with growing numbers of qualified candidates but also with growing numbers of candidates who are not adequately equipped for the exacting requirements of higher education..., the resources of universities--human and material--are limited. While established universities are expanding their facilities and new ones are being rapidly set up, it is obvious that they are all, though in varying degrees, still unable to cope with the heavy demands of modern national life or with the pressures for admission that are exerted on them.¹⁰⁸

¹⁰⁸ Frank Bowles. Access to Higher Education, p.10.

Patterns of Enrollment Demand

Students by Types of Institutions Since 1962

With a lack of resolute implementation of rapid expansion in further education, the total number of students of higher learning increased slightly, and in some cases by "leaps and bounds". Table 2.24 presents this statistical evidence.

In the academic year 1962-63 there were seven universities and four public higher education institutions. Private and affiliated higher institutions were, then, not yet established. Of the total 24,456 students in that year, 21,563 students, that is, 88.2 percent were studying in the seven universities and only 2,893 students (11.8%) were in the four public higher education institutions.

In the academic year 1966-67 there were eight universities, 29 public higher education and affiliated higher learning institutions and five private centers of higher education.¹⁰⁹ In that year, of the total 36,826 students, the percentage distribution was as follows:

¹⁰⁹Educational Statistics in Iran. Bureau of Statistics Ministry of Education, Tehran, 1963-1964...1968-1969; Higher Education Statistics in Iran, Institute for Research and Planning in Science and Education, 1969-70 ...1971-1972.

TABLE 2.24 TOTAL STUDENTS BY TYPE OF HIGHER EDUCATION INSTITUTION IN IRAN 1962-63 to 1971-72

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Type Academic Year	Grand Total Aggre- % Gate	Public Higher Education Establishments										Private (1) Institutions Aggre- % Gate
		Autonomous					Affiliated					
		Universities		Higher Ed. Inst.		Total Aggre- % Gate	Institutions		Total Aggre- % Gate			
		Aggre- % Gate	Aggre- % Gate	Aggre- % Gate	Aggre- % Gate							
1962-63	24,456 100.0	21,563 88.2	2,893 11.8	24,456 100.0	--	--	24,456 100.0	--	--	--	--	
1963-64	24,885 100.0	22,268 89.5	2,397 9.6	24,665 99.1	220 0.9	220 0.9	24,885 100.0	--	--	--	--	
1964-65	25,473 100.0	20,822 81.7	2,478 9.7	23,300 91.4	1,408 5.5	1,408 5.5	24,707 96.9	766 3.1	766 3.1	3.1	3.1	
1965-66	29,683 100.0	23,372 78.7	2,702 9.1	26,074 87.8	1,689 5.7	1,689 5.7	27,763 93.5	1,920 6.5	1,920 6.5	6.5	6.5	
1966-67	36,826 100.0	26,766 72.7	3,462 9.4	30,228 82.1	2,377 6.5	2,377 6.5	32,605 88.6	4,221 11.4	4,221 11.4	11.4	11.4	
1967-68	46,987 100.0	32,716 69.6	3,897 8.3	36,613 77.9	3,710 7.9	3,710 7.9	40,323 85.8	6,664 14.2	6,664 14.2	14.2	14.2	
1968-69	58,194 100.0	37,400 64.3	7,493 12.9	44,893 77.2	5,211 9.0	5,211 9.0	50,104 86.2	8,090 13.8	8,090 13.8	13.8	13.8	
1969-70	67,268 100.0	39,444 58.6	9,296 13.8	48,740 72.4	8,233 12.2	8,233 12.2	56,973 84.6	10,295 15.4	10,295 15.4	15.4	15.4	
1970-71	74,708 100.0	41,900 56.1	9,323 12.5	51,223 68.6	10,905 14.6	10,905 14.6	62,128 83.2	12,580 16.8	12,580 16.8	16.8	16.8	
1971-72	97,338 100.0	44,333 45.5	10,401 10.7	54,734 56.2	23,334 24.0	23,334 24.0	78,068 80.2	19,270 19.8	19,270 19.8	19.8	19.8	
Total Growth Index 1962-63 = 1	3.9	2.1	3.6	2.2	106.1	106.1	3.2	25.2	25.2	25.2	25.2	
Average Growth Index %	16.6	8.3	15.3	9.3	79.3	79.3	13.8	58.5	58.5	58.5	58.5	

Students from Pars High School is included in the "Private Institutions" column.
 SOURCE: Educational Statistics in Iran, Bureau of Statistics, Ministry of Education, Tehran, 1962-63, ...
 1968-69; Higher Education Statistics in Iran. Institute for Research and Planning in Science
 and Education, 1969-70;1971-72.

<u>Type of Institution</u>	<u>Number of Students</u>	<u>%</u>
Universities	27,766	72.7
Public and aff. Inst.	5,839	15.9
Private Institutions	<u>4,221</u>	<u>11.4</u>
	36,826	100.0

By academic year 1971-72, the total number of university establishments remained at eight while the total number of higher learning institutions, both public and private, reached an astonishing figure of 89 centers. Of these 89 centers; 6 are autonomous public higher education institutions; 58 are affiliated public higher education institutions, and 25 are private higher education institutions. It can be seen that the remarkable growth is mainly owing to the rapid establishment of private centers of higher education and especially--affiliated public institutions. Of a total 97,338 students, the percentage distribution of students among the four types of higher education establishments was as follows:¹¹⁰

<u>Type of Institution</u>	<u>Number of Students</u>	<u>%</u>
Universities	44,333	45.5
Public Autonomous Institutions	10,401	10.7
Affiliated Institutions	23,334	34.0
Private Institutions	<u>19,270</u>	<u>19.8</u>
	97,338	100.0

¹¹⁰Ibid.

This shows that the other types of higher education establishments are taking an increasingly expanding share of the students and lightening the load on the universities.

On the whole, between the academic years of 1962-63 and 1971-72 the student body of higher learning increased steadily but with mounting acceleration as the Third and Fourth National Development Plans (1963-68 and 1968-1973 respectively) were implemented. The total of 24,456 students in 1962-63 reached a total of 97,338 students by 1971-72 showing an almost four-fold growth (Growth Index = 3.9). The average rate of growth was 16.6 percent. This indicates a rapid expansion compared with the growth of higher education in some neighboring countries.¹¹¹

Between the years 1962-63 and 1971-72 the number of students in the universities increased from 21,563 to 44,333 indicating a total growth of just over two times (Growth Index = 2.1). The average annual growth was 8.3 percent.¹¹²

For autonomous public higher education institutions, the rate of student expansion was more rapid than in the universities indicating a growth index of 3.6 between 1962-63 (2,893 students) and 1971-72 (10,401 students). Their percentage composition among other types of higher learning centers fluctuates through these ten years mainly owing

¹¹¹Ibid

¹¹²Ibid. The author has calculated percentages and some other statistics.

to consolidation of some of the teacher-training colleges for purposes of qualitative and administrative improvements. For example, in 1963-64 the consolidation of the College of Science and Technology and the Tehran Teacher Training College (Danesh Sara) resulted in a decrease in the intake of students for that year.

Public affiliated higher education institutions are mostly oriented to technical and vocational courses. The establishment of affiliated further education centers commenced only in 1963-64, with an initial small enrollment of 220 students. They made up less than one percent of the total higher learning students (percentage composition = 0.9). This figure grew with astonishing rapidity, reaching a total of 23,334 students making up 24.0 percent of the total of higher education students, by 1971-72. This expansion was indicated by a growth index of 106 times in the short period from 1963-64 to 1971-72. This is supported by the fact that the average rate of growth was an approximate 79.3 percent increase annually. It is interesting to note that between the years 1963-64 to 1970-71, although the growth was rapid, the increase was slower than between the school years 1970-71 and 1972-72, when the number of students leaped from 10,905 to 23,334, a difference of about 12,429 students. This brought the percentage share of the total

students from 14.6 percent to 24.0 percent showing the rising importance of this type of further education center in both the academic and economic sectors. This sudden increase was partly attributed to the authorization of Educational Orientation and Guidance Training Centres for Teachers to award Junior College diplomas to their graduates.¹¹³

It is evident then, that by far the greatest number of higher education establishments in Iran belong to the public sector. Until the 1963-64 school year, public higher education establishments made up 100 percent of the total. It was not until 1964-65 that higher educational centers could be established by the private sector. During that year three private higher education institutions were founded, together serving 766 students who made up 3.1 percent of the total college level students. Since then, private higher education has continued to expand steadily in number and size and reached a total of 19,270 students by 1971-72. Their percentage rose to 19.8% of the total number of higher education students. Although slower than affiliated higher education institutions, their growth nevertheless is faster than that of universities and public autonomous higher education facilities. The growth rate shows an expansion of over 25 times (Growth Index=25.2)

¹¹³Higher Education Statistics in Iran, 1970 to 1972.

in the eight years from 1964-65 to 1971-72, with an average rate of growth of approximately 58.5 percent annually.¹²⁶

Distribution of Students in Higher Education
by Level and Field of Study

The total number of higher education students are enrolled in nine internationally standardized fields of study.¹¹⁴ These are presented in Table 2.25

Table 2.25 shows the percentage distribution among the different types of higher education by field of study, while Table 2.26 gives the percentage distribution among the fields of study by type of institutions.

In the field of social sciences, university students comprised the highest percentage (50 percent) of the total social science student body in 1969-70 (see Table 2.25). However, this percentage had declined to 33.1 percent by 1971-72. The marked decline in social science students in universities was accounted for by a parallel rise in this major in private higher education institutions. In 1969-70, the percentage composition of total social science students was 27.4%. This rose to a remarkable 46.0 percent by 1971-72, indicating that almost half the students reading in the field of the social sciences were attending private institutions. This is shown more clearly in Table 2.25 where in 1969-70, social science students studying in

¹¹⁴Ibid

¹¹⁵ Based on the Statistical Yearbook published by the United Nations, Educational, Scientific and Cultural Organization, UNESCO.

TABLE 2.25 TOTAL STUDENTS BY FIELD OF STUDY AND TYPE OF HIGHER EDUCATION INSTITUTIONS 1969-70 to

Academic Institution	1969-70						1970-71						1971-72																		
	Universities			Autonomous			Total	Universities			Autonomous			Total	Universities			Autonomous			Total										
	Amg.	\$	%	Amg.	\$	%		Amg.	\$	%	Amg.	\$	%		Amg.	\$	%	Amg.	\$	%											
Field																															
Social Science	7,305	50.5	1,513	10.5	1,675	11.6	3,963	27.4	14,456	100.0	7,257	43.9	1,774	10.7	2,118	12.8	5,337	32.6	16,526	100.0	7,252	33.1	2,093	9.5	2,495	11.4	10,081	46.0	21,921	100.0	
Literature & Humanities	7,709	57.9	317	2.4	--	--	5,279	39.7	13,405	100.0	8,181	55.6	413	2.8	--	6,110	38.7	--	14,704	100.0	8,113	38.7	565	2.7	5,768	27.5	6,533	31.1	20,979	100.0	
Engineering	3,434	29.3	4,178	35.7	3,987	34.1	104	0.9	11,703	100.0	3,779	27.0	4,200	30.0	5,973	42.6	56	0.4	14,008	100.0	4,606	26.4	4,258	24.4	8,179	46.9	408	2.3	17,451	100.0	
Medical Sciences	8,328	88.9	--	--	1,002	10.7	40	0.4	9,370	100.0	9,008	90.1	--	--	992	9.9	--	--	10,000	100.0	8,784	87.0	--	--	1,315	13.0	--	--	10,099	100.0	
Natural Sciences	6,632	74.0	1,759	19.6	191	2.1	382	4.3	8,964	100.0	7,644	77.4	1,521	15.4	181	1.8	530	5.4	9,876	100.0	9,162	60.0	1,437	9.4	3,707	24.2	974	6.4	15,280	100.0	
Agriculture	2,190	73.6	166	15.6	435	14.6	185	6.2	2,976	100.0	2,262	71.5	293	2.3	449	14.2	158	5.0	3,162	100.0	2,442	58.8	391	2.4	761	18.3	560	13.5	4,154	100.0	
Fine Arts	1,869	66.5	47	1.7	874	31.1	19	0.7	2,809	100.0	1,712	60.2	63	2.2	1,050	36.9	19	0.7	2,844	100.0	1,637	51.8	92	2.9	1,168	37.0	262	8.3	3,159	100.0	
Education	442	20.6	1,316	61.2	69	3.2	323	15.0	2,150	100.0	420	21.5	1,059	54.3	142	7.3	330	16.9	1,951	100.0	481	19.1	1,565	62.1	147	5.8	329	13.0	2,522	100.0	
Law	1,535	100.0	--	--	--	--	--	--	1,535	100.0	1,637	100.0	--	--	--	--	--	--	1,637	100.0	1,856	93.8	--	--	--	--	123	6.2	1,979	100.0	
Grand Total	9,444	58.6	9,296	13.8	8,231	12.1	10,295	15.1	27,668	100.0	61,900	56.1	9,321	12.5	10,385	14.6	12,580	16.8	74,708	100.0	44,113	45.5	10,401	10.7	21,540	24.1	19,270	19.7	97,544	100.0	

Students from Para High School are included in the "Private Institutions" column.

SOURCE: Higher Education Statistics in INDIA, Institute for Research and Planning in Science and Technology, 1969-70, 1971-72, Chennai.

Students from Pers High School are included in the "Private Institutions" column.
 Hight Education Statistics in Israel. Institute for Research and Planning in Science and Education, 1969-70...1971-72, Tel Aviv.

TABLE 2.26 TOTAL STUDENTS BY TYPE OF HIGHER EDUCATION INSTITUTION AND FIELD OF STUDY 1969-70 to 1971-72

Academic Year Institution	1969-70						1970-71						1971-72					
	Universities	Autonomous	Affiliated	Private*	Total		Universities	Autonomous	Affiliated	Private*	Total		Universities	Autonomous	Affiliated	Private*	Total	
	AME. \$	AME. \$	AME. \$	AME. \$	AME. \$		AME. \$	AME. \$	AME. \$	AME. \$	AME. \$		AME. \$	AME. \$	AME. \$	AME. \$	AME. \$	
Field	7,303 18.5	1,513 16.3	1,675 20.3	1,963 38.5	16,456 21.5		7,257 17.3	1,776 19.0	2,118 19.4	5,337 42.7	16,526 22.1		7,252 16.3	2,093 20.1	2,495 10.6	1,080 53.2	221,921	22.5
Social Sciences	7,709 19.5	317 3.4	--	5,279 51.3	13,305 19.8		8,181 19.5	613 6.4	--	6,110 48.6	14,704 19.7		8,113 18.3	565 5.4	5,768 24.5	6,533 33.9	926,979	21.5
Literature & Humanities	3,434 8.7	4,178 44.9	3,987 48.4	104 1.0	11,703 17.4		3,779 9.0	4,200 45.0	5,973 54.8	56 0.4	14,008 18.8		4,606 10.4	4,258 40.9	8,179 34.8	408 2.1	2,451	17.9
Engineering	8,328 21.2	--	1,002 12.2	40 0.4	9,370 13.9		9,008 21.5	--	992 9.1	--	10,000 13.4		8,784 19.8	--	1,315 5.6	--	30,099	10.4
Medical Sciences	6,532 16.8	1,759 18.9	191 2.3	382 3.7	8,961 13.3		7,644 18.2	1,521 16.3	181 1.7	530 4.2	9,876 13.2		9,162 20.7	1,437 13.8	3,707 15.7	974 5.1	13,380	15.6
Natural Sciences	2,190 5.6	166 1.8	435 5.4	185 1.8	2,976 4.4		2,263 5.5	293 3.1	449 4.1	158 1.3	3,162 4.2		2,442 5.5	391 3.8	761 3.2	560 2.9	4,154	4.3
Agriculture	1,869 4.7	47 0.5	874 10.6	19 0.2	2,809 4.2		1,712 4.1	63 0.8	1,050 9.6	19 0.2	2,844 3.8		1,637 3.7	92 0.9	1,168 5.0	262 1.4	3,159	3.2
Fine Arts	442 1.1	1,316 14.2	69 0.8	323 3.1	2,150 3.2		440 1.0	1,059 11.4	42 1.3	330 2.6	1,951 2.6		481 1.1	1,565 15.1	147 0.6	359 1.7	1,522	2.6
Education	1,535 3.9	--	--	--	1,535 2.3		1,637 3.9	--	--	--	1,637 2.2		1,658 4.2	--	--	123 0.6	1,979	2.0
Law	--	--	--	--	--		--	--	--	--	--		--	--	--	--	--	--
Grand Total	59,444 200.0	9,256 100.0	8,233 100.0	10,895 100.0	67,268 100.0		51,900 100.0	9,323 100.0	10,505 100.0	13,250 100.0	74,708 100.0		64,333 100.0	100,000 100.0	19,270 100.0	97,444 100.0	100.0	100.0

*Students from Para High School are included in the "Private Institutions" column.
 SOURCE: Higher Education Statistics in ICM, Institute for Research and Planning in Science and Education
 1969-70.....1971-72. Yearwise.

private institutions constituted 38.5 percent of the total body of private education students. By 1971-72, the structure of that student body showed increasing emphasis in the field with a percentage of 52.3, that is, more than half the total students in private higher learning centers are concentrated in the field of social sciences. The main reasons for private institutions' preference for this field is that it is less stringently dictated by governmental planning and control and also involves the least necessity for heavy capital outlays.¹¹⁶

In the field of engineering, the percentage of universities among the types of institutions declined from 29.3 percent in 1969-70 to 26.4 percent in 1971-72 (See Table 2.25). However, Table 2.26 indicates that the percentage composition among the fields within the universities has in fact been rising--from 8.7 percent in 1969-70 to 10.4 percent in 1971-72 of the total higher education student cohort. This may indicate a shift from subjects in the Arts field in favor of the Scientific and Technical fields. Whereas, the percentage compositions of higher education students of autonomous institutions have declined both among the types of higher education institutions; and among the fields within their category of higher education institutions, that for affiliated institutions has increased fairly markedly. In

¹¹⁶ Higher Education Statistics in Iran, 1970-1972

1969-70 the percentage composition of students in affiliated institutions rose from 34.1 percent to 46.9 percent in 1971-72 (See Table 2.25). This could indicate that the government's implementation of the manpower policy with its emphasis on the supply of the immediate labour-market needs demanded by an industrial-modernizing economy is becoming increasingly effective.¹¹⁷

In the field of medical science, it is evident that the universities enroll the bulk of higher education students. The percentage share commanded by the universities remained fairly constant, maintaining an 87.0 percent in 1971-72 (see Table 2.25). This is expected as universities are almost solely responsible for the training of graduates in this important field of study. The rest of the students attend affiliated institutions which are mainly responsible for the training of technicians and technical assistants for this field. Autonomous and private institutions do not have faculties in this field although in 1969-70, private institutions had a share of 0.04 percent of the total student body in this field which is almost negligible (see Table 2.26). By 1970-71, even this had been discontinued.

In the field of agriculture, the percentage for universities among the types of institutions decreased from 73.6 percent in 1969-70 to 58.8 percent by 1971-72 in favor

¹¹⁷ Ibid.

of both affiliated institutions and private institutions (See Table 2.25). This percentage rose from 14.6 percent in 1969-70 to 18.3 percent in 1971-72, while private institutions showed a more marked increase from 6.2 percent to 13.5 percent respectively. This indicates the mounting realization by both affiliated and private institutions of the rising demand and needs in this sector of the economy.¹¹⁸

In the field of education, autonomous public higher institutions enroll the bulk of total students partaking in this field, maintaining a 62.1 percent share of the total students among the other types of institutions (See Table 2.25). Affiliated institutions' share of the percentage distribution increased from 3.2 percent in 1969-70 to 5.8 percent in 1971-72. This was a result of the government's realization of the urgent need to increase the supply of trained teachers as the educational system expands at all levels.¹¹⁹

118

Ibid

119

Ibid.

PLANNING IN MANPOWER DEVELOPMENT

The following section is devoted to planning literature in educational and manpower development.

Definition of Planning

There are various definitions for planning in the literature and even in different nations. Galbraith has defined planning as:

...foreseeing the actions required between initiation of production and its completion and preparing for the accomplishment of these actions. And it consists also of foreseeing and having a design for meeting any unscheduled developments, favorable or otherwise, that may occur along the way.¹²⁰

A definition of planning by Achoff states that, "Planning is the design of a desired future and effective ways of bringing it about"¹²¹ Then, one can read from Dror, the international planning authority who claimed "planning is the process of preparing a set of decisions for action in the future directed at achieving goals by optimal means."¹²²

¹²⁰ John K. Galbraith. The New Industrial State. (New York: Signet Books, 1967). p. 244.

¹²¹ Russel L. Ackoff. A Concept of Corporate Planning. New York: Wiley-Interscience, 1970, p. 1

¹²² Y. Dror . "The Planning Process: A Facet Design" International Review of Administrative Science XXXIX, 1 (1963), 50-51.

A definition of planning by Ewing is:

...the continuous process of making present entrepreneurial (risktaking) decisions systematically and with the best possible knowledge of their futurity, organizing systematically the efforts needed to carry out those decisions, and measuring the results of these decisions against the expectations through organized, systematic feedback.¹²³

There have been some special definitions designed for educational planning. Beeby, who is an international education writer defined educational planning as:

...the exercising of foresight in determining the policy, priorities and costs of an educational system, having due regard for economics and political realities, for the system's potential for growth and for the needs of the country and of the pupils served by the system.¹²⁴

Burchell and Castetter, two other education writers, wrote:

Planning, in regard to the educational program, may be defined as deciding in advance what the goals will be, what learning experiences are needed to achieve the goals, how these experiences will be organized and what services will be provided. In short, planning is designed to bring about a unified educational program in which the sequence of learning experiences logically would lead to the attainment of desired outcomes.¹²⁵

¹²³Peter F. Drucker. "Long Range Planning Means Risk-Taking". Long-Range Planning for Management, ed. D.W. Ewing, (New York: Harper and Brothers, 1964), p.10

¹²⁴Beeby, C.E. Planning and Educational Administration. (Paris, UNESCO, International Institute for Educational Planning, 1967). p.13.

¹²⁵William B. Castetter and Helen R. Burchell. Educational Administration and the Improvement of Instruction (Danville, Illinois: The Interstate Printers & Publishers, 1967). p 15.

In short, planning in education results in better education.

Change

Because Iran and Iranian socio-economic conditions are subject to change and also because the literature of change and the related literature of planning are frequently difficult to separate, a review of literature about change which is the final result of planning will complete the review of literature about planning. One characteristic of any dynamic system is that it shows continuous change.¹²⁶ Just to maintain its relative position, an organization must grow and change, for that growth and change in planning is necessary.¹²⁷

This is based on Marien's idea, that the prospect of continuing change could be evidenced by concern for the future.¹²⁸ "One of the most effective ways of pursuing social change is for men to imagine some future they would like to live in, and then to act in the present to create some part of that future, not merely to plead for its creation."¹²⁹

¹²⁶Ronald Lippett, Jeanne Watson and Bruce Westley, Dynamics of Planned Change. (New York: Harcourt, Brace & World, 1958), p. 10

¹²⁷Igor H. Ansoff. "Strategies for Diversification," Long-Range Planning for Management, ed. D.W. Ewing (New York: Harper and Brothers, 1964), pp. 115-116.

¹²⁸Michael Marien. The Age of Extending Horizons, "An Introduction to the Literature of Educational Future." Notes on the Future of Education. I (Nov.-Dec. 1969) p. 3.

¹²⁹A.I. Waskow, "The Education of Peacemakers," The Saturday Review (August 12, 1967) p. 12.

Therefore, one can see that "Planning may primarily seek to prepare for the future; it can also serve as an instrument to change it."¹³⁰ Current "Educational planning in the USA generally falls into the first area of preparatory planning rather than change-oriented planning",¹³¹ but it is the opposite in Iran, because the final approach of planning is change through creation.

The planner is an agent of change, but he/she must be concerned with orderly change.¹³² Whenever change is planned, it must be change planned for stability.¹³³

The literature reviewed was decidedly against change for the sake of change only. There was some interest in change for progress. Most planners assume that everything is improveable, can be improved.

"Planned change can be viewed as a link between theory and practice, between knowledge and action."¹³⁴

¹³⁰ Warren L. Zieger. An Approach to the Future Preparative in American Education. (Syracuse: Educational Policy Research Center, Syracuse University, 1970.)

¹³¹ Ibid

¹³² Leonard J. Duhl (Ed.) The Urban Coalition. (New York: Basic Books, 1963.)

¹³³ David H. Jenkins. "Force Field Analysis Applied to School Situation," The Planning of Change. eds. W.G. Bennis, K.D. Benne, and R. Chin (New York: Holt, Rinehart and Winston, 1961). p. 243.

¹³⁴ Bennis op.cit., W.G. Bennis, K.D. Benne, and R. Chin (eds.) The Planning of the Change (New York. Holt, Rinehart and Winston, 1961.)

For change it is necessary to plan for modification of forces. That means that existing forces for stability must be removed, added to, reduced or have their direction changed.¹³⁵ Planners must not be used to defend vested interest groups or established policies against change.¹³⁶ The planner must be open to change. As a matter of fact, planners must anticipate change.¹³⁷ Planning has to be toward improvement, toward change.¹³⁸

As Green said: "Change is the only inevitability in history¹³⁹ but so is continuity, particularly in the schools. Therefore, society may have to plan to rebuild the school."¹⁴⁰

¹³⁵Jenkins, op.cit. p.241.

¹³⁶Kjell Eide. "Organization of Educational Planning." Educational Planning. ed. Don Adams (Syracuse: Syracuse University, 1964), p. 76.

¹³⁷Ovsiew and Castetter, op.cit., p. 229

¹³⁸Kenneth H. Hansen. "Planning and Change: Design-Decision-Action," in Designing Education for the Future, No.4 eds. E.L. Morphet and .D.L. Jesser (New York: Citation Press, 1968), p. 62.

¹³⁹Thomas F. Green. "Schools and Communities: A Look Forward," Harvard Educational Review, XXXIX (Spring, 1969), 252.

¹⁴⁰Ibid.

National Economic Planning as the Basis of the Higher Education Planning in Iran

Planning Structure

Responsibility for formulating targets for the educational system in Iran, for translating them into actual program structures is divided between a number of ministries and committees within each ministry under the general control of the Plan and Budget Organization.

The planning of higher education in Iran has become a realistic objective only under the centralized economic system which is similar to the Socialist economic system, based as it is on public responsibility for the means of the production and the combination of nearly all educational establishments under a single state system."¹⁴¹

In theory there are two documented basic concepts governing the planning of higher education.

First, the unified and centralized planned supervision of higher education by the state;

Secondly, the planned development of higher education, including the establishment of optimum proportions between different sectors of national production and trained personnel for them.¹⁴²

¹⁴¹Nicholas Bannett, The author's discussion with him during Summer 1978 in UNESCO office in Paris.

¹⁴²Plan and Budget Organization. Goals and Objectives of Economic Planning: Educational Planning. P BO. Tehran 1975 (Farsi-Persian).

The planning of higher education in Iran is an essential part of national economic planning. In theory, it takes into consideration the different indices in national economic plans, the budget, the financial plans of state undertakings, and the financial plans of public organizations. This makes it possible to establish the required "mix" in the development of higher education in the light of the country's budgetary situation, and to provide the country with experts with higher qualifications.¹⁴³

What is important to emphasize is that in Iran higher education is planned in unison with the development plans for the different sectors of the nation's economy. Philosophically, this means that priority is given to training personnel for those branches of the national economy which are developing rapidly and which bring the largest benefits to society.

In the Third National Development Plan (1963-1968) it was indicated:

The constant development in industry, agriculture, public affairs, and business administration requires a corresponding increase in the number of graduates and specialists. In other words, social and economic progress necessitates the training of the appropriate personnel to achieve the target. ¹⁴⁴

¹⁴³Plan and Budget Organization: Summer 1978. The author's discussion and interview with national as well as educational planning experts. Tehran, Iran.

¹⁴⁴Plan Organization (now it is called Plan and Budget Organization). Education In The Third Development Plan. (Tehran. Feb. 1968), p. 38.

This has been true for most national economic plans, as well as education plans, because in recent education planning documents one can read:

Now in regard to Iran's position/situation in rapid economic and industrial progress and because of availability of relative extensive possibilities which have been created for employing resources planning expertise, and also in regard to development on the international level, preparation of long term socio-economic development plans and/or planning and within that plan, educational planning has become a necessity. Long term educational planning guarantees the relation and coordination between component parts of educational systems and long term socio-economic development plans.¹⁴⁵

Since higher education is a field which affects the interests of the country's population, in Iran, its development is planned in advance (for five year periods) without the participation of outside or lay people in the area of planning (teachers, professors, parents, students, governors, farmers)¹⁴⁶

These plans are drawn up for Iran as a whole and also subdivided among provinces based on unpredictable criteria.

¹⁴⁵Institute for Research and Planning in Science and Education, Design of Long Term Educational Master Plan for Iran (IRPSE, Center for Educational Planning. Tehran, March 1973.) p. 2 (Farsi-Persian).

¹⁴⁶Planning experts discussion, Summer 1978.

On the basis of unevaluated or uncontrolled results of former plans and broad analysis of existing positions, the five year plans may change based on some conditions which have not previously been foreseen. These annual changes are common in educational planning procedures too, they produce some changes in admission of new students to higher education, establishing new institutions of higher education and altering the output of graduates from universities and colleges by type of study.

"31 - In selection of students for higher education, it is recommended that a minimum of 40 percent of those selected be inhabitants of the region where an institution of higher learning is located. It is further suggested that some priority be given to women in certain fields of study.¹⁴⁷

We now come to the shortage of manpower for implementing the current five-year plan and future five-year plans. Where immediate needs are concerned, you (conference members) must sit (down) and consider what should be done. Perhaps the length of study in certain fields is excessive. Perhaps, there could be programmes of six-months' duration. For example, when students complete a number of units in the first six months of college, there is room for another group of students to come in and begin the course of units that the first group of students have completed. It may thus be possible to take in more than one group of students in the course of a year.¹⁴⁸

¹⁴⁷The Resolution of the Seventh Conference In The Evaluation of the Educational Revolution. Sept. 1974, (Ministry of Science and Higher Education. Tehran), p. 26.

¹⁴⁸Ibid, p.12.

Manpower Development

The overall higher education plan for training experts is not clear, because there were not any documents to show the results of the past five development plans on the basis of the numbers of experts required by different sectors of the national economy. In existing plans the number of needed experts in each field has not been predicted, plans have only indicated that the country needs trained and skilled manpower. In the Third Development Plan in Education there was not any indication about vocational and technical training development. But in The Fourth Development Plan, the shortage of qualified manpower for development plans and projects has been felt. Therefore, one can read:

Vocational and technical education centers both stationary and mobile, must be established, expanded and better equipped in view of the pressing need for skilled and semi-skilled workers in both urban and rural areas. The same measure should be adopted with respect to centers rural service and industry, and to make the maximum use of the capacity of educational institutions and of the training potentials of factories and industrial units. Joint action by the Ministeries of Labour and Social Affairs, Cooperative and Rural Affairs, Agriculture and Natural Resources and other organizations are concerned with this purpose.¹⁴⁹

Different organizations were taking action in vocational or technical training:

¹⁴⁹The Seventh Conference on the Evaluation of Revolution in Education. p. 22-23.

Fifty-one Organizations, at least, take action in technical or vocational training.

The main ones are:

- The Ministry of Education
- The Ministry of Labour and Social Affairs
 - Vocational Training Department
 - Industrial Training Board
- The Ministry of Science and Higher Education
 - Universities
 - Colleges
 - National Industrial Education Centre
- The Ministry of Agriculture
 - Agricultural Instruction Department
- Industries with a Majority of Public Capital
- Technical Ministries
- Some rare private industries.¹⁵⁰

General Perspectives of the Fourth Development Plan (1968-1973)

Although no priority ranking of the stated objectives is indicated in the Fourth Plan document, the very high growth rate target for GNP of 57 percent over the five years of the plan¹⁵¹ or an average annual rate of 9.4 percent would imply that an output expansion is the main goal of the plan. Included among the other objectives (after other important major ones) is one calling for full coverage of elementary

¹⁵⁰Ministry of Labour and Social Affairs and Institute for Research and Planning in Science and Education. Study of Vocational Training System in Iran. (Tehran IRPSE 1974)p.33-4.

¹⁵¹Plan Organization Fourth National Development Plan 1968-73 (Tehran, 1968), p. 39.

education, expansion of secondary education and development of higher education; another one calls for creation of "maximum full-time productive employment"¹⁵² which is related to industrialization, development of education and manpower development, and planned to absorb new entrants of educated manpower and gradually convert non-skilled manpower into a labour force with an educated background.¹⁵³

The strategy of the plan was to ensure a balanced development of different levels of education and also development of educated manpower by the end of the Fourth Development plan, including implementation of policies affecting both the supply and demand for education by people and the demand for education manpower by private and public sectors.¹⁵⁴

But unrealistic and unreliable projections and predictions in different parts of the plan made by the Plan Organization and related ministries (Education; Science and Higher Education; Labour and Social Affairs) proved that the plan was not based on reliable data and information, because the results of that plan have not reached the goals and objectives during the Plan period.

¹⁵²Ibid.

¹⁵³Ibid.

¹⁵⁴Ibid.

As implied by the shifts in the urban/rural distribution of the college-age population projected by the Plan, the pressures on the labour market for generation of additional productive work opportunities is expected to be very great in the urban areas of the country. Heavier rates of rural to urban migration than during the proceeding Plan periods were implicitly, and in some instances explicitly, very high.¹⁵⁵

And that situation changed many parts of the plan's assumptions and definitions.

Objectives of the Fifth National Development Plan 1973-78

The general objectives of the Fifth National Development Plan were:

- To raise as much as possible the level of knowledge, culture, health and public welfare.
- To attain a more just distribution of national income with special attention to the rapid raising of the living standards and welfare of the low-income groups.
- To maintain the rapid and continued economic growth with relative price stability and balance in the foreign payments.
- To provide employment in all regions of the country at a level which would absorb all the new labour force arriving on the market and substantially reduce concealed or seasonal unemployment.
- To establish a greater balance in the socio-economy of various regions of the country.
- To fully utilize established production capacity created under previous developments plans; to raise productivity in production and efficiency in the supply of goods and services in both the public and private sectors.

¹⁵⁵ Firooz Jalili . Where We Are Going. What is our Destination in Higher Education. (Kayhan International. Tehran, Sept. 1974.)

To improve the Administration in proportion to the magnitude of the national aims and objectives; and to enhance the country's defense capability.

To protect, revitalize and improve the environment.

To increase Iran's share in international trade, and Iran's greater presence in new international markets with due regard to Iran's newly acquired specialization in the field of industry.

To attain these objectives, three principal points will be given top priority in all economic and social policies of the Fifth Plan:

First: Planning discipline, similar to military discipline, must be exercised by all government establishments and organizations.

Second: A revolutionary spirit of thrift, resistance to luxury, must govern as a national behaviour, the expenditure of government funds and people's way of life. This principle requires a new mentality and social values, coupled with special laws and regulations to prevent luxury spending and wastage of public funds.

Third: The principles and objectives of the Plan must be constantly defended and must not be changed for exigencies except when higher interests of the state require. 156

The Fifth National Development program, as it was originally intended, called for vast amounts of investment in both the public and private sectors. Total investment under this plan originally amounted to \$36,000 million, of which almost \$23,000 million was to come from the Government and the rest, some 36.4 percent, was to be provided by the

¹⁵⁶Decade of the Revolution (1963-73) Op. Cit. p. 186

private sector.¹⁵⁷ "As the table below indicates, the scale of planned investments for the various sectors of the economy are massive and indeed are equivalent to nearly seven times the actual investments made under the previous Fourth Plan."¹⁵⁸

Having outlined the major goals of the Fifth National Development Plan, a brief reference will now be made to the balance of education; and/or manpower and the transformation which they were undergoing..

Achievements and Shortfalls of the Fifth Plan

The Fifth Development coincided with a most dramatic increase in Iran's foreign exchange, due to the rise in oil revenues. In many important fields, the plans had been surpassed. But the sharp increase in foreign revenues brought its own problems. The planners found themselves in a state of euphoria; with all the money they could dream of. The result was a number of grandiose projects which could obviously not be carried out, because money is simply not everything. There was a tendency towards extravagance; towards luxury. There were wastages and duplications. Since the belief was that everything could be bought, little attention was paid to any order of priority. When the things ordered and purchased all arrived at the same time, the ports, roads and the transport system could not cope with them. Bottlenecks formed everywhere.

¹⁵⁷Plan and Budget Organization, The Fifth National Development Plan. op. cit.

¹⁵⁸Jahangir Behrouz . Iran Almanac and Book of Facts Sixth Edition.(Echo of Iran. Tehran,1977) p. 358-359.

TABLE 2.27 FIXED INVESTMENT OF PUBLIC SECTOR FUNDS UNDER THE FIFTH PLAN (1973-78)

	Original	Revised	Increase	% Increase
		IR '000 Million	IR '000 Million	
Agriculture	121	239.6	118.6	98
Water	106	160	54	51
Industry	180	352.1	172.1	95.6
Mines	46	62	16	34.6
Oil	130	333	203	156.1
Gas	24	51	27	112.5
Electricity	53	240	187	352.8
Communications	177	404	227	128.2
Telecommunications	36	91.4	55.4	153.9
Rural development	36	60	24	66.7
Urban development	32	45	13	42.2
Government buildings	91	320	229	251.6
Housing	90	230	140	155.5
Education	127	130	3	2.4
Culture	5	10	5	100.
Tourism	7	11	4	57.1
Health	24	43	19	79.2
Welfare	5	9	4	80
Sport	9	15	6	66.7
Provincial development	-	10	10	-
Public affairs	-	32	32	-
TOTAL	1,299	2,848.1	1,549.1	-

SOURCE: Iran Almanac. p. 359.

TABLE 2.28 INVESTMENT UNDER FIFTH DEVELOPMENT PLAN

Sectors	Billion Rials	\$ Million	% of Total
Agric. & Irrig.	475.49	7,044.3	10.12
Trans & Comm.	585.50	8,644.4	12.43
Industries & Mines	846.44	12,539.8	18.01
Social Welfare	229.80	3,404.4	4.90
Fuel & Energy	1,101.70	16,321.5	23.44
Manpower	131.57	1,949.2	2.80
Housing	925.00	13,703.7	19.68
Others	405.30	6,000.0	8.62
GRAND TOTAL	4,698.80	69,607.3*	100.00

*Adjusted figure

SOURCE: Iran Almanac, p. 359.

An imperial edict issued on 8 November, 1976, instructed the Government to see, through an Imperial Commission, why many development projects were never started and many which were started were not completed. The commission is also to investigate the reasons for the bottlenecks, and to prevent future wastage. Preliminary studies have shown that some of the projects started under the Fourth Plan are not yet finished; and others which started under the Fifth Plan will not be completed before the end of it. Some of the projects in which substantial amounts of money have been invested cannot be utilized even 10%. The Government has ordered a detailed study of all the un-started and unfinished projects. Unfinished projects will be given priority over those which have not started at all. New schedules are being fixed for their completion. A final report on this matter was presented to His Imperial Majesty within two months from the date of the Imperial edict, i.e. 8 January, 1977.¹⁵⁹

Past, Present and Future

Speaking at a Royal audience on February 15, 1977, Plan and Budget Organization (PBO) Director, A.M. Majidi predicted that Iranians will enjoy a per capita income of over \$5,000 at today's prices by the end of the 8th Plan in 1993. The PBO Director said under the 6th Plan (1978-1983) and future plans the country will aim to mobilize itself for self-sufficiency in essential agricultural and industrial commodities.

Reviewing the program achieved by the country in the course of five development plans, Majidi noted that since the first plan was launched in 1949, national investment has risen last year. Government investment alone last year was 30 times greater than the entire figure projected for investment during the seven years of the 1st Plan. GNP during this 28 year period

¹⁵⁹PBO. and Iran Alamac. op. cit.

has risen from about 40 billion rials to 3,636 billion rials, a 90-fold rise. Per capita income has thus risen from about \$80 to \$1,800. Added value in the industrial sector has increased from six billion rials in 1949 to 582 billion rials last year, and the share of industry in GNP now stands at 30 per cent. Majidi pointed out that in 1949 total oil and non-oil exports came to 19 billion rials. Last year, non-oil exports alone came to 41 billion rials. The number of school children has risen from 400,000 to six million, and from 2.9 percent of the population to 18.6 percent. At the same time, 15,000 literacy corps, 1,500 tribal and 500 technical schools have come into existence. The 28 year period has seen the increase in total road mileage of 2.5 times. Port capacity has risen from under one million to 19 million tons. Despite continuing bottlenecks, due to rapid economic expansion, Majidi said, the expansion of the country's infrastructure network has been nothing short of a "miracle". Electric power generation has risen from 46.6 million kwt. hrs. in 1949 to 15,703 million kwt. hrs. today, a 340-fold increase. By the end of the Fifth Plan in 1978, electric power generations will hit the 31,000 million kwt. hrs. mark. 160

Ramsar Education Conference

The Ninth Ramsar Education Conference concluded on September 9, 1976, with the announcement of detailed recommendations on teacher training and welfare, school construction, public participation in educational planning in innovative teaching. The proposals drawn up during the six-day conference will be submitted for final review to the Imperial Education Council which will turn draw up executive policies and guidelines. The conference recommended that a

¹⁶⁰Kayham International. Oct. 1976. Tehran

specialist committee be set up to examine methods of determining individual student talents and abilities. To study this matter, representatives from the Ministries of Education and of Science and Higher Education are to form a committee and submit within six months their recommendations to the Imperial Council. The Ministry of Education has also undertaken to study the successful programmes that involved tribal schools and rural teaching training colleges. The purpose of this study is to find new solutions to academic issues which are compatible with local circumstances.

The conference also recommended that rural farming cooperatives be allowed to select rural teachers under the supervision of the Ministries of Education and of Cooperatives and Rural Affairs. Model schools must also be established throughout the country where on an experimental basis innovative teaching methods are adopted to suit local conditions.

The Ramsar Conference also stressed that a committee be formed to examine the ways in which conventional learning can be combined with visits to cultural, recreational and sports centres and camps. To avoid expenditure on extravagant and luxury buildings, the Ministry of Science and Higher Education is to issue regulations standardizing school and university buildings.

The provision of adequate school buildings was also considered at the conference and it was recommended that (a) more funds be made available for the construction of school buildings during the Sixth Development Plan, preferably through private investment, (b) projects be launched to provide recreational grounds for schools and (c) space needed for educational purposes be reserved prior to allocation of land for other city projects. The conference also recommended that technical training be popularized through regular secondary school courses, and short term technical and vocational training courses for high school students. The Ministry of Education has also undertaken to evaluate the results of the guidance course school system (which enters its fifth year this

year). Particular stress was also placed on fostering public participation in educational decision-making: schools will be required to provide a framework through which students, parents, teachers, and others will be able to voice their opinions on course contents, school programmes and allied. 161

Sixth Plan Priorities Outlined

Iran's Sixth Development Plan (1978-83) will lay stress on the integration of regions, while retaining decentralization as one of its major aims, according to Plan and Budget Organization Director Abdol Majid Majidi. In an article for the government daily Rastakhiz Majidi wrote that the Plan will seek to integrate town and village and to close the income gap between them through a comprehensive network of agricultural and industrial centres, a more strategic distribution of population and the development of "peripheral" or less-developed areas. Communications and transport systems will be improved and the Plan will encourage social and cultural integration by fostering decentralization, public participation in decision-making and a more even distribution of income and employment opportunities. Giving general guidelines to the Plan, Majidi said that the development of such an integrated approach will take precedence over fixing specific growth rates, investment levels and production targets. These must remain flexible and subject to annual change. 162

¹⁶¹Ministry of Science and Higher Education. Ninth Conference on the Evaluation of the Revolution in Education Tehran, 1976.

¹⁶²J. Behrouz, Iran Almanac. op.cit.

Priority for current projects: In the early years of the Plan priority will be given to completing projects already under way, in preference to launching new, non-essential programmes. Iran will continue to try and reduce the share of oil in the Gross National Product (GNP) and in the country's exports, and to increase the contribution to exports of industrial and processed goods. Another target will be self-sufficiency in basic agricultural products. Infrastructural development will lay emphasis on the need to improve the handling of Iran's growing imports. Port capacity will be expanded at Bandar Shahpour, Bandar Abbas and Bushehr. The need to improve international links is further recognized by the emphasis on road building of routes into and out of the country. Some rail links will be electrified and transformed into dual-track lines, the most pressing being links between Bushehr and the interior, Gol-e-Gowhar to Bandar Abbas, and Bushehr to Bandar Abbas and Ahwaz--again emphasizing the need to alleviate port congestion.¹⁶³

In the following section the education aims and objectives of the Sixth National Development Plan will be discussed.

The General aims and objectives of the Sixth National Development Plan (1978-1983) in education were stated as follows:

1. To provide education consistent with the economic and social development objectives of the country.
2. To make provisions for the expansion of education consistent with the government's social obligations and responsibilities, including educational opportunities for all children of school age.

¹⁶³J. Behrouz. Iran Almanac . p. 365.

3. To achieve more equitable balance by accelerating the qualitative improvement of regional and rural education.
4. To promote the development of private education, particularly the improvement of its quantitative standards.
5. To effect qualitative improvement in course preparation and curriculum development, text books, school buildings, free education and the qualification of teachers.¹⁶⁴

The more general aims were then expressed in slightly more specific terms as follows:

1. To provide educational opportunity for everyone of compulsory school age, including expansion of compulsory education at the lower high school level, which will require (a) the provision of adequate school buildings, equipment, facilities and teachers, and (b) special attention to be paid to schools in overcrowded municipal areas and rural areas where attendance is a problem.

¹⁶⁴Plan and Budget Organization. Preliminary Report of the Sixth National Development Plan (1978-1983) (PLBO. Tehran 1978.)(Farsi-Persian).

2. To orient secondary education so as to satisfy occupational requirements and prepare the youth for citizenship, which will require (a) more comprehensive schools, (b) better vocational secondary education, and (c) improved educational guidance.
3. To make qualitative and quantitative improvement in the training of teachers.
4. To improve the quality of university education, especially in engineering, agriculture, medicine and natural science, (a) by establishing new universities in different regions of the country and expanding existing ones, and (b) by upgrading (not increasing) education at the social science faculties.¹⁶⁵

¹⁶⁵Institute for Research and Planning in Science and Education and Plan and Budget Organization. Preliminary Design of Educational Planning for the Sixth Development Plan. Tehran, 1978.

SUMMARY

The literature indicates that the population of Iran is at present growing at a rate close to 3% a year, this being the difference between a birth rate of about 42 per 1,000 and a death rate of about 12 per 1,000.

The findings demonstrated an increase in the sex ratio for Iran over the past 10 years from 103.6 to 107.3. There were variations between urban and rural areas as well as the different regions in the country.

For example, in the urban areas there was a higher sex ratio for all ages, than for ages under one year which may be expected because of male migration and location of collective households in urban areas. When the large cities were examined further, this assumption gained even more support. However, the rural areas had a contrary pattern with higher sex ratios for ages under one than for all ages. Although male migration out of rural areas may account for the difference in some cases, in other cases it was so great that the phenomenon needs further investigation before any explanation can be given. The growth is slightly reduced by a small net out-migration of Iranians to foreign countries. Taking account of this out-migration and of the sampling error, the results of the survey would affirm that the population growth in Iran in 1973-1976 was not less than 2.8% per year.

There were higher sex ratios found among those persons who migrated from other *ostan* to the present place of residence than those who migrated from another *shahrestan* within the *ostan* of present residence. This suggested more inter-*ostan* male migration than among females.

The rural areas present much higher birth and death rates than the cities. The rural birth rate is estimated at 49 per 1,000, the death rate at 14 per 1,000, resulting thus in a natural increase of the magnitude of 3.5% a year. However, a strong rural-to-urban migration reduces the actual population increase in rural areas to below 2% and raises it to close to 5% in urban areas.

There is evidence of a recent sharp decline in fertility among urban women, particularly those over 30 years of age and who even previously have had smaller-than-average families. Among rural women, the fertility decline has so far been slight.

The use of the three main age groups gave clues as to the youthfulness of the population even without adjusting the age data. In 1966, Iran had 46 percent of its population under 15 years, only 50 percent in the ages 15-64 and 3.9 percent in the ages 65 and over.

Results by region and *ostan* indicate that both the birth and death rates are lowest in *Markezi Ostan* where *Tehran* is situated and in the *Caspian Sea littoral* just North of it. The highest birth rates (around 50 per 1,000

and over), together with the highest death rates (close to 20 per 1,000) are encountered in the western and eastern parts of the country.

The infant mortality is estimated at approximately 112 per 1,000 live births in the whole country--76 in urban and 130 in rural areas. The mortality of female infants is about 10% higher than that of males.

Internal migration affects about 1.5 million people each year and results in a net rural-to-urban movements of some 300,000 persons. The bulk of the migrants are young persons in the age range of 10-34 years. Particularly mobile are the young men of 15 to 24 years of age.

The pattern of a large youthful population for the total country was the same for both urban and rural areas for all ostan . Central Ostan had the largest proportion of persons in the productive years, probably due to migration, the highest proportion of educated in Tehran and the existence of family planning on a large scale in Central Ostan. The other ostan with large cities had slightly different patterns but still most displayed nearly the same proportion of youth and productive age persons.

In Iran, the problem of dependency was great among the youth, for a small proportion in the active years must support it. Even though the proportion in the ages 15-64 equals that under 15 years, it must be remembered that only

about half of that age group was economically active according to the 1966 Census.

This type of age structure has definite consequences for economic development, for while capital is needed to stimulate the economic sector in order to provide future jobs, the expanding youth will demand a greater proportion of the budget for education, recreation and housing as well as increased employment opportunities.

If the youth in the rural areas continue to grow, probably more and more will be forced to seek employment in urban areas which will have its effect on urban planning from a physical, social and economic point of view.

Thus far economic development has been able to keep pace with the growing youthful population. The rate of economic growth had increased rapidly over the last ten years and more and more capital is being invested in industry which serves to stimulate the economy and encourages job expansion.

Summary of Definitions of Planning

Although there are many disputes over the terms "planning" and "policy", and many definitions have been proposed, the author understands that "planning" is to recognize the actual situation of education, as objectively as possible, and to see what conditions are necessary and what methods must be used to attain a goal. "Policy", as the author understands the term, means to decide what action the government should

take in order to bring reality closer to the targets set out by planning. The decision is normally based on a certain scale of values and on a forecast of the probable effects of the decision.

In the following chapter the methodology of the study will be discussed.

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CHAPTER THREE

DESIGN AND METHODOLOGY OF THE STUDY

Introduction

Having examined many aspects of Iran's population growth, school enrollment trends and manpower development in Chapter Two, it is evident that information concerning future population growth is essential to the formation of rational plans for economic and social development in Iran, as in other developing nations. Iranian civil servants engaged in the planning function must realize that responsible public programming depends upon adequate knowledge of the demographic situation. Program planning, budgeting and implementing cannot be done effectively without the use of demographic estimates and projections. The intent of this descriptive research is to provide information and quantitative data for subjective and statistical analyses to serve the purpose of this study, which are:

1. To project, demographically, future population trends in Iran by sex and age, in urban and rural areas and

the nation as a whole until 1991, (Iranian Solar year of 1370).

2. Based on past trends, to project future enrollment rates for post secondary institutions in Iran, as derived from projected college age population figures.¹

3. To determine whether there are programs and budget forecasts for extending higher education facilities and services for future democratization and development of higher education, in keeping with future college age population growth rates, demand for higher education and manpower development needs.

4. The last portion of the purpose of this study is to investigate the existence and adequacy of middle manpower planning which has to be closely associated with higher education development planning.

¹Enrollment indicates those qualified applicants who were able to pass nation-wide qualifying entry examination and register for classes rather than those who were merely willing to continue their higher education, or who were ambitious to do so.

In order to achieve the objectives, this study will attempt to present the most productive and creative means of democratization and development of post-secondary education on one hand, and on the other hand, the best means for development of middle manpower, as the most vitally needed human resource in the country.

In this chapter design, methodology, data sources, collection and instrumentation will be considered. Population and higher education enrollment projection models are presented and data treatment is described.

Design

The major consideration underlying the selection of research design is the provision of descriptive accuracy supported by data. This study is not intended to test causal hypotheses and is descriptive rather than analytical, thus the design was selected to minimize bias and maximize validity. This design proved best to obtain the most accurate conclusions; these appear in Chapter Four.

Data Gathering Procedures

The following investigative steps were taken to accomplish the purposes of this study:

Gathering Demographic/Population Data

To implement the Population Projection Model which is used in the first part of this study, the author researched journals, books, documents, census results, population surveys, and government information about Iran's population, with particular attention to the mid 1960's and 1970's.

Sources: The sources of data for this part of the study were some Iranian and a few international organizations. The major source for most of the needed population data was the Statistical Center of Iran in Tehran. Other documents were obtained from UNESCO (Paris),² the Plan and Budget Organization (Tehran), and other international institutions.

Gathering Statistics in Higher Education

Higher education data and statistics were requisite for the Higher Education Enrollment Projection Model.

Sources: The major sources of statistics and data on higher education for this part of the study were The Ministry of Science and Higher Education; Institute for Research and Planning in Science and Education; and Ministry of Education: Department of Coordination for Educational Plans: Bureau of Statistics. However, other resources such as the Statistical Center of Iran, UNESCO (Paris), Tehran's University Library, Majless Library and others were helpful.

²United Nation's Educational, Scientific and Cultural Organization.

Gathering Planning Documents and Information

Two different means were used to gather information about Iran's higher education plans.

The first was to seek out planning documents available from the following offices or institutions:

- A. The Central Government of Iran, through directly responsible ministries in charge of higher education. They are the Ministry of Science and Higher Education, and the Ministry of Education.³
- B. The Iranian Institute for Research and Planning in Science and Education.
- C. Higher education institutions themselves which, to facilitate the study, were limited to the following institutions:⁴
 - 1. All universities in operation until the end of 1978. 17
 - 2. All autonomous higher education institutions at the end of 1978. 10
 - 3. All other private or publicly affiliated institutions of higher education which had 1,000 students or more. 14

Total number of institutions furnishing information	41
--	----

A second means of obtaining needed information about Iran's higher education plans were interviews with responsible

³After the Islamic revolution of 1978, the two ministries of Arts and Culture and Science and Higher Education were combined to create the new Ministry of Culture and Higher Education.

⁴Classification of institutions is according to the Ministry of Higher Education in Iran.

administrators and executives in Iranian institutions and government agencies. The author interviewed⁵ higher education officials such as the Deputy-Minister of Higher Education, Chancellor and Vice-Chancellor of The Institute for Research and Planning in Science and Education, Deputy Minister of Education, presidents of colleges and universities and their vice-presidents in charge of development plans and programs, and General Directors of the offices of Planning and Programming; Budgeting and Control; also Implementing and Coordination which were branch offices of The Ministry of Science and Higher Education and The Ministry of Education.

Gathering Data About Human Resource Needs and Plans

After a brief look at past haphazard, poorly planned development and some generalized trends of the last decade (1966-1976) in Iran, a final portion of this descriptive research study will be devoted to current and future byproducts of plans of higher education which are manpower development plans. The author researched documents, statistics, and data about manpower development plans in Iran. In a manner parallel to the preceeding research of documents about higher education plans, some additional sources were consulted, particularly Central Government offices, agencies and institutions.

⁵Interviews were "non structured and non-directive," see Nachmeas, David and Chavse. Research Methods in the Social Sciences. (St. Martin's Press, N.Y., 1976) p.101.

The author went to the following offices for data on current and future manpower development plans and needs in Iran: The Ministry of Labour and Social Affairs, the Ministry of Economics and Finance, the Industrial Management Center of Iran, the Organization for Development and Renewing Heavy Industry and The Center for Industrial Development of Iran.

Some national plans dealing with higher education also discussed manpower needs. Of 19 documents acquired only 7 discussed data and indications about human resources, manpower needs, the job market and areas of demand. A list of these may be found in Appendix C.

Experts Round Table

As an additional source of information, the author arranged for a week of experts' discussions in late summer 1978 in Tehran which were attended by more than thirty professionals in the field of education, (especially higher education) who are known nationwide. These experts are important because of their research, their academic and personal involvement, their past and present responsibilities; and their knowledge and leadership in education. They were chosen on the basis of the author's investigations, recommendations from others, and ten years of working experience, study and research in education.

Discussions were held both at the Institute for Research and Planning in Science and Education and the central building of the Ministry of Science and Higher Education. Past, current and future issues and problems of Iranian

education in general, and higher education in particular, were discussed. Recommended solutions were considered.

At first the author specified questions and topics related to this research but after the first session the issues and discussions continued spontaneously. During the third and fourth meetings the participants invited other experts they knew. All were thirsty for open, non-obligatory and unofficial discussion and suggested continuing the meetings for another week, but political problems and demonstrations, even the possibility of physical danger, prohibited extending the meetings.

One of the prerequisites of the discussions was that no photographs, names, or recorded tapes could be used beyond the purposes of the meeting, removed from the meeting room or published. Therefore, the author promised that participant names would not be mentioned and that after listening to the tapes and taking notes in the meeting room, he would remove and destroy them under supervision. The reasons for these measures was that participants were afraid some organization or person would, somehow, use their participation or words against them. This is not an unrealistic fear in Iran and precautions had to be taken and participants' fears overcome.

Criteria and Source of Administrative Interviewees and Round Table Participants: Initial selection of top

administrative and executive personnel was made from professional publications and the Job Analysis and Job Description Directory which is prepared and published by the Organization for Civil Administration and Employment Affairs of the Country.⁶ This directory lists offices and their officials and functions (major and related) in Iran.

Interviewees and participants in this study were persons with well respected and well-defined reputations for interest, knowledge, and official involvement in problems of planning, programming, budgeting, implementation and control of higher education. All were knowledgeable about the past, current and future nationwide problems of higher education in Iran.

Four criteria were established for top administrative or executive participants, requiring that they have one of the following characteristics.

- A. Holds or has formerly held a professional appointment with administrative or executive responsibility in an institution of post-secondary (or higher) education.
- B. Holds or has formerly held the job of Minister, Deputy-Minister, Director, General-Director or a similar level position in an

⁶This directory is not for sale or generally available for public use. It is only for official government use.

agency directly or indirectly related to higher education or manpower development.

- C. Holds or has formerly held a position of leadership in a national foundation or professional organization devoted to higher education or human resources improvement, development and planning.
- D. Has earned national, if not international, recognition for scholarship and knowledge of higher education or career development problems through publications, participation in pertinent national studies or through the recommendations of other nationally known scholars.

Instrumentation

Various research instruments were employed to accomplish the purposes of this descriptive study. Each one of the research instruments is a separate instrument which the author has chosen to use in combination with other instruments. Before developing the instruments, the author explained the needs and purpose of the study to experts such as demography professors from Michigan State University, Nan Johnson and Allan Beegle who assisted with instrumentation and demography researchers from U.N.E.S.C.O. who gave ideas for instrumentation. The author talked with researchers from the International Union for the Scientific

Study of Population in Belgium who were: Freidrich Edding, Gunner Fougstedt, Alain Gerard and Charles B. Nami. These researchers gave a clear account of the complex network of interrelationships linking demographic variables with education in any society, Iran included.

Population Projection Model

There are a variety of methods and models for population projection. Some are mathematics-oriented methods, some are computer-oriented models and some use both a computer and mathematics. Some methods and models have been developed for special societies with special demographic characteristics, some are applicable only under particular circumstances. However, a few were flexible and applicable to any population.

After studying various projection methods, the author, with help from Nan Johnson⁷ developed this model for projecting Iranian population figures. The major resource for this method was Nathan Keyfitz's projection model,⁸ which the author modified for the purposes of this research study and to be consistent with the availability of demographic information for Iran's population. This projection method is a combined computer and mathematical model.

⁷Dr. Nan Johnson is Demography professor in the Department of Sociology at Michigan State University.

⁸Nathan Keyfitz, Matrix Multiplication as a Technique of Population Analysis. Milbank Memorial Foundation Quarterly. Vol. 42 October 1964, pp. 68-84.

Nathan Keyfirt, "The Population Projection as a Matrix Operator" Demography Vol.1, November 1964, pp. 56-73.

Description of Population Projection Model

This projection method starts by computing the female population as the source of the fertility of the society.

Step A is to create a matrix ($A_{18 \times 1}$) by listing the numbers of Iranian women in eighteen age groups. According to Table 1, page 1 and 2, of the National Census of Population and Housing for November 1976, that list for the total population is as shown in Table 3.1

Step B is to compute a five year Life Table Survival Ratio (LTSR) using an abridged life table for the total population, as well as separate ones for urban and rural populations and for males and females (See Tables 3.2 Abridged Life Table for Iranian Females 1973-76). To compute L.T.S.R. we employ different formulas for different age groups. In computing a five year L.T.S.R. for the infant female population it is necessary to use Formula 1.

$$(1) \quad {}_5S_0^5 = \frac{{}_4L_5}{L_0 + {}_4L_1} \quad \text{where}$$

S_0 = Survival Ratio for 0 to 4 years of age

L = Stationary Population of a certain age.

For example, according to Table 3.2, ${}_4L_5 = 405,998$, $L_0 = 91,810$ and ${}_4L_1 = 340,120$, therefore:

$${}_5S_0^5 = \frac{405,998}{91,810 + 340,120} = 0.93995$$

This survival ratio represents the proportion of Iranian females aged 0-4 years old in 1976 who could expect to survive five years.

TABLE 3.1 POPULATION OF IRAN BY SEX AND AGE GROUP

AGE GROUP	MALES	FEMALES
0-4	2,810,024	2,593,694
5-9	2,716,512	2,536,568
10-14	2,260,679	2,040,552
15-19	1,821,891	1,787,193
20-24	1,355,584	1,452,172
25-29	1,009,213	1,096,513
30-34	836,244	865,451
35-39	823,066	800,207
40-44	895,015	772,733
45-49	752,743	635,806
50-54	728,486	597,314
55-59	398,077	308,750
60-64	303,003	278,196
65-69	181,876	166,188
70-74	192,536	185,959
75-79	115,585	89,168
84-84	78,592	67,078
85 and over	58,053	50,455

SOURCE: Statistical Center of Iran

TABLE 3.2 ABRIDGED LIFE TABLE FOR IRAN, FEMALES 1973-76

AGE GROUP	q_x	l_x	n^d_x	n^l_x	T_x	Q_x
0	0.11700	100,000	11,700	91,810	5,744,982	57.44
1-4	0.07407	88,300	6,540	340,120	5,653,172	64.02
5-9	0.01371	81,760	1,121	405,998	5,313,052	64.98
10-14	0.00663	80,639	535	401,858	4,907,054	60.85
15-19	0.00722	80,104	578	399,075	4,505,196	56.24
20-24	0.00841	79,526	669	395,958	4,106,121	51.63
25-29	0.01109	78,857	875	392,098	3,710,163	47.05
30-34	0.01351	77,982	1,054	387,275	3,318,065	42.55
35-39	0.01671	76,928	1,285	381,428	2,930,790	38.10
40-44	0.02347	75,643	1,775	373,773	2,549,362	33.70
45-49	0.03324	73,868	2,455	363,203	2,175,584	29.45
50-54	0.04735	71,413	3,381	348,613	1,812,381	25.38
55-59	0.06787	68,032	4,617	328,618	1,463,768	21.52
60-64	0.09768	63,415	6,194	301,590	1,135,150	17.90
65-69	0.14053	57,221	8,041	266,003	833,560	14.57
70-74	0.20342	49,180	10,004	220,890	567,557	11.54
75-79	0.28668	39,176	11,231	167,803	346,667	8.85
80-84	0.41875	27,945	11,702	110,470	178,864	6.40
85-	1.00000	16,243	16,243	68,394	68,394	4.21

SOURCE: Statistical Center of Iran

For computing the female population aged 85 and over it is necessary to use Formula 2 as follows:

$$(2) \quad s_{85}^5 = \frac{T_{85}}{T_{85}} \quad \text{where}$$

T = Life Table Cohort.

According to Table 3.2, $T_{85} = 68,394$ and $T_{80} = 178,864$.

$$s_{85}^5 = \frac{68,394}{178,864} = 0.38238$$

This survival ratio represents the proportion of women aged 80 years or more in 1976 who could expect to live 5 years.

For computing all other survival ratios, we employ Formula 3, which is a general formula for the other fifteen age groups.

$$(3) \quad {}_n s_x^5 = \frac{{}_n L_{x+5}}{{}_n L_x} \quad \text{where}$$

n = number of years in age group and

x = age group's starting age.

For example:

$${}_5 s_5^5 = \frac{{}_5 L_{5+5}}{{}_5 L_5} = \frac{{}_5 L_{10}}{L} = \frac{401,858}{405,998} = 98980.$$

This survival ratio is the proportion of females aged 5-9 years old in 1976 who could expect to survive 5 years.

This last formula yields 15 survival ratios, predicting proportions expected to live 5 more years of age cohorts 5-9, 10-14, ..., 75-79 years old in 1976.

Step C is to create a "Survival Ratio Matrix". Entering those 17 survival ratios on a diagonal, we create an 18 x 18 matrix. All other rows in the matrix will be zero. Thus:

	0	0	0	0	0	0. . . . 0
${}_5S_0^5$	0	0	0	0	0	0. . . . 0
0	${}_5S_5^5$	0	0	0	0	0. . . . 0
0	0	${}_5S_{10}^5$	0	0	0	0. . . . 0
0	0	0	${}_5S_{15}^5$	0	0	0. . . . 0
$S_{18 \times 18} = 0$	0	0	0	${}_5S_{20}^5$	0	0. . . . 0
0	0	0	0	0	${}_5S_{25}^5$	 0
0	0	0	0	0	0	 S_{85}^5

At this point it was necessary, for a survival ratio matrix, to employ a computer.

Step D is to create a birth matrix. For this matrix we need the age-specific fertility rates (ASFR) for women in urban and rural areas and the country as a whole. In Iran, according to 1973-1976 annual population surveys and other documents published by the Statistical Center of Iran,⁹ the ASFR for Iranian women was shown in Table 3.3.

Ages of fertility vary in different societies and different cultures. In Iran, because of the lack of comprehensive education and the impact of cultural values on non-educated families, girls tend to marry at an early age. However, by 49 years of age the natural fertility years of females are generally over.

⁹K.L. Kohli. Abridged Life Tables for Iran and its Rural-Urban Areas, 1973-76. (Statistical Center of Iran, Tehran, 1977).

TABLE 3.3 AGE SPECIFIC FERTILITY RATE FOR IRANIAN WOMEN
(1975)

AGE GROUPS	ASFR
10-14	0.00155
15-19	0.13035
20-24	0.30700
25-29	0.29235
30-34	0.22895
35-39	0.15795
40-44	0.0517
45-49	0.05275

Source: Statistical Center of Iran

To compute the number of births to be contributed through 1981 by female children in the 5-9 age groups in 1976, we have to multiply the number of female children aged 5-9 in 1976 by the LTSR of females aged 5-9 and then multiply that by 0.5 and by the ASFR for women 10-14 years old.

Because all children are not born on one day and all would not be the same age on the same day our computation will multiply the census population of an age group (P_x^f) by the survival ratio, by the ASFR and by 0.5 or $\frac{1}{2}$ to account for differences in specific birth dates, to get the projected number of births for women of 5-9 years over the next five years (See Formula 4).

$$(4). P_{5-9}^f \times S_5^5 \times 0.5 \times ASFR_{10-14}$$

P_x^f = Census population of females (f) in certain age group (x)

S = Survival ratio for females in certain age group.

For females 10-14 years old and other age groups, the process is the same but we add the census figures for the population as they were enumerated in the 1976 census. Multiply that by the survival ratio, times one-half, times ASFR for 15-19 year old (See Formula 5).

$$(5). P_{10-14}^f \times S_{5-10}^5 \times ASFR_{15-19} \times 0.5 + \\ P_{10-14}^f \times ASFR_{15-19} \times 0.5$$

To continue our mathematical computations,

$$(6) \frac{L_0 + 4L_1}{5^{10}} \text{ is the proportion of persons born in a year } \\ \text{(say, 1976), who will survive five years.}$$

According to the abridged life table (Table 3.3) for females, L_0 is 91,810 and L_1 is 340,120, and l_0 is 100,000.

5 = time period duration

$$\text{Thusly, } \frac{91,810 + 340,120}{5 \times 100,000} = \frac{431,930}{500,000}$$

The proportion of births in Iran which are female can be seen as:

$$K = \frac{5 \times 0.86386 \times P^f}{5 \times 0.86386 \times 0.488} =$$

K is the constant factor in equation.

$K = 0.00210$. This constant represents the proportion of females born who can be expected to live 5 years.

By multiplying the data in column 3 of Table 3.4 (the probability of a child living for a 5 year period) by K for all rows of column 3 and dividing the quotient by 1,000, we obtain column 4 of Table 3.4, the probability of giving birth to surviving daughters over the next five years.

Step E is to construct the birth matrix $B_{18 \times 18}$, which will have zero in all cells except in the first row.

Cell 1	Cell 2	Cell 3	Cell 4	Cell 5	Cell 6
000	0.00161	0.13815	0.45840	0.62866	0.54643
Cell 7	Cell 8	Cell 9	Cell 10	Cell 11 to Cell 18	
0.40524	0.22590	0.11498	0.56605	0000	

Now add $B_{18 \times 18}$ to $S_{18 \times 18}$, the sum will be a matrix $M_{18 \times 18}$. To obtain the estimated number of females in 1991, Formula 7 is used:

$$(7) \quad M_{18 \times 18}^3 A_{18 \times 1}$$

To compute Formula 7 the application of a computer is necessary. (For details of the computer program see Appendix B).

TABLE 3.4 THE NUMBER OF BIRTHS CONTRIBUTED BY FEMALE CHILDREN AGED 5-9 IN 1976 WHICH WILL OCCUR IN IRAN.

$$\text{Average} = \frac{U+R}{2}$$

(1)		(2)		(3)		(4)	
Age Group	Survival Ratio	Age Specific Fertility Rate x 1000	Probability of having a child in 5 years			Elements of birth matrix x K/1000	
5-9	.98980	--	.98913 x .5 x 1.55 = .76657			0.00161	
10-14	.99219	1.55	.99375 x .5 x 130.35 + .5 x 1.55 = 65.54266			0.13815	
15-19	.99219	130.35	.99219 x .5 x 307 + .5 x 130.35 = 217.47616			0.45840	
20-24	.99025	307.00	.99025 x .5 x 292.35 + .5 x 307 = 298.24979			0.62866	
25-29	.98770	292.35	.98770 x .5 x 228.95 + .5 x 292.35 = 259.24195			0.54643	
30-34	.98490	228.95	.98490 x .5 x 157.95 + .5 x 228.95 = 192.25748			0.40524	
35-39	.97993	157.95	.97732 x .5 x 57.7 + .5 x 157.95 = 107.17069			0.22590	
40-44	.97912	57.7	.97431 x .5 x 52.75 + .5 x 57.7 = 54.54743			0.11498	
45-49	.95983	52.75	.5 x 52.75 = 26.375				

Up to this point only projections for the female population have been considered. For male population projections the stationary life table is used (See Table 3.5). Male projections also use Table 3.3.

It is assumed the sex ratios of the life table population will be the same in 1991 as in 1976. Given this assumption we compute the sex ratio SR_x for the 18 age groups of the stationary population of life table using Formula 8 for computing sex ratios (SR_{0-4}) for ages 0-4 years.

$$(8) \quad SR_{(0-4)} = \frac{L_o^m + 4L_1^m}{L_o^f + 4L_1^f}$$

For example, in Iran according to Tables 3.3 and 3.5:

$$SR_{(0-4)} = \frac{92510 + 346600}{91810 + 340120} = \frac{439,110}{431,930} = 1.0166$$

To obtain sex ratios for age groups 5-9 years and over use Formula 9, thus:

$$(9). \quad SR_{(5-9)} = \frac{5L_5^m}{5L_5^f}$$

For example in Iran, according to Tables 3.3 and 3.5:

$$SR_{(5-9)} = \frac{417670}{405998}$$

In general:

$$SR_{x-(x+5)} = \frac{5L_x^m}{5L_x^f}$$

TABLE 3.5 ABRIDGED LIFE TABLE FOR IRAN, MALES 1973-76

Age Group	q_x	l_x	n^d_x	n^L_x	T_x	$\frac{T_x}{l_x}$
0	0.10700	100,000	10,700	92,510	5,763,858	57.63
1-4	0.05935	89,300	5,300	346,600	5,671,348	63.51
5-9	0.01109	84,000	932	417,670	5,324,748	63.39
10-14	0.00608	83,068	505	414,078	4,907,078	59.07
15-19	0.00618	82,563	510	411,540	4,493,000	54.42
20-24	0.00712	82,053	584	408,805	4,081,460	49.74
25-29	0.00807	81,469	657	405,703	3,672,655	45.08
30-34	0.01054	80,812	852	401,930	3,266,952	40.43
35-39	0.01646	79,960	1,316	396,510	2,865,022	35.83
40-44	0.02547	78,644	2,003	388,213	2,468,512	31.39
45-49	0.03912	76,641	2,998	375,710	2,080,299	27.14
50-54	0.05901	73,643	4,346	357,350	1,704,589	23.15
55-59	0.08832	69,297	6,120	331,185	1,347,239	19.44
60-64	0.12616	63,177	7,970	295,960	1,016,054	16.08
65-69	0.18231	55,207	10,065	250,873	720,094	13.04
70-74	0.25274	45,142	11,409	197,188	469,221	10.39
75-79	0.34550	33,733	11,655	139,528	272,033	8.06
80-84	0.46705	22,078	10,312	84,610	132,505	6.00
85+	1.00000	11,766	11,766	47,895	47,895	4.07

SOURCE: Statistical Center of Iran

Then, multiply the estimated females in a given age group for 1991 by the sex ratio for that age group to estimate the number of males in that same age group.

"The utility of this way of expressing projections depends on a computer being available!"¹⁰ The author's access to the Michigan State University's Eyber 750 (Control Data Institute) computer has been through the symbolic language known as FORTRAN. (For more information about programs, symbolic language, and computer used see Appendix B and Nathan Kifitz's papers).

Projection of Higher Education Enrollments

The second part of this research is a projection of college enrollments. For that purpose the author employed Ronald Thompson's straight line approach for projection of enrollments in colleges and universities.¹¹

Method: The method used is based on a direct relationship between the number of children born eighteen to twenty-four years prior to a given year and the number of students attending higher education institutions that year.

Another set of projections is based on the number of projections of children born eighteen through twenty-four years prior to a given year and the number of students

¹⁰Nathan Keyfitz, Matrix Multiplication as a Technique of Population Analysis, p.75.

¹¹Ronald Thompson, Projections of Enrollments in Public and Private Colleges and Universities: HEW The American Association of Collegiate Registrars and Admission Officers AACRAO;

attending higher education institutions that year. The age group eighteen through twenty-four years was chosen because this group forms the basis of college attendance in Iran with more than sixty-five percent¹² of all college students in this age group.

The total number of children born in Iran eighteen through twenty-four years prior to a given year were added and this sum was related to the number of students attending institutions of higher education in the country that year. This relationship is expressed as a percentage. To determine trends over past years this relationship was computed for 1966, 1971 and 1976. The procedure was followed for both two year and four year schools. In this projection of enrollment, it was assumed that the traditional Fall opening dates for higher education institutions would remain the same over time.

Enrollment Projection Model

A number of mathematical models have been developed for enrollment projections. Many of these have incorporated variables which have proved to be more or less irrelevant to the problem at hand. In the 1976 through 1991 enrollment projections presented here a straight line approach,

¹²I.R.P.S. & E. Preliminary Report and Long-Term Educational Master - Plan for Iran. 1975.

discounting all but the most essential variables, has been followed. A mathematical model of this approach as applied to Iran, is presented.

In order to build this model for Iran, a mathematical relationship between the student population in Iranian higher education institution and the total college-age population must be expressed. Since the statistical relationship between the two has already been discussed, it is necessary only to express this relationship in mathematical notation. Mathematically, the relationship between Iran's student population (denoted by S) and the college-age population (P) is defined as:

$$(1) \quad S_t = X_t P_t$$

where the percentage value X_t expresses the percentage relationship between S and P (the percent of P that is S) and where t denotes any academic year.

The value X_t expresses that percentage of P which is S in any academic year t , and is mathematically defined as:

$$X_t = \frac{S_t}{P_t}$$

While t represents any academic year, specific academic year designations are necessary for computation of the value X_t . Therefore, let t_1 be the first academic year for which actual enrollment data are available. Let t_2 represent the last academic year for which actual enrollment data are

available. In this study in which enrollment trends for 1966-1976 are considered, t_1 would be 1966 and t_2 would be 1976. Furthermore, t_2 will henceforth be referred to as the base academic year. (Read "t-sub-1" and "t-sub-2").

The value P_t , or the college-age population in any academic year, is given. In order to find S_t , the student population of any academic year, the value of X_t must be completed. This computation is done in the following manner:

Step 1 - A linear combination of the average difference per year is the value of X_t added to X_{t2} , i.e.: the value of X_t at the base academic year. The average difference per year in the value of X_t at the base academic year and the value of X_t at the first given academic year, by the reciprocal of the difference between the base academic year and the first given academic year or, in short, by the following formula:

$$(2) \text{ avg. difference/year in } X_t = \frac{X_{t2} - X_{t1}}{t2 - t1}$$

Remember that X_t expresses a percentage value.

Step 2 - To find the necessary linear combination of equation (2) to add to X_{t2} , the following formula applies:

$$(3) \quad n \left(\frac{X_{t2} - X_{t1}}{t2 - t1} \right)$$

where n is defined as the value obtained by adding the negative of the base academic year t_2 to the academic year t , to which the model is being applied. Since:

$$(4) \quad t = t_2 + n$$

it follows that

$$(5) \quad n = t - t_2$$

Step 3 - X_t may now be defined as:

$$(6) \quad X_t = X_{t_2} + n \left(\frac{X_{t_2} - X_{t_1}}{t_2 - t_1} \right)$$

Substituting equation (6) into the original equation (1) yields:

$$(7) \quad S_t = P_t \left[X_{t_2} + n \left(\frac{X_{t_2} - X_{t_1}}{t_2 - t_1} \right) \right]$$

and further substituting equation (4) into equation (7) yields the mathematical model for the computation of future enrollments:

$$S_{t_2} = (P_{t_2+n}) \left[X_{t_2+n} \left(\frac{X_{t_2} - X_{t_1}}{t_2 - t_1} \right) \right]$$

Treatment of Acquired Data

In order to accomplish the objectives of this study, the following approaches are used:

A. Projecting Future Population (1976-1991).

Using the preceeding Population Projection Model (page 177) the author examined all available pertinent data and analyzed, computed and set them up for input to the model. In calculations for the model, some basic and advanced mathematical computations were made to prepare the data for computer analysis.

All program cards were punched. The sets of data cards for urban, rural and overall population groups were put into the M.S.U. computer (EYBER 750 by Control Data Institute) separately, and results were produced for eighteen different age groups.

B. Projecting Future Enrollments (1976-1991)

All statistical data on higher education, brought to the U.S. from Iran, was examined according to the requirements of Thompson's model. After analysis of 1966-1976 data concerning annual enrollments in higher education in Iran, enrollment rates for 1966 and 1976 were calculated for base rates. According to the mathematical model for computation of future enrollments in the academic year (5) of 1966, the student population of higher education

institutions (S_t) was 36,882¹³ and total births for the previous 18 to 24 years were 2,420,574.¹⁴

Using these figures, the percentage value of X_{1966} =

$$\frac{\text{Number of Enrolled College Students} \times 100}{\text{Number of Births 18-24 Years Ago}}$$

or

$$X_{1966} = \frac{36,882 \times 100}{2,420,574}$$

$$X_{1966} = 1.52$$

During 1976 the number of students enrolled in higher education institutions was 154,215¹⁵ and the number of college age people born 18-24 years before was 4,166,875.¹⁶

$$\text{Again: } X_{1976} = \frac{154,215 \times 100}{4,166,875}$$

$$X_{1976} = 3.70$$

¹³Institute for Research and Planning in Science and Education. Statistics of Higher Education in Iran. (IRPS&E. Tehran 1977), p.8.

¹⁴Statistical Center of Iran. Statistical Year Book, 1973.

¹⁵IRPSE Statistics of Higher Education in Iran (1979) Institute for Planning and Research in Science and Education (Tehran, 1978). p.3 (Farsi).

¹⁶Statistical Center of Iran. National Census of Population and Housing 1976, SCI (Tehran, 1978) p.5.

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According to Step 1 for computing the average difference per year in $X_t = \frac{X_{t2} - X_{t1}}{t2 - t1}$ where

$$X_{t2} = X_{1976} \quad t2 = 1976$$

$$X_{t1} = X_{1966} \quad t1 = 1966$$

$$X_t = \frac{3.70 - 1.52}{1976 - 1966} = \frac{2.18}{10}$$

$$X_t = 0.218$$

Thus X_t expresses a percentage value.

Projected enrollments are derived from projected population figures for Iran, therefore, in applying the model to 1981, the value of n (see step 2 of model) would be:

$$n = t - t2$$

$$n = 1981 - 1976$$

$$n = 5$$

X_t may now be defined as (see Step 3):

$$X_t = X_{t2} + n \left(\frac{X_{t2} - X_{t1}}{t2 - t1} \right)$$

Again, using enrollment figures for 1966-1976,

$$X_{1981} = 3.70 + 5 (0.218)$$

$$X_{1981} = 3.70 + 1.09$$

$$X_{1981} = 4.79$$

Therefore, the percent of students expected to be enrolled in higher education institutions in 1981 are 4.79 percent of the projected college age population for that year.

Substituting the enrollment trends for 1981 into the original equation (1) of the model yielded

$$S_t = P_t \left[(X_{t2} + n \left(\frac{X_{t2} - X_{t1}}{t2 - t1} \right)) \right]$$

$$S_{t2+n} = (P_{t2+n}) \left[X_{t2+n} \left(\frac{X_{t2} - X_{t1}}{t2 - t1} \right) \right]$$

$S_{t2+n} = S_{1981}$ = the college age population in 1981 multiplied by 4.79, the result would be enrolled students in higher education institutions in Iran.

Similar computations were carried out for 1986 and 1991.

Analysis of Planning Documents

In response to requests to each of the preceeding agencies in Iran, 28 planning documents related to higher education and manpower development (middle manpower) were obtained. Of the 28 documents, a careful review by this researcher indicated that among them there were none that were both comprehensive and feasible enough to be properly termed "master plans" even though some purported to be such.

There was research by a group in the Institute for Research and Planning in Science and Education but the

government affiliation did not mean that the plan was going to be put into action. Of just as little use were two purported master plans, the Sixth Development Plan (1978-83), and the Fifth Development Plan (1973-78) and Fourth Development Plan (1968-73) which were five year nationwide development plans. Of 28 planning documents 13 plans were selected as potentially useable for the purpose of current and future development and democratization of Iranian higher education on one hand; and manpower development needs on the other. Those needs are for skilled educated manpower, particularly middle-manpower, demonstrated by the industrial, technical, administrative and business sectors, public and private (see Appendix C).

Even among those 13 plans considered potentially useable, some were eliminated for the following reasons:

1. Plans long outdated and presently under revision. To have used these plan(s) would have misrepresented the facts.
2. Plans which were very poorly prepared and written or which were logically remiss. The content analysis to be performed depended upon internal consistency in the documents considered, a quality which was absent from these particular plan(s).
3. Some plans lacked substance. The "plan" was essentially a public relations document or propaganda for administrative personnel in the Ministry of Higher Education, Ministry of Labour and

Social Affairs and/or related agencies; and, in general the regime or administration in power.

Of the six remaining plans selected for final analysis in this study all were prepared by Iran's Institute for Research and Planning in Science and Education, Statistical Center of Iran, and Plan and Budget Organization of Iran.

Criteria for Document Analysis

An analysis of plans was done in order to extract from each plan the explicit and implicit information on the objectives of the central government and government affiliates, the scope of future democratization and development of higher education, and the development of manpower according to the future socio-economic needs of Iran.

The instrument used for the analysis was a chart for classification of higher education and manpower development plans according to whether they provided for increasing the capacity of present institutions, establishing new colleges and universities, and innovation or reorganization of higher education systems to become "mass education" and coping with present and future demands for increased post secondary education from a growing population. (It also provided for classification of response to the demand for educated manpower by different socio-economic sectors from all across the country.) The chart included a variety of actions toward democratization of higher education by increasing its capacity to provide educational services, so that any person who wants to go to college or university may do so; and by training skilled manpower to substitute for foreign experts.

Reliability in content analysis is largely dependent upon clearly stated criteria for classification of the communication content.¹⁷ One major classification criteria was used in the content analysis. That set of distinctions was "implicit-explicit" and was used to identify content which had a bearing on plans for higher education.

In the first stage of analysis the "explicit" content was immediately apparent. Often statements were preceded by a phrase such as, "the purpose of this plan (or program) is to increase higher education capacity..." or "the purpose or (goal/objective) of this plan is to develop and train high/middle educated manpower according to socio-economic needs of country". The difficulty in this first stage was in distinguishing "implicit" content from the rest of a plan.

The "explicit" category included any discussion that directly concerned plans, on a national or provincial level, which could be determined to have potentially beneficial effects toward extending or diversifying higher education for all qualified applicants.

"Implicit" content was also concerned with plans for meeting educational and manpower needs but such plans were treated indirectly or considered only as a part of another issue.

¹⁷Walter R. Borg, Educational Research (1963): pp. 256-260.

Analysis of Other Information:

After short interviews with manpower-development and higher education personnel in positions of authority, the same short chart was used for evaluation of discussion content. Some of these persons explicitly indicated the existence of short or long term plans for higher education and manpower development, but they were unable to recall or discuss in detail any plan for a gradual balance between demand and enrollment of ambitious, qualified applicants in higher education and the supply of educated manpower in Iran. Most propagandized about the regime or administration in power, a tradition among inept administrators.

Most of the administrators had held their positions for many years; yet they knew of few "implicit" plans which had as their ultimate goal increasing the capacity of higher education in Iran. The author met many of these administrators and felt many had reached the level of their incompetence where the appearance of action substitutes for any real action or effectiveness.

Among those few administrators and executives who were frank, some admitted without subterfuge that there were not any clear, reliable plans that would be effective in handling future demand for higher education. And, if there were one or two plans written by different agencies, they would continue to exist only on paper as there is no authority to implement them. They will not be put into action. The

administrators agreed that a comprehensive plan for higher education problems must be prepared by scientific methods and devoid of propaganda.

To analyze reliability in each individual's responses to the author's questions, the author used two related techniques. In each organization the author interviewed two or more responsible persons on separate occasions and individually, without mentioning that he had interviewed others, and then compared their responses. A second means was to review personally any documents regarding plans the administrators had discussed in their interviews. If these existed and were available and either under operation or ready for operation, then the reliability of the administrators' comments was considered to be dependable.

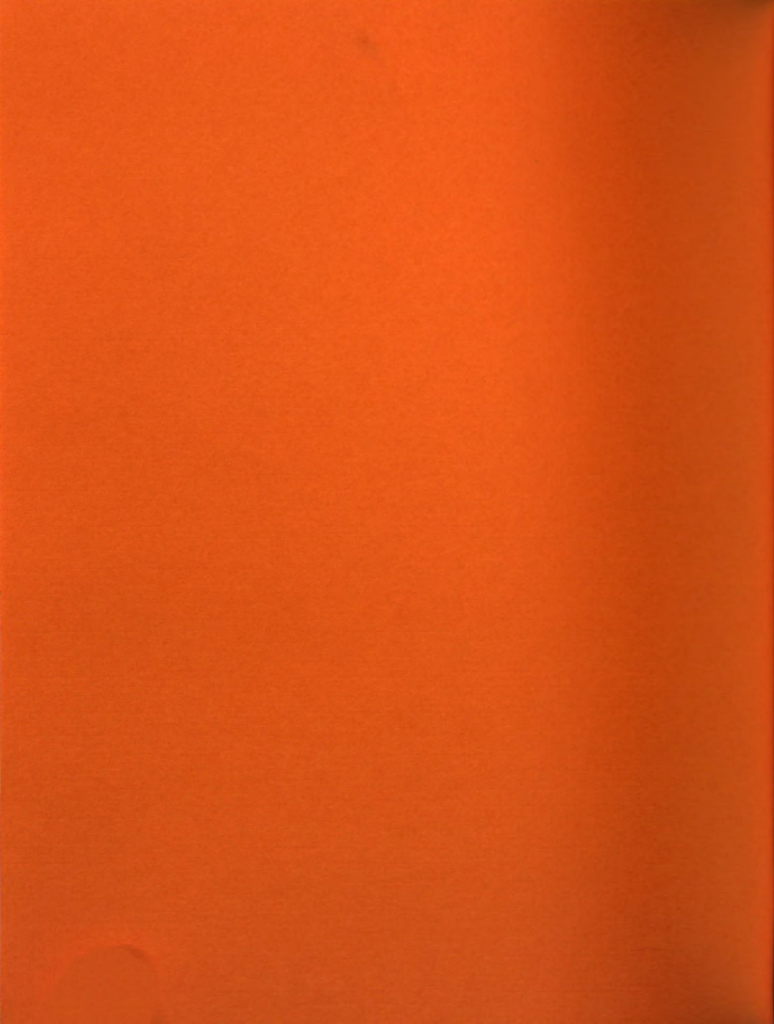
Summary

In the preceeding pages the means and methods for obtaining and analyzing data in this descriptive study have been detailed. These include the population projection and higher education in enrollment projection models which utilize past and current population and enrollment data to project statistics relevant to future needs and demands for post secondary education.

Several resources were used to collect statistical data and information about past trends in higher education in Iran. These included research of journals, government and university documents, census results and population surveys.

To determine the existence, quality and comprehensiveness of future plans for meeting educational needs and manpower demands in Iran, planning documents were sought from the central government, the Iranian Institute for Planning in Science and Education and from higher education institutions. A second method of obtaining this information was interviews with administrators and executives in Iranian institutions and government agencies. Finally, a week long round-table discussion was convened during the Summer of 1978 which brought together more than 30 recognized experts in the field of Iranian education to consider the issues of higher education and manpower planning.

The contents of these documents, discussions and interviews were then subjected to content analysis in which "explicit" and "implicit" categories served to classify information which related to higher education and manpower planning to meet the demands of the population and needs of the country. The results of these techniques are presented in the following chapter.



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Four

Representation

of

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CHAPTER FOUR

PRESENTATION OF FINDINGS

Introduction

The analysis and findings which were generated from the data collected, documents researched and discussions held with Iranian experts are presented in this chapter. In this chapter the methodology employed for each portion of this descriptive research study will be reviewed briefly and then the findings will be presented in the order of the four portions of the purpose of the study.

Methodology For The First Portion Of The Study

The first portion of this study was to project demographically the future population trends in Iran by sex and age groups in urban and rural areas as well as the nation as a whole, until 1991, particularly the college age population.

In order to accomplish this goal, the author selected the Nathan Kifitz's¹ population projection model as an

¹See Nathan Kifitz Milbank Memorial Foundation Quarterly, Vol 42 - Oct. 1964, pp. 68-84. Also NKifitz, Demography, Vol #1, Nov. 1964, pp. 56-72.

instrument. This model is a combined computer and mathematical projection and the author employed it for the model's flexibility and adaptability. The model uses past population statistics, fertility, mortality and birth rate figures by age groupings in order to forecast future population data. These forecasts and past data include information relative to sex and residential location (urban-rural) of population groups. After some modifications according to the goals and objectives of this study, the author collected and computed data according to the definitions of the model, prepared computer cards and fed them into Michigan State University's computer. Results were provided by sex and residential location. Population base data was obtained from Iran's 1976 census.

Findings and Results of the
First Portion of the Study

Background Information

As indicated in preceeding chapters and Table 4.1, the population of Iran in 1976 was 33,662,176 of which 51.50 percent (17,337,119) were male and the rest (16,324,997) females.² Of the total population, 17,864,951 persons or 53.07 percent were residents of rural areas and 15,797,225 or 42.93 percent were urban dwellers (See Tables 4.2 and 4.3).³

Among urban residents 8,273,394 were male and 7,524,921 were female. In rural areas males numbered 9,064,875 and females 8,800,076. (See Figure 4.1, 4.2, 4.3 and 4.4).⁴

Table 4.4 presents a general overview of Iran's population based on the 1976 census (See Figure 4.5 and 4.6).

² Statistical Center of Iran. National Census of Population and Housing November 1976, p. 1 (Table 1)

³ Ibid, pp. 2 and 3

⁴ Ibid

TABLE 4.1 TOTAL POPULATION OF IRAN BY SEX AND AGE GROUP
IN 1976

No.	Age Groups	Total	Male	Female
1	0 - 4	5,403,718	2,810,024	2,593,694
2	5 - 9	5,253,080	2,716,512	2,538,568
3	10 - 14	4,301,231	2,260,679	2,040,552
4	15 - 19	3,609,084	1,821,891	1,787,193
5	20 - 24	2,808,756	1,355,584	1,453,172
6	25 - 29	2,105,726	1,009,213	1,096,513
7	30 - 34	1,701,695	836,244	865,451
8	35 - 39	1,623,273	823,066	800,207
9	40 - 44	1,667,748	895,015	772,733
10	45 - 49	1,388,549	752,743	635,806
11	50 - 54	1,325,800	728,486	597,314
12	55 - 59	706,827	398,077	308,750
13	60 - 64	581,199	303,003	278,196
14	65 - 69	348,064	181,874	166,188
15	70 - 74	378,295	192,536	185,959
16	75 - 79	204,753	115,585	89,168
17	80 - 84	145,670	78,592	67,078
18	85 and over	108,508	58,053	50,455
*	TOTAL	33,662,176	17,337,179	16,324,997
	PERCENTAGE	100%	51.50%	49.50%

SOURCE: Statistical Center of Iran, 1977

TABLE 4.2 URBAN POPULATION OF IRAN BY SEX AND AGE GROUP
IN 1976

No.	Age Groups	Total	Male	Female
1	0 - 4	2,166,742	1,115,844	1,050,898
2	5 - 9	2,219,000	1,140,296	1,078,704
3	10 - 14	2,076,311	1,104,982	971,329
4	15 - 19	1,917,914	1,024,029	893,885
5	20 - 24	1,532,913	795,654	737,259
6	25 - 29	1,111,424	565,143	546,281
7	30 - 34	874,984	453,596	421,388
8	35 - 39	793,941	418,885	375,056
9	40 - 44	765,186	415,846	349,340
10	45 - 49	630,558	338,088	292,470
11	50 - 54	588,163	319,553	268,610
12	55 - 59	333,880	184,205	149,675
13	60 - 64	260,209	133,375	126,834
14	65 - 69	156,072	76,189	79,883
15	70 - 74	168,282	81,963	86,319
16	75 - 79	91,890	49,533	42,357
17	80 - 84	61,577	31,495	30,082
18	85 and over	48,179	23,628	24,551
*	TOTAL	15,797,225	8,272,304	7,524,921
	PERCENTAGE	100%	52.36%	47.64%

SOURCE: Statistical Center of Iran, 1977

TABLE 4.3 RURAL POPULATION OF IRAN BY SEX AND AGE GROUP
IN 1976

No.	Age Groups	Total	Male	Female
1	0 - 4	3,236,976	1,694,180	1,542,796
2	5 - 9	3,034,080	1,576,216	1,457,864
3	10 - 14	2,224,920	1,155,697	1,069,223
4	15 - 19	1,691,170	797,862	893,308
5	20 - 24	1,275,843	559,930	715,913
6	25 - 29	994,302	444,070	550,232
7	30 - 34	826,711	382,638	444,063
8	35 - 39	829,332	404,181	425,151
9	40 - 44	902,562	479,169	423,393
10	45 - 49	757,991	414,655	343,336
11	50 - 54	737,637	408,933	328,704
12	55 - 59	372,947	213,872	159,057
13	60 - 64	320,990	169,628	151,362
14	65 - 69	191,992	105,687	86,305
15	70 - 74	210,213	110,573	99,640
16	75 - 79	112,863	66,052	36,811
17	80 - 84	84,093	47,097	36,996
18	85 and over	60,329	34,425	25,904
*	TOTAL	17,864,951	9,064,875	8,800,074
	PERCENTAGE	100%	50.74%	49.26%

SOURCE: Statistical Center of Iran, 1977

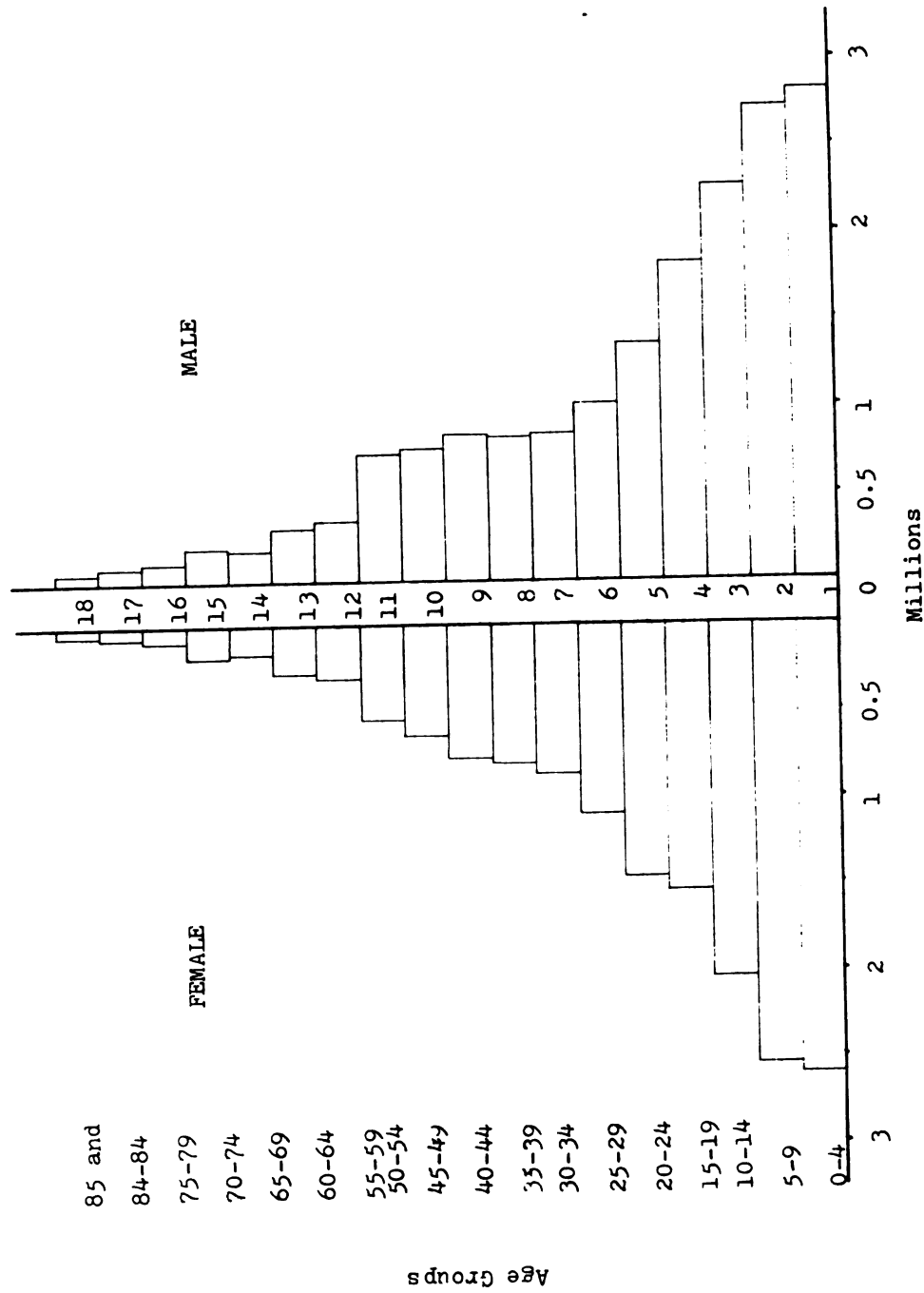


FIGURE 4.1 Pyramid of Population of Iran by Sex Based on Census 1976

FIGURE 4.2 Distribution of Iranian Population by Sex Based on Census 1976

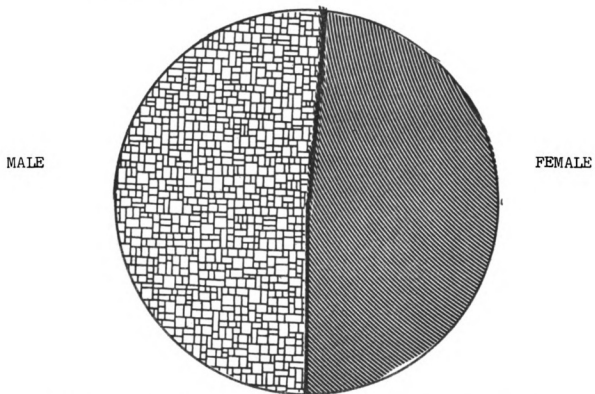


FIGURE 4.3 Distribution of Iranian Population By Residential Area and Sex Based on Census 1976

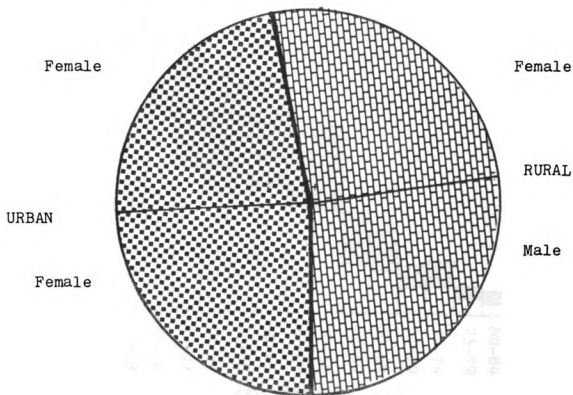
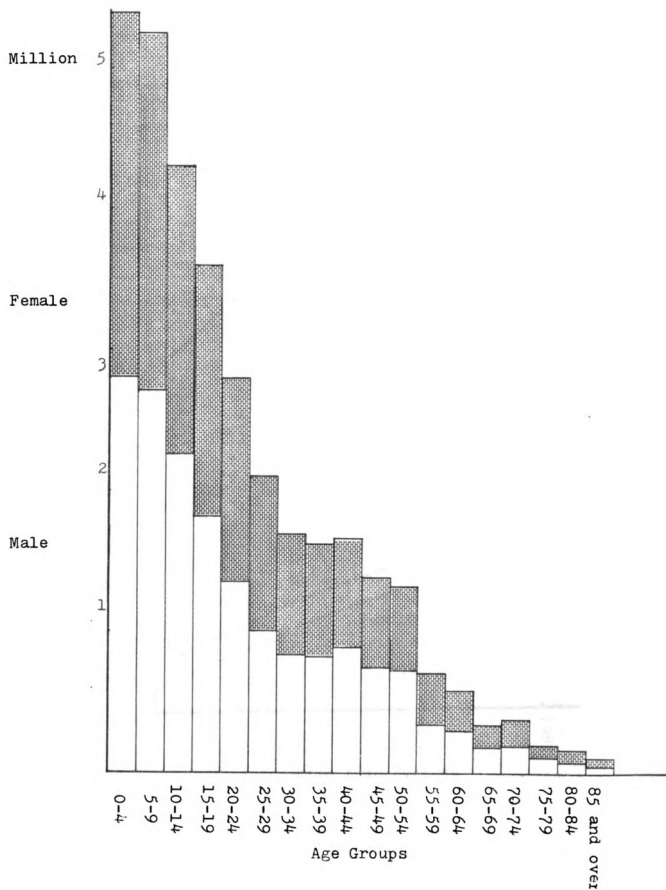


FIGURE 4.4 Population of Iran by Sex and Age Groups
Based on Census, 1976



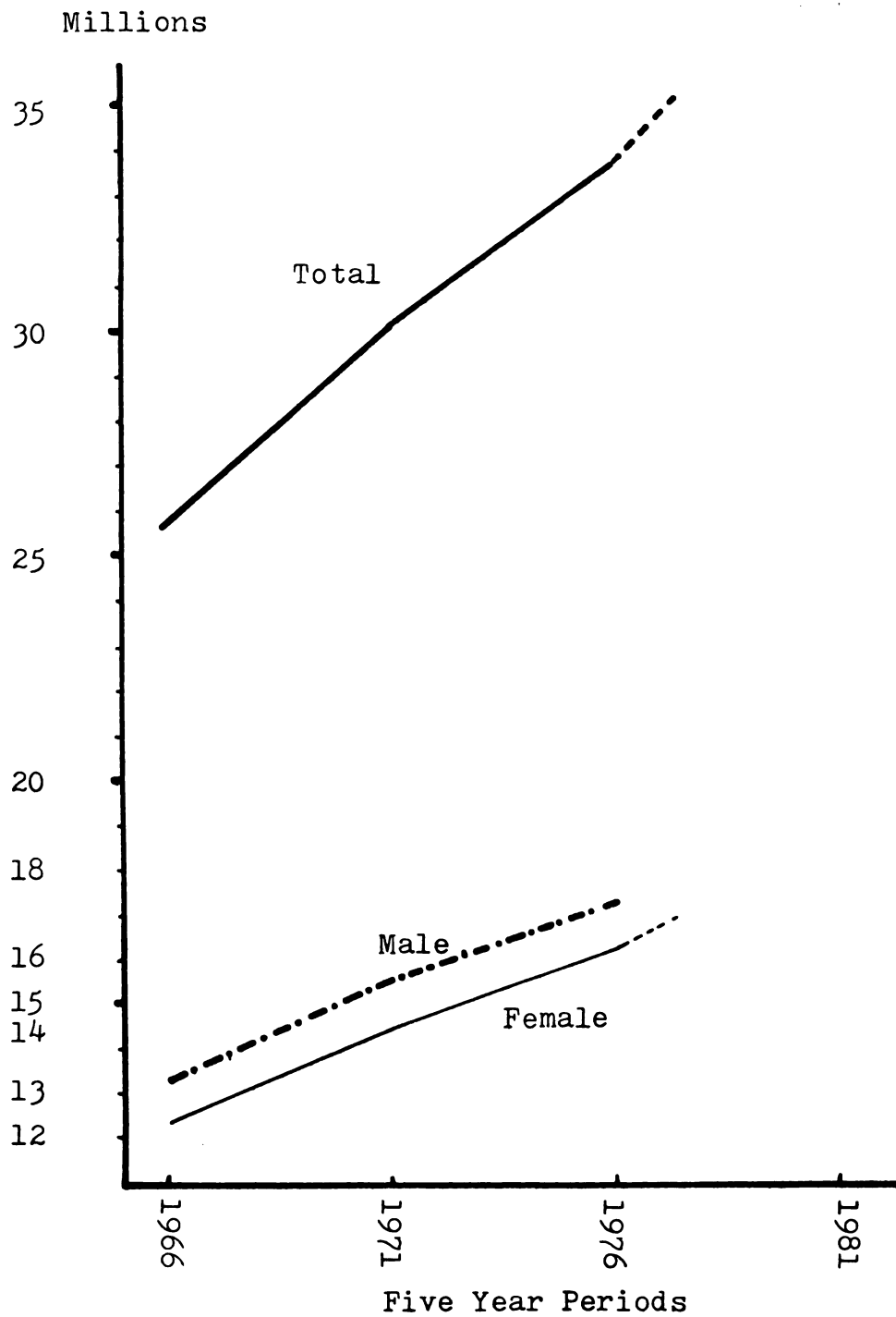


FIGURE 4.5 Diagram of Population Increase of Iran by Sex During 1966-1971 and 1971-1976 Periods.

TABLE 4.4 GENERAL PERSPECTIVE OF POPULATION OF IRAN BY SEX AND RESIDENTIAL AREA (1976)

Resident Sex	TOTAL (U & R)	%	URBAN	%	RURAL	%
Male (M)	17,337,179	51.50	7,272,304	24.58	9,064,875	26.92
Female (F)	16,324,997	49.50	7,524,921	22.35	8,800,076	26.15
TOTAL (M+F)	33,662,176	100.	15,797,225	46.93	17,864,951	53.07

SOURCE: Statistical Center of Iran, 1977

The average age of the population and median age of urban area, rural area and whole country were different in 1976 census. (See Table 4.5)

TABLE 4.5 AGE MEAN AND MEDIAN OF IRANIAN POPULATION BY SEX AND RESIDENTIAL AREA

Residence	Sex	Age Means	Median Age
Whole Country	Male	22.7	17.7
	Female	22.2	17.2
	Total	22.4	17.5
Urban	Male	23.0	18.7
	Female	22.8	18.6
	Total	22.9	18.7
Rural	Male	22.3	15.5
	Female	21.7	16.7
	Total	22.	16.1

SOURCE: Statistical Center of Iran.

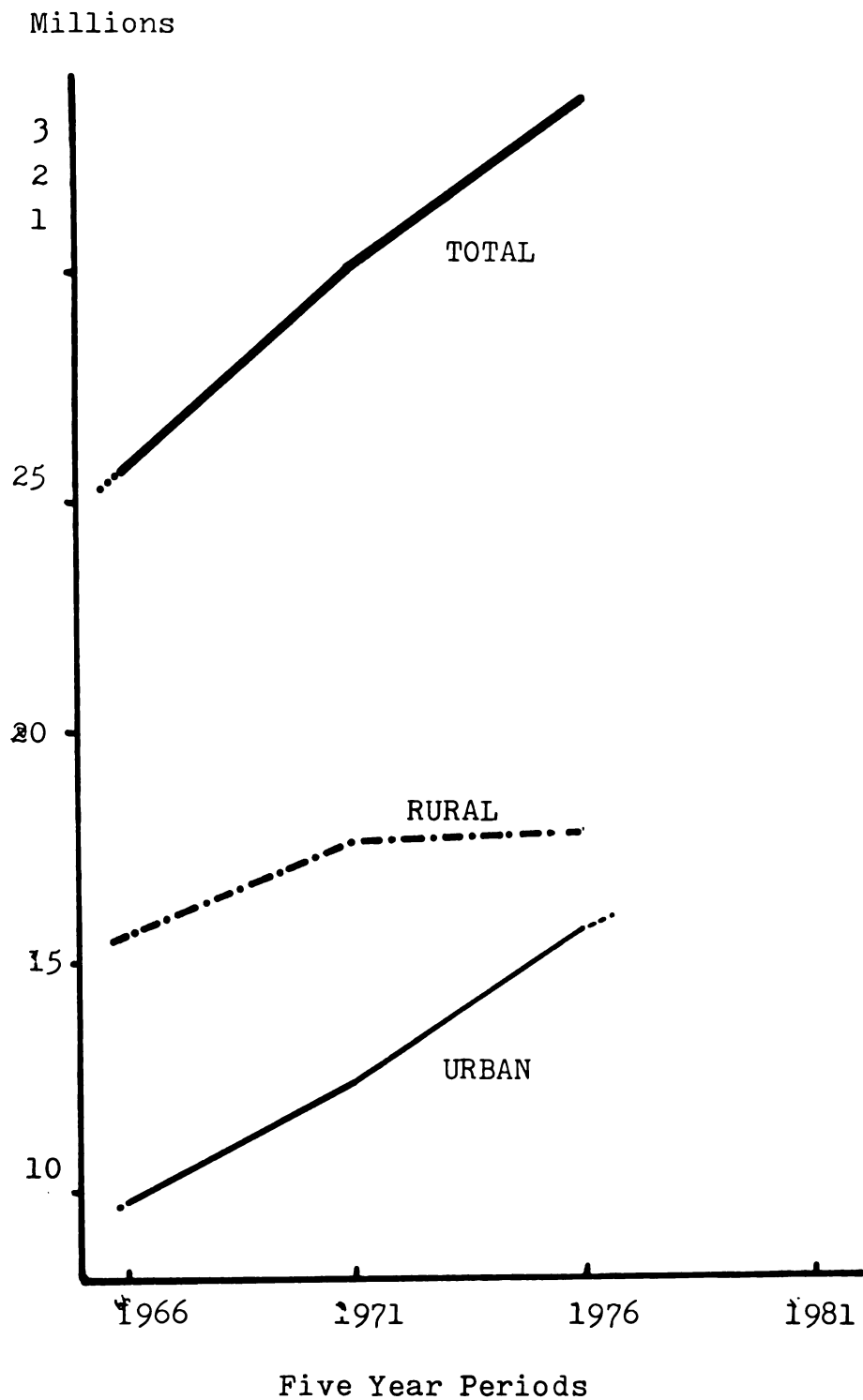


FIGURE 4.6 Diagram of Increase in Population of Iran During 1976 Over Population for 1966, 1971 by Residential Areas.

Table 4.5 clearly indicates that population of Iran was young in 1976. This trend is expected to continue as the fertility rate is going to increase and annual mortality will decrease.

RESULTS FOR POPULATION PROJECTIONS FOR 1981

Results of population projections for 1981 show the total population of the country will increase by 15.25 percent, indicating a projected 1981 population of 38,795,802 persons. Of that population, 19,973,829 or 51.49 percent will be male and 49.51 percent or 18,821,973 persons will be female. As in 1976 the total number of males will be greater than females in Iran (See Table 4.6 and Figures 4.7, 4.8, 4.9 and 4.10).

In 1981 the majority of Iran's population or 53.43 percent of the total population will live in rural areas. In other words, 20,774,280 Iranians will live in rural areas and 18,068,373 persons or 46.57 percent will continue to live in urban areas. (See Table 4.7). It is interesting that results of the projection show in 1981 among the rural population, the number of males will be fewer than females, but in urban areas females will be fewer than males. Of the total rural population of Iran in 1981, 49.85 percent will be males (10,356,290) and 50.15 percent will be females (10,417,990). Conversely, 52.41 percent of urban population of Iran in 1981 will be males (9,469,677) and 47.59 percent (8,598,696) will be females (See Tables 4.8 and 4.9 and Figure 4.11).

TABLE 4.6 TOTAL POPULATION OF IRAN BY SEX AND AGE GROUP
IN 1981

No.	Age Groups	Total	Male	Female
1	0 - 4	6,412,684	3,334,103	3,078,581
2	5 - 9	5,313,152	2,747,651	2,565,501
3	10 -14	5,313,666	2,792,952	2,520,714
4	15 -19	4,087,698	2,063,083	2,024,615
5	20 -24	3,420,961	1,651,193	1,769,768
6	25 -29	2,755,772	1,320,474	1,435,298
7	30 -34	2,123,193	1,043,237	1,079,956
8	35 -39	1,715,328	869,506	945,822
9	40 -44	1,682,484	902,834	779,650
10	45 -49	1,619,856	878,164	741,692
11	50 -54	1,330,526	731,190	599,336
12	55 -59	1,254,795	706,610	548,185
13	60 -64	568,871	296,554	272,317
14	65 -69	483,743	252,729	231,014
15	70 -74	256,915	130,667	126,248
16	75 -79	281,081	158,659	122,422
17	80 -84	119,906	64,701	55,205
18	85 and over	55,171	29,522	24,649
*	TOTAL	38,795,802	19,973,829	18,821,973
	PERCENTAGE	100.00%	51.49%	48.51%

TABLE 4.7 TOTAL POPULATION OF IRAN BY RESIDENTIAL AREA
AND AGE-GROUP IN 1981

No.	Age Groups	Total	Rural	Urban
1	0 - 4	6,412,684	4,190,957	2,658,499
2	5 - 9	5,313,152	2,972,271	2,089,151
3	10 - 14	5,313,666	2,996,014	2,290,022
4	15 - 19	4,087,698	2,009,405	2,070,339
5	20 - 24	3,420,961	1,578,089	1,843,984
6	25 - 29	2,755,772	1,279,761	1,486,384
7	30 - 34	2,123,193	1,022,435	1,122,115
8	35 - 39	1,715,328	829,866	881,587
9	40 - 44	1,682,484	469,957	808,379
10	45 - 49	1,619,856	905,282	734,957
11	50 - 54	1,330,526	744,713	617,227
12	55 - 59	1,254,795	723,729	567,148
13	60 - 64	568,871	308,247	297,125
14	65 - 69	483,743	294,676	220,574
15	70 - 74	256,915	148,667	131,968
16	75 - 79	281,081	202,656	148,327
17	80 - 84	119,908	50,406	62,796
18	85 and over	55,171	47,149	41,781
TOTAL		38,795,802	20,774,280	18,068,373
PERCENTAGE		100.00%	53.43%	46.57%

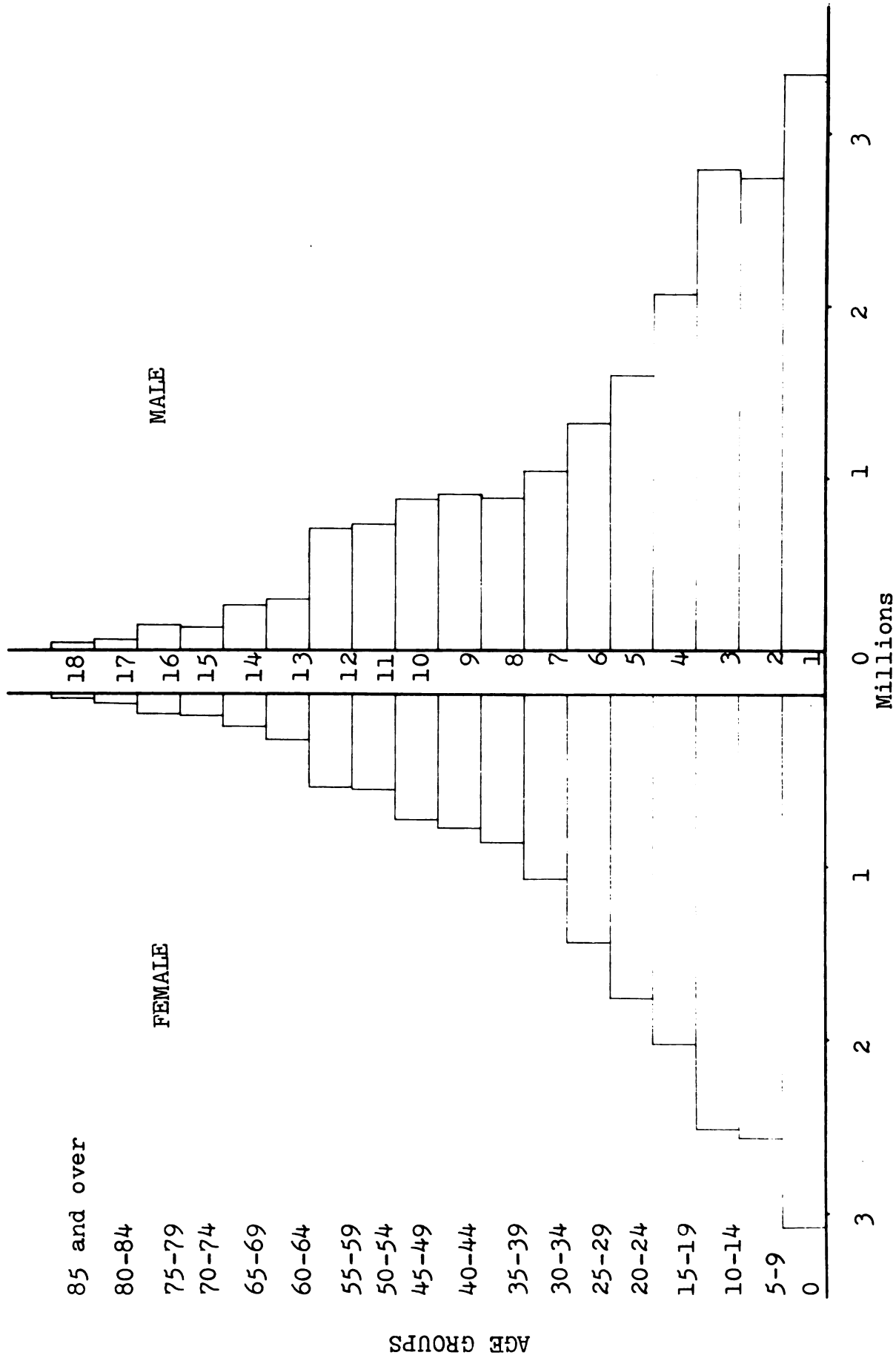


FIGURE 4.7 Pyramid of Projected Population of Iran by Sex in 1981

FIGURE 4.8 Distribution of Projected Population of Iran by Sex in 1981

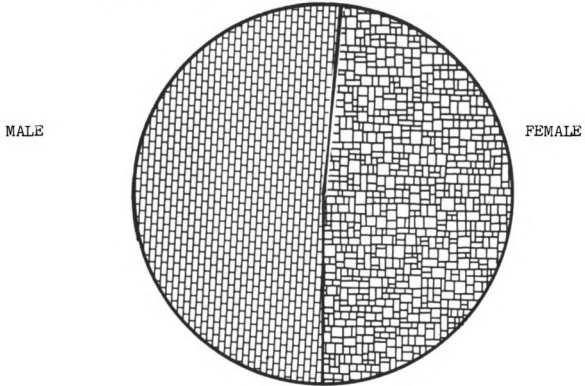


FIGURE 4.9 Distribution of Projected Population of Iran by Residential Areas and Sex in 1981

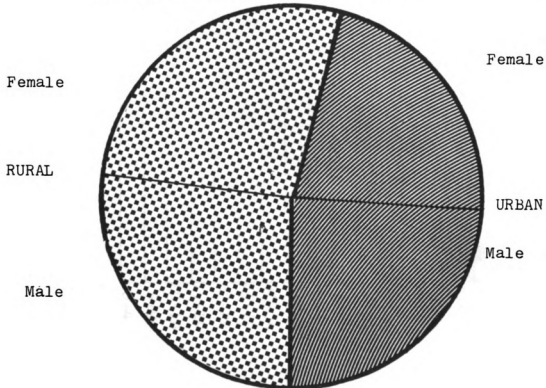
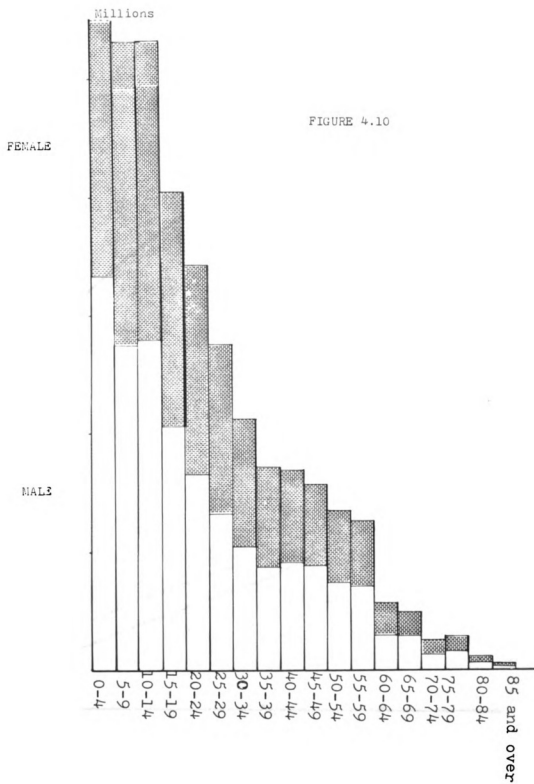


FIGURE 4.10 Projected Population of Iran by Sex and Age Groups in 1981



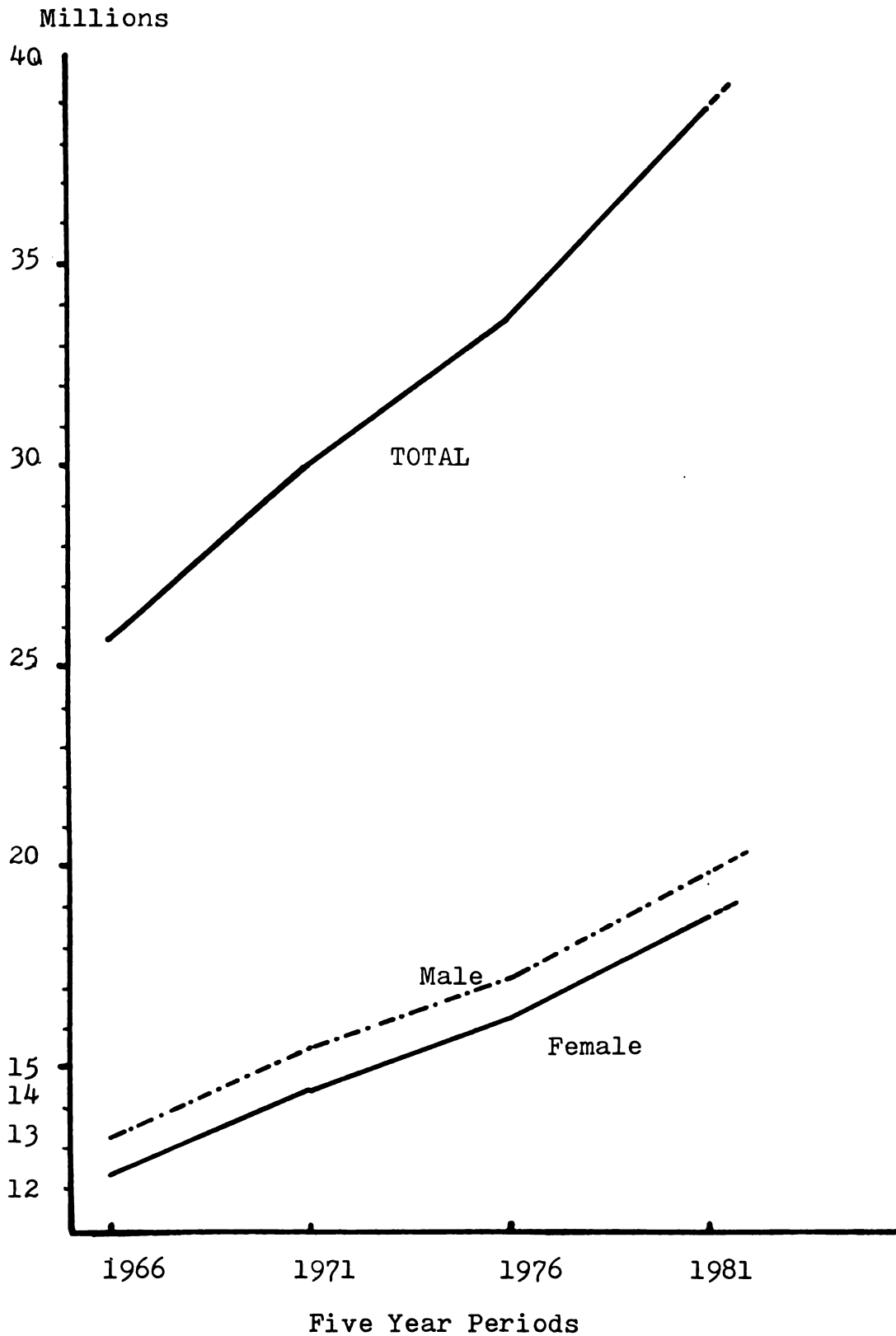


FIGURE 4.11 Diagram of Increase in Projected Population of Iran During 1981 Over Actual Population for 1966, 1971 and 1976 by Sex.

TABLE 4.8 RURAL POPULATION OF IRAN BY SEX AND AGE GROUP
IN 1981

No.	Age Groups	Total	Male	Female
1	0 - 4	4,190,957	2,193,361	1,997,596
2	5 - 9	2,972,271	1,543,981	1,428,290
3	10 - 14	2,996,014	1,556,315	1,439,699
4	15 - 19	2,009,405	947,913	1,061,492
5	20 - 24	1,578,089	692,517	885,572
6	25 - 29	1,279,761	571,537	708,224
7	30 - 34	1,027,435	479,741	542,694
8	35 - 39	829,866	404,512	425,354
9	40 - 44	469,957	54,801	415,156
10	45 - 49	905,282	495,281	410,001
11	50 - 54	744,713	412,844	331,869
12	55 - 59	723,729	414,971	308,758
13	60 - 64	308,247	162,916	145,331
14	65 - 69	294,676	162,237	132,439
15	70 - 74	148,667	78,209	70,458
16	75 - 79	202,656	130,019	72,637
17	80 - 84	50,406	28,230	22,176
18	85 and over	47,149	26,905	20,244
TOTAL		20,774,280	10,356,290	10,417,990
PERCENTAGE		100.00%	49.85%	50.15%

TABLE 4.9 URBAN POPULATION OF IRAN BY SEX AND AGE GROUP
IN 1981

No.	Age Groups	Total	Male	Female
1	0 - 4	2,654,499	1,367,157	1,287,342
2	5 - 9	2,089,151	1,073,521	1,015,630
3	10 - 14	2,290,022	1,218,416	1,071,606
4	15 - 19	2,070,339	1,105,596	964,743
5	20 - 24	1,843,984	957,027	886,957
6	25 - 29	1,486,384	755,974	730,410
7	30 - 34	1,122,115	581,597	540,518
8	35 - 39	881,587	465,155	416,432
9	40 - 44	808,379	439,256	369,123
10	45 - 49	734,957	394,068	340,889
11	50 - 54	617,227	335,388	281,839
12	55 - 59	567,148	312,936	254,212
13	60 - 64	297,125	159,056	138,069
14	65 - 69	220,574	107,691	112,883
15	70 - 74	131,968	64,292	67,676
16	75 - 79	148,327	79,942	58,385
17	80 - 84	62,796	32,119	30,677
18	85 and over	41,781	20,486	21,295
TOTAL		18,068,373	9,469,677	8,598,696
PERCENTAGE		100.00%	52.41%	47.59%

In spite of the fact that by 1981 the total population of Iran is going to increase (compared with the 1976 census), that does not mean that the population of all age groups by 1981 will also increase. According to this projection's results, the population of a few age groups in 1981 will be less than the population of the same age groups in 1976 (See Table 4.10); this point is valid for the urban, rural, female and male populations (See Tables 4.10, 4.11, 4.12, 4.13, 4.14 and Figure 4.12).

The mean age of the population of Iran in 1981 will be 22.93 for the total population, 21.05 for females and 21.38 for males. It will be different for rural and urban residents (See Table 4.15).

Further changes and perspectives of the population of Iran in 1981 are illustrated in Figures 4.8, 4.9, 4.10 and 4.11.

TABLE 4.10 COMPARATIVE AGE GROUP CHANGE IN THE IRANIAN POPULATION FOR 1976-1991

No.	Age Groups	Population		Percent Change +/-	Population 1986	Percent Change		Population 1991	Percentage Change		
		1976	1981			1986	1981		1976	1981	1986
1	0 - 4	5,403,718	6,412,684	18.67	7,707,700	42.64	20.19	9,183,592	69.95	43.21	19.15
2	5 - 9	5,253,080	5,313,152	1.14	6,306,437	20.05	18.69	7,579,997	44.30	42.66	20.19
3	10 - 14	4,301,221	5,313,666	23.54	5,374,275	24.95	1.14	6,378,987	48.31	20.05	18.69
4	15 - 19	3,609,084	4,087,698	13.26	5,049,575	39.91	23.53	5,107,171	41.51	24.94	1.14
5	20 - 24	2,808,756	3,420,961	21.80	3,875,424	37.98	13.28	4,787,351	70.44	39.94	23.53
6	25 - 29	2,105,726	2,755,772	30.87	3,356,160	59.38	21.79	3,802,013	80.55	37.96	13.28
7	30 - 34	1,701,695	2,123,193	24.77	2,779,187	63.32	30.90	3,384,675	98.90	59.41	21.79
8	35 - 39	1,623,273	1,715,328	5.67	2,140,477	31.86	24.78	2,801,812	72.60	63.34	30.90
9	40 - 44	1,667,748	1,682,484	0.88	1,778,393	6.63	5.70	2,219,173	33.06	31.90	24.78
10	45 - 49	1,388,549	1,619,856	16.66	1,634,355	17.70	0.89	1,727,522	24.41	6.65	5.70
11	50 - 54	1,325,800	1,330,526	0.36	1,552,111	17.07	16.65	1,566,003	18.12	17.70	0.89
12	55 - 59	706,827	1,254,795	77.52	1,259,044	78.13	0.34	1,468,723	107.79	17.05	16.65
13	60 - 64	581,199	568,871	-2.12	1,010,030	73.78	77.55	1,013,449	74.37	78.15	0.34
14	65 - 69	348,046	483,743	38.99	473,521	36.05	-2.11	840,736	141.56	73.80	77.55
15	70 - 74	378,495	256,915	-32.12	357,131	-5.64	39.01	349,585	-7.64	36.07	-2.11
16	75 - 79	204,753	281,081	37.28	190,827	-6.80	-32.11	265,264	25.16	-5.63	39.01
17	80 - 85	145,670	119,906	17.69	164,625	13.01	37.29	111,764	-23.27	-6.79	-32.11
18	85 and over	108,508	55,171	-49.15	45,407	-58.15	117.70	62,340	-42.55	12.99	37.29
		33,662,176	38,795,102	15.25	45,054,679	33.84	16.13	52,650,157	56.41	35.71	16.86

** + = means increase * - = decrease

TABLE 4.11 COMPARATIVE MALE AGE GROUP POPULATION CHANGES IN IRAN FOR URBAN AREAS 1976-1991

NO.	Age Groups	Population		Percent Change +/-	Population 1986	Percent Change		Population 1991	Percentage Change	
		1976	1981			1986	1981		1976	1981
1	0 - 4	1,115,844	1,367,157	22.34	1,616,083	44.83	18.33	1,829,171	63.93	33.99
2	5 - 9	1,140,296	1,073,521	-5.85	1,315,055	15.32	22.50	1,554,494	36.32	44.80
3	10 - 14	1,104,982	1,218,416	10.26	1,147,173	3.81	-5.85	1,405,278	27.18	15.34
4	15 - 19	1,024,029	1,105,596	7.96	1,219,734	19.11	10.32	1,148,414	12.15	3.87
5	20 - 24	795,654	957,027	20.28	1,032,891	29.82	7.92	1,139,523	43.22	19.07
6	25 - 29	565,143	755,974	33.76	909,473	60.93	20.30	981,567	73.68	29.84
7	30 - 34	453,596	581,597	28.22	777,630	71.43	33.70	935,525	106.25	60.85
8	35 - 39	418,885	465,155	11.04	596,658	42.44	28.27	797,767	90.45	71.50
9	40 - 44	415,846	439,256	5.63	487,715	17.28	11.03	625,596	50.44	42.42
10	45 - 49	338,088	394,068	16.56	416,384	23.16	5.66	462,319	36.74	17.32
11	50 - 54	319,553	335,388	4.95	390,913	22.33	16.55	413,050	29.26	21.88
12	55 - 59	184,205	312,936	69.88	328,347	78.25	4.92	382,706	107.76	22.29
13	60 - 64	133,375	159,056	19.25	270,145	102.54	69.84	283,449	112.52	78.21
14	65 - 69	76,189	107,691	41.35	117,230	53.87	8.86	119,107	161.33	84.89
15	70 - 74	81,963	64,292	-21.56	90,852	10.84	41.31	98,900	20.66	53.83
16	75 - 79	49,533	79,942	61.39	62,677	26.53	-21.60	88,569	78.80	10.79
17	80 - 85	31,495	32,119	1.98	51,834	64.58	61.38	40,639	29.03	26.52
18	85 and over	23,628	20,486	-13.30	20,891	-11.58	1.08	33,714	42.69	64.57
			9,649,677		10,851,685		14.59	12,419,788		34.32

** + = means increase * - = decrease

TABLE 4.12 COMPARATIVE FEMALE AGE GROUP POPULATION CHANGES FOR IRAN IN URBAN AREAS 1976-1991

No.	Age Groups	Population		Percent Change +/-	Population		Percent Change		Population		Percent Change	
		1976	1981		1986	1991	1986	1981	1991	1986	1981	1986
1	0 - 4	1,050,898	1,287,342	22.50	1,521,736	1,722,383	44.80	18.21	1,722,383	63.89	33.80	13.18
2	5 - 9	1,078,704	1,015,630	-5.84	1,244,139	1,470,666	15.33	15.34	1,470,666	3.63	44.80	18.20
3	10 - 14	971,329	1,071,606	10.32	1,008,947	1,235,952	3.87	-5.85	1,235,952	27.27	15.34	24.28
4	15 - 19	893,885	964,743	7.92	1,064,341	1,002,106	19.10	10.32	1,002,106	12.11	3.87	-5.85
5	20 - 24	737,259	886,957	20.18	957,267	1,056,092	8.04	29.84	1,056,092	43.24	19.06	1.03
6	25 - 29	546,281	730,410	33.70	878,718	948,374	60.85	20.30	948,374	73.60	29.84	7.93
7	30 - 34	421,388	540,518	28.27	722,704	869,447	55.74	33.70	869,447	106.33	60.85	20.30
8	35 - 39	375,056	416,432	11.03	534,161	714,205	42.42	28.27	714,205	90.43	71.50	33.70
9	40 - 44	349,340	369,123	5.66	409,844	525,710	17.32	11.03	525,710	50.49	42.42	28.27
10	45 - 49	292,470	340,889	16.55	360,193	399,930	23.15	5.66	399,930	36.74	17.32	11.03
11	50 - 54	268,610	281,839	4.92	328,498	347,100	22.29	16.55	347,100	29.22	23.15	5.66
12	55 - 59	149,675	254,212	69.84	266,732	310,891	78.21	4.93	310,891	107.71	22.30	16.55
13	60 - 64	126,834	138,069	8.86	234,501	246,050	84.89	69.84	246,050	93.99	78.21	4.92
14	65 - 69	79,883	112,883	41.31	122,883	208,708	53.83	8.86	208,708	161.27	84.89	69.84
15	70 - 74	86,319	67,676	21.60	95,634	104,105	10.79	41.31	104,105	20.60	53.83	8.85
16	75 - 79	42,357	68,385	61.45	53,616	75,765	26.58	-21.60	75,765	78.87	10.79	41.31
17	80 - 84	30,082	30,677	1.98	49,508	38,815	64.58	61.38	38,815	29.03	26.53	-21.59
18	85 and over	24,551	21,295	-13.26	21,716	35,046	-11.54	1.98	35,046	42.75	64.57	61.38
			8,597,794		9,975,143	10,417,990						

** + = means increase

* - = means decrease

TABLE 4.13 COMPARATIVE MALE AGE GROUP POPULATION CHANGES IN IRAN FOR RURAL AREAS 1976-1991

No.	Age Groups	Population		Percent Change +/-	Population		Percent Change		Percentage Change		
		1976	1981		1986	1991	1976	1981	1976	1981	1986
1	0 - 4	1,694,180	2,193,361	29.46	2,677,471	3,277,896	58.04	22.07	43.48	49.45	22.42
2	5 - 9	1,576,216	1,543,981	-2.04	1,999,131	2,440,372	26.83	29.48	54.85	58.06	22.07
3	10 - 14	1,155,697	1,556,315	34.66	1,524,743	1,974,222	31.93	-2.02	70.83	26.85	29.48
4	15 - 19	797,862	947,913	18.80	1,276,356	1,250,464	59.97	34.65	56.73	31.92	-2.03
5	20 - 24	559,930	692,517	23.68	822,899	1,108,025	46.96	18.83	97.88	60.00	34.65
6	25 - 29	444,070	571,537	28.70	706,981	840,086	59.20	23.70	89.18	46.99	18.83
7	30 - 34	382,648	479,741	25.37	617,493	763,828	61.37	28.71	99.61	59.21	23.70
8	35 - 39	404,181	404,512	0.08	506,915	652,459	25.42	25.31	61.43	61.30	28.71
9	40 - 44	479,169	54,801	-88.56	54,827	68,706	-88.56	0.05	-35.66	25.37	25.31
10	45 - 49	414,655	495,281	19.44	485,645	485,878	17.12	0.19	71.28	1.90	0.05
11	50 - 54	408,933	412,844	0.96	493,006	483,414	20.56	19.41	18.21	17.09	-1.9
12	55 - 59	213,872	414,971	94.02	418,966	500,316	95.90	0.96	133.93	20.57	19.42
13	60 - 64	169,628	162,916	-3.96	316,213	319,258	86.41	94.09	88.21	95.96	0.96
14	65 - 69	105,687	162,237	53.51	155,773	302,349	47.39	-3.98	186.08	86.36	94.09
15	70 - 74	110,573	78,209	-29.27	120,015	115,233	8.54	53.45	4.21	47.34	-3.98
16	75 - 79	66,052	130,019	96.84	91,941	141,087	3.92	-29.29	113.60	8.51	53.45
17	80 - 84	47,097	28,230	-40.10	55,704	39,390	18.28	97.32	-16.36	39.53	-29.29
18	85 and over	34,425	26,905	-21.84	16,127	21,822	53.15	-40.06	7.56	18.27	97.32

** + = means increase

* - = means decrease

TABLE 4.14 COMPARATIVE FEMALE AGE GROUP POPULATION CHANGE FOR IRAN FOR RURAL AREAS 1976-1991

No.	Age Groups	Population		Percent Change +/-	Population		Percent Change	Population		Percentage Change		
		1976	1981		1986	1976		1981	1991	1976	1981	1986
1	0 - 4	1,542,796	1,997,596	29.48	2,438,498	58.5	22.07	22.07	2,985,334	93.50	49.45	22.42
2	5 - 9	1,457,864	1,428,290	-2.03	1,849,335	26.85	29.48	29.48	2,257,513	54.85	58.06	22.07
3	10 - 14	1,069,223	1,439,669	34.65	1,410,493	31.92	-2.03	-2.03	1,826,292	70.80	26.85	29.48
4	15 - 19	893,308	1,061,492	18.83	1,429,290	60.00	34.65	34.65	1,400,295	56.75	31.91	-2.03
5	20 - 24	715,913	885,572	23.70	1,052,300	46.99	18.83	18.83	1,416,912	97.91	59.89	34.65
6	25 - 29	550,232	708,224	28.71	875,061	59.03	23.56	23.56	1,040,998	89.19	46.99	18.96
7	30 - 34	444,063	542,694	22.21	698,521	57.30	28.71	28.71	864,059	94.59	59.21	23.70
8	35 - 39	425,151	425,354	0.05	533,034	25.37	25.31	25.31	686,088	61.37	61.30	28.71
9	40 - 44	423,393	415,156	-1.95	415,354	-1.90	0.04	0.04	520,502	22.93	25.37	25.31
10	45 - 49	343,336	410,001	19.42	402,024	17.09	-1.95	-1.95	402,217	17.15	-1.90	0.05
11	50 - 54	328,704	331,869	0.96	396,307	20.57	19.42	19.42	388,597	18.22	17.09	-1.95
12	55 - 59	159,057	308,758	94.12	311,731	95.99	0.96	0.96	372,259	134.04	20.57	19.42
13	60 - 64	151,362	145,331	-3.98	282,081	86.36	94.09	94.09	284,797	88.16	95.96	0.96
14	65 - 69	86,305	132,439	53.45	127,162	47.30	-3.98	-3.98	246,816	185.98	86.36	94.09
15	70 - 74	99,640	70,458	-29.28	108,122	98.53	53.46	53.46	103,813	4.19	47.34	-3.98
16	75 - 79	46,811	72,637	55.17	51,364	9.73	-10.0	-10.0	78,820	68.37	8.51	53.45
17	80 - 84	36,994	22,176	-40.05	43,758	18.28	97.32	97.32	30,942	-16.36	39.53	-29.29
18	85 and over	25,904	20,244	-21.85	12,134	-53.15	-40.06	-40.06	23,944	-7.56	18.28	97.32

** + = means increase * - = means decrease

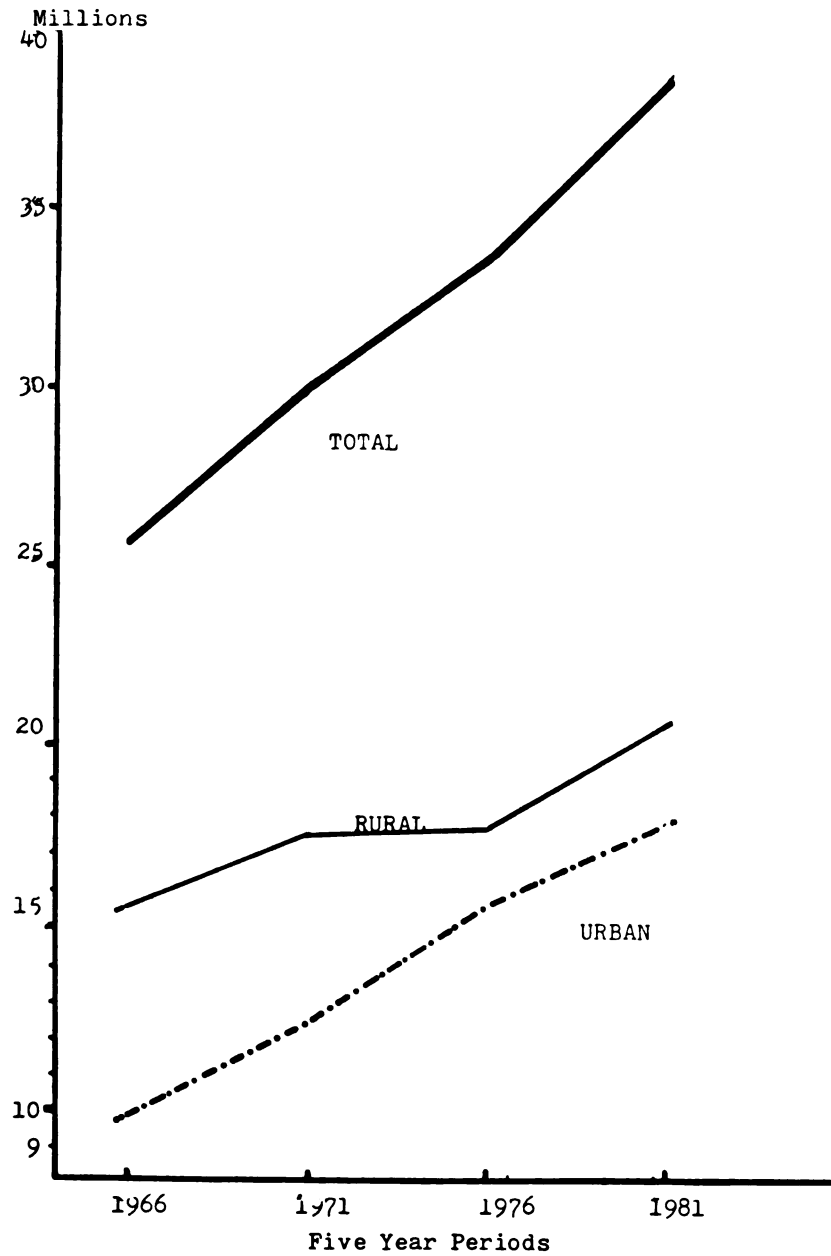


FIGURE 4.12 Diagram of Increase in Projected Population of Iran During 1981 Over Actual Population for 1966, 1971 and 1976 by Residential Areas.

TABLE 4.15 AGE MEANS FOR URBAN, RURAL AND TOTAL COUNTRY
IN POPULATION OF IRAN BY SEX IN 1981

<u>RESIDENCE</u>	<u>SEX</u>	<u>Mean Age</u>
Whole Country	Male	21.38
	Female	21.05
	Total	22.93
Urban	Male	24.01
	Female	24.66
	Total	24.17
Rural	Male	22.07
	Female	22.02
	Total	22.04

RESULTS OF POPULATION PROJECTIONS FOR 1986

Results of the population projections for 1986 show that, compared with 1981, the year 1986 percentage increases for the total population will be higher than percentage increases for 1981 over 1976. In 1986, the percentage increase for the total population will be 16.13 percent over 1981 and 33.84 over 1976 (See Tables 4.10, 4.11, 4.12, 4.13 and 4.14).

Findings from the projection model indicate that the total population of Iran in 1986 will be 45,054,679. Male Iranians will be 51.38 percent of total population, or 23,150,062, and the number of females will be 21,904,617 or 48.52 percent of the total population (See Table 4.16 and Figures 4.13, 4.14, 4.15 and 4.16).

The projection indicates that in 1986 number of Iranian rural residents will still be higher than urban residents, but this could be subject to change because of many socio-economic factors. The population of rural areas will be 24,778,275 and urban areas 20,726,823. From a percentage point of view, 46.00 percent of the population will live in urban areas and 54.00 percent will live in rural areas (See Table 4.17). In the urban population males will still outnumber females, but in 1986 the male population of rural areas will be nearly equal to the number of females. In definite figures, the number of females is still higher than males in rural areas, but the difference is not very high.

TABLE 4.16 TOTAL POPULATION OF IRAN BY SEX AND AGE GROUP
IN 1986

No.	Age Groups	Total	Male	Female
1	0 - 4	7,707,700	4,007,412	3,700,288
2	5 - 9	6,306,437	3,261,320	3,045,117
3	10 - 14	5,374,275	2,824,809	2,549,466
4	15 - 19	5,049,575	2,548,547	2,501,028
5	20 - 24	3,875,424	1,870,549	2,004,875
6	25 - 29	3,356,160	1,608,160	1,748,000
7	30 - 34	2,779,187	1,365,562	1,413,625
8	35 - 39	2,140,477	1,085,015	1,055,462
9	40 - 44	1,778,393	954,300	824,093
10	45 - 49	1,634,355	886,024	748,331
11	50 - 54	1,552,111	852,962	699,149
12	55 - 59	1,259,044	709,003	550,041
13	60 - 64	1,010,030	526,531	483,499
14	65 - 69	473,521	247,389	226,132
15	70 - 74	357,131	181,637	175,494
16	75 - 79	190,827	107,714	83,113
17	80 - 84	164,625	88,831	75,794
18	85 and over	45,407	24,297	21,110
*	TOTAL	45,054,679	23,150,062	21,904,617
	PERCENTAGE	100.00%	51.38%	48.52%

TABLE 4.17 TOTAL POPULATION OF IRAN BY RESIDENTIAL AREA
AND AGE GROUP IN 1986

No.	Age Groups	Total	Rural	Urban
1	0 - 4	7,707,700	5,115,969	3,137,819
2	5 - 9	6,306,437	3,848,466	2,559,194
3	10 - 14	5,374,275	2,935,236	2,156,120
4	15 - 19	5,049,575	2,705,646	2,284,075
5	20 - 24	3,875,424	1,875,699	1,990,158
6	25 - 29	3,356,160	1,583,042	1,788,191
7	30 - 34	2,779,187	1,316,014	1,500,334
8	35 - 39	2,140,477	1,039,949	1,130,819
9	40 - 44	1,778,393	470,181	897,559
10	45 - 49	1,634,355	887,669	776,577
11	50 - 54	1,552,111	889,313	719,411
12	55 - 59	1,259,044	730,697	595,079
13	60 - 64	1,010,030	598,294	504,646
14	65 - 69	473,521	282,935	240,113
15	70 - 74	357,131	228,137	186,486
16	75 - 79	190,827	143,305	116,293
17	80 - 84	164,625	99,462	101,342
18	85 and over	45,407	28,261	42,607
TOTAL		45,054,679	24,778,275	20,726,823
PERCENTAGE		100.00%	54.00%	46.00%

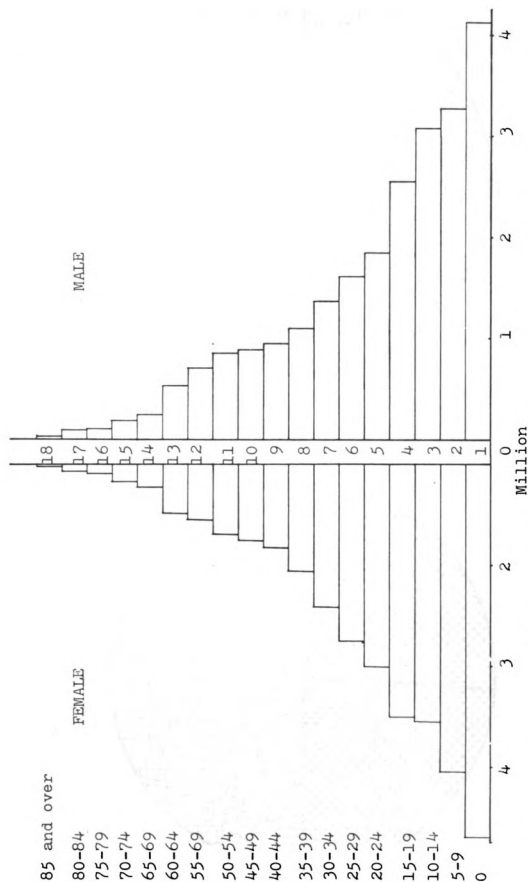


FIGURE 4.13 Pyramid of Projected Population of Iran by Sex and Age Groups in 1986.

MALE

FEMALE

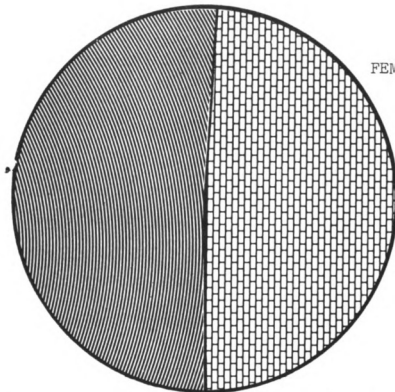


FIGURE 4.14 Distribution of Projected Population of Iran by Sex for 1986

Female

Female

RURAL

URBAN

Male

Male

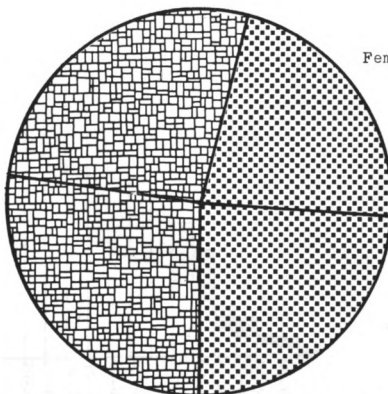
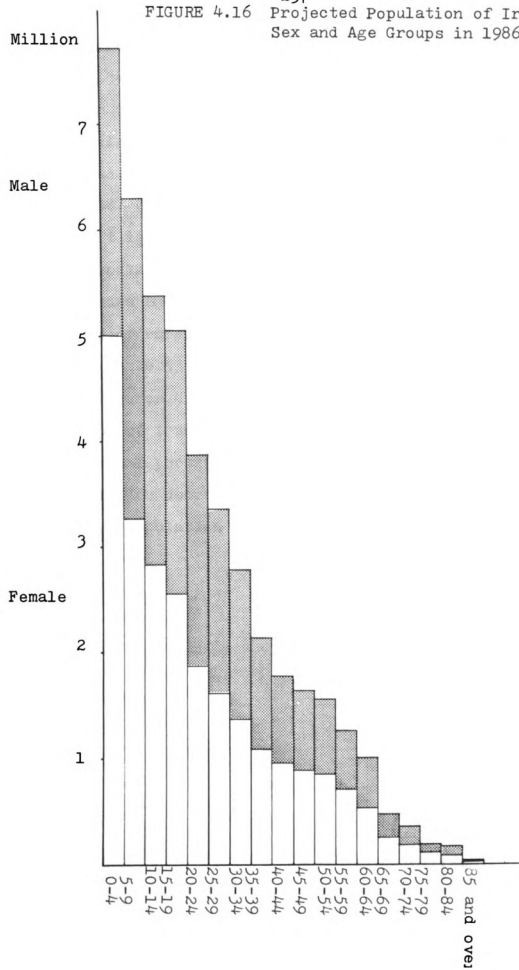


FIGURE 4.15 Distribution of Projected Population of Iran by Residential Areas and Sex for 1986.

FIGURE 4.16 Projected Population of Iran by Sex and Age Groups in 1986



(See Tables 4.18 and 4.19). Among the rural population in 1986 12,340,206 will be males and 12,438,069 will be females. In urban areas, the difference between urban males and females will be greater. The urban male population is predicted to be 10,851,685 and the number of urban females 9,875,138. (See Figures 4.17 and 4.18).

It is important to mention that the mean age for the total population will be 22.92 years; for the male population 23.44 years and for all Iranian females 22.47 years. The mean age of rural residents will be 21.95 and for the urban population 24.53 years of age (See Table 4.20).

Figures 4.12, 4.13, 4.14, 4.15, 4.16 and 4.17 illustrate the shape of Iran's population in 1986.

Total population of Iran will increase in 1986, but there will be decreases in a few age groups of both rural and urban population (See Tables 4.10, 4.11, 4.12 and 4.13).

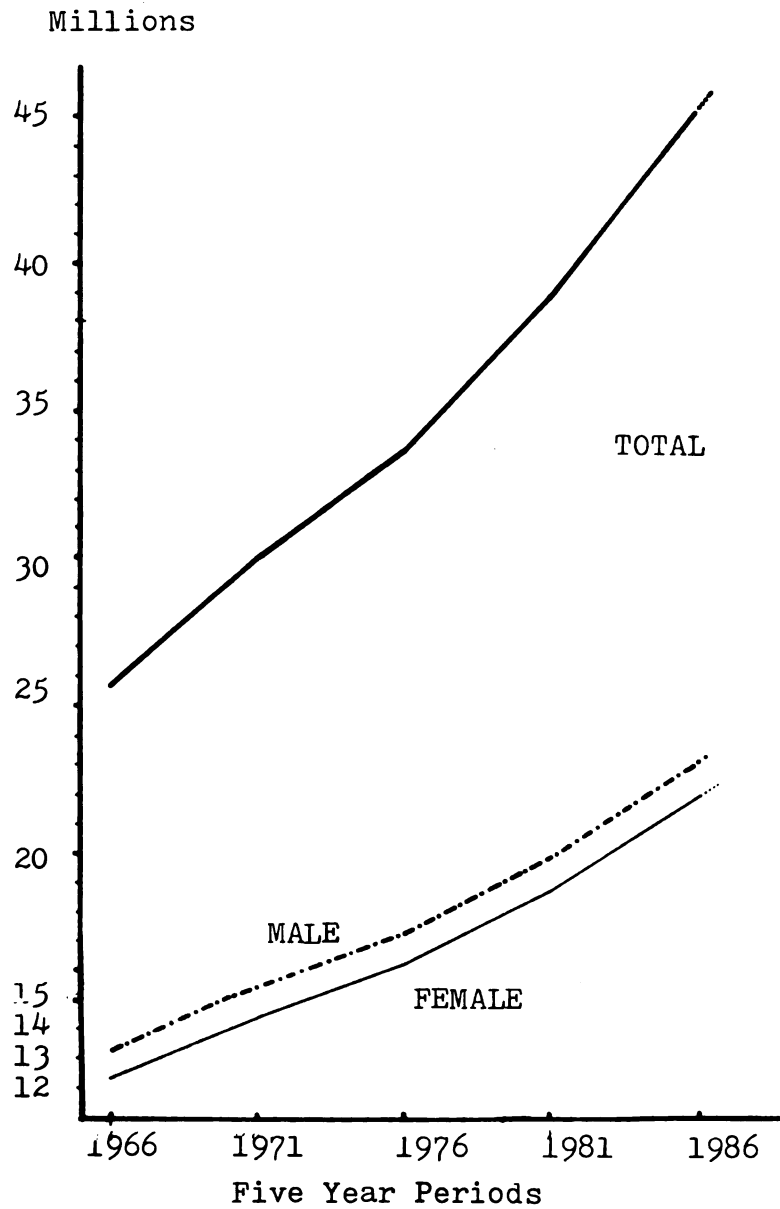


FIGURE 4.17 Diagram of Increase in Projected Population of Iran During 1986 Over 1966, 1971, 1976 Populations by Sex.

TABLE 4.18 RURAL POPULATION OF IRAN BY SEX AND AGE GROUPS
IN 1986

No.	Age Groups	Total	Male	Female
1	0 - 4	5,115,969	2,677,471	2,438,498
2	5 - 9	3,848,466	1,999,131	1,849,335
3	10 - 14	2,935,236	1,524,743	1,410,493
4	15 - 19	2,705,646	1,276,356	1,429,290
5	20 - 24	1,875,699	822,899	1,052,300
6	25 - 29	1,583,042	706,981	876,061
7	30 - 34	1,316,014	617,493	698,521
8	35 - 39	1,039,949	506,915	533,034
9	40 - 44	470,181	54,827	415,354
10	45 - 49	887,669	485,645	402,024
11	50 - 54	889,313	493,006	396,307
12	55 - 59	730,697	418,966	311,731
13	60 - 64	598,294	316,213	282,081
14	65 - 69	282,935	155,773	127,162
15	70 - 74	228,137	120,015	108,122
16	75 - 79	143,305	91,941	51,364
17	80 - 84	99,462	55,704	43,758
18	85 and over	28,261	16,127	12,134
TOTAL		24,778,275	12,340,206	12,438,069
PERCENTAGE		100.00%	49.80%	50.20%

TABLE 4.19 URBAN POPULATION OF IRAN BY SEX AND AGE GROUP
IN 1986

No.	Age Groups	Total	Male	Female
1	0 - 4	3,137,819	1,616,083	1,521,736
2	5 - 9	2,559,194	1,315,055	1,244,139
3	10 - 14	2,156,120	1,147,173	1,008,947
4	15 - 19	2,284,075	1,219,734	1,064,341
5	20 - 24	1,990,158	1,032,891	957,267
6	25 - 29	1,788,191	909,473	878,718
7	30 - 34	1,500,334	777,630	722,704
8	35 - 39	1,130,819	596,658	534,161
9	40 - 44	897,559	487,715	409,844
10	45 - 49	776,577	416,384	360,193
11	50 - 54	719,411	390,913	328,498
12	55 - 59	595,079	328,347	266,732
13	60 - 64	504,646	270,145	234,501
14	65 - 69	240,113	117,230	122,883
15	70 - 74	186,486	90,852	95,634
16	75 - 79	116,293	62,677	53,616
17	80 - 84	101,342	51,834	49,508
18	85 and over	42,607	20,891	21,716
TOTAL		20,726,823	10,851,685	9,875,138
PERCENTAGE		100.00%	52.36%	47.64%

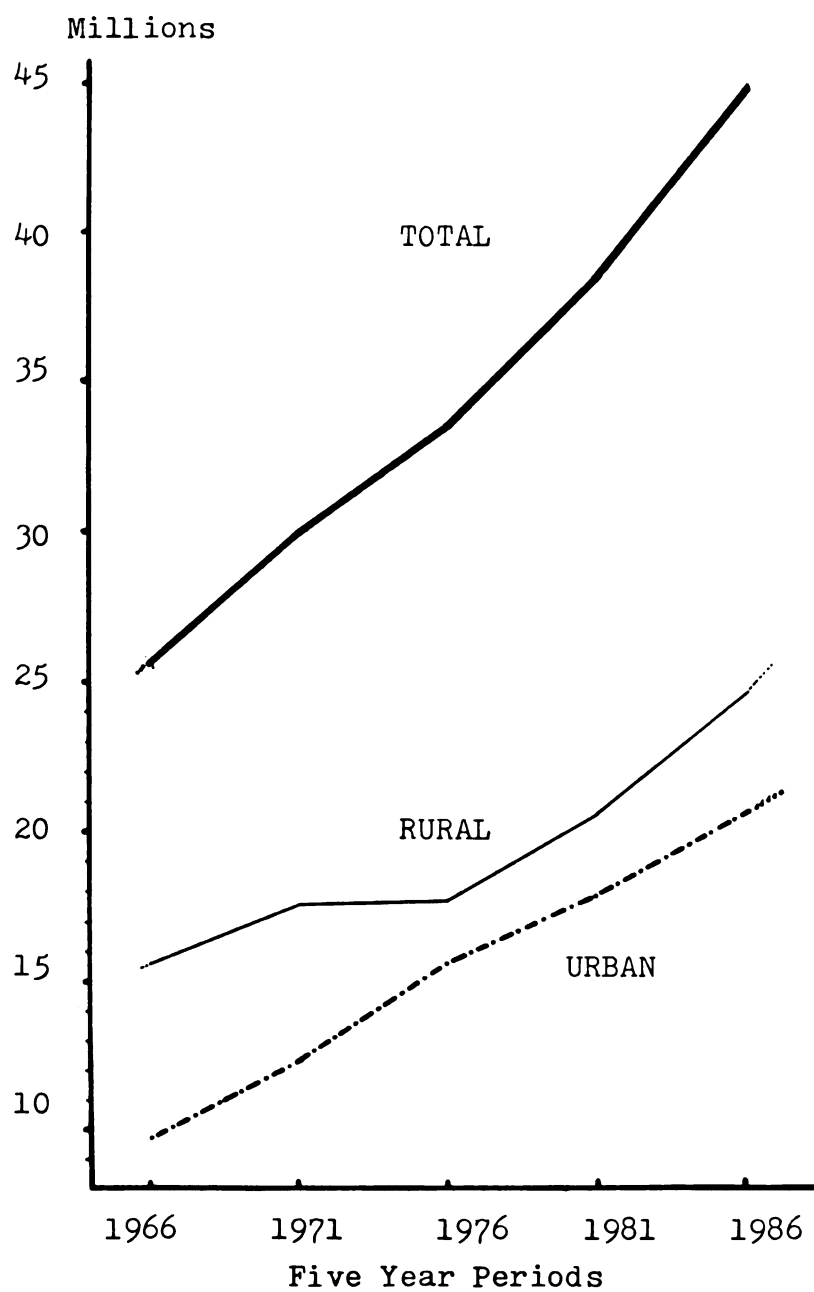


FIGURE 4.18 Diagram of Increase in Projected Population of Iran in 1986 Over 1966, 1971, 1976 and 1981 Populations by Residential Location.

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TABLE 4.20 AGE MEANS OF URBAN, RURAL AND TOTAL POPULATION
OF IRAN BY SEX IN 1986

RESIDENCE	SEX	MEAN AGE
Whole Country	Male	23.44
	Female	22.47
	Total	22.92
Urban	Male	24.97
	Female	24.37
	Total	24.53
Rural	Male	21.68
	Female	21.80
	Total	21.75

RESULTS OF POPULATION PROJECTION FOR 1991

Findings of the population projection indicate that in 1991 the total population of Iran will be 52,650,157 which, compared with 1976, will be a percentage increase of 56.41 percent, compared with 1981 will represent a jump of 36.71 percent and compared with the 1986 population will increase 16.86 percent (see Tables 4.10, 4.11, 4.12 and 4.13). The male population in Iran is projected to be 27,044,814 with a mean age of 22.50, but the total percentage of males in the country will not change and will be around 51.37 percent of the total population (See Figures 4.19, 4.20, 4.21 and 4.22).

In 1991 there will be 25,605,343 female Iranians with a mean age of 21.56 years, and like the 1986 female population, it will be less than the male population. Their percentage will be 48.63 percent of total Iranian or 2.74 percent less than males (See Table 4.21).

It has been projected in this study that in 1991 nearly 55.55 percent of Iranians will live in rural areas and their exact number will be 29,680,013 with a mean age of 21.50 years. In the same year 44.45 percent of Iranians or 23,731,133 persons will live in urban areas with a mean age of 25.52 years (See Tables 4.22, 4.23, 4.24 and 4.25).

In 1991 among rural residents 49.70 percent will be male with a mean age of 21.44 years. Females will be 50.30 percent with an age mean of 21.55 years (See Tables 4.23 and 4.25). For the same year in urban areas, 52.33 percent of

TABLE 4.21 TOTAL PROJECTED POPULATION OF IRAN BY SEX AND AGE GROUP IN 1991

No.	Age Groups	Total	Male	Female
1	0 - 4	9,183,592	4,774,762	4,408,830
2	5 - 9	7,579,997	3,919,931	3,660,066
3	10 - 14	6,378,987	3,352,902	3,026,085
4	15 - 19	5,107,171	2,577,616	2,529,555
5	20 - 24	4,787,351	2,310,708	2,476,643
6	25 - 29	3,802,013	1,821,798	1,980,215
7	30 - 34	3,384,675	1,663,070	1,721,605
8	35 - 39	2,801,812	1,420,248	1,381,564
9	40 - 44	2,219,173	1,190,826	1,028,347
10	45 - 49	1,727,522	926,532	790,990
11	50 - 54	1,566,003	860,596	705,407
12	55 - 59	1,468,723	827,079	641,644
13	60 - 64	1,013,449	528,313	485,136
14	65 - 69	840,736	439,238	401,498
15	70 - 74	349,585	177,799	171,786
16	75 - 79	265,264	149,731	115,533
17	80 - 84	111,764	60,307	51,457
18	85 and over	62,340	33,358	28,982
TOTAL		52,650,157	27,044,814	25,605,343
PERCENTAGE		100.00%	51.37%	48.63%

TABLE 4.22 TOTAL POPULATION OF IRAN BY RESIDENTIAL AREA
AND AGE GROUP IN 1991

No.	Age Groups	Total	Rural	Urban
1	0 - 4	9,183,592	6,263,230	3,551,554
2	5 - 9	7,579,997	4,697,885	3,025,160
3	10 - 14	6,378,987	3,800,514	2,641,230
4	15 - 19	5,107,171	2,650,759	2,150,520
5	20 - 24	4,787,351	2,524,937	2,195,615
6	25 - 29	3,802,013	1,881,084	1,929,941
7	30 - 34	3,384,675	1,627,887	1,804,972
8	35 - 39	2,801,812	1,338,557	1,511,972
9	40 - 44	2,219,173	589,208	1,511,306
10	45 - 49	1,727,522	888,095	862,249
11	50 - 54	1,566,003	972,011	760,150
12	55 - 59	1,468,773	872,575	693,597
13	60 - 64	1,013,449	604,055	529,499
14	65 - 69	840,736	549,165	407,815
15	70 - 74	349,585	219,046	203,005
16	75 - 79	265,264	219,907	164,334
17	80 - 84	111,764	70,332	79,454
18	85 and over	62,340	55,766	68,714
TOTAL		52,650,157	29,680,013	23,731,133
PERCENTAGE		100.00%	55.55%	44.45%

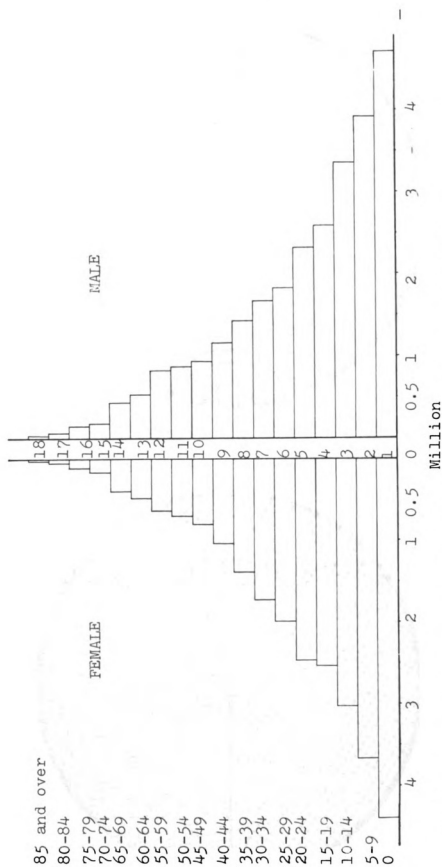


FIGURE 4.19 Pyramid of Projected Population of Iran for 1991 by Sex.

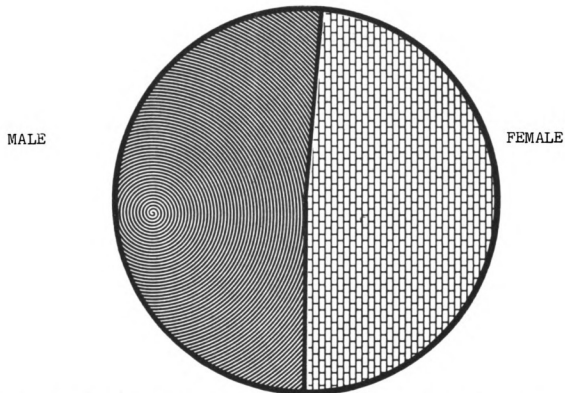


FIGURE 4.20 Distribution of Projected Population of Iran By Sex in 1991

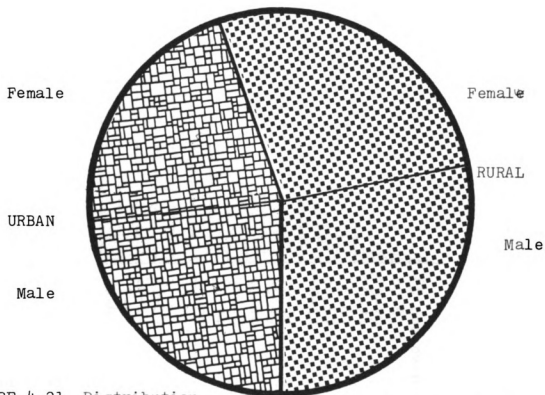


FIGURE 4.21 Distribution of Projected Population of Iran in 1991 by Residential Location and Sex

FIGURE 4.22 Projected Population of Iran by Sex in 1991

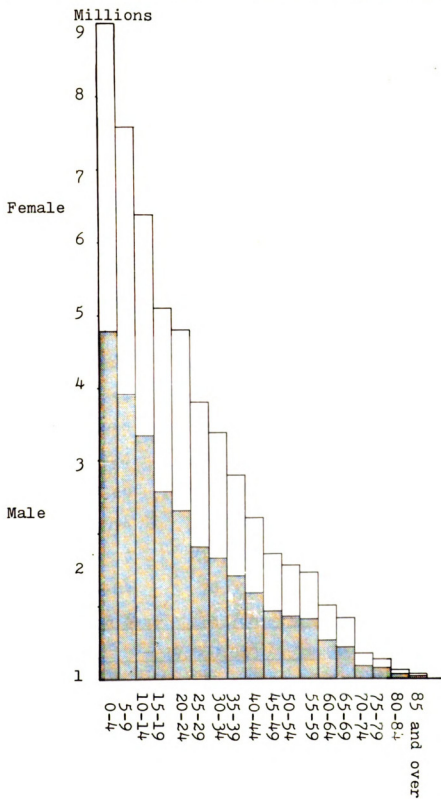


TABLE 4.23 RURAL POPULATION OF IRAN BY SEX AND AGE GROUP
IN 1991

No.	Age Groups	Total	Male	Female
1	0 - 4	6,263,230	3,277,896	2,985,334
2	5 - 9	4,697,885	2,440,372	2,257,513
3	10 - 14	3,800,514	1,974,222	1,826,292
4	15 - 19	2,650,759	1,250,464	1,400,295
5	20 - 24	2,524,937	1,108,025	1,416,912
6	25 - 29	1,881,084	840,086	1,040,998
7	30 - 34	1,627,887	763,828	864,059
8	35 - 39	1,338,557	652,469	686,088
9	40 - 44	589,208	68,706	520,502
10	45 - 49	888,095	485,878	402,217
11	50 - 54	872,011	483,414	388,597
12	55 - 59	872,575	500,316	372,259
13	60 - 64	604,055	319,258	284,797
14	65 - 69	549,165	302,349	246,816
15	70 - 74	219,046	115,233	103,813
16	75 - 79	219,907	141,087	78,820
17	80 - 84	70,332	39,390	30,942
18	85 and over	55,766	31,822	23,944
TOTAL		29,680,013	14,749,815	14,930,198
PERCENTAGE		100.00%	49.70%	50.30%

TABLE 4.24 URBAN POPULATION OF IRAN BY SEX AND AGE GROUP
IN 1991

No.	Age Groups	Total	Male	Female
1	0 - 4	3,551,554	1,829,171	1,722,383
2	5 - 9	3,025,160	1,554,494	1,470,666
3	10 - 14	2,641,230	1,405,278	1,235,952
4	15 - 19	2,150,520	1,148,414	1,002,106
5	20 - 24	2,195,615	1,139,523	1,056,092
6	25 - 29	1,929,941	981,567	948,374
7	30 - 34	1,804,972	935,525	869,447
8	35 - 39	1,511,972	797,767	714,205
9	40 - 44	1,151,306	625,596	525,710
10	45 - 49	862,249	462,319	399,930
11	50 - 54	760,150	413,050	347,100
12	55 - 59	693,597	382,706	310,891
13	60 - 64	529,499	283,449	246,050
14	65 - 69	407,815	199,107	208,708
15	70 - 74	203,005	98,900	104,105
16	75 - 79	164,334	88,569	75,765
17	80 - 84	79,454	40,639	38,815
18	85 and over	68,760	33,714	35,046
TOTAL		23,731,133	12,419,788	11,311,345
PERCENTAGE		100.00%	52.33%	47.67%

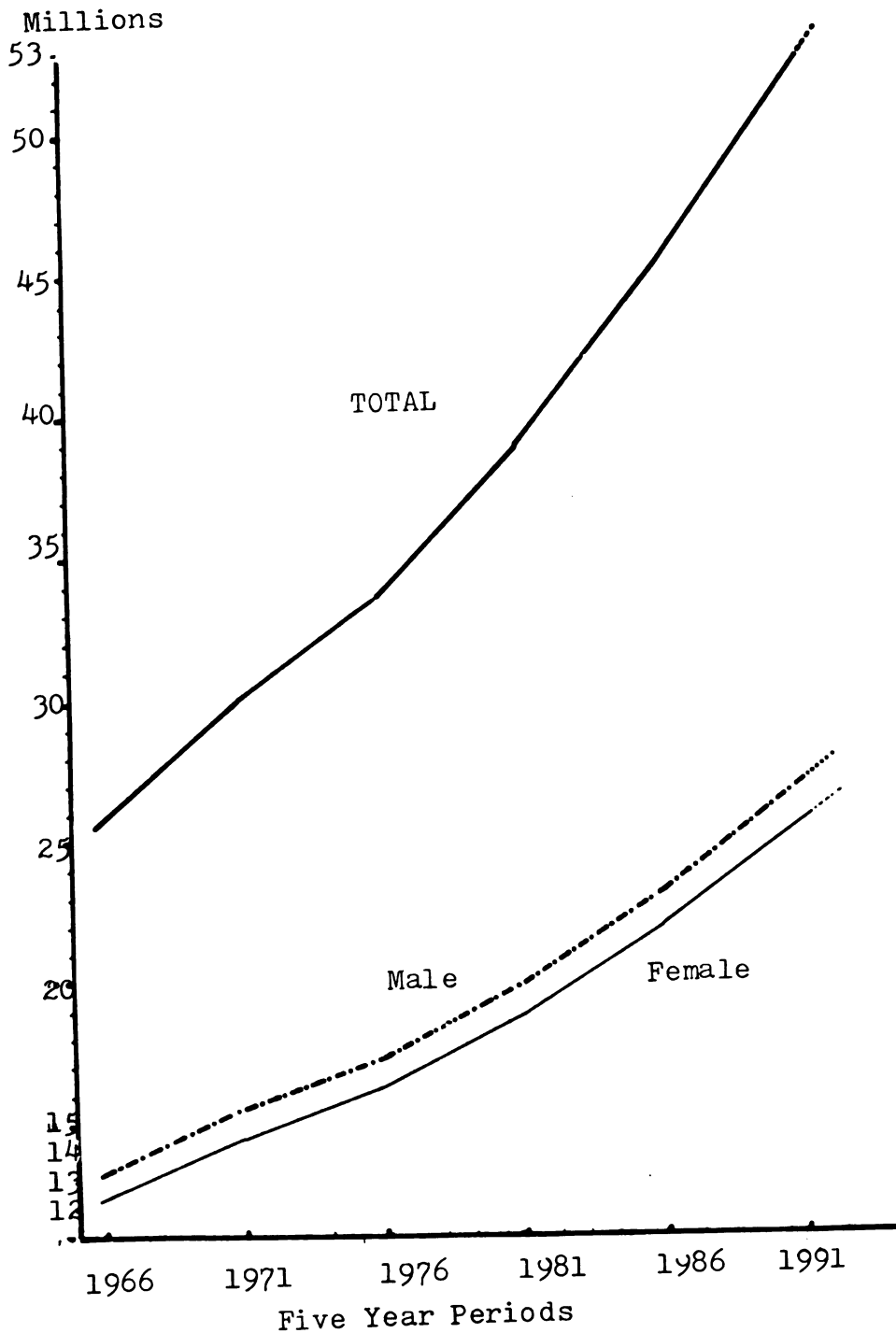
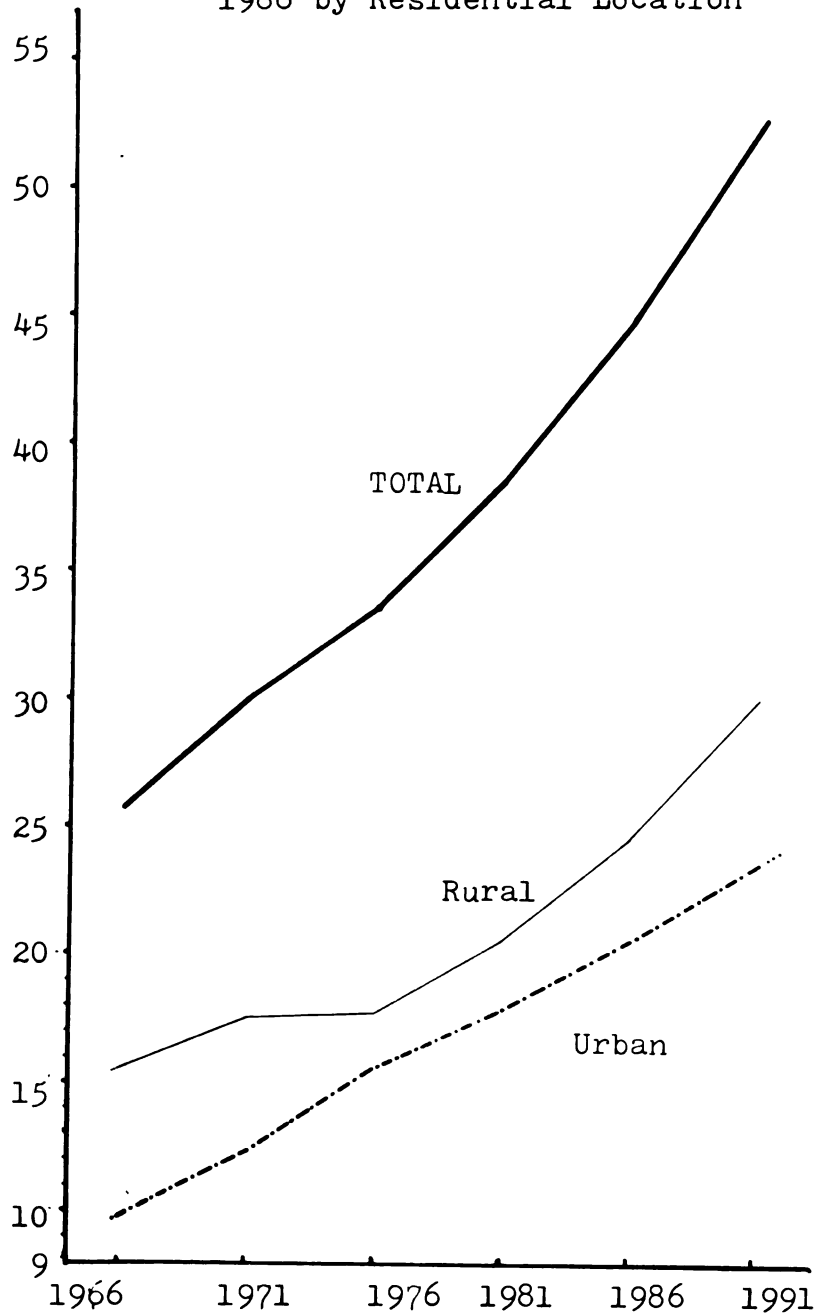


FIGURE 4.23 Diagram of Increase in Projected Population of Iran in 1986 Over 1966, 1971, 1976, 1981 and 1986 by Sex

TABLE 4.25 AGE MEANS OF THE URBAN, RURAL AND TOTAL POPULATION
OF IRAN BY SEX IN 1991

RESIDENCE	SEX	AGE MEAN
Whole Country	Male	22.50
	Female	21.56
	Total	22.35
Urban Area	Male	25.00
	Female	24.73
	Total	25.52
Rural Area	Male	21.44
	Female	21.55
	Total	21.50

FIGURE 4.24 Diagram of Increase in Projected Population of Iran in 1991 Over 1966, 1971, 1976, 1981, 1986 by Residential Location



the urban population will be male with a mean age of 25.00, and 47.67 percent will be female with a mean age of 24.73 years (See Tables 4.24 and 4.25). An important point is that in urban areas the number of males will be greater than females and their mean age is higher too. In rural areas it will be opposite with females out-numbering males **with** a higher mean age (See Tables 4.23, 4.24 and 4.25 and Figures 4.22 and 4.23).

In this study the projected population of Iran (college age groups) for the years 1981, 1986 and 1991 become the basis for projecting applicants for higher education based on past trends of 1966-76. Tables 4.1, 4.6, 4.16 and 4.21 and Figure 2.24 show that population of Iran is and will be a young population. By looking at school and college age groups one can see Iran needs more educational services in general and higher education in particular. In Figure 2.24 lower age groups will continue to be larger than higher age groups and the pyramid of population will continue to be "tree-shaped".

METHODOLOGY FOR THE
SECOND PORTION OF THE STUDY

Second portion of the purpose of this study is, based on past trends, to project future enrollment rates for all post secondary institutions in Iran, as derived from projected college age population figures.

For the second portion of this research study the author employed Ronald Thompson's "Straight line" approach model to project enrollments in higher education institutions. This model uses past enrollment statistics and trends, population projections and year to year births to forecast the number of persons eligible for higher education as well as enrollment in higher education institutions. The main reason for applying this model is that this model is a mathematical model based on a mathematical relationship between the student population in higher education institutions and the total college-age population, which can be derived from the past, present and future population of Iran.

FINDINGS AND RESULTS OF THE SECOND PORTION OF THIS STUDY

Background

In data presented previously, it was shown that in recent years Iran has had substantial increases in population, and also demonstrated that in future years (until 1991) the population will continue to grow. Paralleling this increase in total population is an expected substantial increase in the college age population.

Before mentioning projection results, it is considered desirable to briefly examine past enrollment trends to the post-secondary institutions and trends of secondary school graduates in the country. This is done by considering the growth patterns of the universities, autonomous public institutions, affiliated institutions and other institutions of higher education. From these data one can get an idea of the number of high school graduates, higher education enrollments and number of qualified applicants who passed nation-wide higher education entry examinations for post-secondary education (See Tables 4.26, 4.27 and 4.28 , and Figures 4.25 and 4.26).

From the data presented in Table 4.29 it can be seen that the number of high school graduates increased from 41,076 in 1966-67 to number 185,347 in 1976-77. During this 10 year period the number of high school graduates⁵

⁵High School is grades 10,11 and 12.

TABLE 4.26 NUMBER AND TYPE OF SECONDARY SCHOOL GRADUATES
1963-1976

Years	General Hi School	Technical Hi School	Teacher Training	Total
1963	12,520	1,891	5,219	19,630
1964	23,892	2,383	568	26,943
1965	28,619	2,428	3,533	34,580
1966	34,539	3,008	3,529	41,076 ³
1967	35,472	3,444	4,100	43,016
1968	42,648	3,654	4,965	51,267
1969	50,755	3,848	3,508	58,111
1970	50,886	3,765	2,176	56,827
1971	66,338	6,163	5,300	77,801
1972	71,636	8,306	5,301	85,243
1973	82,216	10,549	8,660	101,425
1974	96,415	13,375	11,238	121,028
1975	101,388	18,811	18,365	138,564
1976	134,610	25,784	24,953	185,347 ³

¹The Academic Year in Iran starts on the first day of Fall (September 23) and ends at the end of Spring.

²Sources: Ministry of Education and Statistical Center of Iran.

³Figures from 1966 and 1976 were used for projection.

Thousand FIGURE 4.25 Diagram of Increase in Secondary School Graduates in Iran During 1963-1976 Period

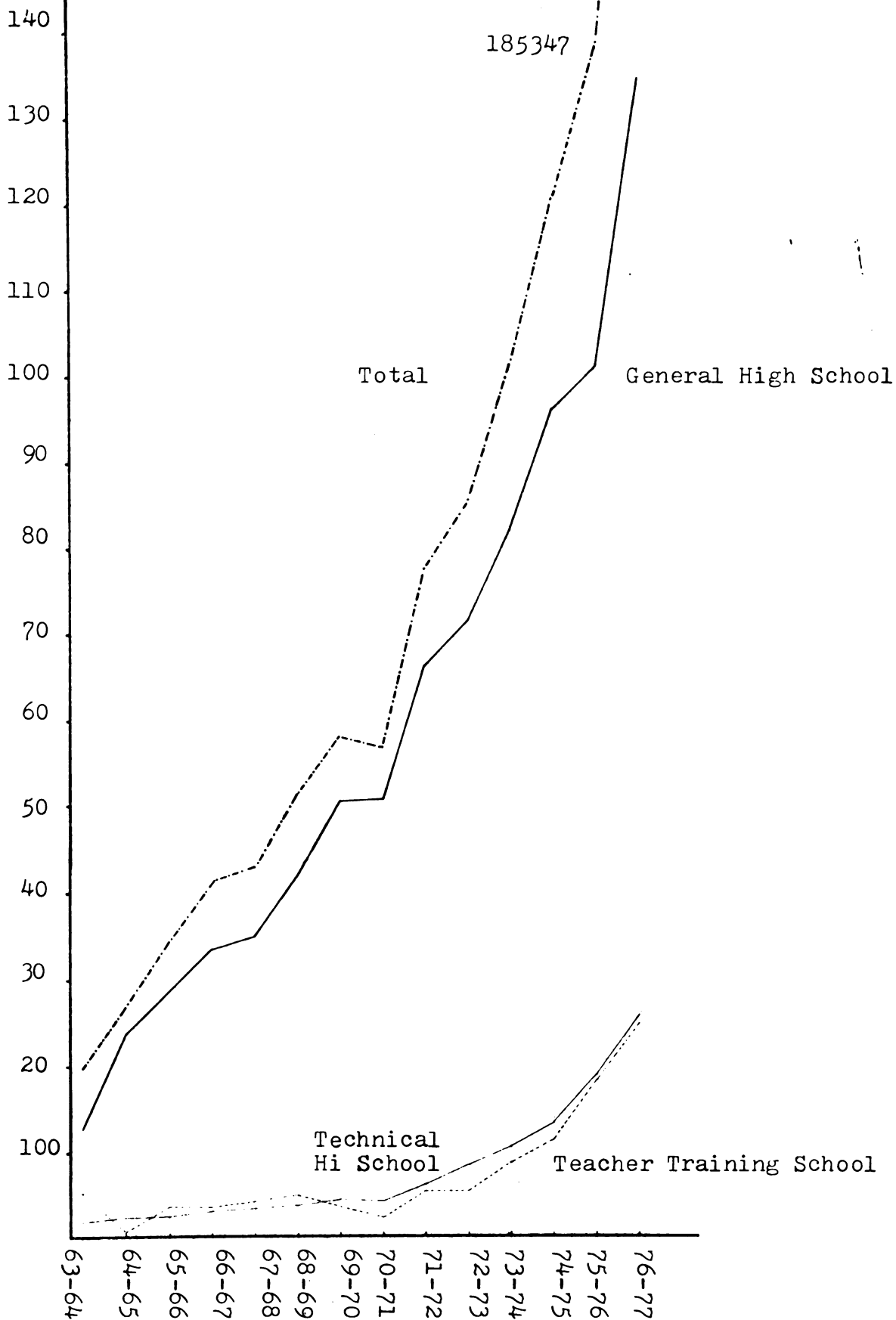


TABLE 4.27 NUMBER OF STUDENTS ADMITTED TO HIGHER EDUCATION INSTITUTIONS BY TYPE OF INSTITUTION AND SEX OF STUDENTS (1969-70 TO 1977-78)

Type of Institution	ACADEMIC YEAR										
	69-70	70-71	71-72	72-73	73-74	74-75	75-76	76-77	77-78		
Total	20,617	21,181	33,034	32,836	36,809	42,411	45,916	40,166	48,286		
Male	--	--	23,443	23,360	24,718	29,781	31,896	26,476	32,566		
Female	--	--	9,591	9,476	12,091	12,630	14,020	13,690	15,720		
Total	9,197	10,640	12,760	11,654	11,563	15,772	16,989	14,382	20,876		
Univer-	--	--	9,826	8,642	8,143	11,424	11,449	9,279	13,739		
sities	--	--	2,934	3,012	3,420	4,348	5,540	5,103	7,128		
Total	2,862	2,084	3,082	3,258	3,599	1,990	2,380	2,485	2,742		
Autono-	--	--	2,635	2,744	3,022	1,750	1,998	1,936	2,307		
mous	--	--	447	514	577	240	382	549	435		
Public	5,049	4,236	9,231	9,788	13,296	13,486	19,308	20,525	22,666		
Insts.	--	--	5,606	6,490	8,009	8,671	13,665	13,749	15,609		
Total	--	--	3,625	3,298	5,287	4,815	5,643	6,776	7,057		
Affili-	3,509	4,221	7,961	8,136	8,351	11,163	7,239	2,774	2,001		
ated	--	--	5,376	5,484	5,544	7,936	4,784	1,512	911		
Insts.	--	--	2,585	2,652	2,807	3,227	2,455	1,262	1,100		
Total											
Male											
Female											

SOURCE: Institute for Research and Planning Science and Education, Tehran

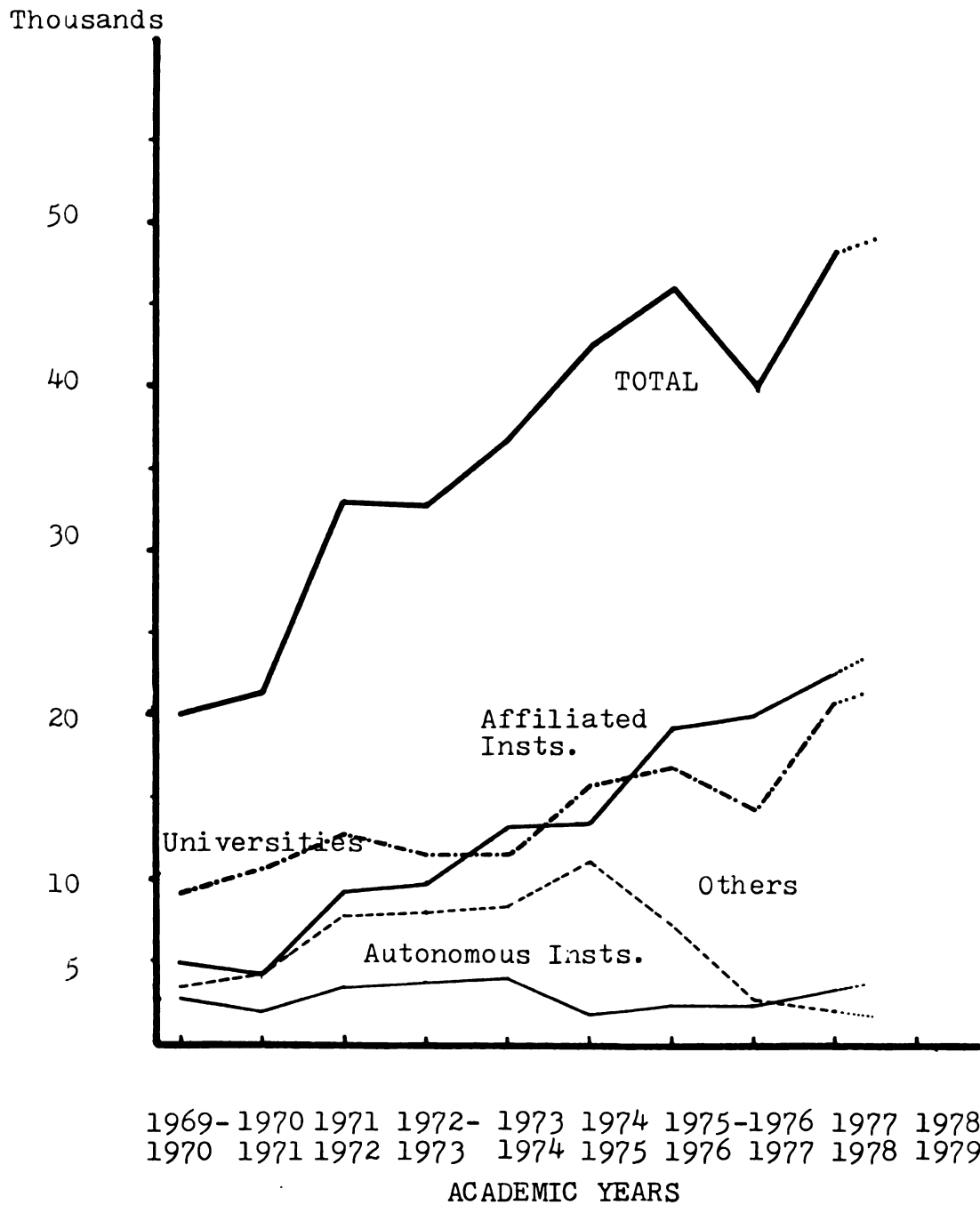


FIGURE 4.26 Diagram of Students Admitted to Higher Education Institutions In Iran by Type of Institution During 1969-78 period.

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TABLE 4.28 COMPARISON OF THE NUMBER OF SECONDARY SCHOOL GRADUATES ACCEPTED AND ENROLLED, HIGHER EDUCATION STUDENTS, 1966-76

Year	Number of Graduates				Post Secondary Ed.	
	Gen. Hi.Sch.	Techn. Hi.Sch.	Teacher Training	Total	Accepted	Enroll- ment
1966	34,539	3,008	3,529	41,076	--	36,882
1967	35,472	3,444	4,100	43,016	--	46,987
1968	42,648	3,654	4,965	51,267	--	58,194
1969	50,755	3,848	3,508	58,111	20,617	67,268
1970	50,886	3,765	2,176	56,827	21,181	74,708
1971	66,338	6,163	5,300	77,801	33,034	97,338
1972	71,636	8,306	5,301	85,243	32,836	115,311
1973	82,216	10,549	8,660	101,425	36,809	123,114
1974	96,415	13,379	11,238	121,032	42,411	135,354
1975	96,175	16,644	17,912	130,731	45,916	151,905
1976	134,610	25,784	24,953	185,347	40,166	154,215

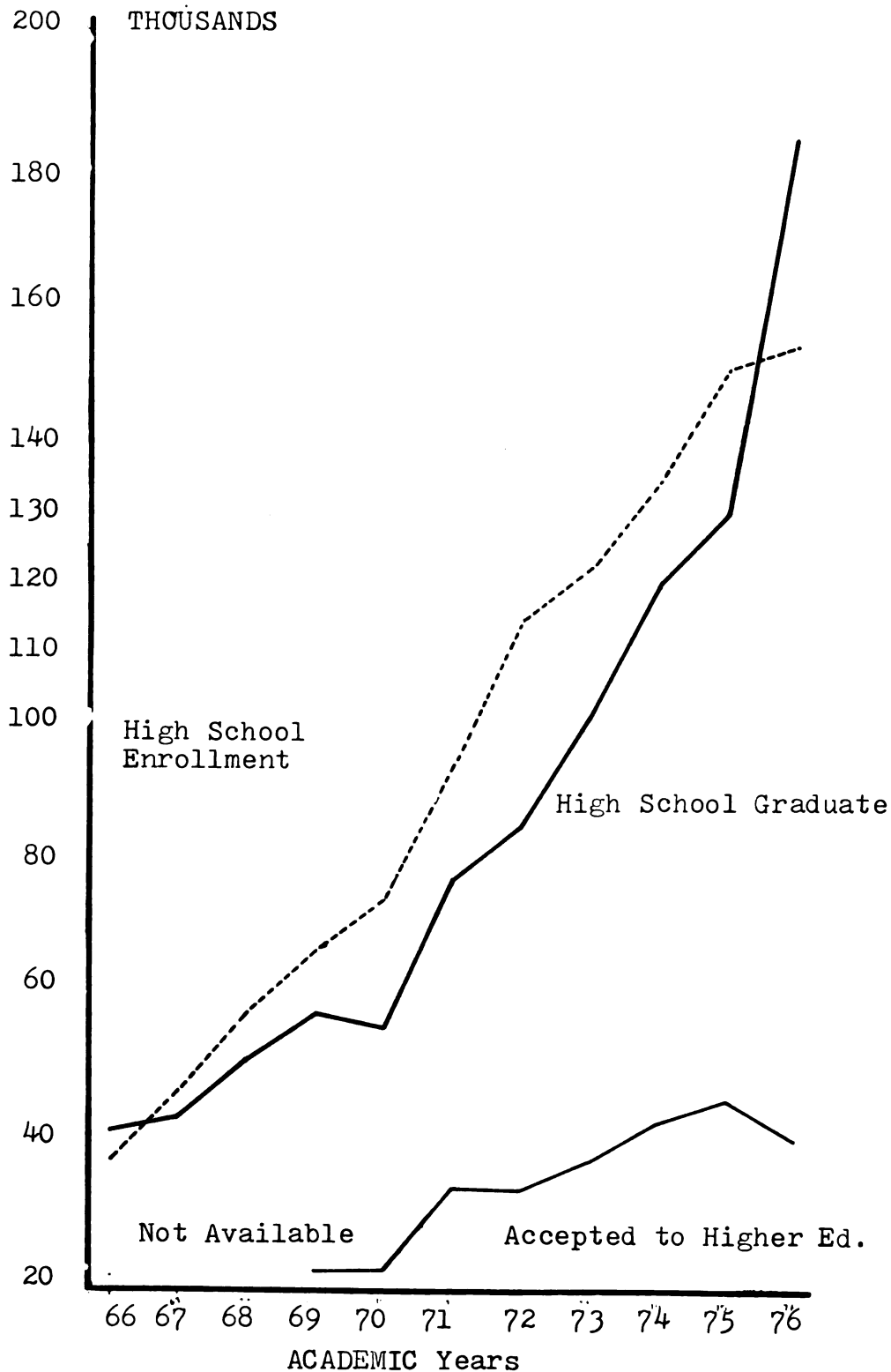
SOURCE: Ministry of Education and Institute for Research and Planning in Science and Education

TABLE 4.29 ENROLLMENT IN IRANIAN HIGHER EDUCATION BY TYPE OF INSTITUTION DURING 1966-1977.

Type of Institution	ACADEMIC YEAR										
	66-67	67-68	68-69	69-70	70-71	71-72	72-73	73-74	74-75	75-76	76-77
Total	36,882	46,987	58,194	67,268	74,708	97,338	115,311	123,114	135,354	151,905	154,215
Male	28,020	34,855	43,124	50,319	55,681	68,469	80,781	87,002	96,720	109,116	108,196
Female	8,862	12,132	15,070	16,949	19,027	28,869	34,530	36,112	38,634	42,789	46,019
Univer- sities	26,822	32,741	37,628	39,444	41,900	44,333	46,777	48,858	58,461	65,372	68,693
Male	21,086	25,451	29,177	31,053	32,380	34,042	35,851	36,869	43,714	46,435	47,550
Female	5,736	7,290	8,451	8,391	9,250	10,291	10,926	11,989	14,747	18,937	21,143
Autono- mous Public Institit- utions	3,462 3,037 425	3,897 3,178 719	7,493 6,169 1,324	9,296 7,702 1,594	9,323 7,632 1,691	10,401 8,707 1,694	12,065 10,276 1,789	13,023 11,141 1,882	7,761 7,086 675	8,904 7,971 933	10,797 9,125 1,672
Affili- ated Institit- utions	2,377 1,667 107	3,685 2,670 1,015	4,983 3,753 1,230	8,233 6,443 1,790	10,905 8,849 2,056	23,334 13,753 9,581	31,684 18,562 13,122	30,979 18,760 12,219	30,669 19,548 11,121	39,816 27,702 12,114	56,799 40,254 16,545
Other Institit- utions	4,221 2,230 1,991	6,664 3,556 3,108	8,090 4,025 4,065	10,295 5,121 5,174	12,580 6,820 5,760	19,270 11,967 7,303	24,785 16,092 8,993	30,254 20,232 10,022	38,463 26,372 12,091	37,813 27,008 13,805	17,926 11,267 6,659

SOURCE: Institute for Research and Planning in Science and Education Tehran, Iran 1978

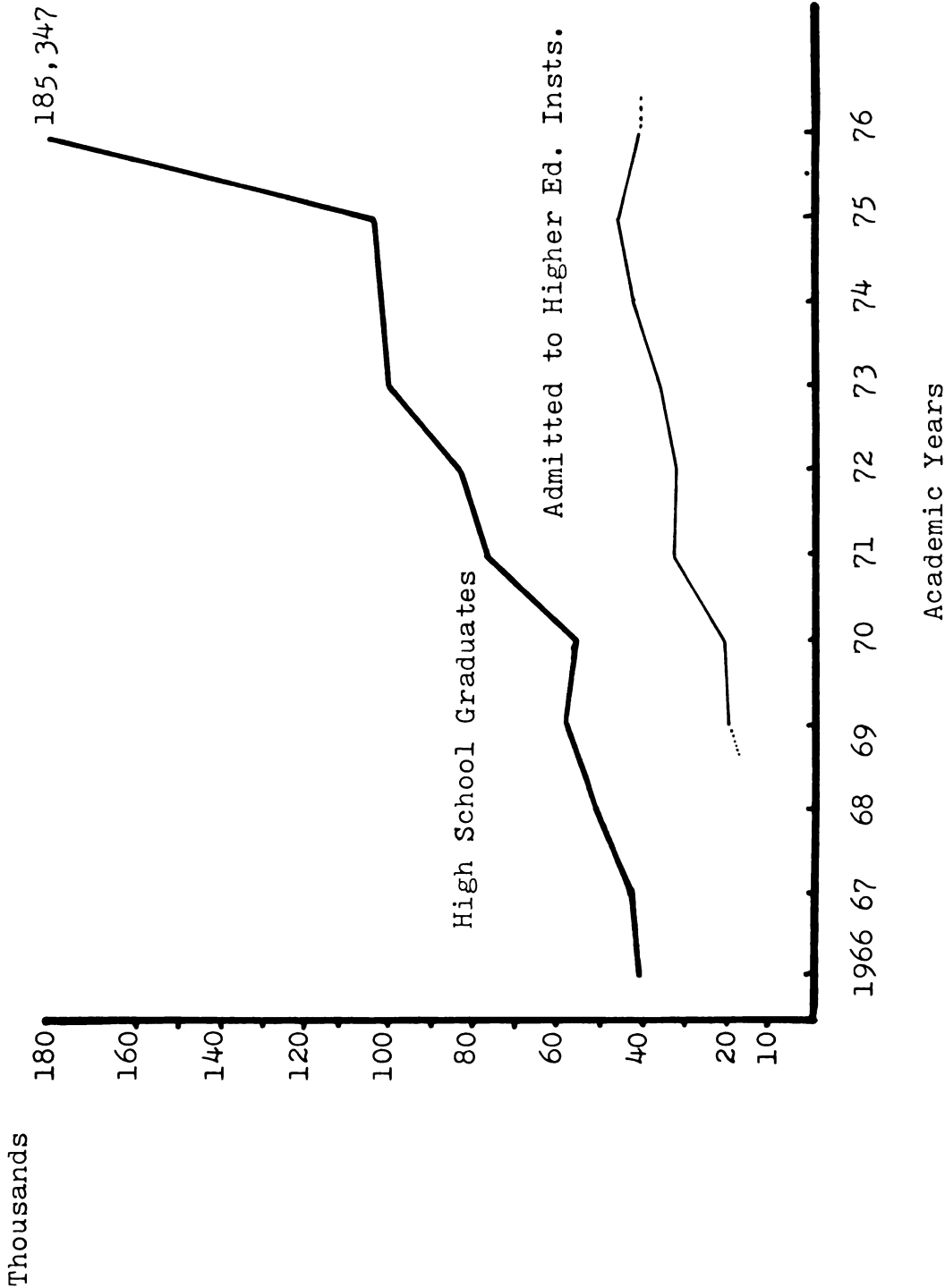
FIGURE 4.27 Diagram of Comparison Between Number of High School Enrollments, High School Graduates and Accepted or Admitted and Enrolled Students of Higher Education During 1966-1977 period.



increased from 41,076 to 185,347 or 450 percent. This growth rate was lower than the population of high school age for that year, also less than the growth rate of high school enrollment.

During this period of time the number of higher education acceptances and enrollments increased, but this increase was not parallel with the number of applicants for higher education, high school graduates or the size of the college age group. (See Figure 4.27). Every year the gap between the college age population, number of high school graduates and those who are accepted for higher education becomes wider. If the current rate of development continues over the long term there will be declining higher education enrollments in comparison with an increasing population of college age and growing demands for higher education (See Figure 4.28).

FIGURE 4.28 Diagram of Comparison Between High School Graduates and Admitted Qualified to Higher Education Institutions During 1966-77 **Period**



Results and Findings

The projections presented in this section make several assumptions which are presented in detail in "Assumptions." The reader must consider and evaluate those assumptions.

A **precautionary** note should also be added that these projections should be regarded simply as "trends" and not as absolute numbers. The more distant the year for which projections are made, the more subject they are to error. Projections for the nation are more accurate than at the provincial level. The task of projecting for different institutions of Iranian higher education is even more difficult, partly because of competition for students, policy decisions of individual institutions and locations of new institutions.

Major changes in the economic, political and social situation could bring about rapid changes in the enrollment levels.

The general trend in college enrollments in Iran is upward (See Table 4.30) and has resulted from:

1. High birth rate in Iran particularly in the early sixties.
2. More children attending primary and secondary school.
3. A higher proportion of students graduating from high school.
4. A higher proportion of high school graduates being admitted to colleges and universities.

TABLE 4.30 PROJECTION OF SECONDARY EDUCATION GRADUATES IN IRAN DURING 1976-1991 BASED ON 1966-1976 GRADUATION TRENDS AND THE PROJECTED POPULATION OF IRAN 1976-91 BY SEX

Year	Data Are	Sex	Total Births 15-19 years Previously	SECONDARY SCHOOL GRADUATES							
				Total	% of Birth	Gen.Hi. School	% of Birth	Techn. Hi.Sch.	% of Birth	Teacher Training	% of Birth
1976	Actual	Total	3,609,084	185,347	5.135	134,610	3.730	25,784	0.714	24,953	0.691
		Male	1,821,891	112,046	6.150	78,814	4.326	21,248	1.166	11,984	0.658
		Female	1,787,193	73,301	4.101	55,796	3.122	4,536	0.254	12,969	0.726
1981	Pro- jected	Total	4,087,698	281,540	6.8875	199,929	4.891	41,000	1.003	39,038	0.955
		Male	2,549,547	208,374	8.173	141,755	5.560	41,685	1.635	24,973	0.8795
		Female	2,024,615	111,576	5.511	85,479	4.222	7,329	0.362	18,799	0.9285
1986	Pro- jected	Total	5,049,575	436,283	8.64	305,600	6.052	65,190	1.291	61,554	1.219
		Male	2,548,547	259,850	10.196	173,123	6.793	53,595	2.103	33,157	1.301
		Female	2,501,028	198,106	7.921	133,105	5.322	11,755	0.47	28,287	1.131
1991	Pro- jected	Total	5,107,171	530,763	10.3925	368,380	7.213	80,693	1.580	75,739	1.483
		Male	2,577,616	314,959	12.219	206,905	8.027	66,296	2.572	41,822	1.6225
		Female	2,529,555	210,737	8.331	162,448	6.422	14,621	0.578	33,719	1.333

5. A higher proportion of persons entering colleges continue to a first level degree (B.A. or B.S.).

These factors will result in an increase in the number of college enrollments from 36,882 in the fall 1966 to 413,539 in the fall 1991. Within this total enrollment the largest increases will be at the affiliated institutions (See Tables 4.31, 4.32 and Figure 4.29).

When enrollments are examined by the type of institution, it is found that the "affiliate institutions" which are related to governmental agencies and offices, will have the largest increases in enrollment. It is estimated that they will increase from about 56,799 students in 1976 to 229,920 in 1991 (See Table 31).

The number of students enrolled in Iranian institutions of higher education was predicted to increase (See Table 4.31 and 4.32). If enrollment follows the predicted trend it can be seen that total enrollment will increase but decrease in comparison with population growth and the growing college age population, increasing numbers of high school graduates and the ultimately skyrocketing demand for higher education. (See percent of births in Tables 4.31 and 4.32, also Figure 4.30). These projections are based on the number of students enrolled at all higher education institutions. These enrollment predictions could change, however, if the capacity of institutions of higher education were substantially increased.

It is anticipated that the proportion of the college age population actually demanding to enroll in institutions of higher learning will continue to increase. For example,

TABLE 4.31 PROJECTED ENROLLMENT IN HIGHER EDUCATION IN IRAN DURING 1976-1991 BASED ON ADMISSION TRENDS (1966-1976) AND POPULATION PROJECTIONS FOR 1976-1991

Year	Data Are	Sex	Total Births 18-24 Years Previously	E N R O L L M E N T									
				Total	% of Birth	Univer- sity	% of Birth	Autonomous Public Inst.	% of Birth	Affiliated Insts.	% of Births	Others	% of Birth
1976	Actual	Total	4,167,875	154,215	3.70	68,693	1.648	10,707	0.257	56,799	1.362	17,926	0.43
		Male	2,016,028	108,196	5.37	47,550	2.358	9,125	0.453	40,254	1.997	11,267	0.559
		Female	2,151,847	46,019	2.14	21,143	0.982	1,672	0.078	16,545	0.768	6,659	0.309
1981	Pro- Jected	Total	4,955,441	188,854	3.811	97,909	1.975	15,761	0.318	99,944	2.017	27,637	0.558
		Male	2,425,653	116,844	4.817	66,560	2.744	13,244	0.546	70,877	2.922	17,961	0.7405
		Female	2,529,788	72,010	2.846	31,349	1.230	2,517	0.0993	29,067	1.149	9,676	0.3825
1986	Pro- Jected	Total	5,336,618	239,063	4.479	127,667	2.39	21,213	0.397	149,709	2.805	37,968	0.711
		Male	2,925,777	153,358	6.267	91,577	3.13	18,696	0.639	112,847	3.847	26,975	0.922
		Female	2,410,841	85,705	3.555	36,090	1.496	2,917	0.121	36,862	1.529	10,993	0.456
1991	Pro- jected	Total	6,945,231	413,539	5.954	181,741	2.616	29,938	0.431	229,920	3.310	56,289	0.810
		Male	3,399,801	262,362	7.717	119,537	4.981	24,886	0.732	162,238	4.772	37,516	1.1035
		Female	3,545,430	151,177	4.264	62,204	1.754	5,052	0.1425	67,682	1.909	18,773	.5295

SOURCE: For 1976, Statistical Center of Iran and Institute for Research and Planning in Science and Education.

FIGURE 4.29 Illustration of Projected Enrollment Increases in Iranian Higher Education During 1976-1991

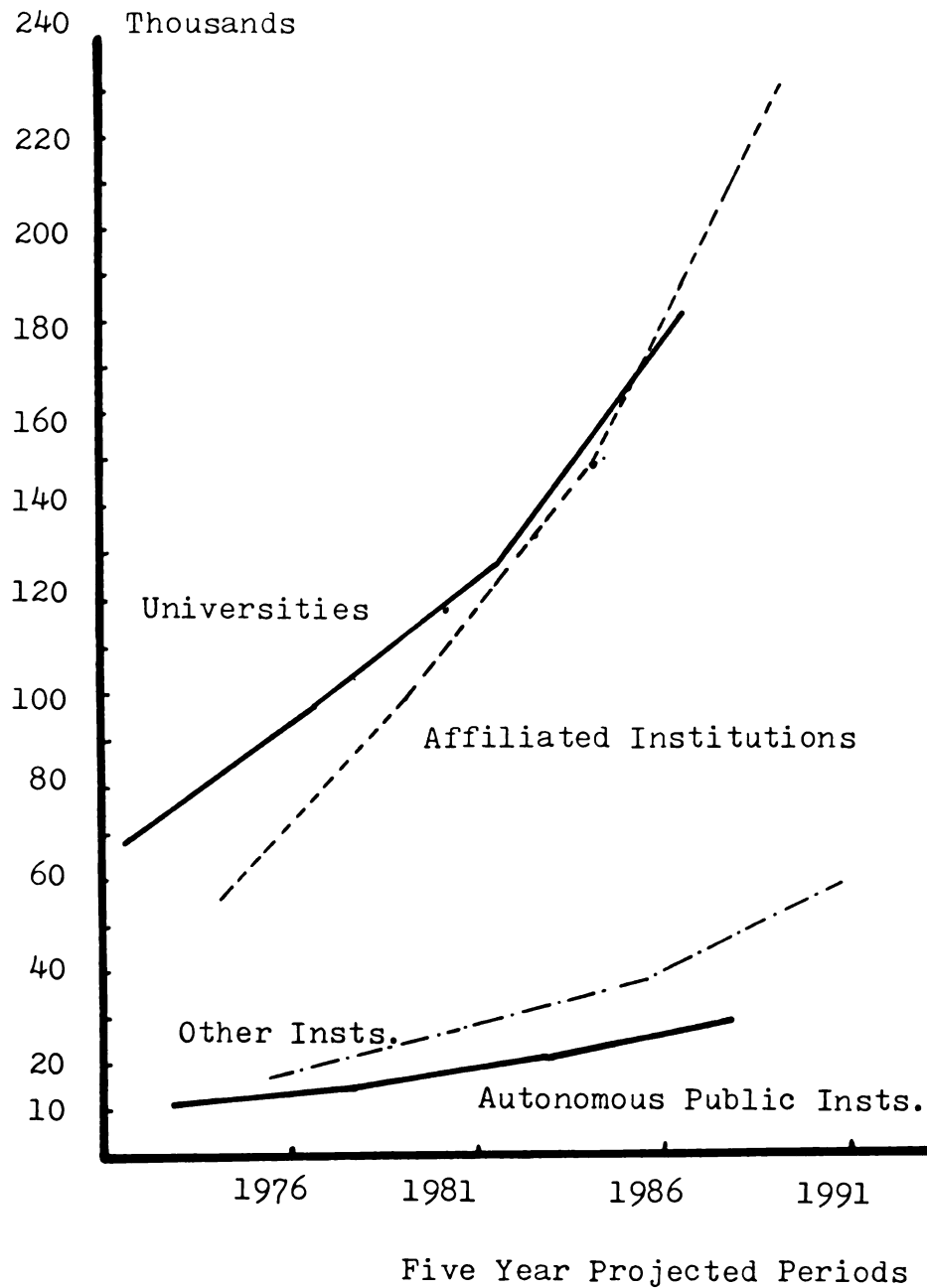
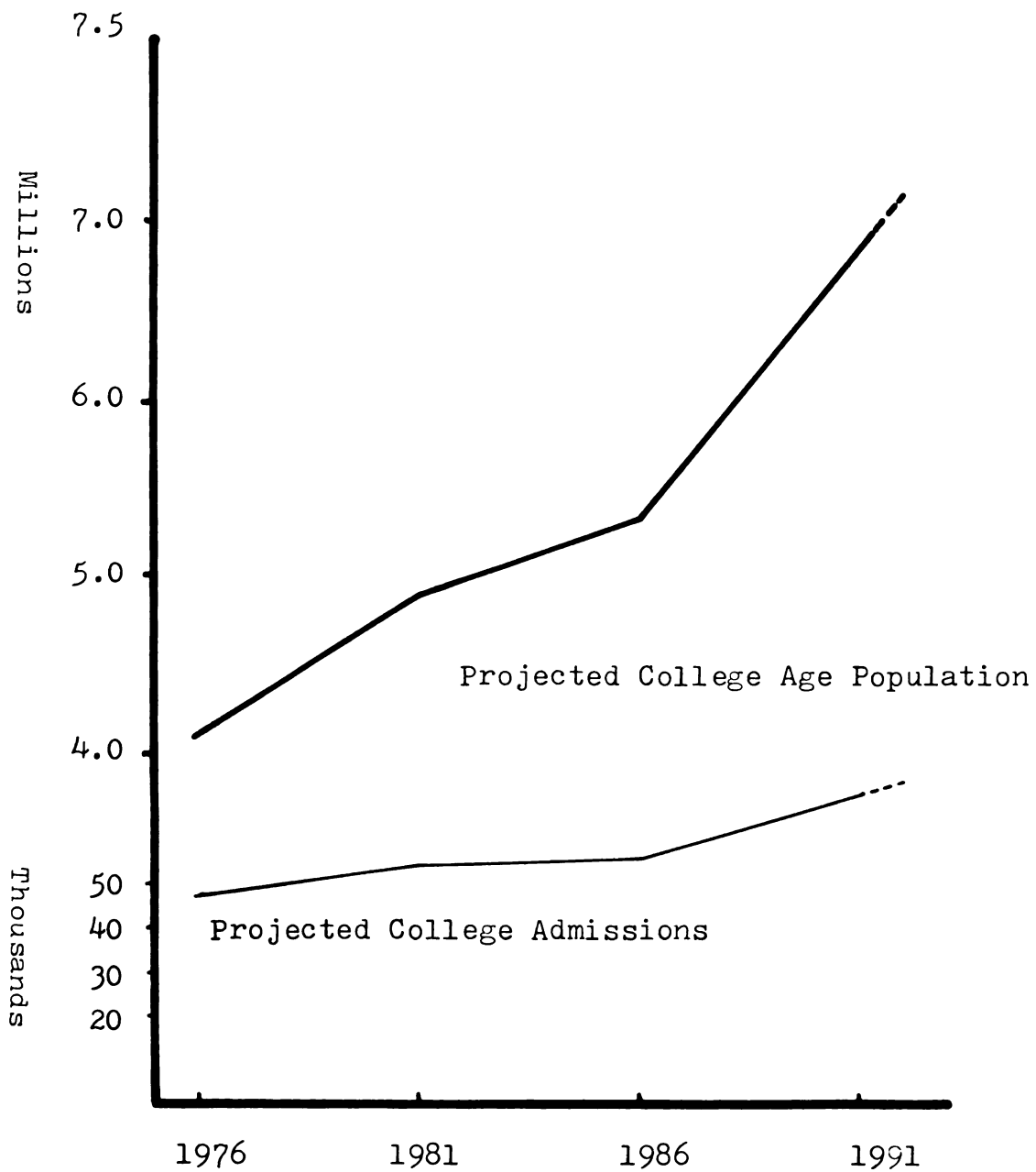


TABLE 4.32 HIGHER EDUCATION ADMISSION PROJECTIONS AMONG THE COLLEGE AGE GROUPS FOR 1976-1991 IN IRAN, BASED ON 1971-76 TRENDS

Year	Total Births 18-24 Years Previously	Admitted by Higher Ed.	% of Births- (College age)
1976	4,167,875	48,286	1.158
1981	4,955,441	55,451	1.119
1986	5,336,618	57,636	1.080
1991	6,945,231	73,133	1.053

SOURCE: Statistical Center of Iran and Institute for Research and Planning in Science and Higher Education

FIGURE 4.30 COMPARING BETWEEN PROJECTED COLLEGE AGE POPULATION AND NUMBER OF PROJECTED ADMISSIONS TO HIGHER EDUCATION IN IRAN (1976-1991)



in 1966 almost 1.35 percent of the computed college age population (18-24 years) was actually enrolled in all post secondary institutions across the country, and five years later (1971) 1.158 percent of the college age population was enrolled. In the years after 1971 a decreasing percent of the college age population is projected to enroll in higher learning institutions (See Tables 4.30, 4.31 and 4.32).

Tables 4.31 and 4.32 show the increase in the number of enrollments but the decrease in the percentage of the college age population enrolled.

The projection results indicate that the number of enrollments are increasing but the proportions are expected to decline during the projection period so that in the late 1980's, if this trend continues, the number of accepted applicants will represent an even smaller proportion of the college age population. In other institutions trends are different. (See Tables 4.31, 4.32, and 4.33). Projections of enrollment for each type of higher education in Iran may be found in Tables 4.31 and 4.33. The universities are expected to increase from 37,909 in 1981 to slightly more than 181,741 by 1991. This is an approximate 500 percent increase over the next 10 years. The number of students in 1976 at affiliated institutions was nearly 57,000, the projected enrollments in 1991 for those institutions were 229,920 which is the highest jump among the various types of higher learning institutions in Iran in 1991. The reason for this is that the sponsors of those affiliated institutions need more skilled manpower.

TABLE 4.33 PROJECTIONS OF ADMISSIONS TO HIGHER EDUCATION IN IRAN DURING 1976-1991,
BASED ON ADMISSION TRENDS OF 1971-1976 AND PROJECTED POPULATION

Year	Data Are	Sex	Total Births 18-24 Years Previously	Total	% of Births	Univer- sity	% of Births	Autonomous Public Insts.	% of Births	Affiliate Institutions	% of Births	Other Insts.	% of Births
1976	Actual	Total	4,167,875	48,286	1.158	20,876	0.5	2,742	0.066	22,666	0.544	2,011	0.048
		Male	2,016,028	32,566	1.615	13,739	0.681	2,307	0.114	15,609	0.774	911	0.045
		Female	2,151,847	15,720	0.731	7,128	0.331	435	0.020	7,057	0.329	1,100	0.051
1981	Pro- jected	Total	4,955,441	55,451	1.119	27,750	0.56	2,180	0.044	35,084	0.708		--
		Male	2,425,653	38,398	1.583	15,767	0.605	1,572	0.0648	24,839	1.024		--
		Female	2,529,788	21,326	0.843	10,397	0.411	404	0.016	10,316	0.4078		--
1986	Pro- jected	Total	5,336,618	57,635	1.08	33,887	0.635	8,805	0.165	48,723	0.913		--
		Male	2,925,777	45,145	1.543	14,921	0.510	97	0.0033	39,103	1.3365		--
		Female	2,410,841	23,698	0.983	12,319	0.511	23	0.011	12,206	0.5063		--
1991	Pro- jected	Total	6,945,231	73,133	1.053	49,311	0.71	--	-0.014	77,648	1.118		--
		Male	3,399,801	51,099	1.503	14,109	0.415	--	-0.058	56,063	1.649		--
		Female	3,545,430	39,815	1.123	21,663	0.611	--	0.006	21,443	0.6048		--

SOURCES FOR 1976: Institute for Research and Planning in Science and Education; and
Statistical Center of Iran

From the data presented in this analysis, it can be seen that the rate of growth for enrollments in comparison to the college age population reaches a high point during the 1980's decade. But the rates of admission (percent of births) are gradually slowing down. If the projections are reasonably accurate, however, the rates of increase are expected to rise during the 1980's. The reason for this is that the base from which the rates are computed has become substantially larger on the one hand and, on the other hand, the first wave of college students who were born during the "baby boom" of the sixties will graduate from high school and demand post secondary education because with socio-economic change the demand for highly educated and skilled manpower is going to increase.

In conclusion, the major emphasis of the second part of this study has been given to the impact of "population explosion" on demand for higher education in Iran and enrollment projections based on trends of enrollment in the 1966-1976 period. There is, however, an even greater challenge facing those who are responsible for planning higher education. This is the challenge of the "explosion of knowledge". It is a legitimate question whether it is possible to improve the quality of existing programmed curricula at a time when the pressures to expand the quantity are so great.

For those in positions of educational leadership in Iran, it is not a question of whether this can be accomplished, but how. For a better understanding of these problems see Figure 4.31 and Table 4.34.

Millions

FIGURE 4.31 Comparison Between the College Age Population and Projected Higher Education Enrollments (1976-1991)

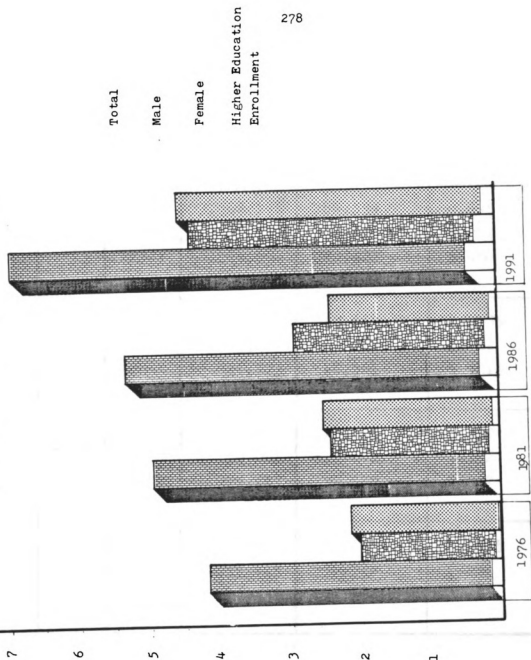


TABLE 4.34 PROJECTION OF POPULATION WITH HIGHER EDUCATION
BY SEX (1976-1991)

Year	Data Are:	Sex	Population	Number Who Have Higher Education	
				Population	% of Total
1966	Actual	Total	26,047,000	109,000	0.418
		Male	13,478,000	92,000	0.682
		Female	12,578,000	17,000	0.135
1976	Actual	Total	33,662,178	284,534	0.845
		Male	17,337,179	208,498	1.202
		Female	16,324,997	76,026	0.466
1981	Pro- jected	Total	38,795,802	410,654	1.0585
		Male	19,973,829	292,017	1.462
		Female	18,821,973	118,861	0.6315
1986	Pro- jected	Total	45,054,679	573,095	1.272
		Male	23,150,062	398,644	1.722
		Female	21,904,617	179,580	0.797
1991	Pro- jected	Total	52,650,157	792,118	1.4855
		Male	27,044,814	536,028	1.982
		Female	25,605,343	238,386	0.931

THIRD AND FOURTH PORTIONS OF THE STUDY

The purpose of the third portion is:

To determine whether there are plans, programs, and budget forecasts for providing higher education facilities, capacities and services for future democratization and development of higher education, in keeping with the future college age population growth rates and demands for higher education.

In regard to the current problems of higher education which include population growth, and the increasing college age population, skyrocketing demand for higher education, the economic, social and political situation and ethnic, cultural and geographical conditions in Iran; the last portion of this study is in conjunction with general economic and social planning. As economic and social development proceeds, modern Iran requires personnel with various levels of knowledge and increasingly specialized types of skills. It would be desirable for the number of students completing their education at various levels to correspond with the demand for their abilities. In order to approximate this goal, there must be appropriate plans and programs. The fourth portion of this study is to investigate the existence of middle manpower development planning which needs to be closely associated with higher education planning.

Methodology

To accomplish the third and fourth portions of this descriptive study the following steps were undertaken:

1. Review of planning documents prepared by the central government and its ministries, affiliated agencies, or organizations related to higher education and development of middle manpower. These planning documents were analyzed on the basis of explicit and implicit criteria and internal consistency.
2. Short interviews with personnel in positions of authority in higher education and manpower development.
3. Experts' round table: the author brought together a group of well known experts in higher education and manpower development as sources for additional information. Each of the experts is well respected for outstanding work in the field.

Findings And Results Of Third And Fourth Portions Of This Study

Background

Despite differences in social and geographic structure and different emphasis in directing the society toward modern and progressive life styles, all administrators in power in Iran have recognized the importance of learning and, having drawn up plans for varying degrees of comprehensiveness, they are endeavoring both to implement these plans and to improve the national planning machinery. While designed to take advantage of rapid economic growth or to establish necessary infrastructure, all plans give considerable emphasis to social and cultural development and stress the importance of raising living standards.

While basic objectives and final aims include such intangibles as the achievement of "a just and prosperous society" and "practices that will strengthen the moral fiber of our nation and reintroduce those values that will invigorate our democracy", the social aims, apart from adequate provisions for education, health and social security, give priority to providing sufficient food, clothing and proper housing for all. They also give special attention to improving living conditions in rural areas generally and in backward regions of the country in particular, and ensuring employment opportunities not in line with population growth, but to cure existing unemployment, in urban areas and the under-employment

predominant in rural areas. It is recognized that, in the short term, such aims with their broad investment of limited resources might conflict with the objective of achieving rapid economic growth, but their implications are more often than not either ignored or met through "ad hoc" measures.

Findings And Results

Efforts were made to compensate for planning deficiencies by instituting a continuous dialogue with Iranian authorities on the subjects examined in this study in general and this portion of the study in particular. A draft version of this research was fully discussed with authorities so as to ensure that its findings would be as realistic as possible and that its recommendations would allow for practical implementation.

In this portion of the study, statements from all usable documents and plans were grouped and analyzed according to the third and fourth portions of the purpose of the investigation.

Higher Education Plans and Programs

The first set of findings listed below pertain to higher education development plans in Iran since 1966. The following are quotes from the Third Plan:

Regarding higher education, the Third Plan aimed at improving university organization and the educational system rather than the development of, and increase in, the number of facilities. Hence no provision was made in the Plan for establishing another university. But as a result of the establishment of new faculties by the public sector, and independent colleges and schools by the private sector, as well as the creation of new specialized branches in existing university, higher education has expanded quantitatively so much that it is anticipated that by the end of the Third Plan, it will be possible to increase student enrollment in Iranian universities to 33,000. (Education in The Third Development Plan, Plan Organization, Feb. 1968, Tehran, p.7).⁶

In the Third Development Plan one can see the emphasis on quality rather than quantity of higher education, despite the unmistakable fact that the population of country was going to increase, the demand for higher education was going to rise, and society's socio-economic situation needed more specialized higher educated manpower. However, planners and the central government administrators were not interested in developing higher education facilities at least parallel with population growth, demand for post secondary education, and the country's needs for manpower educated for different levels.

Even what planners did forecast about the establishment of private colleges was not realized. The results of misplanning and miscalculations in planning have been that year-by-year the number of applicants to higher education

⁶The Third Planning Period was 1963-1968.

becomes more disproportionate to the facilities available and the doors to higher learning are closed to increasing numbers of qualified secondary school graduates who would like to go to colleges and universities.

The constant development of industry, agriculture, public affairs and business administration requires a corresponding increase in the number of graduates and specialists. In other words, social and economic progress necessitates the training of the appropriate personnel to achieve the targets.

All this means that it is essential to increase the number of universities and institutes of higher education and to raise their standards. Special attention has been paid to universities in The Third Plan because the social, economic, and industrial development of the country and the maximum utilization of natural resources would not be possible without a proper infrastructure of scientific research and specialized personnel. (Education in the Third Development Plan. Plan Organization, Feb. 1968).

By reading the second portion of the Third Development Plan, one can realize the contradiction between the second and first sections of the plan. In the second portion of the plan the planners mention future increases in the numbers of graduates, while in the first part they emphasize quality rather than increasing the facilities to meet increasing demand. One might ask how they were able to predict increasing numbers of graduates, based on the serious needs of country, when there have not been any increases in admissions.

During the Third Development Plan, "special attention was paid to socio-economic and industrial development" without

equal emphasis on manpower development for implementing and organizing those development plans equally across the country.

The core of the Fourth Development Plan was the industrial and economic development of Iran. Less attention was paid to higher education but during that period the number of institutions and the number of admitted and enrolled students increased even more sharply than had been expected.

In the planning documents there was not adequate emphasis on higher education development.

Perspectives of development plans of 13 universities and autonomous public institutions during the Fifth Development period were as follows:

As has been indicated (in Table 4.35) the number of students of 13 universities and autonomous public institutions would increase from 44,858 students during the last year of the Fourth National Development Plan (1968-73) to 65,764 students in the final year of Fifth National Development Plan, and during five years, a total of 20,906 students would be added to the number of higher education students, showing an annual growth rate of 9.3. During the same period the number of faculty members will expand from 3,572 to 6,278, which means that within a five year period 2,705 faculty members will be added in those 13 universities and autonomous public institutions of higher education. This is a 15.1 percent annual growth rate. In the same time period (See Table 4.37), the total allocatable budget for current expenditures and improving the quality of those 13 institutions and universities was 33,077 million rials (\$465,873,239 in U.S. dollars). Their total development and expansion budget (fixed and unfixed) is 20,311 million rials (\$286,070,425 U.S. dollars) and the total budget and credit allocated equals 54,115 million rials. If acquiring those predicted budgets is possible, one probably can expect that during Fifth Development Plan, those 13 universities and institutions will achieve acceptable levels of academic standards...

(Report of Institute for Research and Planning in Science and Education To The Sixth Conference on the Evaluation of Revolution in Education. IRPSE. September of 1973. Tehran, pp. 17-18) (Farsi-Persian).

In reality during the Fifth Development Plan the annual allocated budget for higher education increased more than had been expected or dreamed. However, neither the capacity of higher education institutions, the number of admissions and enrollments nor the quality of their instruction and curriculum changed or improved. Instead, administrators lavished uncountable monies in unnecessary and sometimes wasteful ways, which did not have any productive effects on the quality or the quantity of higher education in Iran.

Innovation in Higher Education

Because of vast development in secondary education during the late Fourth and early Fifth Development Plans and unbalanced demand and supplies of highly educated manpower, there is a lack of both quality and quantity and, finally, an unequal distribution of higher education across the country. There is a lack of proper educational facilities of adequate quality. The high cost per student and the absence of qualified instructors have created some problems in the contemporary educational system of this country.⁷

⁷Report of IRPSE to the 6th Conference, p. 39.

TABLE 4.35 NUMBER OF STUDENTS AT 13 UNIVERSITIES AND AUTONOMOUS PUBLIC INSTITUTIONS DURING THE FIFTH DEVELOPMENT PLAN

No.	Universities & Institutions	Number of Students (day)		Number of Faculty Members		Number of Students (Night)	
		Current 1972-73	Planning Goal 1977-1978	Current	Planning Goal	Current	Planning Goal
1	Tehran University	*14,968	17,026	*1,150	1,863	2,335	--
2	Pahlavi Univ.	4,064	5,800	361	622	N.A.	--
3	Isfahan Univ.	2,974	4,050	250	422	1,190	1,400
4	National Univ.	4,781	7,158	318	581	1,077	1,572
5	Jaundi Shapour Univ.	2,424	6,340	182	518	N.A.	--
6	Mashad Univ.	3,630	4,935	306	472	N.A.	--
7	Tabriz Univ.	4,769	5,880	435	631	2,114	3,060
8	Teacher Univ.	2,110	4,600	156	255	1,325	--
9	College of Science And Art	1,880	4,080	168	525	1,797	2,270
10	Tehran Poly Tech.	1,016	1,310	143	131	Does Not	Have
11	Educat.Corp. Teacher University	**587	2,050	30	117	--	--
12	Rezaie Argri. Col.	428	1,000	39	80	Does Not	Have
13	Tehran Business Col.	1,227	1,535	35	61	503	--
TOTAL		44,858	65,764	3,573	6,278	--	--

*Estimated Figures ** This University has also 1225 correspondence degree students
NOTE: After the Islamic Revolution the names of a few of these institutions changed

TABLE 4.36 TOTAL CAPITAL ASSETS AND CURRENT BUDGET OF 13 UNIVERSITIES AND AUTONOMOUS PUBLIC HIGHER EDUCATION INSTITUTIONS DURING THE FIFTH DEVELOPMENT PLAN

Institutions of Higher Education	Program of Higher Education					Under-takings From 4th Plan	Total Allocated Budget (X)
	Current Budget Operational Budgets (X)	Improvement Budget Consumption Budget (X)	Capital Assets (X)	Re-search			
1 Tehran Univ.	14,000	1,900	2,719	350	--	--	18,969
2 Pahlavi Univ.	4,467	715	1,994	68	--	--	7,244
3 Isfahan Univ.	2,277	380	1,196	70	--	--	3,923
4 National Univ.	1,458	243	434	5	104	104	2,243
5 Joundi Shapour University	2,129	1,363	735	--	--	--	4,227
6 Mashhad Univ.	1,763	322	663	--	60	60	2,808
7 Tabriz Univ.	3,750	837	1,613	--	--	--	6,200
8 Teacher Univ.	1,000	432	1,266	--	--	--	2,698
9 College Of Science & Art	686	760	1,065	--	--	--	2,511
10 Tehran Poly-technique	697	91	180	--	60	60	1,028
11 Education Corps. Teacher Univ.	300	554	375	--	--	--	1,259
12 Rezaie Agri. College	345	195	223	10	--	--	733
13 Tehran Bus. Col.	175	21	36	--	--	--	232
TOTAL	33,077	7,812	12,499	503	224	224	54,115

X = 1,000,000 Rials

With these deficiencies in mind, a report was made to the 6th Conference on the "Evaluation of the Revolution in Education" which introduced three different innovative avenues toward increasing the quantity of higher education and also providing for the democratization of post secondary education. These proposed avenues were:

A Rural Health and Medical Training Center

The Bou-Alee Sina University of Hamedan

A Free University of Iran

The first two institutions were planned to be conventional institutions of higher education similar to those already constructed but the third one was planned as a non-traditional institution copied from the British "Open University". Free University was designed to increase the number of higher education students by the application of telecommunications media (radio, television, tele-computer and telephone) and correspondence materials all across Iran.

Planners of the system and those who learned about its success in Britain, France and few other western and non-western nations thought that the system could be productive and constructive in the democratization of higher education in Iran. Unfortunately, they did not consider the socio-economic values of Iranian applicants to higher education and their motivation for going to college. The goals and objectives of the system in Britain and other nations were different from the needs in Iran. There were

problems in technical aspects such as radio, television and telephone coverage. Most important, the efficiency and dependability of the postal service in Iran was not adequate to its tasks and the whole system lacked coordination and cooperation.

As a result, since 1973 the central government has spent millions and millions of dollars and has wasted too much time on plans and agreements for programming and implementation of that so-called university. After a lot of propaganda and lavish spending of the country's higher education budget, which could have been used in more productive ways, still that institution has not been able to register one student.

In August 1973, the Iranian Institute for Research and Planning in Science and Education (IRPS&E) published a book called Educational Revolution in which there are many suggestions and improvement ideas for higher education, but no proven avenues for dealing with the problems. It makes clear what the problems are and discusses what the most productive and effective conditions should be but fails to show how the country should go about moving from where it is now to achieve these productive targets.

In another IRPSE publication called "Preliminary Report on a Long Term Educational Master Plan for Iran" dated August 1975, the fundamental problems are well diagnosed but there are no reliable and dependable development plans to deal with the higher education crisis in Iran.

Despite their lack of reliable planning, programming and budgeting for higher education in Iran, all the plans and "master plans", short or long term, have recognized the importance of planning. That has been the reason for drawing up plans of varying degrees of comprehensiveness, validity and reliability. The planners are in general advertising the need to implement these plans and to improve the national planning machinery.⁸

In later planning documents the projected growth in college age population as well as in the economy is implied by resource availability and a leadership clearly committed to development, however, there are no built-in catalytic agents that ensure sustained progress. Continued expansion will increasingly be dependent on the effects of government policies, the will of rulers and the administration in power for expansive or limited development and appropriate admission and enrollment policies for higher education. The rate and pattern of future expansion will also be influenced by the allocation of resources (particularly financial resources) according to the development plans and choice of techniques in the higher education ministry.

⁸Due to political instability, it was necessary to give up some so-called plans, which in fact were propaganda for the administration and regime in power.

Although there is no priority ranking of the stated objectives in the planning documents, the very high growth rate of more than 50 percent in applicants over the next 15 or 20 years would imply that input and output expansion should be the main goal of higher education planning.

The country's educational efforts are askew and have been strained for a long time. Unless serious and sustained efforts are made to broaden higher education, particularly at the lower levels (which will ultimately improve elementary education) to redirect secondary education so that most of it becomes terminal, and to raise the standards of higher education, Iran will produce more and more unproductive citizens like the current certificate and degree holders who know little and can do little. None of these steps can be taken easily, and no major commitments have been made to bring such fundamental reforms about. Without the means necessary for coming to fruition, the existing plans and recommendations have proven to be of little avail.

While the Civil Service tradition has much to commend it, senior civil servants give too much direction to the country. This conviction that they know best and their corresponding disdain for intellectuals and technically skilled persons prevents normal progress in higher education development and its democratization.

Conclusive data are not available to show the budget necessary to meet the future educational needs of the country at the various levels of education.

Manpower Development Plans

The findings of this portion of study indicate that: the manpower planners have failed to pay adequate attention to the interrelations between investment and manpower. Hundreds of millions of dollars have been allocated for capital investments but not even a few million for training technical workers at the middle manpower level. Similarly, there is no mechanism for assessing the manpower implications of alternative tariffs, taxes and other related government policies.

With regard to middle manpower and technical training, there should be no major efforts to use large enterprises, public, quasi-public and private as training sites and qualified personnel as trainers. What is needed is scientific and accurate methods of training and instructional information. Traditional training has been done before and has failed because trainers simply pass on erroneous information and work methods.

The following excerpts from Planning and Educational documents show that planners were aware of the problems facing the country but unable to determine the methods of implementing reform.

EDUCATIONAL PLANNING AND MANPOWER TRAINING

52 - Increasing the active and occupational involvement of women in economic and social fields is a national necessity. To this end, the following steps should be taken:

- a. The Ministries of Education, and of Cooperatives and Rural Affairs should devise projects to rapidly expand women's general, vocational and social training, especially concerning work in rural areas, to improve their general knowledge, skills and income.

53 - A national council for manpower coordination will be set up to explore the problems of manpower shortage in Iran, and make the data available to educational organizations.

54 - Educational planning should be directed toward the following two aims:

- a. The development of a long-range educational programme to reduce the nations' shortage of skilled manpower between the present time and the end of the Sixth Development Plan.
- b. The mobilization of all existing educational institutions and their expansion to meet the nation's needs for skilled manpower during the Fifth Development Plan.

55 - Planning units within higher education institutions should be strengthened to develop planning orientation. It is recommended that computers be used for this purpose.

56 - Short vocational courses will be arranged, at home and abroad, for Iranian youth who have not been able to complete their education or who have somehow settled abroad.

57 - A scheme should be drawn up and submitted for approval to the Cabinet whereby specialized training courses will be offered to students. Likewise, certificates will be awarded to individuals who have specialized in certain fields either through experience or on-the-job training.

58 - Production and service centers, including factories, hospitals, large farms, etc., should not be neglected as potential training grounds for manpower.

59 - Careful consideration should be devoted to the capacity of foreign universities to train the manpower needed by the nation.

60 - Higher education institutions should make utmost use of their capacity to admit a large number of new students during the second semester of the academic year. Based on studies of various methods to increase this capacity, a plan should be drawn up and submitted for approval to the Central Council of Universities and Colleges.

61 - To increase the efficiency of educational institutions, a larger degree of executive power and autonomy should be given to educational units and regional councils, thereby permitting them to reach decisions quickly.

(The Resolution of the Seventh Conference on the Evaluation of the Revolution of Education. Ministry of Science and Higher Education. Sept. 1974 pp. 29-30)

Despite the preceeding resolutions about educational planning and manpower development, no document was found by this author to mention implementation of these points. If one section of the resolution, such as 54.a, had come to reality, that long term planning would not have remained only printed material on the shelves of IRPSE. It is unfortunate that there were no avenues of support so that the plan could have been put into operation.

It is clear from investigation, document analysis, and explanations of authorities in Iran, that the existing plans for training middle level manpower are badly matched to the actual needs of the economy in a number of ways:

1. The proportions of various levels of training have been wrong. The tendency has been to produce too low a proportion of craftsmen to technicians and of technicians to university graduates, so the resulting pyramid of skills is virtually inverted.

2. Despite an apparent overall surplus in some fields and a large number of high school graduates, there are shortages in certain fields particularly in certain

technical and supervisory level (middle level) posts. The chief shortages in industry have been identified as laboratory technicians, drugstoremen, sawyers, moulders, machine-tool setters, construction machine operators, toolmakers, annealers, temperers, machine maintenance and repairmen in various fields, sheet-metal workers, welders, flame-cutters, most jobs in mining, road construction and agriculture, animal husbandry, botany, computer science (hardware as well as software), and others requiring technical skills. In many cases the jobs are, in fact, filled, but by unqualified or inadequately trained Iranian operators, or qualified foreign experts in those fields in which there were no Iranian for the jobs.

3. There are, moreover, very real but undeclared shortages of trained staff in other fields. The force available for technical advice in agriculture is far too small to meet the Government's aims for agricultural progress. Again, a proportion of one doctor to 4,000 population represents an overall shortage, over and above the maldistribution of doctors between provinces.⁹

There are about 42,000 foreign technicians in Iran.¹⁰ Their presence does not necessarily imply a shortage of the kind of manpower Iran could economically produce, because

⁹That was the average on a national level. On a provincial level the figures are much higher, in some provinces perhaps 10,000 and more per doctor.

¹⁰This figure was for 1977 and early 1978, before the revolution of late 1978.

many are specialists in narrow fields; but clearly most of them should be replaced by Iranians in due course, provided that a proper effort to train their counterparts is made.

Now that the central government has taken over more sections of the economy, and has initiated new organizations (i.e.: co-operatives), there is a considerable shortage of managerial, administrative and organizing skills, especially at the middle and lower levels. The filling of these posts is not necessarily so much a question of increasing the output from education as of providing practical training on a large scale and with a more thorough content.

Despite these facts no clear and really practical plans have been set up to deal with: (a) A maldistribution of higher manpower (i) geographically (ii) between levels of skills (i.e., artisan, technician, university graduates) and (iii) between types of skill. (b) A real shortage in certain skills (doctors, agriculture advisory and research staff, industrial technicians) (c) the need for much more emphasis on practical training of the existing output from the schools and colleges rather than merely expanding that output. In Iran, which is not a socialist society, the Central Government, nonetheless, undertakes directly or indirectly so many economic, industrial and agricultural functions that the need for administrative and managerial training is bound to be acute (d) in addition to these issues of distribution, numbers and practical training

the quality of the educational system itself will need review.

C. General Findings About The Future of Higher Education and Manpower in Iran.

The following observations grow out of a careful review of documents and data analysis; interviews with authorities; and round table sessions in the Summer 1978, the focus of which was to assess the higher education and the manpower dimensions of national developments.

There are several issues close to the surface that government has not paid attention to but will soon have

to face: it will be difficult to stem the outflow of talented people and to speed the return of those who have already left unless more care is taken in assigning them.¹¹

Many people at or near the top of the bureaucracy are repeatedly shifted around, frequently into positions for which they are not qualified. Such instability in job assignment means that a man with professional training has little effective control over his career. Accordingly, if he has options outside the country he will probably pursue them.

The education experts in Iran, as well as this author, interpret the current student unrest as a sign of the students' dissatisfaction with their inability to engage in socio-political discussion or socio-political activities. Higher

¹¹This is during the past regime and before the 1978 Revolution which changed many socio-political conditions.

education cannot be a serious undertaking unless there is room for discussion and criticism that relates to the country's future. Young people want to have an opportunity to participate in shaping it. If the present prohibitions are maintained as tightly as at present, more student unrest is inevitable.

Educated people inside and outside the universities do not have access to reliable information about the course of development as well as the real revenues of the country. Therefore they are unable to assess the strengths and weaknesses of many of the decisions that are made and their outcomes. As a consequence they distrust what they are told and often imagine the worst. The release of more information is necessary if the intellectual class is to be able to make a more constructive contribution to the country's development.

More steps must be made in the direction of decentralized decision-making. One of the consequences of national development plans is that more and more decisions are made by government authorities. Intellectuals and professionals want to use their talents and to perfect them. This is possible only if they are afforded the opportunity to assume greater responsibility.

This author has been impressed by much of what Iran has been able to accomplish within a bare fifteen years. But based on the findings of this investigation and nominal future plans or master-plans, this author is unable to overlook the

fact that there are no satisfactory answers for the manpower problems that loom ahead. There will be more entrants into the labour force than jobs; there will be even more serious imbalance between skills required and skills available; the brain drain will continue and may get worse if the current socio-political conditions continue.

The material in Chapter Five will summarize this study, present conclusions and make some recommendations for further study.

Chapter

Five

Summary

Conclusion

and

Recommendation

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CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

The major problems and purposes of this descriptive study were detailed in the first chapter, and the second chapter was a review of related literature. Chapter Three was devoted to the design of the study and methodology employed by the author. Finally, results and findings of the study were presented in Chapter Four.

In this chapter, central ideas and major elements of the study are extracted from preceeding chapters and presented in a summary of the research, the findings, conclusions, and recommendations for action and further research.

Summary

One of Iran's major social, economic and political problems during the late sixties and seventies has been a high rate of population growth. Aside from any other effects this has created increasing demand for education in general and higher education in particular. The statistical successes

of Iranian secondary schools in recent years is not an issue, but every year the numbers of students completing high school and seeking higher education are increasing sharply. However, the limited capacity of Iranian post-secondary facilities due to a slow rate of development, specific traditional requirements and unreliable selection and admission procedures have created what has been called "a closed door policy",¹ and social, economic and political crisis in the country.

In recent years the lack of highly educated manpower, especially at the lower levels has been realized by authorities in various fields. Therefore there is a high demand for such manpower in the private and the public sector, together with a huge pool of high school graduates who lack employment skills. All of this has created a crisis for central and provincial governments and for the country's economic, political and social progress.

PURPOSES OF STUDY

The four main purposes of this descriptive study were to:

1. Demographically forecast the future population of Iran until 1991 based on 1976's census results. To accomplish this the author modified and implemented Nathan Kiyfitz's Population Projection Model.²

¹Frank Bowles. Access to Higher Education. Vol. I (UNESCO and the International Association of Universities. Paris, 1965)

²Nathan Kiyfitz op.cit.

2. Based on past admission and enrollment trends between 1966-76, to project the number of qualified applicants and also enrollments in all higher education institutions across Iran until 1991. This projection was derived from 1976-1991 population projections, and the author employed Ronald B. Thompson's Enrollment Projection Model.³ This method is based on a direct relationship between the number of children born eighteen to twenty-four years prior to a given year and the number of students attending higher education institutions that year.

3. and 4. To investigate and determine the existence and adequacy of current and future government plans, programs, and budgets for development of higher education institution and facilities to handle the increasing demand for post secondary education. In a related endeavor the fourth portion of this study was to investigate the existence of current and future middle manpower plans, programs and budgets. These have to be closely associated with, and a byproduct of, higher education development plans.

To accomplish the third and fourth portions of this study, the author took the following steps:

1. Review of planning documents prepared by the Central government and its ministries, affiliated agencies, or organizations related to higher education and manpower development. These planning documents were analyzed on the basis of explicit and implicit criteria and internal consistency.

³Ronald B. Thompson, op.cit.

2. Short interviews with personnel in positions of authority in higher education and manpower development.
3. Organization and participation in an Expert's round table. The author brought together a group of highly respected experts in higher education and manpower development as a source of additional information. Each of the experts has done outstanding work in the field but anonymity was promised and must be maintained because of possible political repercussions.

FINDINGS AND RESULTS

Population Projections

The total population of Iran during 1976-1991 is growing sharply. According to the 1976 census the total population of Iran was 33,662,176 persons.⁴ Based on results of population projection in 1981 the total population of Iran will be 38,795,102 an increase of 15.25 percent over 1976. It also has been projected that the population of Iran in 1986 will increase by 16.13 percent over 1981 and 33.84 percent over 1976 and will reach 48,054,679 persons. For 1991 the results of projection show that the population of Iran will be 52,650,157 an increase of 16.86 percent over 1986, 35.71 percent over 1981 and 56.41 percent over 1976.

⁴Statistical Center of Iran, 1976 Census op cit.

Admission and Enrollment Projections

The results of enrollment projections are as follows:

A. High School Graduates:

The results of high school graduate projections, as a basis for higher education admissions, show that the 185,347 high school graduates in 1976⁵ are projected to swell to 281,540 graduates in 1981, 436,283 in 1986 and 530,763 graduates in 1991.

B. Higher Education:

1. Admission Projections: For the academic year 1976-1977 all Iranian higher education institutions admitted 48,286 qualified applicants⁶ which was only 1.158 percent of the college age population in Iran in 1976. It is projected that in 1981 the number of qualified applicants admitted will be 55,451 or only 1.119 percent of the projected college age population for that year. Projected number of applicants admitted to higher education in 1986 will be 57,636 or 1.080 percent of the college-age population of that year. In 1991 there will be 73,133 applicants admitted or 1.053 percent of the college age population for the same year (See Table 4.32).

2. Enrollment Projections: In 1976 the enrollment of all Iranian higher education institutions was 154,215

⁵Ministry of Education Education Statistics, 1978 op cit

⁶Institute for Research and Planning in Science and Education.

students at various levels of post-secondary education.⁷
In 1981, the projected enrollment in post high school education will be 188,854, 239,063 in 1986 and finally, for 1991 the number of projected students is 413,539.

Investigation of Higher Education and
Manpower Development Planning

Results and findings from investigation of plans, programs and budgeting documents related to higher education and manpower development indicated that:

A. In the Third National Development Plan (1963-68) there was no mention of quantitative development of higher education enterprise or middle manpower development.

B. By the Fourth National Development Plan (1968-73) the necessity of development in higher education had been realized. Therefore, in that plan and related documents the development of post-secondary education and development of manpower are mentioned. However, there are no specifics. How or when it is to be done are not clear.

C. The Fifth National Development Plan (1973-78) emphasizes conservative development of higher education and manpower without any reliable criteria for these developments.

⁷Ibid.

CONCLUSIONS

From the prior chapters, some basic conclusions have been drawn which are fundamental in the treatment of population data in the development of a comprehensive national plan. Conclusions have also been drawn about admission and enrollment trends and policies in Iranian higher education institutions. Finally, this study makes clear Iran's need for fundamentally based higher education planning with provisions for manpower needs in the labor market.

Population

Population projections by this study indicate that during 1976-1991 the population of Iran is increasing annually. Projections also indicate that more than fifty percent of the population until 1991 will be under 25 years old, which means the majority of the population will be young and consuming rather than producing. This young population will demand more investment in various services, one of which is education and higher education.

During the same projection period, the population distribution in Iran is going to change. Results show that year by year the rural population will decline and urban population will increase. The size of this population distribution shift is very large, and has several causes. One of those causes is the broad differences between rural and urban life

styles which attracts rural residents, who have not tasted modern life styles until now, to the cities. Another factor is work and the availability of jobs, particularly those jobs which do not require any knowledge or skills.

The increases and shifts in the Iranian population will require many changes in public and private services such as health and social services, housing, transportation, communication, agriculture, industry, food distribution, and even national development planning, programming, budgeting, and implementation. For implementation and operation of any one of these services and the socio-economic development of the country, there must be educated manpower according to the complexity and requirements of the jobs to be done. In this situation population growth need not create an impediment when it can prove to be a constructive and progressive phenomenon if the provisions for training human resources are based on the public interest, convenience, and needs of the province or nation. Population growth, in keeping with modern life styles, will require more educated manpower, especially in Iran which has different ethnic groups with diversity in culture, socio-economic standing, and social life style. The projected population growth and shifts in distribution require prompt and careful consideration by social, economic and political planners and programmers.

Education Enrollments

During the assembly of the projected figures, it became evident that they would show large increases in enrollments at all educational levels during the 1960s, 1970s and 1980s.

The magnitude of the increase was not known, nor was it clear how much of the increase should be attributed to population growth and how much to other unknown causes. There was no question that powerful forces of change were operating to swell enrollment; the questions that remained to be answered were how powerful they were and what their effects would be.

With percentage increases in enrollment far exceeding those in population, there was clear indication that forces in addition to a simple increase in the numbers of children were affecting the educational systems of Iran. A closer inspection of the figures showed this to be true.

In explaining the magnitude of this growth it is important to point out that the growth may come not only as a result of a greater proportion of young people entering educational systems. On the average, students have also continued longer in education. For an explanation of why an increasing proportion of students enter and remain longer in education, it is necessary to consider the causes of enrollment change.

The Causes of Enrollment Change

In the search for causes two basic questions concerning past and future development arise. The first demands definition of the forces responsible for the expansion of education during the past and future decades; the second seeks a reason for the developments that may be expected when the full pressure of population increase, compounded by continued action of those forces, is exerted upon the educational system of Iran. Of these questions, the second does not properly fall within the scope of this study. In regard to the first question the explanation most commonly advanced for the massive enrollment increase, and for the structural and functional changes that have occurred within the system, fall generally into two categories which are related to the concept of enrollment projection. One category of causes is concerned with individual aspirations and the educational opportunities that encourage them, the other is related directly to national planning.

The forces of aspiration which have resulted in educational expansion and increasing demand for higher education have been generated by the opening of new opportunities for advancement through education. Once recognized by students and their parents, these opportunities result in an increased demand for education as a means for achieving personal fulfillment through progress, in other words, in an evaluation of levels of aspiration with respect to

intellectual, social and economic status. The forces of this kind are very important factors in increasing demands for post-secondary as well as general education. In order of the relative power attributed to them, they are as follows:

A. Increase in family funds and in living standards, particularly for persons in the lower middle class and working classes, which have made it possible for parents to provide more education for their children than they had themselves.

B. Industrial development on a large scale which creates demand for technical personnel and other kinds of specialists, including teachers, who have had higher education.

C. An explosion of knowledge, particularly scientific knowledge, which has resulted in greatly increased demand for Iranian scientists and engineers.

D. The inter-related effects of educational progress, increased opportunities of individuals, and national self-sufficiency which have accompanied movements towards economic, technical and industrial independence on the part of government and industry.

E. Greater educational freedom for Iranian female students.

The Effects of Recent Changes on Educational Enrollment

Demand for enrollment at all levels of education, rising to unprecedented heights during the past decade, will continue in the foreseeable future. This has already produced major changes in the size and organization of educational systems in all provinces. The changes of greatest significance to future higher education appear to be these:

1. Primary education has expanded and will continue to expand its facilities, to date without substantial program changes, and has come the closest of any level to keeping pace with demand. This pace is expected to continue in the future until universal elementary education is reached.

2. Secondary education has also expanded its facilities and added new programs while easing restrictions on movement from primary to secondary. This has brought some restrictions on movement from the first cycle of counseling-guiding to the second cycle, and from the second cycle to graduation and on to college. It has experienced enrollment increases and is expected to enroll even higher percentages of the high school age population.

3. Higher education has expanded its facilities in existing institutions and enlarged existing programs, but added few new programs and founded only a small number of new institutions. It has fallen short of satisfying even 20 percent of applicant demand.

4. Higher education has not, however, expanded rapidly enough to accommodate all qualified secondary school graduates and in order to adjust the volume of demand for admission to its capacity, has placed limitations on enrollment. Such limitations are age qualifications (18-24), high school completion and grades and nationwide entrance examinations. Those limitations are by no means new, but they have not been generally employed in all systems of education. These widespread limitations now make it more difficult for Iranian secondary school graduates to enter the higher education program or institution of their choice.

Based on projections, the enrollment in secondary schools, high school graduates and higher education admissions and enrollments all across the country are going to increase. With increased opportunities for elementary and secondary education the gap between the number of qualified applicants and the capacity of higher education institutions (existing and under construction) is becoming wider and wider. Greater opportunities for secondary education will not invariably result in a sharply increased admissions to higher education and change in the current procedures for selecting students for higher education.

Thus this situation will continue to produce the dilemma which is one of the central points of this research study. There has been imbalance between capacity of colleges and universities and the demand of qualified applicants for college education all during the 1960s and 1970s in Iran.

Up to this point reaction to this imbalance by government and private officials has not produced positive, constructive and productive results leading to the democratization of higher education.

Education and Manpower Planning

It is evident that the educational expansion of the past decade has not resulted entirely from the responses of individuals to improved opportunities. In addition, a strong impetus has been provided by central government support and national planning for educational development. In explanation of this the most important factors are usually ranked in the following order:

1. Direct interest and action by the national government to encourage the expansion of educational opportunities which result in manpower development.
2. Stimulation of interest in education and manpower training and support of same by international organizations, regional groups and in some cases, private philanthropy.
3. Expansion of education, as necessary, to train the additional teachers, engineers, and other specialists required by enlarging educational systems, particularly during the period of rapid development in the mid-seventies.

It is important to stress that the various international agencies have contributed greatly to the development of

national planning programs in Iran, particularly the first, second and third ones. They have not only collected and distributed information and supplied advanced technical assistance at various levels, but have also encouraged a great many exchanges of information between Iran and countries with similar educational problems.

With respect to national development plans, reports and documents have been issued by the central government. Many of these documents, unfortunately are restricted in circulation or have gone out of print and were not available for examination by the author. Some were printed but never implemented and the few which were implemented were not controlled or their results were unavailable for other reasons. Nevertheless, the five national development master-plans and some other independent plans obtained made it clear that direct government action, for political, economic and social reasons, is certain to produce continuing change in educational organizations, development of human resources based on the predicted needs of the country, and continuing increases in enrollment. Of particular interest in some of the plans was a fundamental, though sometimes unstated, emphasis on universal education which would provide for all school age children, regardless of socio-economic status, ethnic background, sex or residential location, the highest level of education for which their abilities equip them and they seek.

The national master plans also emphasized the development of manpower the country needs. Of more immediate importance, a commitment to manpower planning is inescapably a commitment to the expansion of education. It is particularly a commitment to enlargement of post-secondary education at the lower or junior college levels of which there was no mention in the master plans. If such institutions were mentioned the plans merely emphasized the need, and did not mention implementation or organization for operation.

Essentially the point is that the expansion of education (elementary and secondary) has created and will continue to create a whole new group of problems affecting the movements of students between various levels of education. It is these problems with which the recommendations of this chapter are concerned.

RECOMMENDATIONS

In Iran a veneer of so-called "progress", "modernization" and trappings of "the great civilization" in the form of industrial and technological developments provide a superficial gloss hiding the social disorganization, a functional disorder symptomized by youth rebellion and unemployment, severe pockets of hidden poverty, illiteracy, drug abuse, rising crime, widening gaps in educational opportunity, quality and quantity, disagreement over the country's military

spending, manpower shortages, and ad-hoc solutions. In the center of this socio-economic and political crisis there is an educational system which is unresponsive to the needs of the country's youth, on one side, and, on the other, unresponsive to the socio-economic needs and necessities of the country.

In Iran, as well as in any other country, the nation's greatest resource is the sum of individuals available and the diversity of their talents. It has become obvious that Iran has no clear reliable policy for the development of post high school education and manpower training programs. Its maximum development must become the first priority of education, especially higher education, and manpower policies. Each time an administration in power fails to achieve the maximum potential of its citizens, to whatever degree, there is a loss to the nation and to the world.

Education for the assumption of a contributory adult role is not the only solution to Iran's social crisis. It is in the schools and colleges (particularly colleges), however, that the prevention of this waste must begin. It is through new types of higher education systems, in cooperation with other social agencies, that the tragic cycle of poverty, inadequate education, and youth rebellion can best be fought, for it is by learning that skills are acquired, attitudes developed, a desire for knowledge born, and hope created or aborted.

There are a lot of things wrong with the current system of higher education. What John W. Gardner wrote in "Quality In Higher Education"⁸ is valid for Iran.

First, a...society, such as ours...calls for the maximum development of individual opportunities at all levels. Many (Iranians) still regard education as a luxury, a high minded activity which is all right, if society can afford it. This is strictly a 19th century view. Today we cannot afford not to have it. It is an absolute bedrock necessity, central to our present strength and to our future growth...

We must never assume that youngsters who are not equipped to attend the intellectually demanding colleges are incapable of rigorous attention to some sort of standards. One of the most appalling and unhappy errors that we can make is to assume that youngsters incapable of the highest standards of intellectual performance are incapable of any standards whatsoever and can properly be subjected to a slovenly educational regime. Though we must make enormous concessions to individual differences in aptitudes, we may properly demand that every form of education be such as to stretch the individual to the utmost of his particular potentialities.⁹

⁸ Ibid. p.31

⁹ John W. Gardner. "Quality In Higher Education" from Perspectives on the Community-Junior College. Edited by William K. Ogilvie and Max. R. Raines. Appleton Century Crofts. Educational Division. Meredith Corporation, New York, 1971). p.30.

Because of the importance of education's impact on society for change, political and government leaders, administrators and planners have maintained the gap between education and society fearing that if they were united, the outcome might cut off the roots of dictatorship, create a demand for freedom and civil rights, bring about an awareness of Iran's political, social, and economic conditions and ... "Revolution."

In the new era and in the future education cannot be divorced from society, since the society not only provides the intellectual and value framework within which education takes place, but also limits the means available for individual learning. The extent to which individuals are able to participate in education, especially at higher levels, is determined by the society in terms of the amount of money made available for education, and the barriers to, and rewards for, different amounts and varieties of education.

There is both a growth component and welfare component in the social role of education and higher education as the former Deputy Director-General of UNESCO states:

I believe that education has a key role, a causal one, in development. It promotes development in two ways, which are part of the growth component of the development equation. First, education provides the specific skills needed for the proper performance of a number of occupations. Second, it creates, influences and conditions the socio-cultural framework which is an indispensable element of the infrastructure for development... It is also part of the welfare component--the levels of living which are, in the end, the goal of all development.¹⁰

Thus education may play a vital part in the development of Iranian society, but if it is to do this effectively, the system must not only prepare individual Iranians for their social roles, but also prepare them to survive in today's social revolution and in tomorrow's democratic free society. This implies providing them, not only with specific skills, but with attitudes and values which enable them to maintain a critical approach to society and the courage needed to work for its change.

What Julius Nyerere, President of Tanzania, said a few years ago is pertinent and true in Iran at the present time.

For development has a purpose; that purpose is the liberation of Man. It is true that in the Third World we talk a great deal about economic development--about expanding the number of goods and services, and the capacity to produce them. But the goods are needed to serve men; services are required to make the lives of men more easeful as well as more fruitful. Political, social and economic organization is needed to enlarge the freedom and dignity of men.

¹⁰M. Adiseshiah, Education and Culture in the Science of Development. (Geneva: International Council of Voluntary Agencies, 1968).

Always we come back to Man--to Liberated Man--as the purpose of activity, the purpose of development.

But Man can only liberate himself or develop himself. He cannot be liberated or developed by another. For Man makes himself. It is his ability to act deliberately, for a self-determined purpose, which distinguishes him from the other animals. The expansion of his own circumstances, and therefore of his power over himself, his environment, and his society, must therefore ultimately be what we mean by development.

So development is for Man, by Man, and of Man. The same is true of education. Its purpose is the liberation of Man from the restraints and limitations of ignorance and dependency. Education has to increase men's physical and mental freedom--to increase their control over themselves, their own lives, and the environment in which they live. The ideas imparted by education, or released in the mind through education, should therefore be liberating ideas; the skills acquired by education should be liberating skills. Nothing else can properly be called education. Teaching which induces a slave mentality or a sense of impotence is not education at all--it is attack on the minds of men.¹¹

Teaching Iranians about development and the world around them is not an optional extra or a neat topic which can be put into a compartment and dealt with simply. If Iranian's concern (and that of their government) in the educational process is with the development of citizens and with enabling them to find their place in the world, then development of innovative higher education is an integral part of the entire educational system in Iran, and the starting point for all thinking. This will require a new

¹¹J.R. Kidd. International Development in Post-Secondary Short-Cycle Education. Report of a Wingspread Conference Convened by AACJC. 1979, p. 7.

educational approach, one which encourages Iranian people particularly younger adults to become active and participating members of their country.

Based on an evaluation of the current system of higher education and existing institutions in Iran, the author put forth the character, services and activities of the community college which was accepted by a panel of well respected educators as well as other government and political leaders. They agreed that through development of community junior colleges, with some minor changes in system and organization in accordance with Iranian values and needs, this new educational approach is possible. It is, therefore, for the community college that action and preparation are most urgently required now.

What the President's Commission on Higher Education in 1947 wrote about characteristics of the community colleges in Higher Education for American Democracy applies to future higher education in a democratic Iran.

Since the program is expected to serve a cross-section of the youth population, it is essential that consideration be given not only to apprentice training but also to cooperative procedures which provide for older students alternative periods of attendance at college and remunerative work.

To this end, it should have effective relationships, not only with the parents of students, but with cultural, civic, industrial, and labor groups as well. ¹²

¹²Higher Education for American Democracy, A Report of the President's Commission on Higher Education, Vol.2. (Washington D.C.: Government Printing Office, 1947), p.6.

Another characteristic of the community college as detailed in this report is also pertinent:

The community college must prepare its students to live a rich and satisfying life, part of which involves earning a living. To this end, the total educational effort, general and vocational, of any student must be a well-integrated single program, not two programs. ¹³

There has not existed in Iran a valid form of adult education whether it be post-secondary, lifelong or continuing. The community college could bring this into being. Therefore, in Iran "community colleges must be the center for administration of a comprehensive adult education program."¹⁴ Democratization of higher education could occur through equalizing opportunities for all Iranians to go to college and obtain higher education for a better personal and social life.

Based on his experience, research, educational background and observation of different educational systems, the author is convinced that community colleges in Iran would indeed become "people's colleges," if designed and organized to provide graduates with the marketable skills and knowledge to become self-supporting citizens of Iran's democracy.

¹³Ibid

¹⁴Ibid

The significant contribution of the community junior colleges to the Iranian educational system will be their efforts to keep up with changing conditions in Iran and to provide the educational facilities that Iran's economic situation and democratic society will demand. As most Iranian's standard of living continues to rise and Iran's industrial life become more complex and technological, high school graduation cannot give the majority of young people adequate training for their proper place in society.

As E.A. Funk, former dean of Arkansas City Junior College, Kansas, said: "The Junior College should fill the interim between graduation from high school and the induction into life activities with general and terminal education that will be usable immediately."¹⁵

Today, one of the most significant educational needs in Iran is to provide a community junior college for the 80 percent of Iran's youth who were miseducated and ignored by the old educational system. Establishing community junior colleges will also be of particular benefit to youth in Iran in either rural areas or distant cities. Such institutions with democratic procedures, a varied terminal curriculum and

¹⁵quoted in "Selected Statements of Educators" in Terminal Education Monograph, ed. William C. Eels (Washington, C.D.: American Association of Junior Colleges, 1964) p. 95.

adult continuing education can provide much to those unable socially, culturally or financially to enter the baccalaureate degree institutions established to turn out "white collar" employees or "aristocratic" degree holders. In the community college they would learn the skills for modern life and become familiar with themselves, their problems (locally, provincially, nationally), their rights, their environment, their philosophy of life, religion, history and culture. When they understand these values and relations they will become productive, active citizens of Iran, and by their practical help Iran will find her place as a modern, strong and developed member of the world family.

Another reason why community junior colleges are recommended as innovatory education for Iranian democracy is that such a system itself is one way of exercising democracy, which has never been done. It's model is democratic and within it democracy could shape and grow.

As Dwayne Orton, former president of Stockton Junior College in California said in 1940:

The (Community) junior college movement is democracy's significant educational expression today, as the secondary school movement was two and three decades ago. This significance will deepen as the "people's college" concept develops.¹⁶

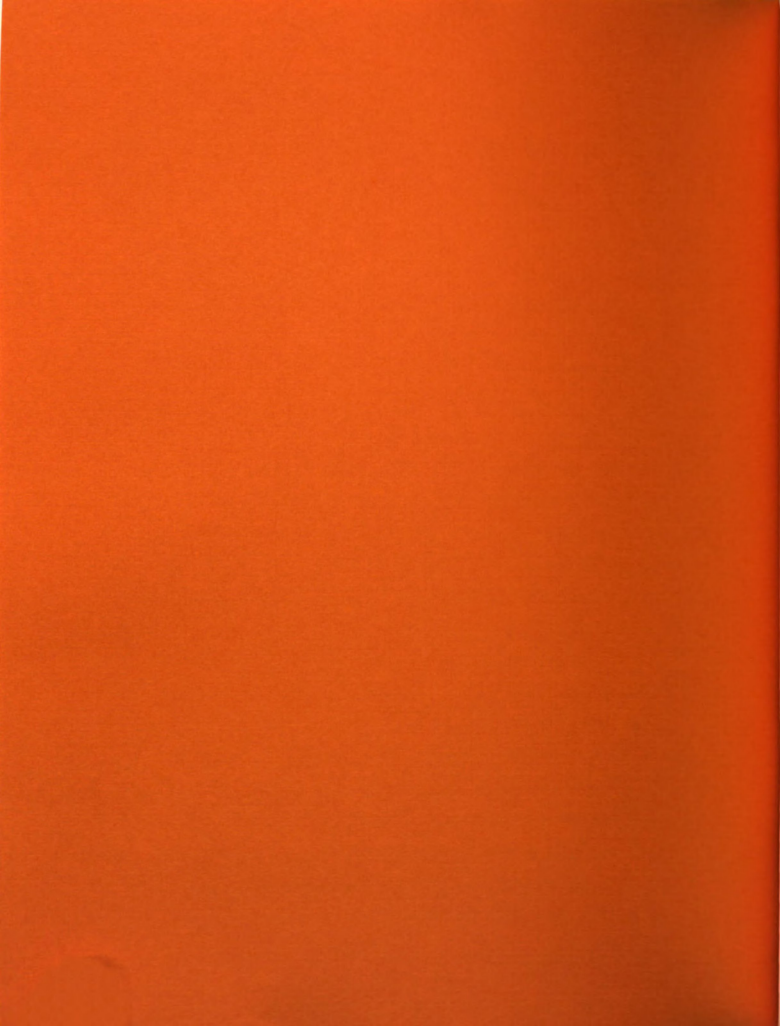
¹⁶Walter C. Eels (Director, American Association of Junior Colleges, Washington, D.C.) Why Junior College Terminal Education? (Wisconsin: George Banta Publishing Co., 1941) p. 92.

Now that statement is particularly applicable to Iran because the community junior college could give supervision and direction to personality adjustment during the period when young Iranians are maturing, when they are neither adults nor children, when they are still thinking about their future, undecided about either vocational or general education. Unlike their parents, they can make a decision and continue their higher education locally.

In addition to all the services the community colleges could render in Iran, "middle manpower development" in varying fields is one of the primary services for in their education and training programs they will produce the technicians, the semi-professionals, professional workers, teachers, scientific technicians, management personnel for the public and private sectors, and highly skilled workers; all of whom can move Iran ahead across the broad front of development--in agriculture, business, education, health, industry and human services.

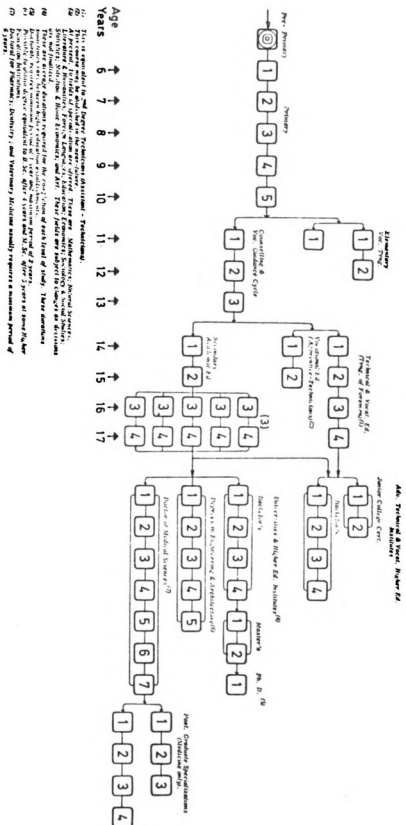
Another idea from the President's Commission also applies to Iran: "It is urgently important in education today that the age-old distinction between education for living and education for making a living be discarded."¹⁷ In a democratic Iran, community colleges (as well as general higher education) can contribute to vocational and personal competence by making individuals (especially younger adults) more effective workers and more intelligent citizens in a society of freemen.

¹⁷ibid. p.61.



APPENDIX A

Chart of The System of Formal Education in Iran. (The New System)



APPENDIX B

PROGRAM MULT

74/175 CPT=0 TRACE DEBUG

FIN 4.8+49F

```

1      PROGRAM MULT(TAPE1,OUTPUT,TAPE2=OUTPUT)
      DIMENSION C(18),F(14),A(18,18),D(C),E(17),F(18),X1(18),X2(18)
      DIMENSION X3(18),G(18),H(18)
      DO 1 J=1,18
5      DO 2 K=1,18
      A(J,K)=0
      CONTINUE
      CONTINUE
      READ(1,3)D,D,F,F
      FORMAT(2F10.6),F
10     DO 4 J=2,18
      A(1,J)=D(J-1)
      CONTINUE
      DO 5 J=2,18
15     A(J,J-1)=E(J-1)
      CONTINUE
      CALL MAT(A,D,C,18)
      DO 6 N=1,18
      X1(N)=C(N)*F(N)
      CONTINUE
20     WRITE(2,7)
      FORMAT(*FEMALE POPULATION 'R1*')
      DO 8 N=1,18
      WRITE(2,8)N,C(N)
25     FORMAT(* AGE GROUP #*,I2,2X,F10.2)
      CONTINUE
      PRINT 10
      FORMAT(*MALE POPULATION 'R1*')
      DO 11 N=1,18
      WRITE(2,12)N,Y1(N)
      FORMAT(* AGE GROUP #*,I2,2X,F10.2)
      CONTINUE
      CALL MAT(A,C,G,18)
      DO 13 K=1,18
35     X2(K)=G(K)*F(K)
      CONTINUE
      PRINT 14
      FORMAT(*FEMALE POPULATION 'R6*')
      DO 15 N=1,18
40     WRITE(2,15)N,G(N)
      FORMAT(* AGE GROUP #*,I2,2X,F10.2)
      CONTINUE
      PRINT 17
      FORMAT(*MALE POPULATION 'R6*')
      DO 18 N=1,18
45     WRITE(2,16)N,Y2(N)
      FORMAT(* AGE GROUP #*,I2,2X,F10.2)
      CONTINUE
      CALL MAT(A,G,H,18)
      DO 20 N=1,18
50     X3(N)=H(N)*F(N)
      CONTINUE
      PRINT 21
      FORMAT(*FEMALE POPULATION 'R1*')
      DO 22 N=1,18
55     WRITE(2,23)N,H(N)
      FORMAT(* AGE GROUP #*,I2,2X,F10.2)
      CONTINUE
      PRINT 24
      FORMAT(*MALE POPULATION 'R1*')
      DO 25 N=1,18
60     WRITE(2,24)N,Y3(N)
      FORMAT(* AGE GROUP #*,I2,2X,F10.2)
      CONTINUE
65     END

```

SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS	DEF LINE	REFERENCES
4141 MULT	1	

PROGRAM MULT			74/175 OPT=0 TRACE DEBUG			FTN 4.8+498		
VARIABLES	SN	TYPE	RELOCATION	REFS				
4614	A	REAL	ARRAY	15	2	17	33	
4572	B	REAL	ARRAY	REFS	2	17	DEFINED	
4550	C	REAL	ARRAY	REFS	2	17	17	
5320	D	REAL	ARRAY	REFS	2	12	DEFINED	
5371	E	REAL	ARRAY	REFS	2	15	DEFINED	
5752	F	REAL	ARRAY	REFS	2	19	35	
5462	G	REAL	ARRAY	REFS	2	33	37	
5504	H	REAL	ARRAY	REFS	2	40	51	
4545	J	INTEGER		REFS	1	2*12	3*15	
4546	K	INTEGER		REFS	6	3*35	DEFINED	
4547	L	INTEGER		REFS	3*15	2*24	2*15	
				2*62	DEFINED	18	23	
5374	X1	REAL	ARRAY	REFS	2	30	DEFINED	
5416	X2	REAL	ARRAY	REFS	2	46	DEFINED	
5440	X3	REAL	ARRAY	REFS	2	62	DEFINED	
FILE NAMES	MODE							
2054	OUTPUT	FMT		WRITES	27	37	43	57
0	TAPE1	FMT		READS	9			
2054	TAPE2	FMT		WRITES	21	24	30	40
EXTERNALS	TYPE	ARGS	REFERENCES					
MAT		4	17	33	40			
STATEMENT LABELS		DEF LINE	REFERENCES					
0	1	0	4					
0	2	0	5					
4412	3	FMT	10					
0	4		11					
0	5		14					
0	6		15					
4407	7	FMT	22					
0	8		23					
4420	9	FMT	25					
4427	10	FMT	26					
0	11		27					
4440	12	FMT	30					
0	13		31					
4447	14	FMT	34					
0	15		37					
4460	16	FMT	40					
4467	17	FMT	44					
0	18		45					
4510	19	FMT	47					
0	20		50					
4507	21	FMT	54					
0	22		55					
4520	23	FMT	57					
4527	24	FMT	60					
0	25		61					
4540	26	FMT	62					
LOOPS	LABEL	INDEX	FROM-TO	LENGTH	PROPERTIES			
4144	1	J	4 9	14P	INSTACK	NOT INAFR		
4146	2	K	5 7	7P	INSTACK			
4164	4	J	11 17	7P	INSTACK			
4175	5	J	14 16	6P	INSTACK			
4207	6	N	18 20	6P	INSTACK			
4221	8	N	23 26	10P		EXT REFS		
4235	11	N	29 32	10P		EXT REFS		
4251	13	K	34 36	6P	INSTACK			
4263	15	N	39 42	10P		EXT REFS		
4277	18	N	45 48	10P		EXT REFS		
4313	23	N	50 52	6P	INSTACK			
4325	22	N	55 58	10P		EXT REFS		
4341	25	N	61 64	10P		EXT REFS		
STATISTICS								
PROGRAM	LENGTH		1571P	989				
BUFFER	LENGTH		3735P	213				
470000 CM USED								

SUBROUTINE MAT

74/175 OPT=0 TRACE DEBUG

FTN 4.8+498

```

1      SUBROUTINE MAT(A,P,C,M)
      DIMENSION A(M,M),P(M),C(M)
      DO 20 L=1,M
        X=P(L)
5       DO 10 I=1,M
          Y=X+A(L,I)*P(I)
10        CONTINUE
          C(L)=X
20        CONTINUE
      RETURN
      END

```

SYMBOLIC REFERENCE MAP (R=2)

ENTRY POINTS	DEF LINE	REFERENCES
4 MAT	1	1

VARIABLES	SN	TYPE	RELOCATION	REFS	2	6	DEFINED
0 A		REAL	ARRAY	F.P.	2	6	DEFINED
0 R		REAL	ARRAY	F.P.	2	6	DEFINED
0 C		REAL	ARRAY	F.P.	2	6	DEFINED
51 I		INTEGER			2+6	8	DEFINED
47 L		INTEGER			4	3	DEFINED
0 M		INTEGER	F.P.		4+2	3	DEFINED
50 X		REAL			7	8	DEFINED

STATEMENT LABELS	DEF LINE	REFERENCES
0 10	7	5
0 20	0	3

LOOPS	LABEL	INDEX	FROM-TO	LENGTH	PROPERTIES	NOT INNER
16	20	L	7 0	23P	INSTACK	
22	10	I	5 7	11R		

STATISTICS	LENGTH	4CF	4R
PROGRAM	670008		
CM USED			

LOAD MAP - MULT

CYFER LOADER 1.5-79335

FWA OF THE LOAD 111
LWA#1 OF THE LOAD 15543

TRANSFER ADDRESS -- MULT 4252

PROGRAM ENTRY POINTS -- MULT 4252

PROGRAM AND BLOCK ASSIGNMENTS.

BLOCK	ADDRESS	LENGTH	FILE	DATE	PROCESS	VFP	LEVEL	HARDWARE
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MAT	5677	6	LCF	04/29/80	FTN	4.8	498	CSCX I
/STF.END/	5717	1						
/FCL.C./	5720	2						
/EXECMSH/	5746	1						
/CONECIO/	5746	1						
/GR.ID./	5746	2						
Q2NTRY=	6150	1	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
/FCL=ENT/	6151	41						
COMIC=	6212	45	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
FCL=FCL	6257	40	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
FE1FST=	6317	3	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
FLYOUT=	6322	311	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
FOPSY=	6673	550	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
GETFIT=	7403	57	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
KRAKEP=	7462	414	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
OUTC=	1076	157	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
FECKSK=	10251	41	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
FLTIN=	10312	156	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
FMTAP=	10470	357	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
FORUTL=	1104	47	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
FTMPF2=	11116	15	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
INCM=	11133	151	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
INFC=	11304	207	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
KUDEP=	11513	465	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
OUTCOM=	12200	154	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
SFA=	12354	11	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
SYSAD=	12365	1	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
LINKMSH	12366	2	SL-LINK					
/MSL=RNC/	12370	42						
MSU=RY	12432	1074	SL-MSURM	12/08/79	COMPASS	3.5	470	
MSU=FY	13526	115	SL-MSURM	12/08/79	COMPASS	3.5	470	
MSU=ER	13643	0	SL-MSURM	12/08/79	COMPASS	3.5	470	
MSU=GP	13643	354	SL-MSURM	12/08/79	COMPASS	3.5	470	
MSU=CZ	14217	130	SL-MSURM	12/08/79	COMPASS	3.5	470	
CM.KTL	14347	12	SL-SYSLIB	09/29/79	COMPASS	3.5	470	
SYS=	14361	40	SL-SYSLIB	04/24/80	COMPASS	3.5	470	
RECOVR	14421	172	SL-SYSLIB					
ERRCAP=	14613	324	SL-FORTRAN					
FERCAP=	15137	205	SL-FORTRAN					
RPVCAP=	15344	177	SL-FORTRAN					

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325.08 CM STORAGE USED

FEMALE POPULATION 191

AGE GROUP #1	3078580.80
AGE GROUP #2	2565570.55
AGE GROUP #3	2520714.45
AGE GROUP #4	2024615.20
AGE GROUP #5	1769767.87
AGE GROUP #6	1435297.98
AGE GROUP #7	1079955.65
AGE GROUP #8	845922.57
AGE GROUP #9	779649.68
AGE GROUP #10	741692.32
AGE GROUP #11	599336.17
AGE GROUP #12	548184.02
AGE GROUP #13	272317.5

AGE GROUP #14	231017	.94
AGE GROUP #15	126248	.74
AGE GROUP #16	122422	.70
AGE GROUP #17	55255	.60
AGE GROUP #18	25649	.29

MALE POPULATION #1		
AGE GROUP #1	333413	.61
AGE GROUP #2	274765	.50
AGE GROUP #3	279295	.61
AGE GROUP #4	206302	.50
AGE GROUP #5	165119	.42
AGE GROUP #6	132347	.15
AGE GROUP #7	104327	.16
AGE GROUP #8	86955	.67
AGE GROUP #9	90283	.33
AGE GROUP #10	97814	.70
AGE GROUP #11	73119	.12
AGE GROUP #12	70661	.37
AGE GROUP #13	29655	.76
AGE GROUP #14	25272	.27
AGE GROUP #15	13066	.72
AGE GROUP #16	15865	.47
AGE GROUP #17	6471	.57
AGE GROUP #18	29522	.33

FEMALE POPULATION #18		
AGE GROUP #1	37002	.09
AGE GROUP #2	37451	.63
AGE GROUP #3	25494	.17
AGE GROUP #4	25010	.67
AGE GROUP #5	20048	.20
AGE GROUP #6	17479	.72
AGE GROUP #7	14136	.06
AGE GROUP #8	10554	.26
AGE GROUP #9	82403	.70
AGE GROUP #10	74833	.15
AGE GROUP #11	60914	.84
AGE GROUP #12	55004	.77
AGE GROUP #13	40340	.1
AGE GROUP #14	22613	.45
AGE GROUP #15	17540	.37
AGE GROUP #16	8311	.87
AGE GROUP #17	7579	.15
AGE GROUP #18	2119	.55

MALE POPULATION #18		
AGE GROUP #1	40074	.94
AGE GROUP #2	32613	.91
AGE GROUP #3	28248	.51
AGE GROUP #4	25485	.27
AGE GROUP #5	18705	.65
AGE GROUP #6	16081	.75
AGE GROUP #7	13655	.74
AGE GROUP #8	10850	.20
AGE GROUP #9	9543	.14
AGE GROUP #10	8862	.29
AGE GROUP #11	8529	.59
AGE GROUP #12	7090	.55
AGE GROUP #13	5265	.52
AGE GROUP #14	2473	.90
AGE GROUP #15	1816	.68
AGE GROUP #16	1077	.29
AGE GROUP #17	8830	.74
AGE GROUP #18	2429	.1

FEMALE POPULATION #19		
AGE GROUP #1	44088	.55
AGE GROUP #2	36600	.86
AGE GROUP #3	30280	.65
AGE GROUP #4	25295	.84
AGE GROUP #5	24766	.65
AGE GROUP #6	19822	.32
AGE GROUP #7	17216	.03
AGE GROUP #8	13815	.97
AGE GROUP #9	10283	.43
AGE GROUP #10	7908	.56
AGE GROUP #11	7054	.88

AGE GROUP #12	641643.85
AGE GROUP #13	485135.04
AGE GROUP #14	401497.65
AGE GROUP #15	171786.14
AGE GROUP #16	115573.21
AGE GROUP #17	51456.84
AGE GROUP #18	28982.17

MALE POPULATION 191

AGE GROUP #1	4774742.41
AGE GROUP #2	3919032.54
AGE GROUP #3	3352071.70
AGE GROUP #4	2577616.38
AGE GROUP #5	231707.50
AGE GROUP #6	1821798.17
AGE GROUP #7	146370.36
AGE GROUP #8	142247.76
AGE GROUP #9	1107826.77
AGE GROUP #10	936531.64
AGE GROUP #11	860506.30
AGE GROUP #12	827178.92
AGE GROUP #13	528313.16
AGE GROUP #14	439238.43
AGE GROUP #15	177798.55
AGE GROUP #16	149731.14
AGE GROUP #17	66307.42
AGE GROUP #18	33358.47

18:04:15 04/29/80 IL54831

405 LINES PRINT.

5 PAGES PRINT. COST AT RG2 IS

LOAD MAP - MULT

CYBER LOADER 1.5-79335

FWA OF THE LOAD 111
LWA#1 OF THE LOAD 15543

TRANSFER ADDRESS -- MULT 4252

PROGRAM ENTRY POINTS -- MULT 4252

PROGRAM AND BLOCK ASSIGNMENTS.

BLOCK	ADDRESS	LENGTH	FILE	DATE	PROCESSR	VFR	LEVEL	HARDWARE
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MAT	5677	60	LGO	04/29/80	FTN	4.8	498	C5CY I
/STF.END/	5717	1						
/FCL.C./	5721	2						
/EXECMSR/	5746	1						
/CONECIO/	5746	1						
/OR.IO./	5746	2						
Q21TRY=	6150	1	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
/FCL=ENT/	6151	41						
COMIO=	6212	45	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
FCL=FDL	6257	40	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
FEIFST=	6317	3	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
FLTOUT=	6322	311	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
FOFSYS=	6673	550	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
GETFIT=	7403	57	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
KRAKEP=	7462	414	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
OUTC=	10076	153	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
FECMSK=	10251	41	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
FLTIN=	10312	156	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
FWTAS=	10470	357	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
FORUTL=	11047	47	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
FTNRD2=	11116	15	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
INCLP=	11133	151	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
INPC=	11304	207	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
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OUTCOM=	12200	154	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
SPA=	12354	11	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
SYSID=	12365	1	SL-FORTRAN	10/27/79	COMPASS	3.5	470	
LINKMSU	12366	2	SL-LINK					
/MSL=RMC/	12370	42						
MSU=RM	12432	1074	SL-MSURM	12/08/79	COMPASS	3.5	470	
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MSU=FR	13643	0	SL-MSURM	12/08/79	COMPASS	3.5	470	
MSU=CP	13643	354	SL-MSURM	12/08/79	COMPASS	3.5	470	
MSU=GZ	14217	130	SL-MSURM	12/08/79	COMPASS	3.5	470	
CM.KIL	14747	12	SL-SYSLIB	09/29/79	COMPASS	3.5	470	
SYS=	14361	40	SL-SYSLIB	04/24/80	COMPASS	3.5	470	
RECCVP	14421	172	SL-SYSLIB	04/24/80	COMPASS	3.5	470	
ERRCAP=	14613	324	SL-FORTRAN					
FERCAP=	15137	205	SL-FORTRAN					
RFVCAP=	15344	177	SL-FORTRAN					

.127 CP SECONDS

32500 CP STORAGE USED

FEMALE POPULATION '81

AGE GROUP	#	1997596.28
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AGE GROUP # 2	1422289.68	
AGE GROUP # 3	1439699.11	
AGE GROUP # 4	1061452.52	
AGE GROUP # 5	885571.95	
AGE GROUP # 6	708224.00	
AGE GROUP # 7	542693.82	
AGE GROUP # 8	425354.40	
AGE GROUP # 9	415155.70	
AGE GROUP # 10	410001.00	
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AGE GROUP # 12	308758.24	
AGE GROUP # 13	145330.92	

AGE GROUP #14	132439.72
AGE GROUP #15	70458.54
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MALE POPULATION 191	
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FEMALE POPULATION 191	
AGE GROUP #1	2438498.53
AGE GROUP #2	1849334.69
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AGE GROUP #7	698521.42
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AGE GROUP #10	402024.33
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AGE GROUP #12	311730.70
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AGE GROUP #14	127161.65
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MALE POPULATION 194	
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AGE GROUP #17	55703.58
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FEMALE POPULATION 191	
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AGE GROUP #3	1826201.09
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AGE GROUP #16	141087.09
AGE GROUP #17	39380.73
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400 LINES PRINT.

9 PAGES PRINT. COST AT R62 IS

LOAD MAP - MULT

CYCLES LOADED 1.5-74333

FPA OF THE LOAD 111
LWA+1 OF THE LOAD 15543

TRANSFER ADDRESS -- MULT 4752

PROGRAM ENTRY POINTS -- MULT 4752

PROGRAM AND BLOCK ASSIGNMENTS.

BLOCK	ADDRESS	LENGTH	FILE	DATE	PROCESSOR	VFP	LEVEL	HARDWARE
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MAT	5647	60	LGI	04/30/80	FTN	4.8	498	C50X 1
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/FCL.C./	5720	26						
/EXECPSG/	5746							
/CONECIO/	5746							
/Q%TO./	5746	2						
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FTNFF2=	11116	15	SL-FORTTRAN	10/27/79	COMFASS	3.5	470	
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MSUER	13643	0	SL-MSURM	12/08/79	COMFASS	3.5	470	
MSUCF	13743	354	SL-MSURM	12/08/79	COMFASS	3.5	470	
MSUG2	14217	130	SL-MSURM	12/08/79	COMFASS	3.5	470	
CMH.KIL	14347	12	SL-SYSLIR	09/29/79	COMFASS	3.5	470	
SYS=	14361	40	SL-SYSLIR	04/24/80	COMFASS	3.5	470	
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FERCAP=	14613	324	SL-FORTTRAN					
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.145 OF SECONDS

32500 CM STORAGE USED

FEMALE POPULATION 181

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FEMALE POPULATION '81	
AGE GROUP # 1	1521735.71
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AGE GROUP # 4	1064741.74
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AGE GROUP # 7	72274.34
AGE GROUP # 8	534161.25
AGE GROUP # 9	409844.52
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AGE GROUP #17	51834.44
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FEMALE POPULATION '86	
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AGE GROUP # 2	1477667.24
AGE GROUP # 3	1235952.35
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AGE GROUP # 6	948773.62
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AGE GROUP # 1	182917.91
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AGE GROUP # 8	79776.13
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AGE GROUP #11	41374.96
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AGE GROUP #18	3371.18

13:29:51 / 4/30/80 IL55954 405 LINES PRINT. 5 PAGES PRINT. COST AT K03 IS

APPENDIX C

APPENDIX (C)

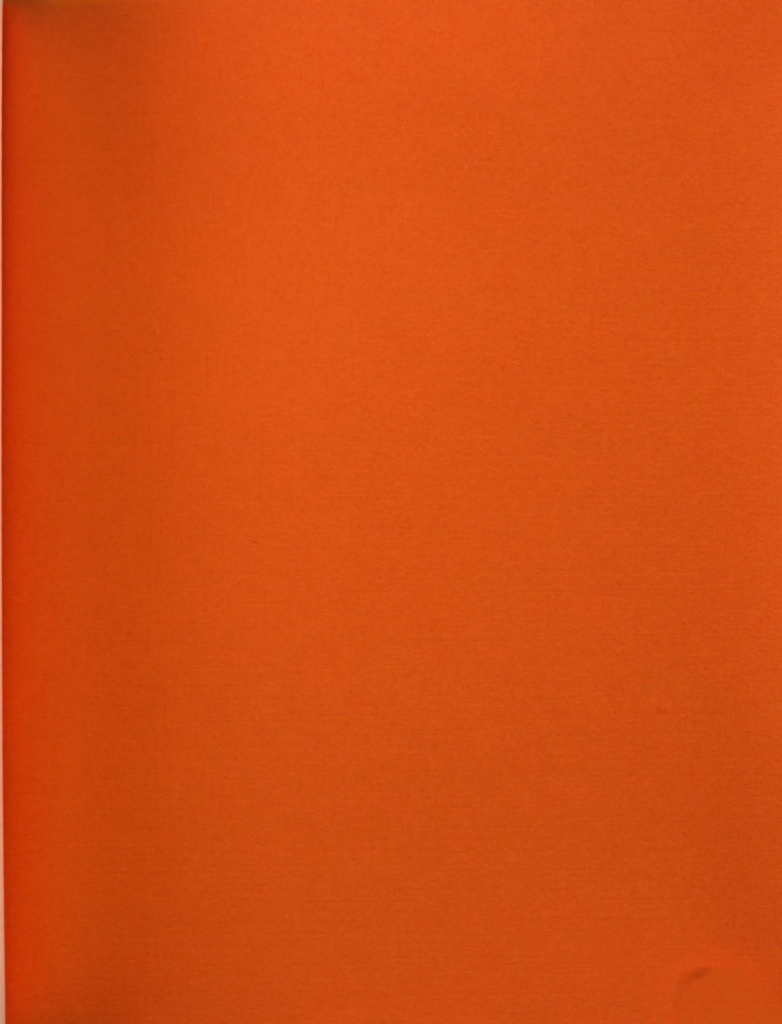
- A. List of planning documents related to higher education and manpower development.
1. The First National Development Plan (1949-1956)
(Seven Years) Plan Organization.
 2. The Second National Development Plan (1956-63)
Plan Organization (1961).
 3. The Third National Development Plan (1963-68)
Plan Organization (1967).
 4. The Fourth National Development Plan (1968-73)
Plan Organization (1973).
 5. The Fifth National Development Plan (1973-78)
Plan and Budget Organization.
 6. The Draft of the Sixth National Development Plan
(1978-1983) Plan and Budget Organization
 7. Draft of Comprehensive Long-Term Educational Plan
In Iran. I.R.P.S.E. 1973
 8. Charter of The Educational Revolution-Ramsar-7th.
August 1968. Institute for Research and Planning
in Science and Education. Feb. 1972. Tehran.
 9. Analytical Study on Financing of Higher Education
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Science and Education. May 1973. Tehran.
 10. Preliminary Report on Medical Training Consortiums.
Institute for Research and Planning in Science and
Education. July 1974. Tehran.

11. Organizational Planning of Free University. Free University of Iran and I.R.P.S.E., 1974. Tehran
12. Draft for Providing Instructional Members of Higher Education Institutions. I.R.P.S.E. Tehran, 1973.
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14. Teacher Education for Guidance Cycle. I.R.P.S.E. 1972, Tehran.
15. Norms for the Design of Educational Facilities. I.R.P.S.E. April 1974, Tehran.
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