

STATUS AND TRENDS OF EDUCATION TURKEY, (1970-2003)

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CONTENTS	PAGE
LIST OF TABLES	III
LIST OF FIGURES.....	V
LIST OF APPENDICES	VI
I - INTRODUCTION.....	1
1.1. General background	2
1.1.1. Demographic background	2
1.1.2. Educational background	5
1.2. Methodology	6
1.2.1. Objectives and scope of the study	6
1.2.2. Organization of the study	7
1.2.3. Basis of the selected method and its rationale.....	7
1.2.4. Data sources and limitations	7
1.2.5. Computational procedure	8
II - FINDINGS; INDICATORS OF EDUCATIONAL CHANGE	12
2.1. Definition of indicators	12
2.2. Indicators of educational change.....	16
2.2.1. Illiteracy and adult literacy rates	16
2.2.2. Net enrollment ratios for pre-primary education.....	21
2.2.3. Primary education, gross and net enrollment ratios	24
2.2.4. Secondary education gross and net enrollment ratios	28
2.2.5. Tertiary education gross and net enrollment ratios, with and without distance tertiary education.....	31
2.2.6. Gender differences at all educational levels in Turkey between 1970-2003	36
2.2.7. Number of students per teacher at all educational levels between 1970-2003	37
2.2.8. Number of students per classroom in all educational levels between 1985-2003	39
2.2.9. Number of educational institutions at all educational levels between 1970-2003	41
2.2.10. Number of education staff in all educational levels between 1970-2003	43
III. REGIONAL DIFFERENCES BY EDUCATIONAL INDICATORS.....	46
3.1. Regional differences calculated by educational indicators for the 2000-2001 school year.....	46
3.1.1. Regional differences in gross and net enrollment ratios of primary education (2000-2001).....	46
3.1.2. Regional differences in gross and net enrollment ratios in secondary education level, (2000-2001)	51
3.1.3. Regional differences for number of student per classroom, in detail of educational levels Turkey (2000-2001)	55
3.1.4. Regional differences in number of student per teacher, in detail of educational levels, Turkey (2000-2001)	57
3.2. Regional differences in calculated educational indicators during the 2001-2002 school year.....	59
3.2.1. Regional differences in gross and net enrollment ratios in primary education, Turkey (2001-2002)	59
3.2.2. Regional differences in gross and net enrollment ratios for secondary education, (2001-2002).....	64
3.2.3. Regional differences for number of student per-classroom, in detail of educational levels, Turkey (2001-2002)	69
3.2.4. Regional differences for number of students per teacher in detail of educational levels, Turkey (2001-2002)	71

IV. CONCLUSION.....	74
REFERENCES.....	77
APPENDIX	80

LIST OF TABLES

TABLE . 1 : ILLITERACY RATIOS, TURKEY, 1970-2003	17
TABLE . 2 : ADULT LITERACY RATE, TURKEY, 1970-2003.....	19
TABLE . 3 : PRE-PRIMARY EDUCATION, NET ENROLLMENT RATIOS, TURKEY, 1980-2003.....	21
TABLE . 4 : PRIMARY SCHOOL, GROSS AND NET ENROLLMENT RATIOS, TURKEY, 1970-2003	25
TABLE . 5 : PRIMARY EDUCATION, GROSS AND NET ENROLLMENT RATIOS, TURKEY, 1970-2003	26
TABLE . 6 : SECONDARY EDUCATION, GROSS AND NET ENROLLMENT RATIOS, TURKEY, 1970-2003	28
TABLE . 7.1: TERTIARY EDUCATION, GROSS AND NET ENROLLMENT RATIOS, TURKEY, 1970-2003	31
TABLE . 7.2 : TERTIARY EDUCATION, GROSS AND NET ENROLLMENT RATIOS (WITHOUT DISTANCE TERTIARY EDUCATION), TURKEY, 1970-2003	34
TABLE . 8: GENDER RATIOS (ALL EDUCATIONAL LEVELS), TURKEY, 1970-2003	36
TABLE . 9: NUMBER OF STUDENTS PER TEACHER, (ALL EDUCATIONAL LEVELS), TURKEY, 1970-2003	38
TABLE . 10: NUMBER OF STUDENTS PER CLASS ROOM, (ALL EDUCATIONAL LEVELS), TURKEY, 1985-2003	40
TABLE . 11: NUMBER OF EDUCATIONAL INSTITUTIONS, (ALL EDUCATIONAL LEVELS), TURKEY, 1970-2003	42
TABLE . 12: NUMBER OF EDUCATION STAFF, (ALL EDUCATIONAL LEVELS), TURKEY, 1970-2003	44
TABLE . 13 : REGIONAL DIFFERENCES IN GROSS ENROLLMENT RATIOS IN PRIMARY EDUCATION, TURKEY (2000 – 2001)	47
TABLE . 14 : REGIONAL DIFFERENCES IN NET ENROLLMENT RATIOS FOR PRIMARY EDUCATION, TURKEY (2000 – 2001)	49
TABLE . 15 : REGIONAL DIFFERENCES IN GROSS ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2000 – 2001)	51
TABLE . 16 : REGIONAL DIFFERENCES IN NET ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2000 – 2001)	53
TABLE . 17 : REGIONAL DIFFERENCES FOR NUMBER OF STUDENT PER CLASSROOM, IN DETAIL OF EDUCATIONAL LEVELS, TURKEY (2000 – 2001)	56
TABLE . 18 : REGIONAL DIFFERENCES IN NUMBER OF STUDENTS PER TEACHER IN DETAIL OF EDUCATIONAL LEVELS, TURKEY (2000 – 2001).....	58
TABLE . 19 : REGIONAL DIFFERENCES IN GROSS ENROLLMENT RATIOS FOR PRIMARY EDUCATION, TURKEY (2001 – 2002)	60
TABLE . 20 : REGIONAL DIFFERENCES IN NET ENROLLMENT RATIOS IN PRIMARY EDUCATION, TURKEY (2001 – 2002)	62
TABLE . 21 : REGIONAL DIFFERENCES IN GROSS ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2001 – 2002)	65
TABLE . 22 : REGIONAL DIFFERENCES IN NET ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2001 – 2002)	67
TABLE . 23 : REGIONAL DIFFERENCES FOR NUMBER OF STUDENTS PER CLASSROOM IN DETAIL OF EDUCATIONAL LEVELS, TURKEY (2001 – 2002)	70

TABLE . 24 : REGIONAL DIFFERENCES FOR NUMBER OF STUDENTS PER
TEACHER IN DETAIL OF EDUCATIONAL LEVELS, TURKEY (2001 –
2002)..... 72

LIST OF FIGURES

FIGURE . 1.1 : ILLITERACY RATIOS, TURKEY, 1970-2003.....	18
FIGURE . 1.2 : GENDER DIFFERENCES IN ILLITERACY RATIOS, TURKEY, 1970-2003.....	18
FIGURE . 2.1 : ADULT LITERACY RATES, TURKEY, 1970-2003.....	20
FIGURE . 2.2 : GENDER DIFFERENCES IN ADULT LITERACY RATES, TURKEY, 1970-2003.....	20
FIGURE . 3.1. : PRE-PRIMARY EDUCATION, NET ENROLLMENT RATIOS (3 – 5 AGES), TURKEY, 1980-2003.....	23
FIGURE . 3.2. : PRE-PRIMARY EDUCATION, NET ENROLLMENT RATIOS (4 – 5 AGES), TURKEY, 1980-2003.....	23
FIGURE . (4-5).1 : PRIMARY EDUCATION GROSS RATIOS, TURKEY, 1970-2003.....	27
FIGURE . (4-5).2 : PRIMARY EDUCATION NET ENROLLMENT RATIOS, TURKEY, 1970-2003.....	27
FIGURE . 6.1 : SECONDARY EDUCATION GROSS ENROLLMENT RATIOS, TURKEY, 1970-2003.....	30
FIGURE . 6.2 : SECONDARY EDUCATION NET ENROLLMENT RATIOS, TURKEY, 1970-2003.....	30
FIGURE . 7.1.1 : TERTIARY EDUCATION GROSS ENROLLMENT RATIOS, TURKEY, 1970-2003.....	33
FIGURE . 7.1.2 : TERTIARY EDUCATION, NET ENROLLMENT RATIOS, TURKEY, 1970-2003.....	33
FIGURE . 7.2.1 : TERTIARY EDUCATION, GROSS ENROLLMENT RATIOS (WITHOUT DISTANCE TERTIARY EDUCATION), TURKEY, 1970-2003.....	35
FIGURE . 7.2.2 : TERTIARY EDUCATION, NET ENROLLMENT RATIOS (WITHOUT DISTANCE TERTIARY EDUCATION), TURKEY, 1970-2003.....	35
FIGURE . 8 : GENDER RATIOS (ALL EDUCATIONAL LEVELS), TURKEY, 1970-2003.....	37
FIGURE . 9 : NUMBER OF STUDENTS PER TEACHER, (ALL EDUCATIONAL LEVELS), TURKEY, 1970-2003.....	39
FIGURE . 10: NUMBER OF STUDENTS PER CLASS ROOM, (ALL EDUCATIONAL LEVELS), TURKEY, 1985-2003.....	41
FIGURE . 11: NUMBER OF EDUCATIONAL INSTITUTIONS, (ALL EDUCATIONAL LEVELS), TURKEY, 1970-2003.....	43
FIGURE . 12: NUMBER OF EDUCATION STAFF, (ALL EDUCATIONAL LEVELS), TURKEY, 1970-2003.....	45
FIGURE . 13.1 : REGIONAL DIFFERENCES IN GROSS ENROLLMENT RATIOS FOR PRIMARY EDUCATION, TURKEY, (2000 – 2001).....	48
FIGURE . 13.2 : GENDER DIFFERENCES IN REGIONS FOR GROSS ENROLLMENT RATIOS FOR PRIMARY EDUCATION, TURKEY, (2000 – 2001).....	48
FIGURE . 14.1 : REGIONAL DIFFERENCES IN NET ENROLLMENT RATIOS IN PRIMARY EDUCATION, TURKEY (2000 – 2001).....	50
FIGURE . 14.2 : GENDER DIFFERENCES IN REGIONS NET ENROLLMENT RATIOS IN PRIMARY EDUCATION, TURKEY (2000 – 2001).....	50
FIGURE . 15.1 : REGIONAL DIFFERENCES IN GROSS ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY.....	52
(2000 – 2001).....	52

FIGURE . 15.2 : GENDER DIFFERENCES IN REGIONS FOR GROSS ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2000 – 2001).....	53
FIGURE . 16.1 : REGIONAL DIFFERENCES IN NET ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2000 – 2001).....	54
FIGURE . 16.2 : GENDER DIFFERENCES IN REGIONS FOR NET ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2000 – 2001).....	54
FIGURE . 17 : REGIONAL DIFFERENCES IN NUMBER OF STUDENTS PER CLASSROOM IN DETAIL OF EDUCATIONAL LEVELS, TURKEY (2000 – 2001).....	57
FIGURE . 18 : REGIONAL DIFFERENCES FOR NUMBER OF STUDENTS PER TEACHER IN DETAIL OF EDUCATIONAL LEVELS, TURKEY (2000 – 2001).....	59
FIGURE . 19.1 : REGIONAL DIFFERENCES IN GROSS ENROLLMENT RATIOS IN PRIMARY EDUCATION, TURKEY (2001 – 2002).....	61
FIGURE . 19.2 : GENDER DIFFERENCES IN REGIONS FOR GROSS ENROLLMENT RATIOS IN PRIMARY EDUCATION, TURKEY (2001 – 2002).....	62
FIGURE . 20.1 : REGIONAL DIFFERENCES IN NET ENROLLMENT RATIOS IN PRIMARY EDUCATION, TURKEY (2001 – 2002).....	63
FIGURE . 20.2 : GENDER DIFFERENCES IN REGIONS FOR NET ENROLLMENT RATIOS IN PRIMARY EDUCATION, TURKEY (2001 – 2002).....	63
FIGURE . 21.1 : REGIONAL DIFFERENCES IN GROSS ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2001 – 2002).....	66
FIGURE . 21.2 : GENDER DIFFERENCES IN REGIONS FOR GROSS ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2001 – 2002).....	66
FIGURE . 22.1 : REGIONAL DIFFERENCES IN NET ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2001 – 2002).....	68
FIGURE . 22.2 : GENDER DIFFERENCES IN REGIONS FOR NET ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2001 – 2002).....	68
FIGURE . 23 : REGIONAL DIFFERENCES FOR NUMBER OF STUDENTS PER CLASSROOM IN DETAIL OF EDUCATIONAL LEVELS, TURKEY (2001 – 2002).....	71
FIGURE . 24 : REGIONAL DIFFERENCES FOR NUMBER OF STUDENTS PER TEACHER IN DETAIL OF EDUCATIONAL LEVELS, TURKEY (2001 – 2002).....	73

LIST OF APPENDICES

APPENDIX.I: POPULATION PROJECTIONS OF EDUCATIONAL AGE GROUPS 80	
APPENDIX.II: DEFINITION OF NUT'S CLASSIFICATION	83

STATUS AND TRENDS OF EDUCATION

I - INTRODUCTION

Social changes are considered as basic requirements for economic development and success the plans. Thus, effort should be taken to raise the educational and cultural level of the people as a pre-requisite for social justice. This will lead in turn to the increase in labor productivity which will push further the development of the country, besides the use of modern techniques as a substitute to the traditional ones.

Accordingly education and culture contribute directly and indirectly to the economic welfare of a country since they are related to the development of the individuals, skills and potentials.

It is not needed to mention that the role of education and training is indispensable to any social and economic development. In Alexandar's view "The role of education in this intersection – both affecting and being affected – by socio economic and demographic factors is difficult to determine precisely" (Kjurciev, 1976). However, the increasing importance of knowledge and skills in a changing society has made education inevitably a vital component in overall development process.

Advocates of human capital theory looked into this issue in relation to employment. In their view education is the main source of skills needed by populations to develop and manage their economies. In this connection investment in education is considered to be an investment in the productive capacity of the population.

The availability of skilled labor force depends on the training facilities together with educational institutions in the country (Todaro, 1977).

In this case educational planning is an integral part of the total national planning, and so the Turkish approach to the educational problems tend to be mapped within the framework of the national development plans.

The purpose of this study is to put forward the status of education in Turkey as reflected to the indicators and see weather regional differences get narrower or widen.

For the purpose of this study three different problems were defined in the educational part of Turkish National Development Plans;

1. More than one result or educational data are given about educational indicators for same year in the sequence of plans.

2. No long-term detailed time series indicators were published from educational data.

3. Thus, scope or speed of educational system for any level of education, neither at national, nor at regional levels can be traced on the base of time series indicators.

1.1. General background

Turkey is on one of the most important geopolitical and strategic position in the world. It is the second largest country in Europe after Russia, with an area of 774 815 sq. km. It is two and half times as big as Italy, three times as big as U.K and one and one half times the size of Spain. The main trait of Turkish physical geography is that the country is highly mountainous almost in a rectangular pattern, consistent with the rectangular shape of the country itself. With mountains and foot hills dominating the landscape, it has been resource - consuming to reach around 40 000 villages and as many hamlets all over the country. Between 1990 – 2003, life expectancy at birth (year) increased from 64.2 to 66.4 for male and 68.7 to 71.0 for female population. Total infant mortality rate decreased from 52.4 % to 38.3 % in 1990 – 2003 period, similarly annual population growth rate decreased from 1.97 % to 1.53 %, crude birth rate decreased from 2.48 % to 2.09 %, crude death rate is already stable 0.69 % for the same period. Total fertility rate (number of children) was 3.00 in 1990 and is 2.43 in 2003. Gross national product in per capita was 2682 \$ in 1990 and 2584 \$ in 2002 due to economic crises in 2000 - 2001. Total unemployment rate has been increased between 1990 – 2002 from 8.0 % to 10.3 % .

In this respect, Turkey developed faster than many countries all over the world, even some European countries like the ones which just became members of European Union. On the other hand Turkey still tries to reach average of development indicators of European Union.

1.1.1. Demographic background

Since the founding of the republic in 1923, Turkey experienced substantial changes in its demographic structure. These changes are among the largest and most significant events of modern times for Turkey. During the past more than 70 years Turkey has lived through a three stage demographic transition.

1. The first stage of demographic transition can be dated from 1923 to 1950, though complete statistics on death rates do not exist for the entire period. However, fertility instead of following and balancing the decline of mortality, increasing significantly from around an average of 5.5 children to 7.0 children per woman during this period. It fluctuated between 7.0 and 6.5 until the permanent decline of fertility began during the 1950's. With falling death rates and rising birth rates, the population growth rate increased rapidly.

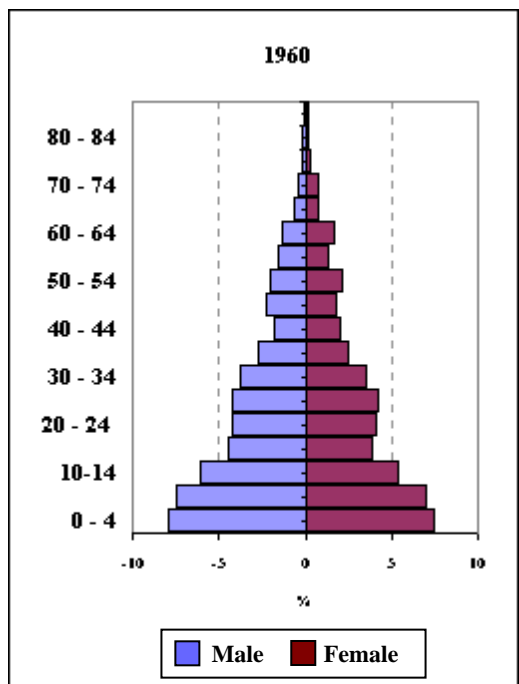
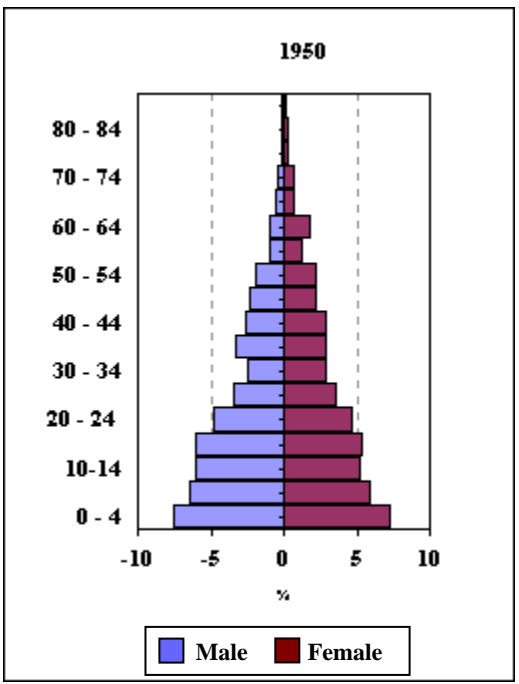
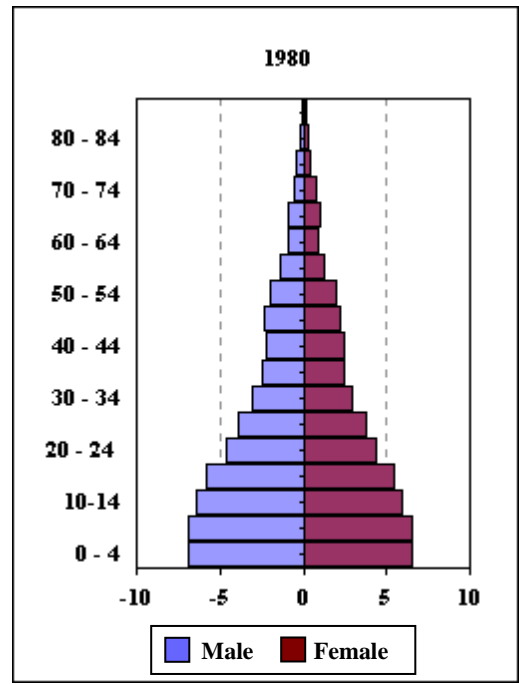
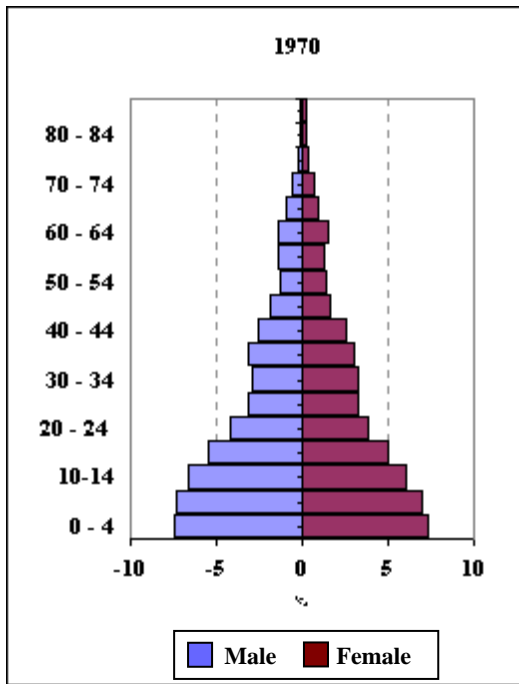
Between 1923 and 1955, the population almost doubled, increasing from 13 to 24 millions.

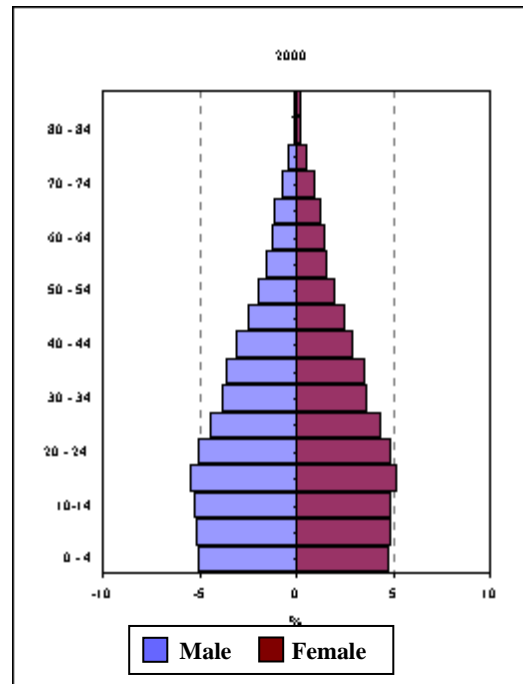
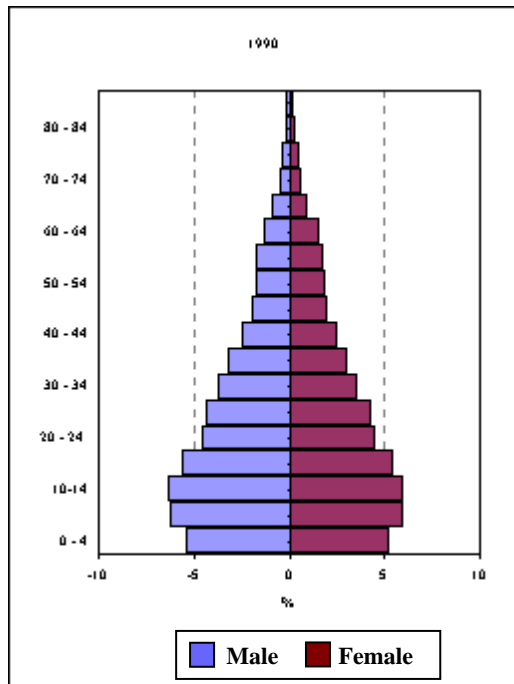
2. The second period of Turkey's demographic transition is dated from about 1955 to 1985. It starts with the population growth rate at its highest level, 2.8 % per year. During the 1950's , fertility began to decline and it did not reverse. However, the rate of decline was not fast enough to catch up immediately with the previous decline in death rates, so the population continued to grow. Between 1955 and 1985, the population doubled again, from 24 to 51 million.

Another major development of the second period was rapid urbanization. The growing momentum of economic change, with jobs increasing faster in urban than rural locations, brought large changes after the 1950's. The proportion urban population rose from 22.5 percent in 1955 to 51.1 percent in 1985. Urbanization and the fertility decline were mutually reinforcing processes. As young adults moved from rural areas to urban areas the chose lower rates of reproduction. The economic transformation that was in progress at the same time reduced the emphasis on family employment and increased the importance of qualifying for jobs in an urban industrial labor market. Increases in standards of living with more emphasis on bringing up healthy and educated children were also a factor. The motivation to have many children decreased and families successfully looked for ways to regulate their fertility (SIS, 1995).

3. The third stage of demographic transition started by the aim of decreasing of annual population growth rate, it is 2.49 % between 1980 – 1985 than 2.17 % between 1985 – 1990 , 2.0 in 1990 and 1.5 in 2003.

More reliable change in the structure of population can be observed in the age and sex structure of the population, which can be shown by population pyramids. Decade changes are given below;





From the population pyramids, it can easily be traced that bottom age groups 0-4 and 5-9 start to get tighter after 1980 and relatively older age groups become larger. In 2000, population pyramid both for age group 0-4 and 5-9 are tighter than 10-14 age group. This is important to point out that demographically population aging stage in Turkey started after 2000's. And also it is important to point out this in the educational plans for 2005 and after. It means age groups population of pre-primary and primary education will be stable for 10 more years and start to decline after that, if sufficient school and teacher investment can be done up to 2005. For these two educational levels, Turkey will not need to do extra investment after 2005.

1.1.2. Educational background

To meet the people's aspirations for education, all the governments since 1950 have tried to improve the conditions of education. As a result, expansion of education has been in many ways, very impressive. At the same time, measures have been taken to meet various demands by widening the scope and variety of educational opportunities, so that a complex and varied education system has been established over the years.

The Turkey of the 1990's was being challenged by inexhaustible demands put on its educational system. To understand this and its implications, however a background knowledge of the Turkish educational system will be in order.

The existing educational system is firmly based on the Turkish constitution on "the rights and responsibilities of education and learning" states clearly that no Turkish citizen shall be deprived of the right to education. The same article leaves the details to be worded by education bills to be enacted

later. “ The basic law of national education – No. 1789 “ which came into effect in 1973, underlining the basic principles of the right to education and compulsory free education for primary education level, also stresses the tenets of universality and equality. Besides these, articles 27, 58, 59, 130, 131 and 132 of the 1982 Constitution of the Republic lay the guiding rules for all the educational undertakings, including sporting and other learning activities.

Another fundamental aspect to be mentioned here is the secular nature of education. Turkey being a secular state, the separation of state and religion has been reflected in the educational system as well. Hence the teaching about religions is a constituent part of the national curriculum, but religious education is not allowed.

It can be said that the status and progress of education in Turkey has been along the lines shown above. The crucial importance of education was understood and expressed throughout the republican years. Even so, the state of education as Turkey enters well into the 1990’s is disheartening. It is disheartening in the sense that some serious attempts at radical changes in the system have failed due to political instability (Sezal,1993) .

During the mid of 1990’s a new attack started for to develop a Turkish educational system according to adaptation attempts to European Union averages. With a new application in Turkish education system in school year 1997-1998, primary and junior high school graduations were abolished and a single graduation from eight – year primary education was put in force. The compulsory education was increased from 5 years to 8 years with law No.4306 dated 18.08.1997 in this new system. This law will be the pushing factor for the increases in many educational indicators of the country. Beyond this reason, in and after 1990’s the largeness of the country is coupled with the large student populations. In the 1991-1992 school year, there were 13 115 041 registered students from pre-school through higher education, spread among some 70 883 school units. The same numbers in 2003-2004 school year are 57 753 school units and 15 725 613 registered students. Of course, on the way of to become a full member of European Union, still educational indicators of Turkey are lower than the averages of European Union, but it is not difficult to catch European levels quantitatively by new actions and steps. After the analysis of educational status and trends of Turkey, we will try to throw out some recommendations according to their discussion in the conclusion parts of this study.

1.2. Methodology

1.2.1. Objectives and scope of the study

The main objectives of this study are ;

1. To analyze educational data’s, which come from different sources for the same years of education for all educational levels.

2. After the analysis of educational data's, to provide decided educational indicators for the period of 1970 – 2003, and to analyze these time series for all educational levels.

3. To give the break down of regional differences for all calculated educational indicators for all educational levels.

4. To show the gender differences in educational levels in detail of regional and national base.

1.2.2. Organization of the study

The study is divided into four sections;

1. The first section contains an introduction with general background, objectives and scope of study, organization of study, basis of method and it's rationale, data sources and limitations, educational transition in Turkey, the age and sex structure, population pyramids and the data for the educational assessment.

2. The second section deals with the definitions of mentioned, calculated and estimated educational indicators in this study and calculates the indicators for the period of 1970 – 2003.

3. The third section discusses the regional differences shown by calculated educational indicators for the 2000-2001 and 2001-2002 school years.

4. A brief concluding note and some recommendations are given in the final section (IV) of the paper.

1.2.3. Basis of the selected method and its rationale

Generally, this study covered available data collection, analyzed the reliability of data by search and observation data collection techniques inquiring how, when and for which purposes the data were submitted, tried to standardize data, to do necessary population projections in order to calculate educational indicators, and finally to cast the time series indicators of different educational levels and issues at national and regional levels, and discussed the results. The importance of this study is that it will be the first time that the status and trends of the Turkish education will be discussed on statistically cross - checked educational time series and it will show how statistical planning could also be beneficially utilized and put forward some recommendations by using and discussing these indicators.

1.2.4. Data sources and limitations

Now that there is sufficient accumulation of different sources of files through the years, the information for the present study derives from all of these different sources. These sources are;

1. Records of the National Population Censuses of State Institute of Statistics.

2. Records of national education data of State Institute of Statistics.
3. The publication on “National Education in Numbers“ of Ministry of National Education.
4. Records of “ILSIS“ project of Ministry of National Education to reduce consistent provincial education data.
5. Revising population projections for 1970 – 2000 period by using population interpolation method.
6. Population projections for after the year 2000 by using some assumptions for some demographic indicators.

1.2.5. Computational procedure

The computational procedure of this study is described below;

STEP 1: To analyze different sources of educational data for the years 1970 – 2003: There are several educational studies in Turkey, many researchers have studied the educational indicators or levels of Turkey using short trend analyses, and some researchers have estimated different educational indicators for the same research periods, due to the use different sources of data. In this case, we analyzed two different sources SIS and MONE, and we absolved how they were collected over the years and when/for what purposes submitted the data to users.

Ministry of National Education’s data comes directly from the schools at village level. The questionnaires were filled out by the head masters of schools and sent to the section of national education at district centers. In district centers, summary tables for the district were produced without any editing. Then these summary tables were send to the statistics section of national education of the provinces, where provincial summary tables were produced from district summary tables and send to the Ministry of National Education. Finally at the Ministry of National Education summary tables at national level were put together from these summary tables of the provinces. After that the Ministry of National Education published these tables and submitted to the States Planning Organization on an annual and five yearly basis, and used for the budget discussion or budged demand in the parliament of the Turkish Republic. After these analysis we realized that no editing procedure between beginning and ending intervals of these process existed.

On the other hand according to a protocol between the Ministry of National Education and States Institute of Statistics, all the forms which were filled out in the schools are transferred to States Institute of Statistics. In the States Institute of Statistics all of the forms were edited one by one, time to time they were returned back to the schools and defective parts of the questionnaire were corrected by asking and checking from the related schools and cross checking by older forms of the schools. After the school questionnaires were corrected, at the level of provinces summary tables were further analyzed and

checked. The process of the States Institute of Statistics is more reliable than the Ministry of National Education's process. But it is very time consuming and there is a lack of time when the Ministry and the SPO need the latest data. During this time we see that already two different data sets are produced. In this study, data of educational indicators mostly used from the records of States Institute of Statistics, for the period of 1970 – 2001. during the Education Master Plan exercised in the 1990's at the Ministry, this question of lacking data caused problems and the SIS Project was given impetus. During 2002, Ministry of National Education completed the ILSIS Project and started to produce all educational data under this body. For 2002 and 2003 data from ILSIS project directly were used. In other words, data analyses of 2002 and 2003 could not be checked by SIS, so the data and educational indicators for 2002 and 2003 are called provisional.

We know that the MoNE reviews and corrects the tentative statistical data which is officially published after being checked by the SIS. Therefore, when the educational data for the older years are compared, there are considerable numbers of variation due to the corrected figures.

Since the States Planning Organization has to submit annual and five yearly data, it is always under time constraint. The organization has chosen some statistical methods to introduce some consistency to the series from the macro level. Also, because the organization does not operate local branches to recheck data, it has to wait for the SIS to produce the corrected tables. These tables are published by the SIS. But they may wait for years before they are published. The same situation arises for the census data as well. The SPO has to use either interim data or the final figures of the last published census, for the five – year plans. So, the annual programs and plans may rest either on statistically adjusted or on older final data on the due date of their submission to the Government. When the time comes for the next plan, the figures of the older plans are corrected with the published final data, but the latest years will again need to be interpolated or adjusted by various techniques. So, the data series of SPO show a dynamic character. But in the published plan documents, there may be different figures of realization for the same year, due to the above mentioned problem of lack of time between the collection and the final publication.

This study has been lucky to have full sets of data and time to go back into the old files and analyze the data to be used. The checking problem rests only with the last two years.

It appears that the task is to set up a fast system of collecting reliable educational data and finish its final annual publication in July of every year.

STEP 2: To do population projections for 1970 – 2000 and for 2001 – 2015 separately:

A. Population projection's for the period 1970 – 2000: For the 1970 – 2000 period census populations of 1970, 1975, 1980, 1985, 1990 and 2000

were used. At the beginning total populations in detail of sex for intercensal years were estimated by using formula;

$$P_t = P_0 \cdot e^{r \cdot t}$$

Where ;

- P_t** : Number of population in second census
- P₀** : Number of population in first census
- r** : Annual growth rate of population
- t** : Time interval (year) between two censuses

Then single ages calculated by using the cohort interpolation technique, but cohort interpolation technique does not reduce or correct age heaping. To reduce age heaping and to correct single age data sets, single ages population are estimated by using smoothing of an age distribution technique (Manual X, U.N, 1983). Smoothing and adjustment procedures are usually applied to cumulated age distribution (that's the number of persons or the proportion of persons under given ages) since the process of cumulating removes the effects on errors that do not result in a net transfer of people across each of the age boundaries used. If heaping tends to transfer people whose true ages are both under or over an attractive age to this age, the use of attractive ages as boundaries for cumulating will not minimize the effects of heaping on the cumulated age distribution. In such circumstances, the use of age boundaries half-way between attractive ages would probably minimize net transfers across boundaries (Hill, Zlotnik, and Durch, 1982). There for, a simple way of smoothing age distributions would be to fit a succession of polynomials to the reported population, expressed either as numbers of persons or as the proportions of persons under ages **a+3, a+8, a+13, and a+18**, where **a** is a multiple of five, and to compute the values of these polynomials over their central ranges in order to obtain a smoothed single – year age distribution. However, the problem of smoothing is somewhat complicated by the fact that ages ending in zero are generally more attractive than ages ending in five, so that the cumulated population under ages ending in eight will tend to be too small, where as the cumulated population under ages ending in three will tend to be too large. This tendency can be allowed for by fitting two polynomials, one to cumulated populations under ages ending in three. The two polynomials would then be evaluated over a common central range; and best estimates of the true cumulated population, relatively free of heaping effects, would be found by averaging.

B. Population projections for the period of 2000 – 2015: For the population projections of 2000-2015 period, beginning year has been taken as the 1990 midyear population. After the correction of age distribution of 1990

and 2000 census of populations midyear population of 1990 has estimated in detail of age and sex, than used by input for 2000-2015 population projections. For projections packet computer program of FIV.FIV-SIN.SIN (UNFPA,2000) is used under the umbrella of three different assumptions. Used assumptions described below;

1. Fertility assumptions: Total fertility rate used as the fertility indicator. For the beginning year with depending 1994 projections (SIS,1994), results of 1990 census of population, 1998 Turkish population and health survey HUIPS,2000), and 2000 census of population are used and assume that net reproduction rate will be 1.00 in 2015, than age distribution of intercensal years estimated by interpolation. Fertility distribution also estimated in the similar way, for age distributions of fertility, the structure of 1990 and 2000 census of populations were taken and for the target year 2015 West-Urban model of 1998 Turkish Population and Health Survey (1998, TDHS) has been used. After that, fertility distribution of intercensal years were estimated by interpolation technique.

2. Mortality assumptions: Infant mortality rate is taken as mortality indicator for constitution of mortality assumptions, and searched when the infant mortality rate will reach ideal goal of 15 ‰ . We assume that infant mortality rate will reach in 2030 to 15 ‰ , and intercensal years calculated by interpolation technique. Than interpolated intercensal years values are transformed to mortality level by using model life tables.

3. Assumptions for: International net migration: the accepted assumption for international net migration during to constitution of 2000 population projection by SIS was 50 000 male and 50 000 female yearly international migrants for the period of 1990-2005. After 2005-2010 international net migration would continuously decrease and reach zero during 2020-2025 period. We used the same assumptions for our population projections. For the age and sex structure of international net migration, age and sex structure of migrants from Bulgaria (1994) to Turkey are used in population projections.

STEP 3: Calculation of educational indicators: In this step, decided educational indicators calculated according to definitions which are mentioned in section 4.1 for the period of 1970 – 2003 by using SIS and MONE data and population projections. For the years of 2002 and 2003 calculated indicators are provisional due to non availability of a quality control process on MONE data and using of estimated age distribution by projection for these years.

II - FINDINGS; INDICATORS OF EDUCATIONAL CHANGE

2.1. Definition of indicators

Definition of indicators which are mentioned and calculated or estimated in this study described below;

ILLITERACY RATE (%)

Definition: Number of persons who do not know how to read and write per 100 persons at 6 years of age and over. In other words, the proportion of the illiterate population to the population 6 years of age and over.

Unit: Percent (%)

Source: State institute of statistic; General censuses of population.

ADULT LITERACY RATE (%)

Definition: Number of adult persons who know how to read and write per 100 persons at 15 years of age and over. In other words, the proportion of the literate adult population at 15 years of age and over.

Unit: Percent (%)

Source: States Institute of Statistics; general censuses of population for the years which ending by 0 and 5, and Household Labor Force Surveys for intercensal years.

NET PRE-PRIMARY SCHOOL ENROLLMENT RATIO (3-5 AGES) (%)

Definition: The ratio of the number of children officially at pre-primary school age (3-5) enrolled in pre-primary school to the number of children officially at pre-primary school age in the population.

Unit: Percent (%)

Source: Ministry of National Education; national education in numbers, for enrolled number of children in detail of age and sex. States Institute of Statistics; general censuses of population for the years which ends by 0 and 5; National Education Statistics. Population projections for intercensal years.

NET PRE-PRIMARY SCHOOL ENROLLMENT RATIO (4-5 AGES) (%)

Definition: The ratio of the number of children officially at pre-primary school age (4-5) enrolled in pre-primary schools to the number of children officially at pre-primary school age in the population.

Unit: Percent (%)

Source: Ministry of National Education; national education in numbers for enrolled number of children in detail of age and sex. States Institute

of Statistics; general census of population for the years which ends by 0 and 5; National Education Statistics. Population projections for intercensal years.

Explanation: Net enrollment rate of pre-primary education for the ages 3-5, calculated by international comparisons. Due to lack of financial resources the States Planning Organization and Ministry of National Education use one which is calculated for only ages 4-5, that is the reason why in this study it was calculated for two different age groups.

GROSS PRIMARY SCHOOL ENROLLMENT RATIO (%)

Definition: The ratio of total primary school enrollments, regardless of age, to the population of the age group that officially corresponds to the primary school level of education.

Unit: Percent (%)

Source: States Institute of Statistics; general census of population, National Education Statistics. Population projections of SIS. Ministry of National Education; national education in numbers.

Explanation: With a new implementation in the Turkish education system in school year 1997-1998, separate primary and junior high school graduations were abolished and a single graduation from eight year primary education has been introduced. The compulsory education, which was raised from 5 years to 8 years in 1973 was put into strict force with law No.4306 dated 18.08.1997 with this new system.

GROSS PRIMARY EDUCATION ENROLLMENT RATIO (%)

Definition: The ratio of total primary education enrollment, regardless of age to the population of the age group that officially corresponds to the primary education level of education.

Unit: Percent (%)

Source: States Institute of Statistics; general census of population, National Education Statistics. Population projections. Ministry of National Education; national education in numbers.

NET PRIMARY SCHOOL ENROLLMENT RATIO (%)

Definition: The ratio of the number of children officially at primary school age enrolled in primary school to the number of children officially at primary school age in the population.

Unit: Percent (%)

Source: States Institute of Statistics; general census of population, National Education Statistics. Population projections. Ministry of National Education; national education in numbers.

Explanation: With a new implementation in Turkish education system in school year 1997-1998, primary and junior high school graduations

were abolished and a single graduation from primary education has been introduced.

NET PRIMARY EDUCATION ENROLLMENT RATIO (%)

Definition: The ratio of the number of children officially at primary education age enrolled in primary education to the number of children officially at primary education age in the population.

Unit: Percent (%)

Source: States Institute of Statistics; general census of population, National Education Statistics. Population projections. Ministry of National Education; national education in numbers.

GROSS SECONDARY EDUCATION ENROLLMENT RATIO (%)

Definition: The ratio of total secondary enrollment, regardless of age, to the total population of the age group that officially corresponds to the secondary level of education.

Unit: Percent (%)

Source: States Institute of Statistics; general census of population, National Education Statistics. Population projections. Ministry of National Education; national education in numbers.

NET SECONDARY EDUCATION ENROLLMENT RATIO (%)

Definition: The ratio of the number of children officially at secondary education age enrolled in secondary education to the number of children officially at secondary education age in the population.

Unit: Percent (%)

Source: States Institute of Statistics; general census of population, National Education Statistics. Population projections. Ministry of National Education; national education in numbers.

GROSS TERTIARY EDUCATION ENROLLMENT RATIO (%)

Definition: The ratio of total tertiary enrollment, regardless of age, to the total population of the age group that officially corresponds to the tertiary level of education.

Unit: Percent (%)

Source: States Institute of Statistics; general census of population, National Education Statistics. Population projections. Council of Higher Education; higher education statistics.

NET TERTIARY EDUCATION ENROLLMENT RATIO (%)

Definition: The ratio of the number of persons officially at tertiary education age enrolled in tertiary education to the number of person officially at tertiary education age in the population.

Unit: Percent (%)

Source: States Institute of Statistics; general census of population, National Education Statistics. Population projections. Council of Higher Education; higher education statistics.

AVERAGE NUMBER OF YEARS OF SCHOOLING COMPLETED (Year)

Definition: This indicator is calculated by dividing the total number of years of schooling spend by population aged 15 and over to the total population aged 15 and over.

Unit: Year

Source: Hacettepe University, Institute of Population Studies; Turkish Population and Health Surveys.

LITERACY RATE OF 15 TO 24 YEARS OLDS (%)

Definition: It is indication of the percentage of the literate population aged between 15-24 age group. It is calculated by taking the ratio of literate persons in 15-24 age group to total population in the same age group.

Unit: Percent (%)

Source: States Institute of Statistics; general census of population for the years which ends by 0 and 5, and Household Labor Force Surveys for intercensal years.

GENDER DIFFERENCES (RATIO OF FEMALE TO MALE AT EDUCATION LEVELS), (%)

Definition: It shows a relative magnitude of the school enrollment ratio of the females to the school enrollment ratio of the males in different educational levels in a given year. Similarly, a relative magnitude of ratio of females to the ratio of males in any educational indicator.

Unit: Percent (%)

Source: Calculated educational indicators in detail of sex, and enrollment ratios for all educational levels.

NUMBER OF STUDENT PER CLASS ROOM (Person)

Definition: This indicator is calculated by dividing the total number of students to the number of classrooms in all educational levels in a given year.

Unit: Person

Source: States Institute of Statistics; national education statistics. Ministry of National Education; national education in numbers.

2.2. Indicators of educational change

To estimate the future school-age populations which are provided by projections of total population by sex and ages, the development of education, particularly in recent years, has indicated the need for more detailed and comprehensive educational projections which include school enrollment and output by level and type of education and projections of total population by educational attainment.

School enrollment projections for different educational levels will be given in the appendix part of this study. On the other hand, planning in the education sector involves not only providing basic physical facilities to meet the demands of the cohorts of school-age population, but also calls for improvements in quality and changes in methods of education. It is possible to get time series data for the different type of educational indicators. Time series data will give the idea about what happened in the past, what the aim or scope of series was and also provide possibility to forecast future level of each indicator. The subject of this study's interest with time series data of educational indicators is to analyze them and discuss these indicators.

2.2.1. Illiteracy and adult literacy rates

Statistics of literacy or illiteracy have their use in the more backward countries where a minimum education indicator of this kind can show how quickly conditions are improving. Nevertheless, it provides only an approximate measure because of the difficulties in establishing a rigorous test and the fact that these tend to vary over time.

Table 1 and figure 1.1 shows illiteracy rates of Turkey for the period of 1970-2003, and figure 1.2 represents gender differences, for this indicator for same period. From this table and figures, it can be understood that illiteracy ratio decreased from 29.69 % to 4.63 % for males between the years 1970 to 2003, decreasing by 84.41 %. For females also decreasing from 58.20 % to 16.76 % for the same period the decrease was 71.20 %. In general, Turkey achieved to reduce illiteracy 75.73 % in 33 years. It can be seen from figure 1.2, gender differences gap between males and females continuously increased during this period. In 1970 two illiterate females can be found among three illiterate people, but in 2003 approximately four illiterate females spaced among five illiterate people. It means opened courses or attack to reduce illiteracy in past 33 years had more positive effects on males then on females. This calls for new attack and plans to reduce female illiteracy for future. But coupled with a need approach. Taking into account that both sexes were offered the same

opportunities, the fact that females have benefited less from them calls for a serious needs assessment study.

TABLE . 1 : ILLITERACY RATIOS, TURKEY, 1970-2003

YEARS	MALE	FEMALE	TOTAL	GENDER RATIO
1970	29.69	58.20	43.79	1.96
1975	23.79	49.49	36.28	2.08
1980	20.02	45.33	32.52	2.26
1985	13.48	31.84	22.55	2.36
1990	11.19	28.02	19.51	2.50
1991	10.69	27.15	18.83	2.54
1992	10.18	26.29	18.14	2.58
1993	9.68	25.42	17.46	2.63
1994	9.17	24.56	16.78	2.68
1995	8.67	23.69	16.10	2.73
1996	8.16	22.82	15.41	2.80
1997	7.66	21.96	14.73	2.87
1998	7.15	21.09	14.05	2.95
1999	6.65	20.23	13.36	3.04
2000	6.14	19.36	12.68	3.15
2001	5.64	18.49	12.00	3.28
2002	5.13	17.63	11.31	3.44
2003	4.63	16.76	10.63	3.62

FIGURE . 1.1 : ILLITERACY RATIOS, TURKEY, 1970-2003

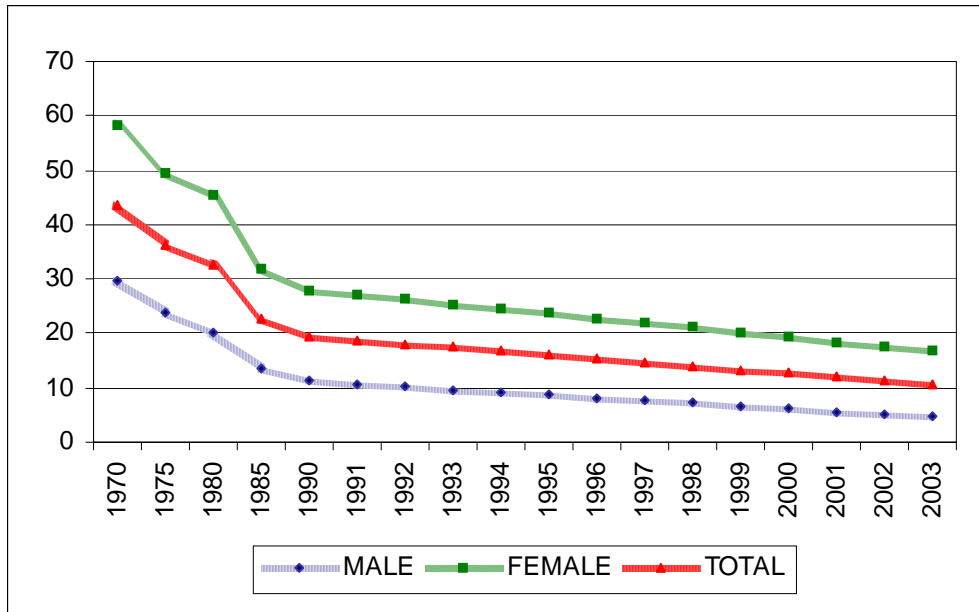
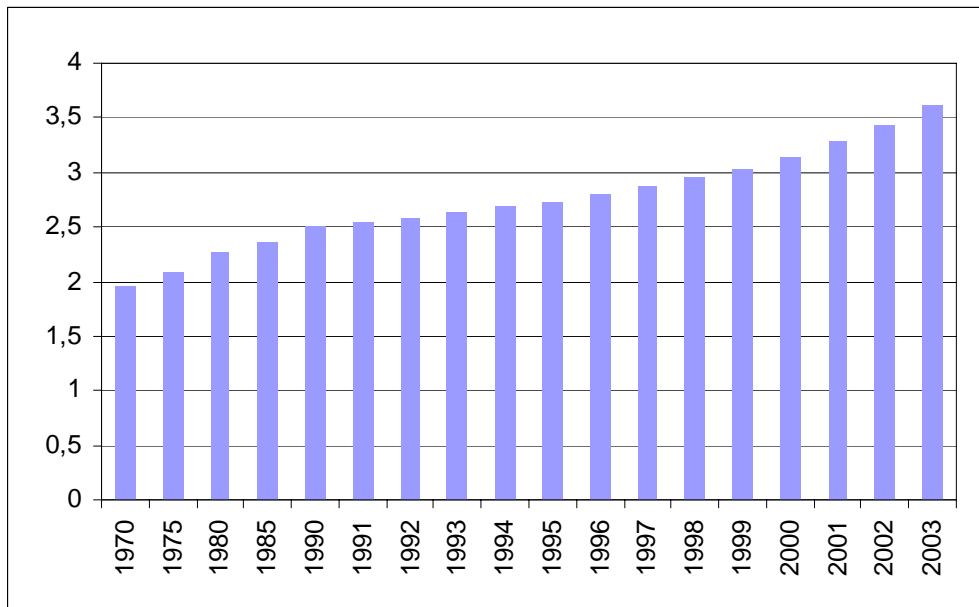


FIGURE . 1.2 : GENDER DIFFERENCES IN ILLITERACY RATIOS, TURKEY, 1970-2003



Adult literacy rate for persons over 15 years of age is another measure to show literacy in working age group or the labor force. It can be seen from table 2 and figure 2.1 that the literacy in the working age is increased from 71.0 % to 95.07 % for males and 35.6 % to 81.1 % for females between 1970-2003 periods. The increase for males is 34.79 % and 127.81 % for females. It is a big achievement for female adult population, on the other hand from figure 2.2, in 1970, for 100 adult literate males can be found 50 adult literate females. This equivalency of gender differences closed in 33 years and in 2003; at present is it 100 adult males against 85 adult females in the population. We can say that gender differences in adult literacy reduced by 70 % in 33 years for males and females.

TABLE . 2 : ADULT LITERACY RATE, TURKEY, 1970-2003

YEARS	MALE	FEMALE	TOTAL	GENDER RATIO
1970	71.0	35.6	53.4	0.50
1975	77.2	45.0	61.5	0.58
1980	81.3	49.7	65.6	0.61
1985	87.6	64.2	75.9	0.73
1990	89.8	67.4	78.4	0.75
1991	90.7	68.3	79.4	0.75
1992	92.0	72.0	81.6	0.78
1993	93.5	76.7	84.7	0.82
1994	93.4	75.6	84.1	0.81
1995	94.0	76.6	85.0	0.81
1996	94.0	76.3	84.9	0.81
1997	93.9	76.9	85.1	0.82
1998	94.4	77.6	85.8	0.82
1999	94.6	78.1	86.3	0.83
2000	94.5	78.3	86.5	0.83
2001	94.5	78.2	86.3	0.83
2002	95.3	79.9	87.1	0.84
2003	95.7	81.1	87.9	0.85

FIGURE . 2.1 : ADULT LITERACY RATES, TURKEY, 1970-2003

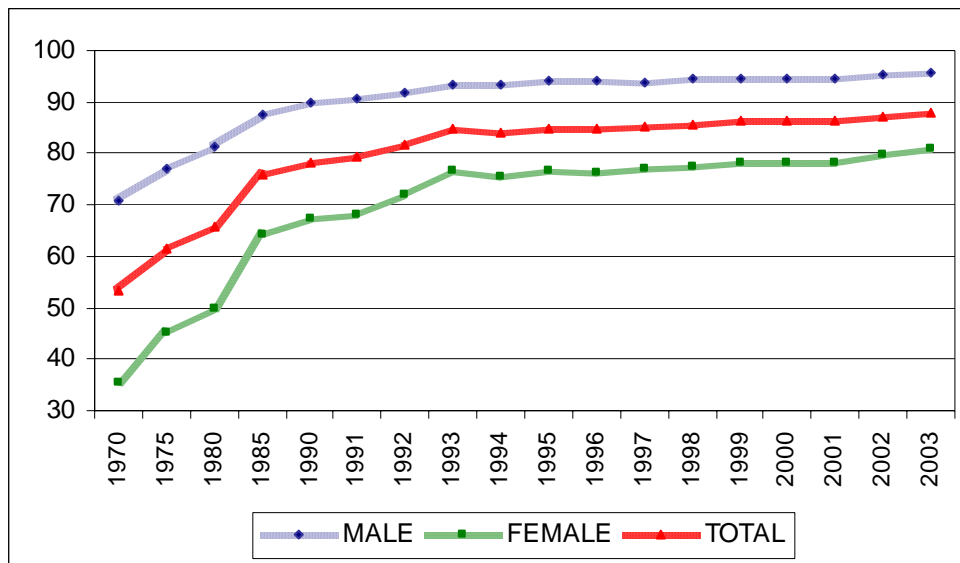
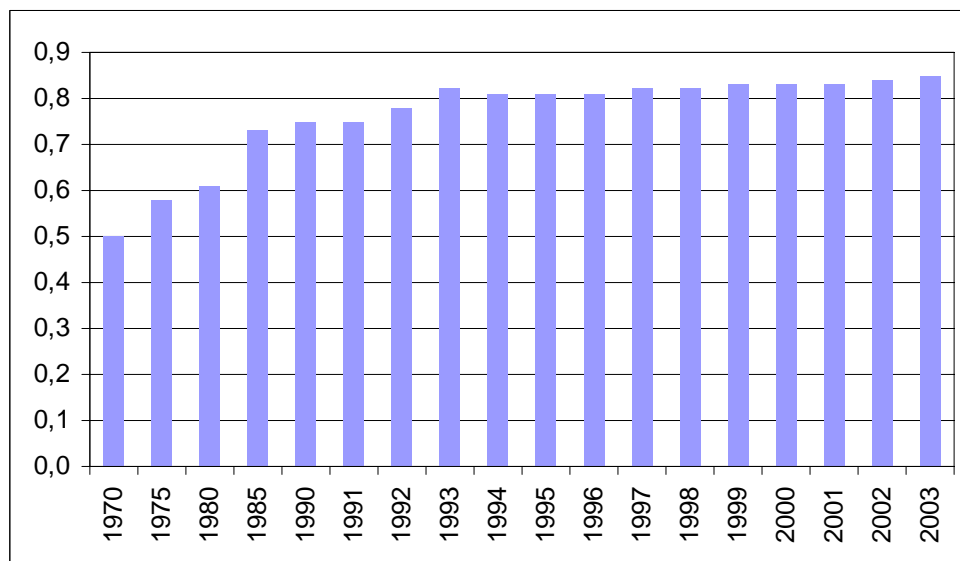


FIGURE . 2.2 : GENDER DIFFERENCES IN ADULT LITERACY RATES, TURKEY, 1970-2003



2.2.2. Net enrollment ratios for pre-primary education

Pre-primary education is simply preparatory education of children to educational life. However, in industrialized communities, it is considered like a compulsory condition for the families with working fathers and mothers. Literature shows that if the mothers work in any job, it is one of the pushing factors to send children to a pre-primary school. In the case of Turkey, females ratio in active labor force is too low when compared to the males. This is a phenomenon of fast urbanization. The working village women become housewives at the first stages of urbanization.

TABLE . 3 : PRE-PRIMARY EDUCATION, NET ENROLLMENT RATIOS, TURKEY, 1980-2003

YEARS	NET ENROLLMENT RATIO (3-5 AGES)			NET ENROLLMENT RATIO (4-5 AGES)		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
1970						
1975						
1980	1.00	0.30	0.65	1.62	0.48	1.05
1985	2.39	2.32	2.34	4.18	4.07	4.10
1990	3.10	2.95	3.03	5.01	4.77	4.90
1991	3.48	3.27	3.37	5.27	4.95	5.10
1992	3.53	3.35	3.43	5.04	4.79	4.90
1993	3.75	3.49	3.62	6.32	5.88	6.10
1994	3.87	3.68	3.78	7.47	7.11	7.30
1995	4.25	3.92	4.09	7.90	7.28	7.60
1996	4.71	4.34	4.53	8.81	8.11	8.47
1997	4.87	4.49	4.69	9.13	8.42	8.79
1998	5.26	4.87	5.07	9.90	9.16	9.54
1999	5.39	5.04	5.22	10.16	9.50	9.84
2000	5.61	5.38	5.50	10.60	10.16	10.39
2001	5.62	5.40	5.51	10.62	10.20	10.41
2002	6.19	6.00	6.10	11.55	11.19	11.38
2003	8.27	6.98	7.67	15.39	12.99	14.27

In educational literature, pre-primary education net enrollment ratios are calculated for the 3-5 age group, but in Turkey according to a definition of States Planning Organization it is calculated for 4-5 age group. However, we calculated net enrollment ratios of pre-primary education for two different age groups and the results are given in table 3, figure 3.1 and 3.2. For 1970 and 1975 data is not available, this might be due to the very small number of children in pre-primary schools. Data was not collected for 1970 and 1975. Net enrollment ratio for 3-5 age group of males is 1.0 % in 1980 and 8.27 % in 2003, it is 1.62 % in 1980 and 15.39 % in 2003 for the 4-5 age group. Net enrollment ratio of pre-primary education of males, approximately increased 8 times. Similarly, net pre-primary education enrollment ratio for the 3-5 age group of females increased from 0.30 % to 6.89 % between the 1980-2003 years. It was 0.48 % in 1980 and increased to 12.99 % in 2003 for the 4-5 age group of females. In comparison with European Union , level of pre-primary education net enrollment ratio is quite low for both age groups. It means that future education plans of Turkey should seriously include investment, teacher and school units for the pre-primary education level. It can be planned step by step in the years, but very important point is that the education plans should care about regional differences and will start from some pilot regions with the ones which have pre-primary education net enrollment ratios under the 5 % .

FIGURE . 3.1. : PRE-PRIMARY EDUCATION, NET ENROLLMENT RATIOS (3 – 5 AGES), TURKEY, 1980-2003

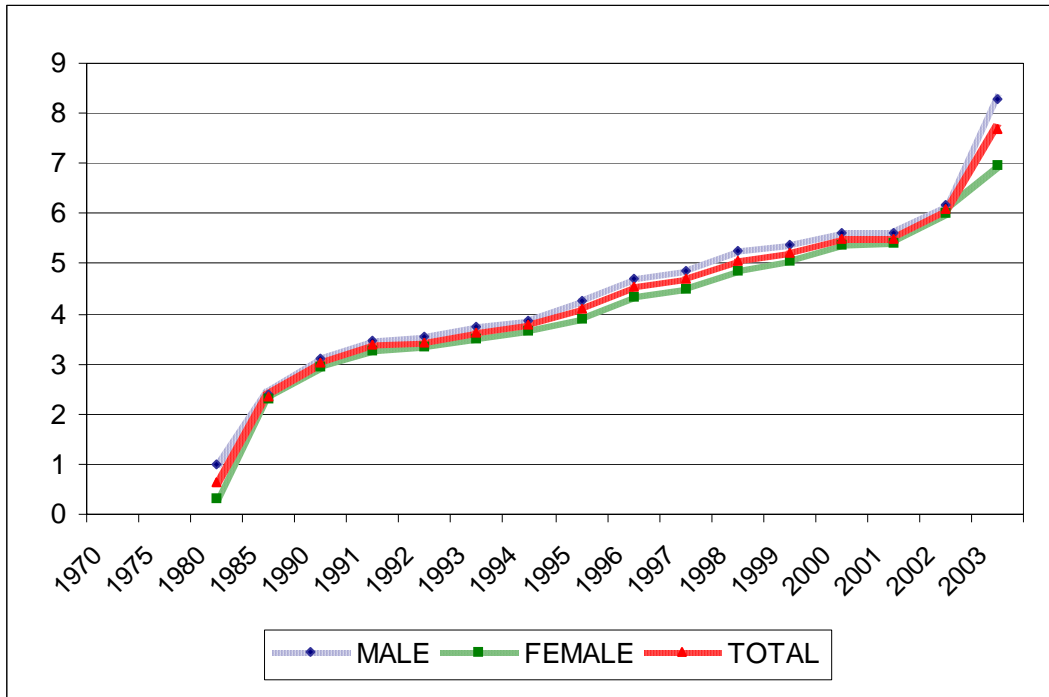
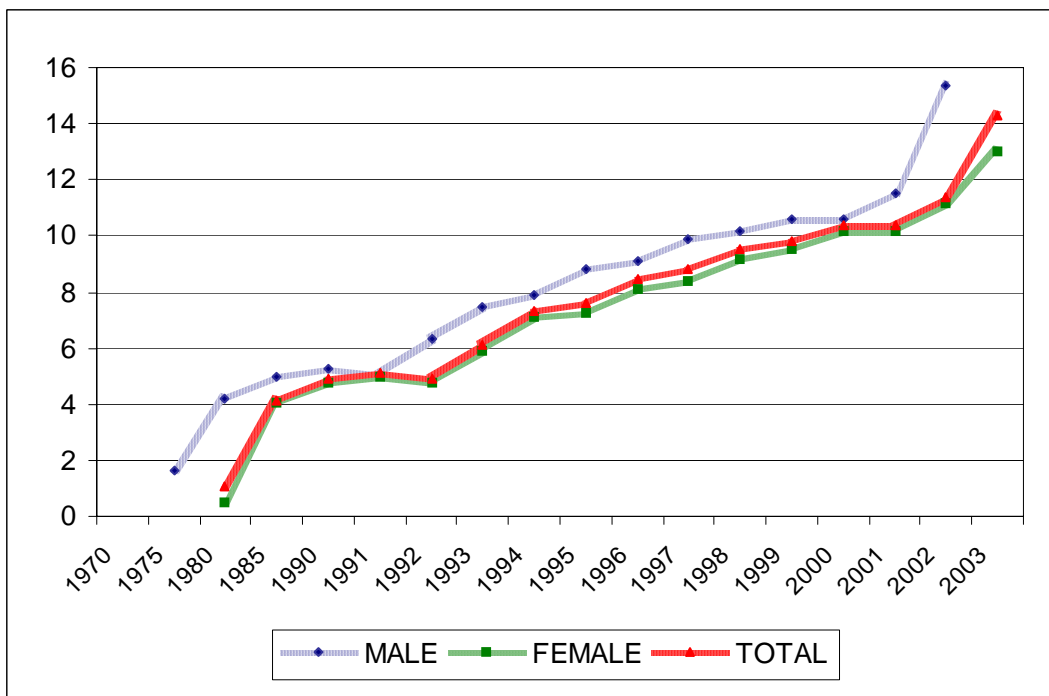


FIGURE . 3.2. : PRE-PRIMARY EDUCATION, NET ENROLLMENT RATIOS (4 – 5 AGES), TURKEY, 1980-2003



2.2.3. Primary education, gross and net enrollment ratios

Primary education is the most important education level for all countries, because it defines secondary and tertiary education level and quality. If the net enrollment ratio of the primary education is approximately 100 %, possibly more graduated students pass and continue to secondary and tertiary education level. In this respect Turkey tried to achieve, and improve its gross and net enrollment ratio for primary education in the past. In the process of improvement, during the 1973 primary education (5 years) has taken the 8 year compulsory education decision. However, in 1997 junior high schools were included under the primary education. Tables 4,5, figures (4-5).1 and (4-5).2 shows gross and net enrollment ratios for primary education between 1970-2003. From these tables and figures, it can be derived that a sharp increase has been recorded for females between 1970-1975 due to compulsory education. After 1975 gross and net enrollment ratios of primary education decreased for both sexes up to 1980. It may be due to economic instabilities in the country and political conflicts before 1980. After 1980 gross and net enrollment ratios of primary education continuously increased for the total and for females, but for males net enrollment ratio of primary education slightly down. There is also fluctuations in 1980, 1985 and 1990. It should be mentioned here that gross enrollment ratio in primary education for males is 108.71 % in 1970 and it is decreased to 99.69 % in 1996, it means during 1970's more students without primary education were covered by the primary education system. Second important increase in trend data is coming after 1997. After junior high schools were merged into compulsory primary education, gross and net enrollment ratios of primary education fell in 1997 for males slightly, but for females sharply. Then, again it started to increase for males, but it was approximately stable for females in 1998. In 1999 it started to increase continuously for both sexes. And in 2000 it reached the previous level of 1996. It may show that Turkish education system adopted to new system in three or four years, or system has the ability of renew itself. In 2000's, gross enrollment ratios increased to 97.39 % for males 93.00 % for females, and net enrollment ratios in 2003 are 93.57 % and 90.21 % for males and females respectively. However, just after two serious educational attacks by the laws of compulsory education in 1973 and 1997 net enrollment ratios of primary education decreased from 96.33 % to 93.57 % for males. This points at the problems of working children. The education system needs to take decisions not in an attack form but by providing wise solutions to the results of a sound needs assessment study. An increase from 74.38 % to 90.21 % occurred for females between 1970-2003. During these periods the structure of education changed from formal request to compulsory, and also compulsory education changed from 5 years to 8 years.

TABLE . 4 : PRIMARY SCHOOL, GROSS AND NET ENROLLMENT RATIOS, TURKEY, 1970-2003

YEARS	GROSS ENROLLMENT RATIO			NET ENROLLMENT RATIO		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
1970	108.71	83.94	96.65	96.33	74.38	85.64
1975	104.60	90.08	97.58	92.68	79.81	86.46
1980	100.96	88.62	94.95	89.46	78.52	84.13
1985	103.20	97.26	100.31	91.55	86.35	88.88
1990	105.36	98.32	101.92	88.70	95.06	91.96
1991	105.54	98.58	102.16	89.41	95.69	92.63
1992	103.20	96.78	100.07	87.83	93.66	90.82
1993	100.23	94.88	97.64	87.92	92.13	90.09
1994	99.50	94.38	97.02	87.28	91.29	89.34
1995	99.01	93.78	96.47	86.79	90.94	88.93
1996	99.69	93.55	96.68	86.92	91.80	89.40
1997	-	-	-	-	-	-
1998	-	-	-	-	-	-
1999	-	-	-	-	-	-
2000	-	-	-	-	-	-
2001	-	-	-	-	-	-
2002	-	-	-	-	-	-
2003	-	-	-	-	-	-

TABLE . 5 : PRIMARY EDUCATION, GROSS AND NET ENROLLMENT RATIOS, TURKEY, 1970-2003

YEARS	GROSS ENROLLMENT RATIO			NET ENROLLMENT RATIO		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
1970	-	-	-	-	-	-
1975	-	-	-	-	-	-
1980	-	-	-	-	-	-
1985	-	-	-	-	-	-
1990	-	-	-	-	-	-
1991	-	-	-	-	-	-
1992	-	-	-	-	-	-
1993	-	-	-	-	-	-
1994	-	-	-	-	-	-
1995	-	-	-	-	-	-
1996	-	-	-	-	-	-
1997	92.00	78.93	85.63	86.28	75.61	81.08
1998	97.05	79.49	88.49	91.00	75.78	83.59
1999	99.89	88.45	94.30	95.15	85.53	90.45
2000	99.95	92.15	96.18	93.62	87.78	90.80
2001	100.04	93.00	96.63	92.37	87.04	89.79
2002	98.73	93.03	95.98	92.46	88.40	90.50
2003	97.39	93.00	95.28	93.57	90.21	91.95

FIGURE . (4-5).1 : PRIMARY EDUCATION GROSS RATIOS, TURKEY, 1970-2003

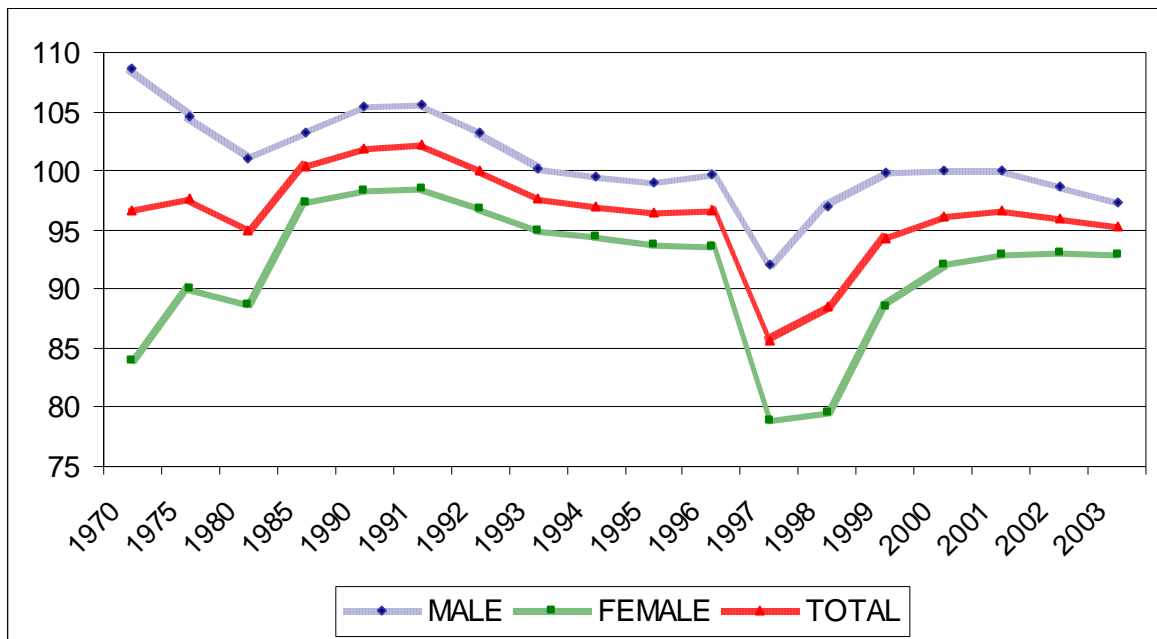
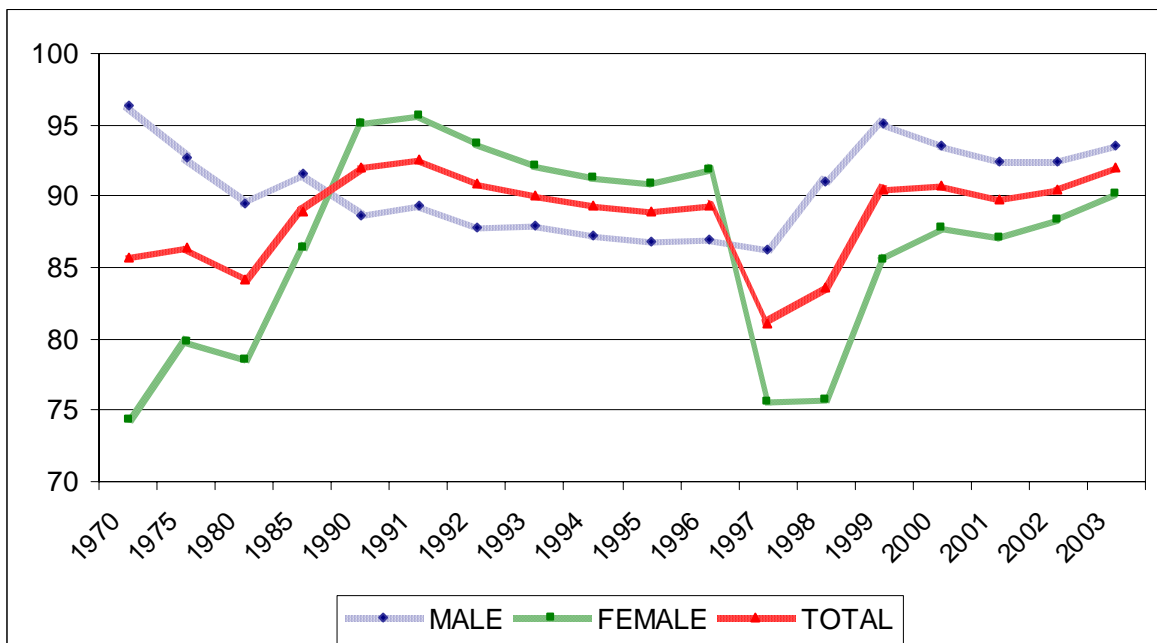


FIGURE . (4-5).2 : PRIMARY EDUCATION NET ENROLLMENT RATIOS, TURKEY, 1970-2003



2.2.4. Secondary education gross and net enrollment ratios

Gross and net enrollment ratios of secondary education given in table 6, figure 6.1 and 6.2 . From table 6, figure 6.1 and 6.2 can be seen that gross enrollment ratios for secondary education increased from 35.04 % to 85.10 % for males, and 15.32 % to 63.34 % for females during the 1970-2003 period. Similarly, net enrollment ratios for the secondary education of male students increased from 30.98 % to 50.24 % during 1970-2003 period. Similar increase was recorded for female students from 13.54 % to 42.41 % in the same period.

TABLE . 6 : SECONDARY EDUCATION, GROSS AND NET ENROLLMENT RATIOS, TURKEY, 1970-2003

YEARS	GROSS ENROLLMENT RATIO			NET ENROLLMENT RATIO		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
1970	35.04	15.32	25.63	30.98	13.54	22.66
1975	40.97	20.08	31.13	31.19	15.30	23.18
1980	43.37	24.02	34.21	31.40	17.07	24.10
1985	44.66	26.87	36.13	31.68	18.83	25.02
1990	45.95	29.72	38.05	31.82	20.59	26.35
1991	49.44	32.58	41.21	33.85	22.31	28.21
1992	53.41	35.06	44.45	37.41	24.56	31.13
1993	56.69	37.54	47.34	40.00	28.86	34.57
1994	61.20	40.15	50.90	42.35	30.89	36.74
1995	63.47	42.90	53.40	44.05	33.21	38.74
1996	61.64	43.19	52.62	43.10	33.78	38.54
1997	59.91	44.47	52.36	41.19	33.78	37.56
1998	64.21	48.67	56.61	41.69	34.47	38.16
1999	65.21	48.42	57.00	42.81	35.27	39.12
2000	63.44	47.97	55.95	43.87	36.06	40.09
2001	68.64	52.67	60.90	47.29	38.77	43.16
2002	81.28	60.00	71.02	48.51	40.14	44.47
2003	85.10	63.34	74.62	50.24	42.41	46.47

The important point in these tables and figures is that after 1996, in which year the compulsory education was strictly enforced to become eight years, gross and net enrollment ratios for secondary education started to decrease for both sexes in 1997, than in 1998 started to increase again and reached higher levels than 1996 level. In 2000, continued to increase up to 2003. It is simply, the adaptation of the education system to the new structure and the result of pushing factor of compulsory education on secondary education.

FIGURE . 6.1 : SECONDARY EDUCATION GROSS ENROLLMENT RATIOS, TURKEY, 1970-2003

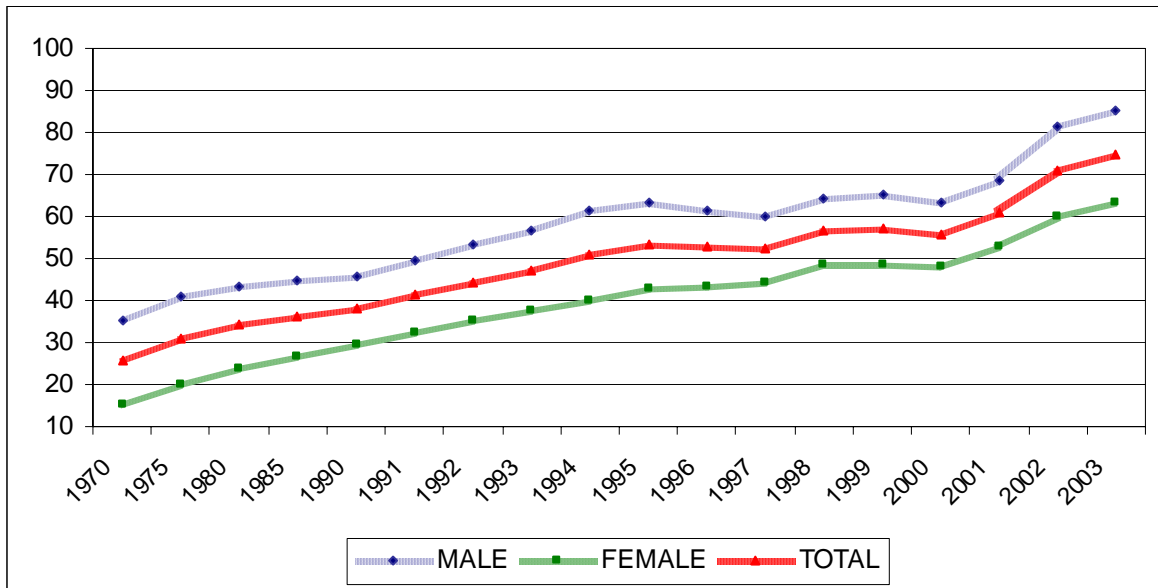
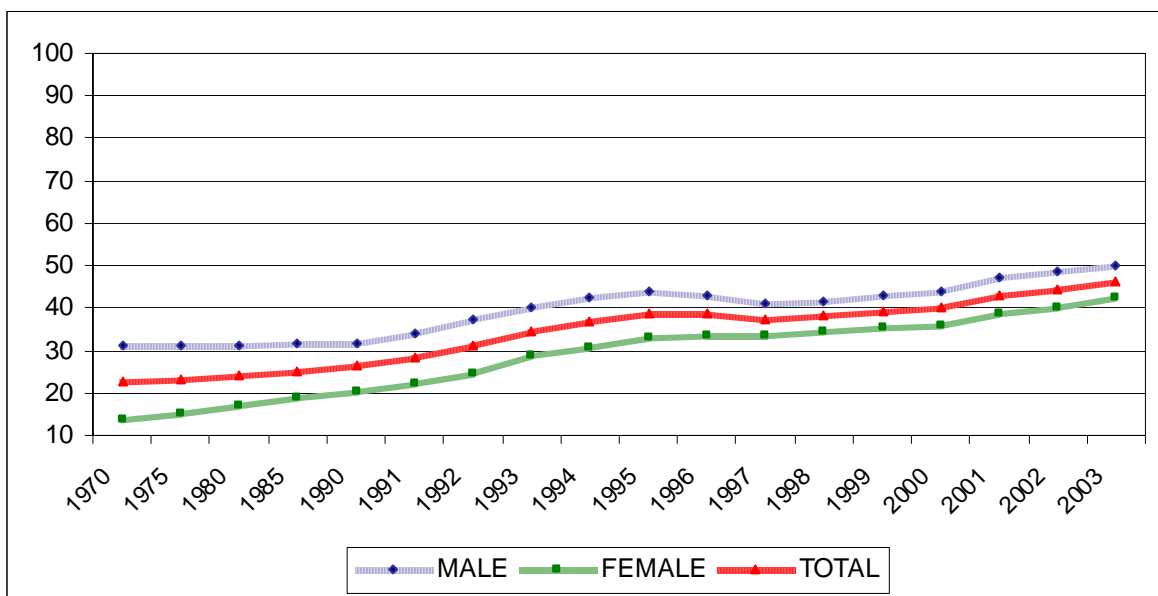


FIGURE . 6.2 : SECONDARY EDUCATION NET ENROLLMENT RATIOS, TURKEY, 1970-2003



2.2.5. Tertiary education gross and net enrollment ratios, with and without distance tertiary education

Table 7.1, figures 7.1.1 and 7.1.2 represent results of gross and net enrollment ratios of tertiary education with distance tertiary education.

TABLE . 7.1: TERTIARY EDUCATION, GROSS AND NET ENROLLMENT RATIOS, TURKEY, 1970-2003

YEARS	GROSS ENROLLMENT RATIO			NET ENROLLMENT RATIO		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
1970	7.29	1.81	4.67	3.93	1.16	2.63
1975	9.70	3.31	6.79	5.23	2.12	3.82
1980	7.42	2.72	5.12	4.00	1.74	2.88
1985	11.50	6.62	8.59	6.03	4.23	4.83
1990	16.35	8.65	12.60	8.57	5.53	7.08
1991	16.95	9.17	13.25	8.64	5.77	7.24
1992	18.53	10.22	14.48	8.93	6.24	7.62
1993	21.72	13.62	17.76	10.48	7.58	9.61
1994	21.40	13.95	17.76	9.82	7.35	8.61
1995	21.96	14.80	18.46	10.57	8.07	9.35
1996	23.65	15.83	19.25	10.58	8.35	9.21
1997	25.22	17.19	21.29	11.73	9.45	10.61
1998	25.23	17.40	21.39	12.10	9.82	10.98
1999	24.55	17.42	21.05	12.68	10.52	11.62
2000	23.87	17.53	20.77	12.26	10.61	11.49
2001	24.13	18.17	21.32	12.58	11.07	11.84
2002	27.55	20.37	24.04	13.98	11.96	12.99
2003	27.49	20.48	24.14	14.18	11.95	13.26

From table 7.1, figures 7.1.1 and 7.1.2 it can be seen that gross enrollment ratios of tertiary education for male students increased from 7.29 % to 27.49 %, and for female students from 1.81 % to 20.48 % between 1970-2003. Same level of increase can also be realized for net enrollment ratios of both sexes between 1970-2003 period. There are increases from 3.93 % to 14.18 % for males, and 1.16 % to 11.95 % for females in the same period.

Gross and net enrollment ratios of tertiary education without the distance tertiary education are necessary measures or indicators for the purpose of creating physical capacity. Table 7.2, figures 7.2.1 and 7.2.2 represent to gross and net enrollment ratios of tertiary education without the tertiary education. During the 1970-2003 period, gross enrollment ratios of tertiary education are increased from 7.29 % to 17.66 % for males and 1.81 % to 12.77 % for females. Similarly, net enrollment ratios increased from 3.93 % to 11.80 % for males, and 1.16 % to 9.51 % for females. It should be mentioned that distance tertiary education in Turkey started to give graduates after 1980.

FIGURE . 7.1.1 : TERTIARY EDUCATION GROSS ENROLLMENT RATIOS, TURKEY, 1970-2003

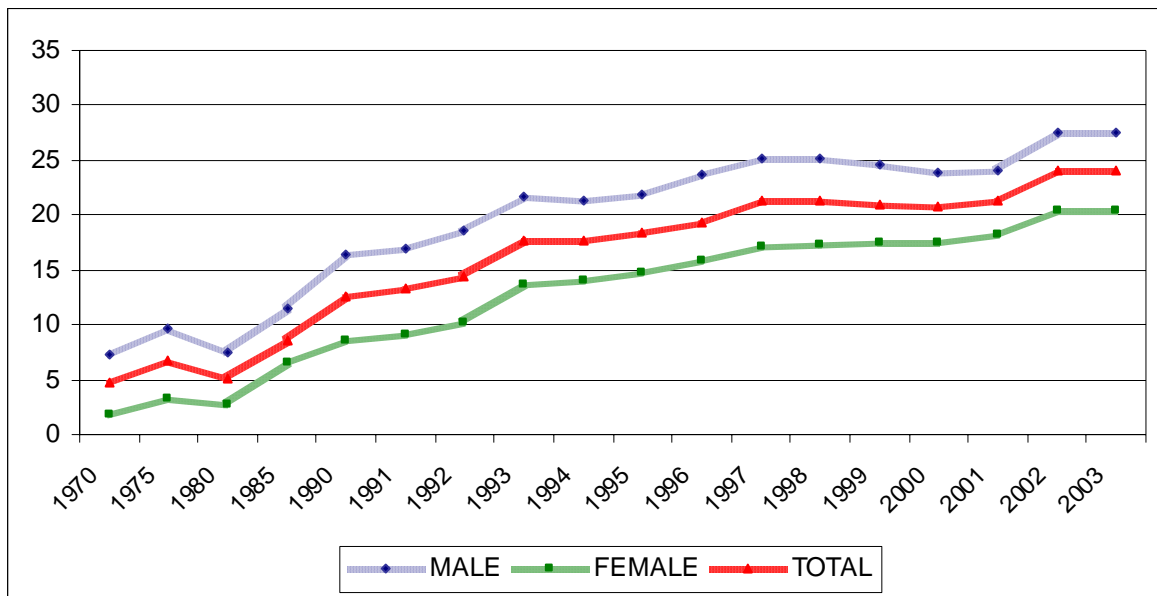


FIGURE . 7.1.2 : TERTIARY EDUCATION, NET ENROLLMENT RATIOS, TURKEY, 1970-2003

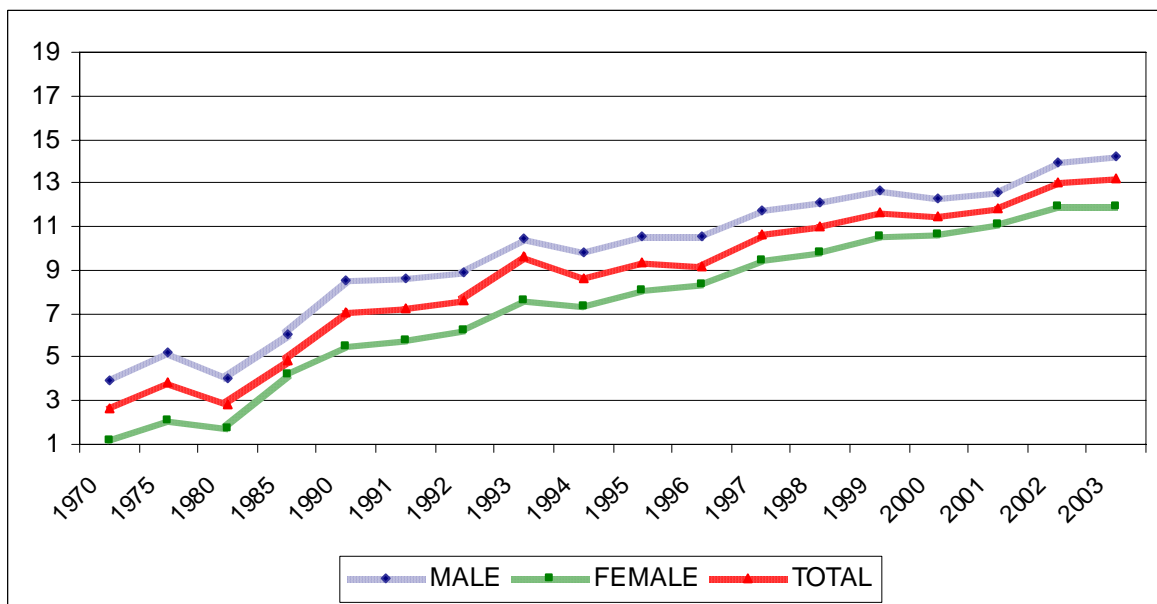


TABLE . 7.2 : TERTIARY EDUCATION, GROSS AND NET ENROLLMENT RATIOS (WITHOUT DISTANCE TERTIARY EDUCATION), TURKEY, 1970-2003

YEARS	GROSS ENROLLMENT RATIO			NET ENROLLMENT RATIO		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
1970	7.29	1.81	4.67	3.93	1.16	2.63
1975	9.70	3.31	6.79	5.23	2.12	3.82
1980	7.42	2.72	5.12	4.00	1.74	2.88
1985	8.76	4.60	6.70	5.95	3.53	4.76
1990	10.04	5.73	7.94	6.82	4.40	5.64
1991	10.19	5.98	8.13	6.83	4.60	5.75
1992	10.71	6.45	8.63	7.09	5.00	6.07
1993	12.48	7.66	10.12	8.25	5.76	7.03
1994	12.34	7.82	10.13	7.57	5.56	6.59
1995	13.43	8.77	11.15	8.64	6.37	7.53
1996	15.40	9.93	12.35	8.83	4.43	6.49
1997	16.57	10.87	13.78	9.76	7.36	8.59
1998	16.71	11.23	14.03	10.24	7.85	9.07
1999	15.76	11.22	13.54	10.21	8.20	9.23
2000	15.87	11.56	13.76	10.63	8.78	9.73
2001	16.24	12.09	14.22	11.46	9.74	10.62
2002	17.58	12.59	15.15	11.89	9.50	10.71
2003	17.66	12.77	15.26	11.80	9.51	10.66

FIGURE . 7.2.1 : TERTIARY EDUCATION, GROSS ENROLLMENT RATIOS (WITHOUT DISTANCE TERTIARY EDUCATION), TURKEY, 1970-2003

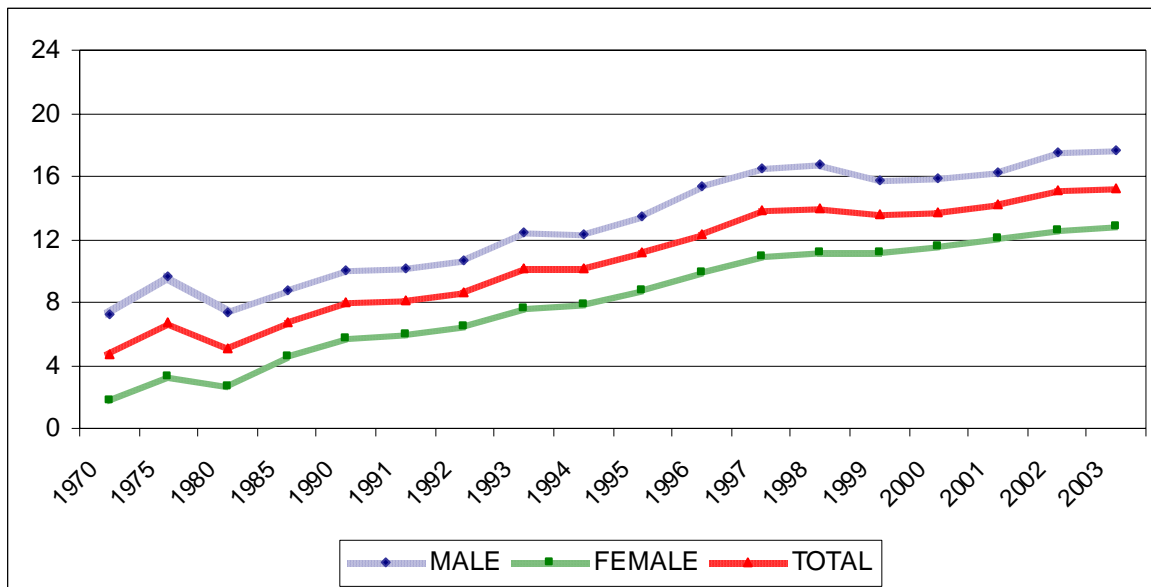
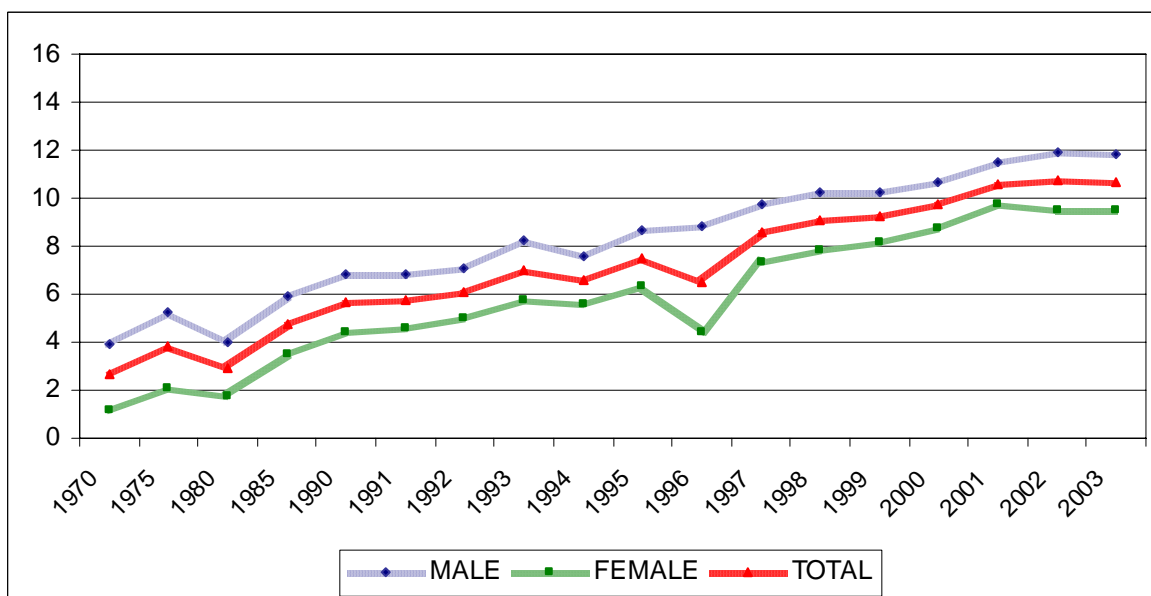


FIGURE . 7.2.2 : TERTIARY EDUCATION, NET ENROLLMENT RATIOS (WITHOUT DISTANCE TERTIARY EDUCATION), TURKEY, 1970-2003



2.2.6. Gender differences at all educational levels in Turkey between 1970-2003

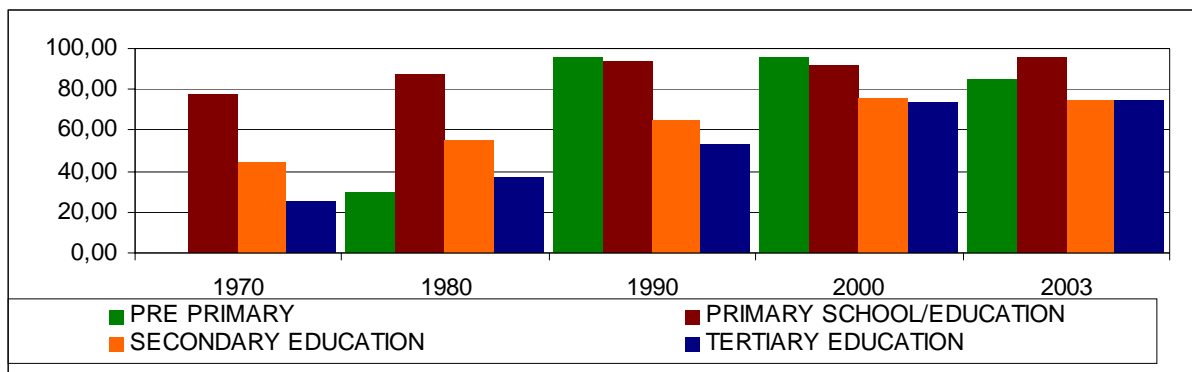
Gender differences is one of the important subject and problems today in all developing countries. In this respect, also Turkey tried to reduce gender differences. Table 8 and figure 8 shows the gender differences for all educational levels between the years 1970-2003. From table 8 and figure 8, it can be seen that gender differences are quite high during 1970's for all levels of education. For pre-primary education it was 30.0 in 1980, but it was reduced in 2000's and reached 96.93 in 2002 and 84.40 in 2003. In primary education it was 77.21 in 1970 and it reduced up to 95.49 in 2003.

**TABLE . 8: GENDER RATIOS (ALL EDUCATIONAL LEVELS),
TURKEY, 1970-2003**

YEARS	PRE PRIMARY	PRIMARY SCHOOL	PRIMARY EDUCATION	SECONDARY EDUCATION	TERTIARY EDUCATION
1970	-	77.21	-	43.72	24.83
1975	-	86.12	-	49.01	34.12
1980	30.00	87.78	-	55.38	36.66
1985	97.07	94.05	-	60.44	57.57
1990	95.16	93.32	-	64.68	52.91
1991	93.97	93.41	-	65.90	54.10
1992	94.90	93.78	-	65.64	55.15
1993	93.07	94.66	-	66.22	62.71
1994	95.09	94.85	-	65.60	65.19
1995	92.24	94.72	-	67.59	67.40
1996	92.14	93.84	-	70.07	66.93
1997	92.20	-	85.77	74.23	68.16
1998	92.59	-	81.91	75.80	68.97
1999	93.51	-	88.55	74.25	70.96
2000	95.90	-	92.18	75.61	73.44
2001	96.09	-	92.96	76.73	75.30
2002	96.93	-	94.23	73.82	73.94
2003	84.40	-	95.49	74.43	74.50

For the secondary education the differences were 43.72 in 1970 and 74.43 in 2003, and it is still high for the secondary education. The reason of these differences may be the fact that the secondary education are not yet under the umbrella of compulsory education in Turkey. Tertiary education has a similar structure with secondary education about gender differences, it was 24.83 in 1970 and 74.50 in 2003. May be after will include secondary education in compulsory education system, it is also will be effect on gender differences of secondary and tertiary education.

FIGURE . 8 : GENDER RATIOS (ALL EDUCATIONAL LEVELS), TURKEY, 1970-2003



2.2.7. Number of students per teacher at all educational levels between 1970-2003

Educational literatures indicate that ideal number of students per teacher should be between 20-25. According to the table 9 and figure 9, which shows the number of students per-teacher in all educational levels between 1970-2003, the pre-primary education always has the ideal number of students per teacher in 1970-2003 period. But for primary education, in all years between 200-2003 it is over the ideal number interval. This means that Turkey needs more teachers for primary education. Also, it should be planned by taking into consideration the future population primary education age groups, which is derived from population projections.

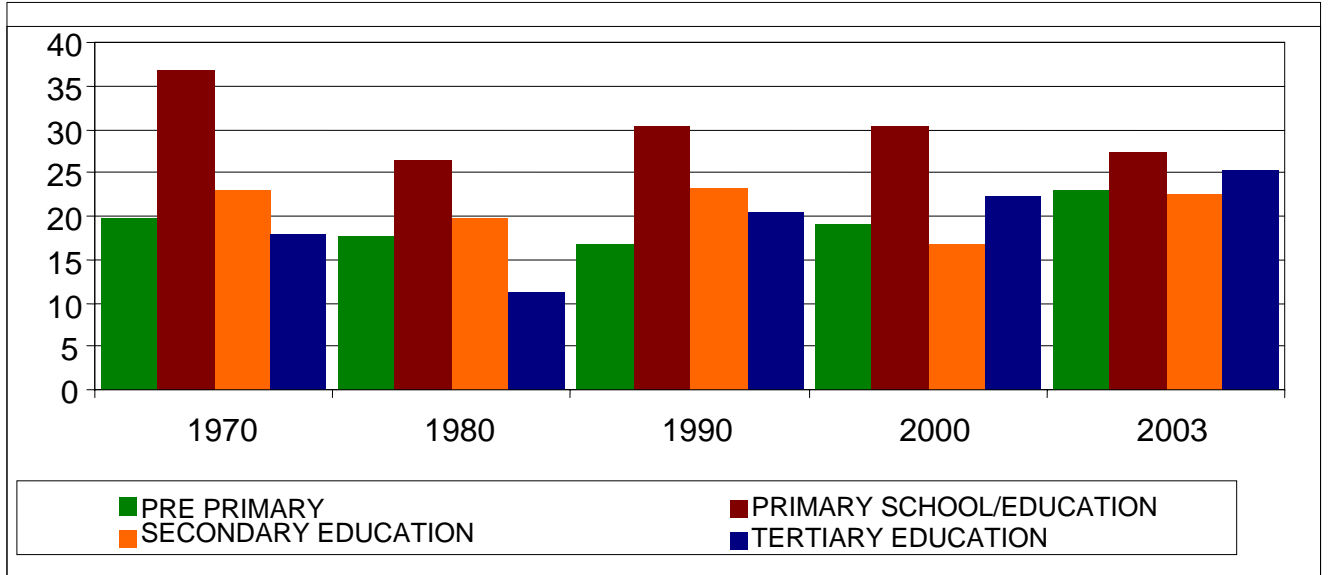
**TABLE . 9: NUMBER OF STUDENTS PER TEACHER,
(ALL EDUCATIONAL LEVELS), TURKEY, 1970-2003**

YEARS	PRE PRIMARY	PRIMARY SCHOOL	PRIMARY EDUCATION	SECONDARY EDUCATION	TERTIARY EDUCATION
1970	19.82	36.77	-	23.09	17.83
1975	18.80	31.91	-	23.83	22.29
1980	17.78	26.43	-	19.80	11.33
1985	16.53	31.19	-	21.19	19.54
1990	16.82	30.38	-	23.23	20.45
1991	16.63	29.28	-	22.77	21.60
1992	15.84	28.45	-	23.05	22.32
1993	16.22	27.54	-	22.67	25.50
1994	16.28	27.75	-	23.33	25.11
1995	16.21	27.61	-	22.27	23.10
1996	17.52	29.42	-	21.76	22.71
1997	17.59	-	30.05	15.15	23.58
1998	18.62	-	30.24	15.63	22.98
1999	18.34	-	30.84	15.83	21.84
2000	19.12	-	30.38	16.76	22.22
2001	17.73	-	28.11	17.81	23.18
2002	21.16	-	26.47	20.42	25.55
2003	22.93	-	27.29	22.45	25.26

Even for secondary education, the overall average number of students per teacher was between ideal numbers from 1970 to 2003. After the junior high school was included to the compulsory primary education in 1997, it fell down to 16, after that it is slightly increased and reached 22.45 in 2003. Also, for secondary education, planning for teacher investments should be done for future by using population projections of today.

For tertiary education the number of student per teacher was in the ideal number interval. But two main points are important: first, it was 25.26 in 2003, just on the upper boundaries of ideal number interval, secondly, when these indicators were calculated the instructors and research assistants were included in denominator of formula, if it was calculated for academicians which are assistant professors and higher, the number of students per teacher comes to approximately 75 students. It means that Turkey should plan to investment more in education of academicians for future.

**FIGURE . 9 : NUMBER OF STUDENTS PER TEACHER,
(ALL EDUCATIONAL LEVELS), TURKEY, 1970-2003**



2.2.8. Number of students per classroom in all educational levels between 1985-2003

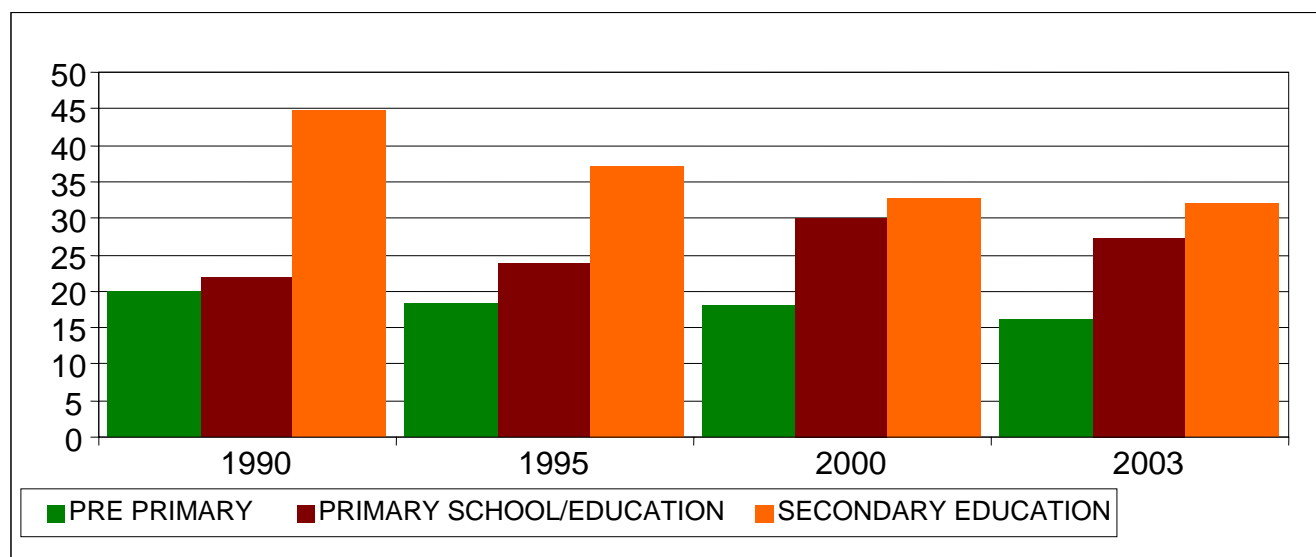
Table 10 and figure 10 shows the number of student per classroom for all educational levels between 1985-2003 for which time series data is available in SIS and MONE. Same ideal number of student interval is also mentioned that it should be between 20-25 students. In pre-primary education, it seems that there is no problem about average of number of students per classroom from 1985 to 2003. For primary education, the number of student per classroom indicator, falls to the ideal interval from 1990 to 1996, and starting 1997 it is over of the ideal average interval up to 2003. It means that the primary education needs investment in term of classrooms and school units in order to reach the ideal number of students per classroom.

**TABLE . 10: NUMBER OF STUDENTS PER CLASS ROOM,
(ALL EDUCATIONAL LEVELS), TURKEY, 1985-2003**

YEARS	PRE PRIMARY	PRIMARY SCHOOL	PRIMARY EDUCATION	SECONDARY EDUCATION
1970	-	-	-	-
1975	-	-	-	-
1980	-	-	-	-
1985	17.95	-	-	-
1990	19.96	21.85	-	44.84
1991	19.43	21.67	-	43.20
1992	19.02	21.88	-	41.39
1993	19.13	23.10	-	39.65
1994	18.52	23.32	-	38.69
1995	18.34	23.88	-	37.20
1996	18.64	24.86	-	36.84
1997	18.84	-	28.59	35.54
1998	19.23	-	30.81	34.86
1999	18.34	-	31.16	34.21
2000	18.06	-	30.11	32.85
2001	17.02	-	28.26	32.04
2002	16.89	-	27.02	23.85
2003	16.04	-	27.19	31.74

For secondary education, the number of students per classroom has never been in the ideal interval in the past except in 2002. We know that due to the 8 year compulsory primary education, the number of students coming into the secondary education will be growing year by year. So, the secondary education immediately needs a new plan of action for increasing classroom or school unit investments.

**FIGURE. 10: NUMBER OF STUDENTS PER CLASS ROOM,
(ALL EDUCATIONAL LEVELS), TURKEY, 1985-2003**



2.2.9. Number of educational institutions at all educational levels between 1970-2003

Table 11 and figure 11 represent the number of educational institutions in all education levels between 1970-2003. This table is given just for the information of the users. From table 10 and figure 10 it can be seen that in pre-primary education number of institutions increase from 119 to 12212 between 1970-2003. This shows Turkey's efforts on pre-primary education in the past 33 years. Number of educational institutions in primary education was 38513 in 1970. It has increased up to 1997 continuously and reached to 47365 institutions. After the compulsory education was enforced to be 8 years, it has started to fall down and reached to 36117 institutions in 2003.

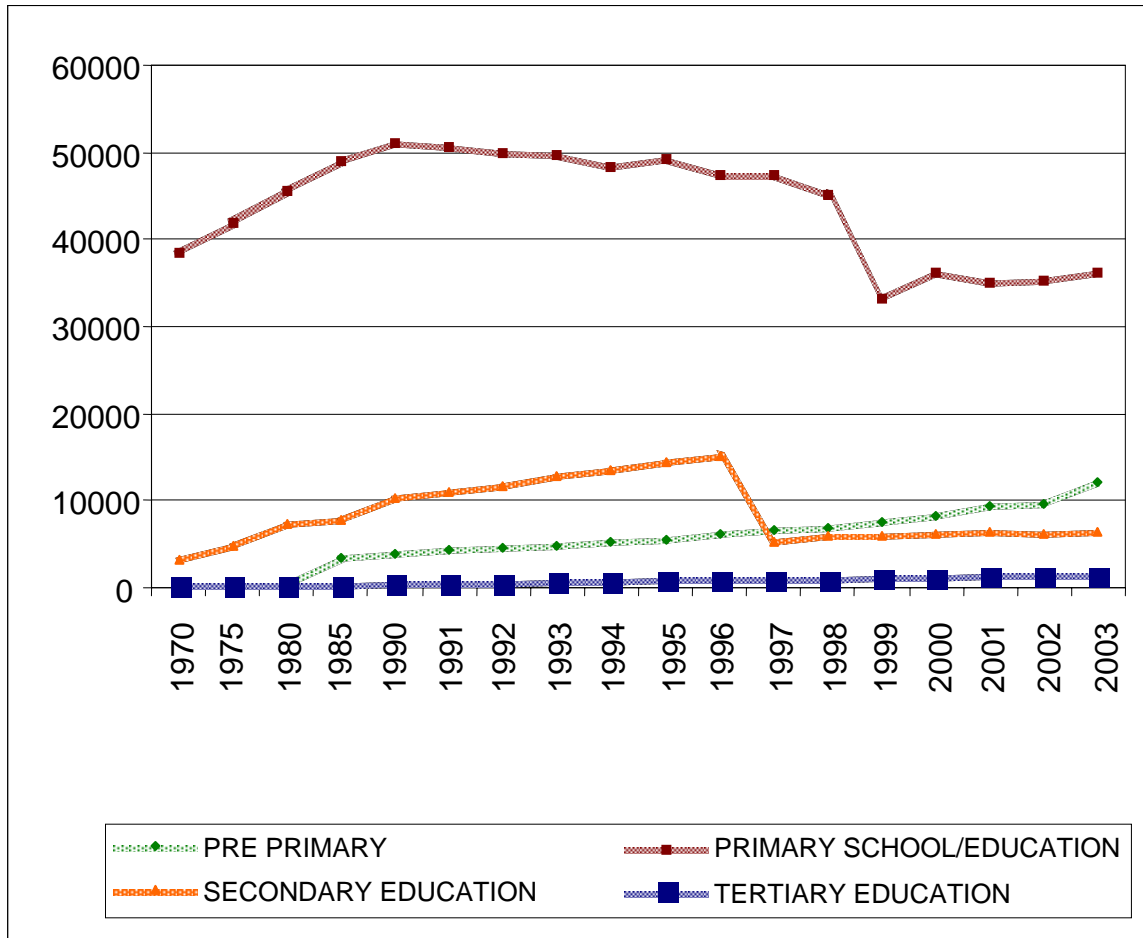
**TABLE . 11: NUMBER OF EDUCATIONAL INSTITUTIONS,
(ALL EDUCATIONAL LEVELS), TURKEY, 1970-2003**

YEARS	PRE- PRIMARY	PRIMARY SCHOOL	PRIMARY EDUCATION	SECONDARY EDUCATION	TERTIARY EDUCATION
1970	119	38513	-	3273	152
1975	119	42000	-	4903	288
1980	119	45660	-	7351	321
1985	3421	49096	-	7808	310
1990	3806	51055	-	10353	408
1991	4465	50701	-	11037	424
1992	4683	49974	-	11783	473
1993	4908	49599	-	12829	625
1994	5169	48429	-	13610	741
1995	5600	49240	-	14372	817
1996	6082	47313	-	15190	863
1997	6563	-	47365	5264	937
1998	6868	-	45102	5963	1006
1999	7660	-	33317	5977	1053
2000	8255	-	36072	6291	1084
2001	9480	-	35052	6367	1337
2002	9657	-	35168	6134	1379
2003	12212	-	36117	6512	1432

In secondary education level the number of educational institutions was 3273 in 1970. This was continuously increased until it reached 15190 in 1996. After the junior high schools were included in compulsory education the number of institutions fell down to 5264 in 1997 due to the unification of the junior high schools with primary school administrations. Then they started to increase again and reached 6512 in 2003.

Tertiary education had 152 educational institutions in 1970, then the number of institutions continuously increased up to 2003 and reached 1432 institutions.

FIGURE . 11: NUMBER OF EDUCATIONAL INSTITUTIONS, (ALL EDUCATIONAL LEVELS), TURKEY, 1970-2003



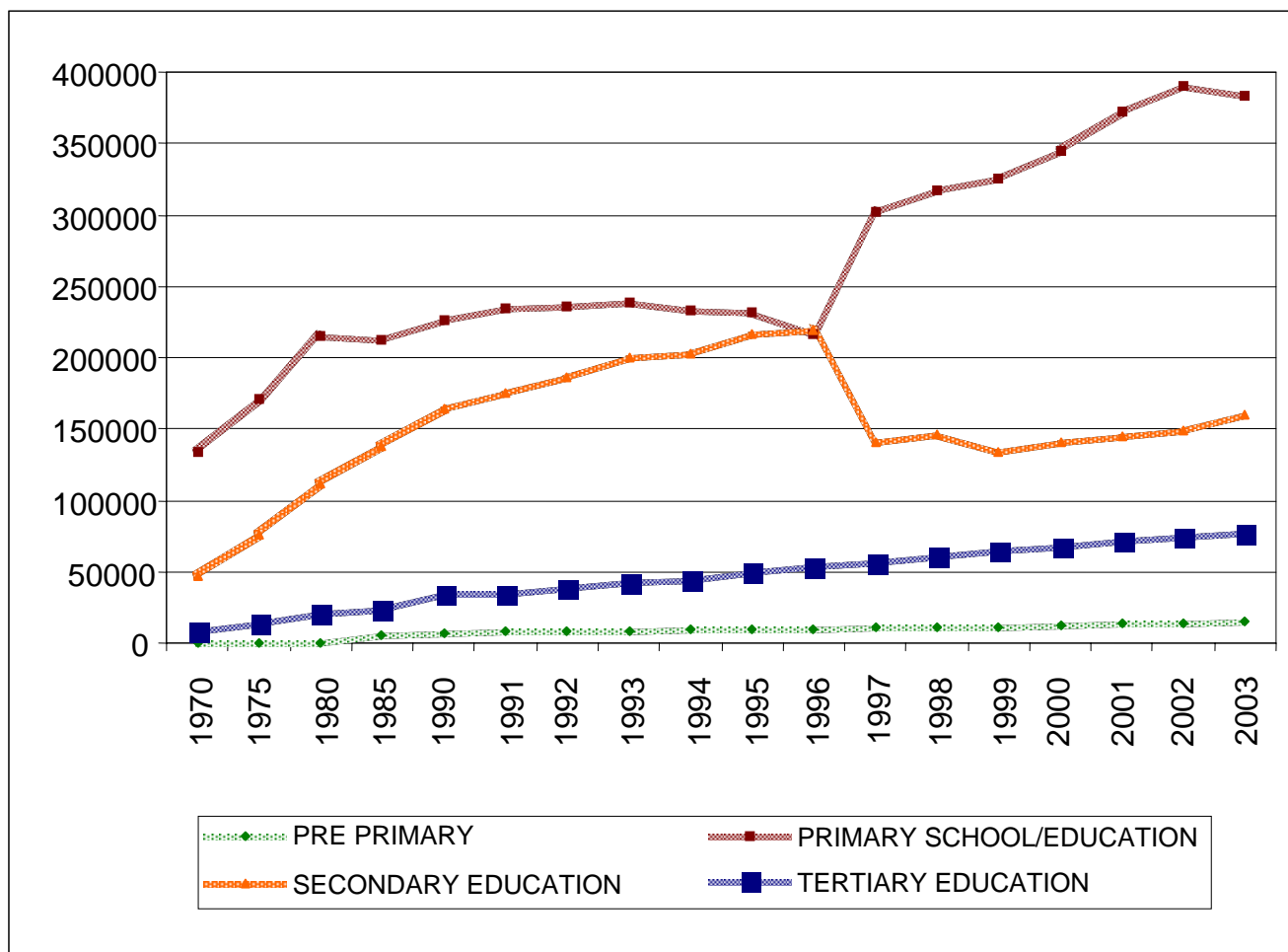
2.2.10. Number of education staff in all educational levels between 1970-2003

Also, the numbers of education staff are presented in table 12 and figure 12 for the period of 1970-2003. From table 12 and figure 12 it can be seen easily that the number of pre-primary education teachers was 220 in 1970 and increased to 14496 in 2003. These numbers for primary education are 134341, 47476 for secondary education and 8931 for tertiary education during the 1970. the number of the staff reached 384029, 160049 and 77065 for primary, secondary and tertiary education levels respectively in 2003.

**TABLE . 12: NUMBER OF EDUCATION STAFF,
(ALL EDUCATIONAL LEVELS), TURKEY, 1970-2003**

YEARS	PRE- PRIMARY	PRIMARY SCHOOL	PRIMARY EDUCATION	SECONDARY EDUCATION	TERTIARY EDUCATION
1970	220	134341	-	47476	8931
1975	232	171323	-	75877	14445
1980	265	215459	-	111216	20917
1985	6016	212717	-	137682	22968
1990	7124	225852	-	163882	34469
1991	7995	234961	-	175179	35132
1992	8400	235721	-	186529	38483
1993	8908	237943	-	199515	42475
1994	9098	233073	-	202603	44086
1995	9771	231900	-	215902	50259
1996	9971	217131	-	218829	53805
1997	10376	-	302254	140619	56401
1998	10979	-	317790	145903	60129
1999	11591	-	325140	134379	65024
2000	11896	-	345015	140969	67880
2001	14295	-	372687	144884	71290
2002	13388	-	390275	148563	74134
2003	14496	-	384029	160049	77065

**FIGURE. 12: NUMBER OF EDUCATION STAFF,
(ALL EDUCATIONAL LEVELS), TURKEY, 1970-2003**



III. REGIONAL DIFFERENCES BY EDUCATIONAL INDICATORS

3.1. Regional differences calculated by educational indicators for the 2000-2001 school year

3.1.1. Regional differences in gross and net enrollment ratios of primary education (2000-2001)

Table 13, figure 13.1 and 13.2 shows regional differences in gross enrollment ratios. Table 14, figure 14.1 and 14.2 represent regional differences of net enrollment ratios for primary education in the school year 2000-2001.

Table 13, figures 13.1 and 13.2 show that the gross enrollment ratios in primary education is higher than 100.0 % in Istanbul, West Marmora, Aegean, East Marmora, West Black Sea regions for males; and in Istanbul, West Marmora, East Marmora regions for females. It is less than 90.0 % in East Black Sea, North-East Anatolia regions for males and in Middle Anatolia, East Black Sea, North-East Anatolia, East Anatolia, South-East Anatolia regions for females. When the gender differences are examined, it can easily be realized that only three regions have problem or big differences by gender. These are the North-East Anatolia, East Anatolia and South-East Anatolia regions.

Table 14, figures 14.1 and 14.2 show that the net enrollment ratio is 100.0 in Istanbul region for males and females Another region is West Marmora which has 100.0 net enrollment ratio for males in primary education. For males, four regions show the net enrollment ratios of primary education under the 90.0 % level; these are Middle Anatolia, East Black Sea, North-East Anatolia, East Anatolia regions. For females seven regions, Mediterranean, middle Anatolia, west black sea, east black sea, north-east Anatolia, east Anatolia, south-east Anatolia are under the 90.0 % level. The four regions, which have net enrollment ratios in primary education under 90.0 %, are same for both sexes. It can be said easily that these four regions have been problematic regions for primary education for different reasons. If Turkey can achieve to carry out the net enrollment ratios over 90.0 % in a short term, then the time will come when to think how it can be carried up to approximately 100.0 %.

In this respect important and interesting region has been Istanbul. It is a well known region for receiving heavy internal migration. Even under this heavy internal migration, its net enrollment ratios in primary education for both males and females are 100.0. This means, Istanbul has the ability to include all migrants in primary education age groups, under the umbrella of primary education system. That is an advantage for internal migration destination areas.

About the gender differences for net enrollment in primary education, it can be said that three regions, North-East Anatolia, East Anatolia and South-

East Anatolia show problems of access. In the other nine regions even no gender differences or very few differences have been calculated. The problem of East Black Sea region is overall low level enrollment ratios in primary education, but not gender. It can be concluded that four regions, East Black Sea, North-East Anatolia, East Anatolia and South East Anatolia need to be handled as pilot regions for the future planning of primary education. With new investments and disciplined application this problem can be solved. When these four regions increase their net enrollment ratios in primary education increase over the 90 % and 95 % step by step in five and ten years respectively, Turkey will obtain approximately 100 % net enrollment ratios in primary education for both sexes in ten years time. The four regions have, very small percentage share in the total population of Turkey.

TABLE . 13 : REGIONAL DIFFERENCES IN GROSS ENROLLMENT RATIOS IN PRIMARY EDUCATION, TURKEY (2000 – 2001)

NUTS REGIONS	MALE	FEMALE	TOTAL	GENDER RATIO
ISTANBUL	105.61	105.11	105.37	99.53
WEST MARMORA	106.37	102.15	104.33	96.03
AGEAN	102.26	97.95	100.16	95.79
EAST MARMORA	105.67	104.18	104.95	98.59
WEST ANATOLIA	99.78	97.23	98.54	97.44
MEDITERRANIAN	99.11	94.16	96.71	95.00
MIDDLE ANATOLIA	91.59	88.43	90.05	96.55
WEST BLACK SEA	100.06	94.03	97.12	93.47
EAST BLACK SEA	84.24	81.21	82.77	96.40
NORTH – EAST ANATOLIA	88.79	74.62	82.07	84.04
EAST ANATOLIA	90.08	68.74	80.04	76.31
SOUTH – EAST ANATOLIA	96.21	76.96	87.08	80.00

FIGURE . 13.1 : REGIONAL DIFFERENCES IN GROSS ENROLLMENT RATIOS FOR PRIMARY EDUCATION, TURKEY, (2000 – 2001)

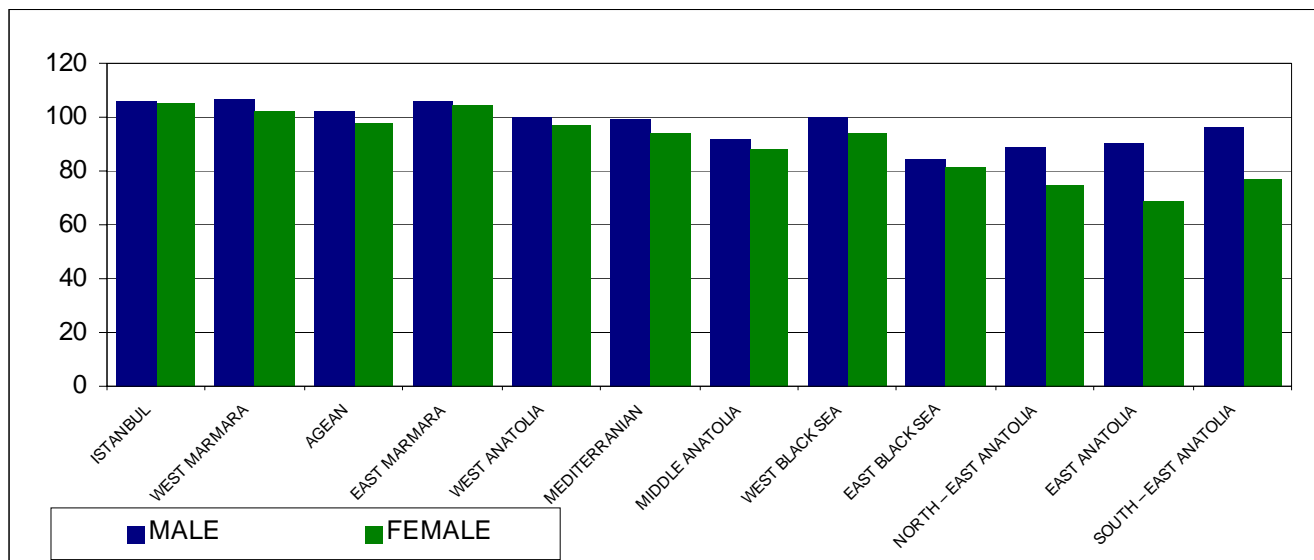


FIGURE . 13.2 : GENDER DIFFERENCES IN REGIONS FOR GROSS ENROLLMENT RATIOS FOR PRIMARY EDUCATION, TURKEY, (2000 – 2001)

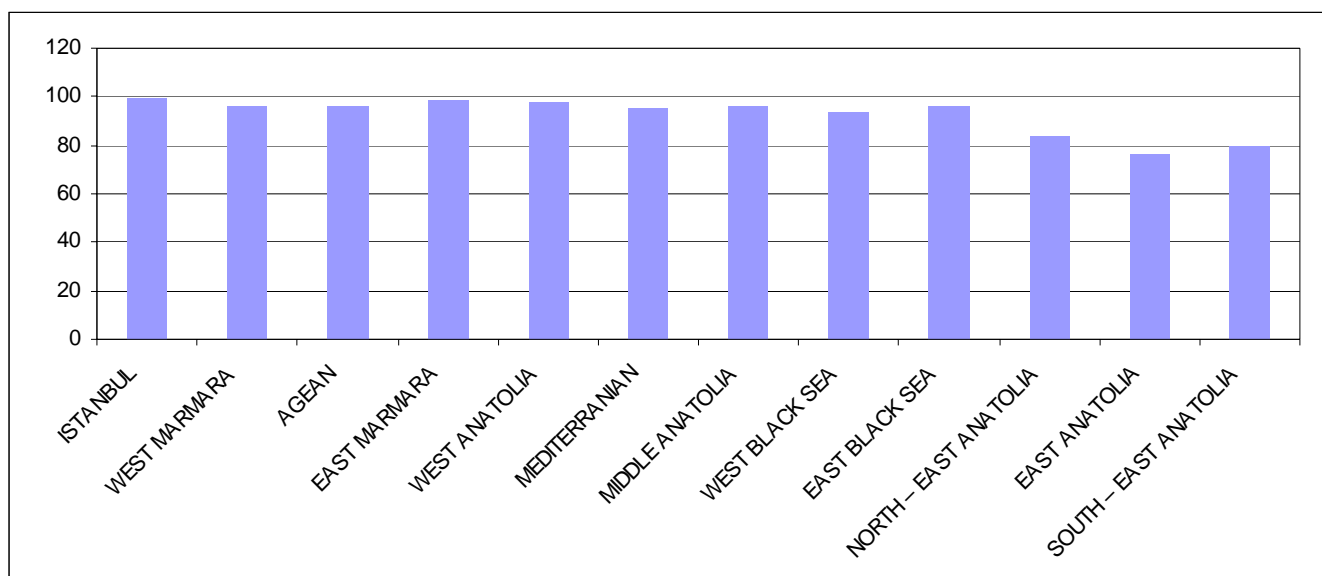


TABLE . 14 : REGIONAL DIFFERENCES IN NET ENROLLMENT RATIOS FOR PRIMARY EDUCATION, TURKEY (2000 – 2001)

NUTS REGIONS	MALE	FEMALE	TOTAL	GENDER RATIO
ISTANBUL	100.00	100.00	100.00	100.00
WEST MARMORA	99.06	96.18	97.66	97.09
AGEAN	96.13	93.70	94.94	97.47
EAST MARMORA	100.00	99.73	99.87	99.73
WEST ANATOLIA	93.84	93.01	93.44	99.12
MEDITERRANIAN	92.41	89.40	90.96	96.74
MIDDLE ANATOLIA	85.88	84.70	85.31	98.63
WEST BLACK SEA	91.20	87.77	89.52	96.24
EAST BLACK SEA	78.30	76.38	77.37	97.55
NORTH – EAST ANATOLIA	82.54	71.27	77.20	86.35
EAST ANATOLIA	83.64	65.46	75.09	78.26
SOUTH – EAST ANATOLIA	90.46	74.15	82.72	81.96

FIGURE . 14.1 : REGIONAL DIFFERENCES IN NET ENROLLMENT RATIOS IN PRIMARY EDUCATION, TURKEY (2000 – 2001)

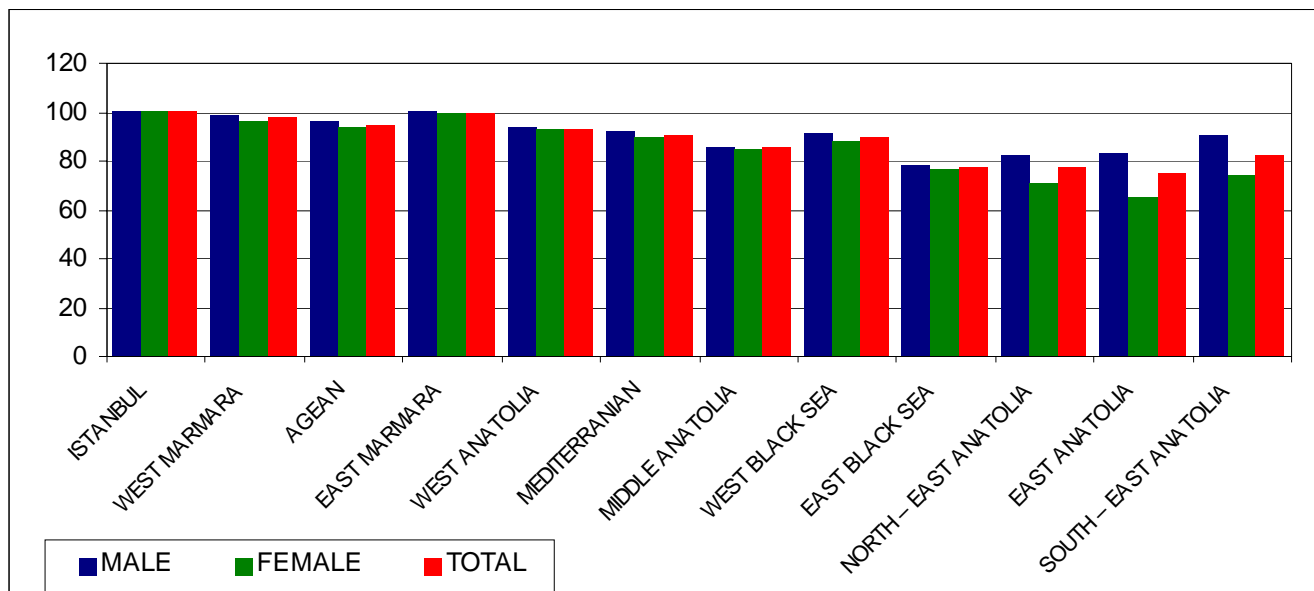
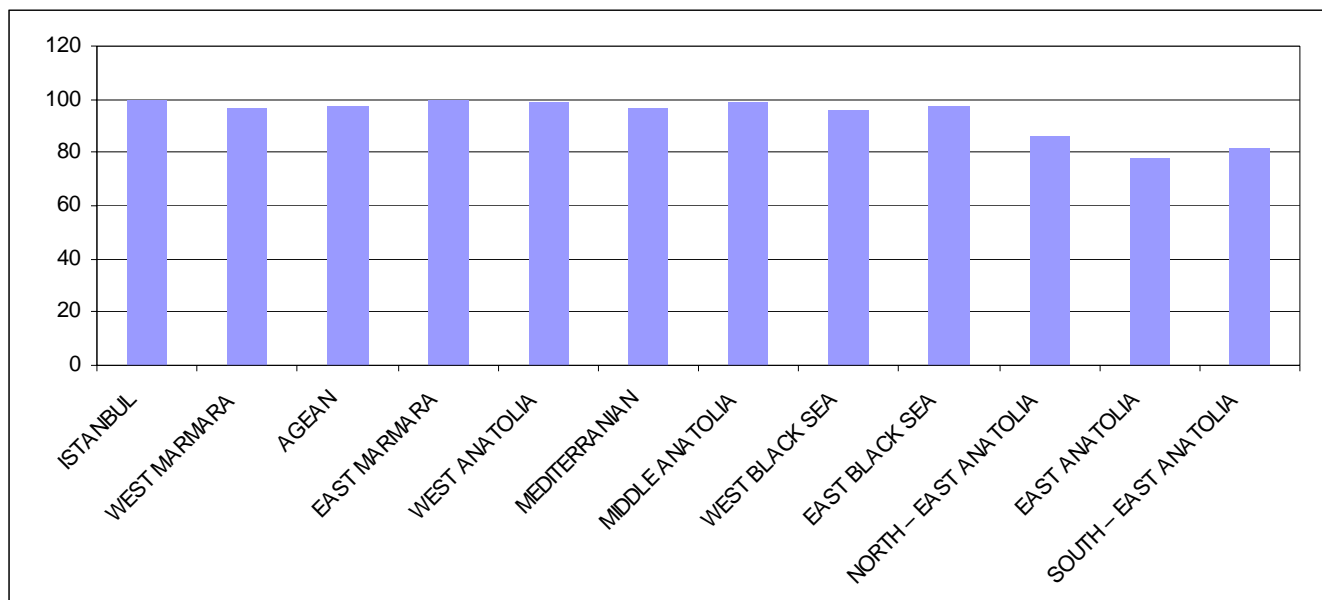


FIGURE . 14.2 : GENDER DIFFERENCES IN REGIONS NET ENROLLMENT RATIOS IN PRIMARY EDUCATION, TURKEY (2000 – 2001)



3.1.2. Regional differences in gross and net enrollment ratios in secondary education level, (2000-2001)

Table 15, figures 15.1 and 15.2 show regional differences in gross enrollment and Table 16, figures 16.1 and 16.2 represent regional differences of net enrollment ratios for secondary education.

From these tables and figures can be seen that East Marmora region has the highest (80.34 %), and South-East Anatolia region has the lowest (43.72 %) gross enrollment ratios for males in secondary education. For females the highest gross enrollment ratio (68.51 %) is calculated for West Marmora, and the lowest gross enrollment ratio (20.7 %) calculated in South-East Anatolia region for secondary education. Figure 15.2 shows that Istanbul region does not have gender differences. Highest gender differences in secondary education is recorded in North-East Anatolia; it is 46.58, which means that in North-East Anatolia region 47 females can be found per 100 males in the secondary education level.

TABLE . 15 : REGIONAL DIFFERENCES IN GROSS ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2000 – 2001)

NUTS REGIONS	MALE	FEMALE	TOTAL	GENDER RATIO
ISTANBUL	68.07	68.04	68.05	99.96
WEST MARMORA	78.73	68.51	73.86	87.02
AGEAN	67.49	56.77	62.26	84.12
EAST MARMORA	80.34	60.80	70.94	75.68
WEST ANATOLIA	72.29	63.64	68.15	88.03
MEDITERRANIAN	65.39	50.24	58.08	76.83
MIDDLE ANATOLIA	62.32	40.17	51.36	64.46
WEST BLACK SEA	63.72	41.50	52.60	65.13
EAST BLACK SEA	58.33	42.68	50.70	73.17
NORTH – EAST ANATOLIA	48.03	22.37	35.31	46.58
EAST ANATOLIA	50.61	24.55	37.90	48.51
SOUTH – EAST ANATOLIA	43.72	20.70	32.60	47.35

In net enrollment ratios in secondary education level, West Marmora region has the highest value for males and females; these are 58.61 % and 53.94 % respectively. South-East Anatolia region has the lowest net enrollment ratios for both sexes; these are 27.02 % for males and 14.61 % for females.

A very interesting result points out that the gender differences of Istanbul region is in favor of females, which is higher than 100.0. This may be one of the results of internal migration from the side of originating areas. Also, girls who have not enrolled earlier, get enrolled when their conditions improve in later ages. After the migration, male members of the families many times do not continue school after five-year compulsory education mostly, and they go on to work to get income to the family. They may be simply street workers, but because there is no provision that reconciles work with education, these children loose their contact with school. Females have more chances to study in big cities with less siblings at home to look after and the lack of suitable work and continue to study. This is also an indicator that shows that gender differences in enrollment cannot be directly attributed to conservative social attitudes of the family. For those families who did not sent their daughters to further schooling do so when they come to big cities. The highest gender differences is found in North-East Anatolia region, it is 52.56.

FIGURE . 15.1 : REGIONAL DIFFERENCES IN GROSS ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2000 – 2001)

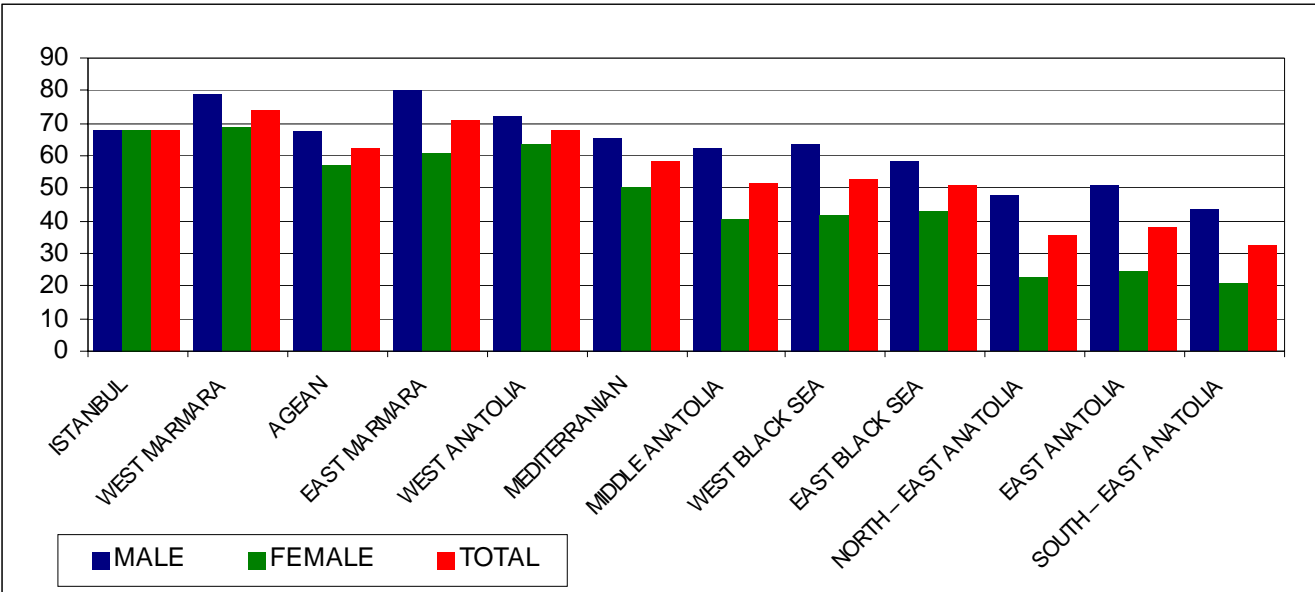


FIGURE . 15.2 : GENDER DIFFERENCES IN REGIONS FOR GROSS ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2000 – 2001)

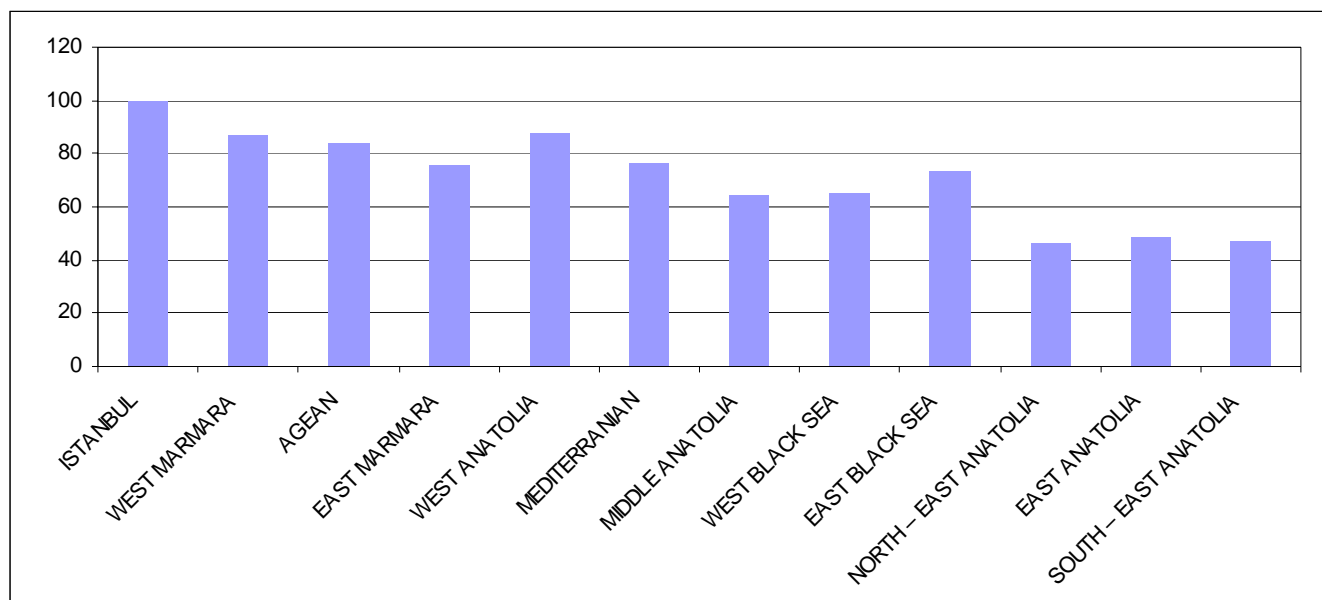


TABLE . 16 : REGIONAL DIFFERENCES IN NET ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2000 – 2001)

NUTS REGIONS	MALE	FEMALE	TOTAL	GENDER RATIO
ISTANBUL	48.48	50.04	49.21	103.21
WEST MARMORA	58.61	53.94	56.38	92.03
AGEAN	48.34	43.22	45.84	89.41
EAST MARMORA	58.18	46.08	52.36	79.20
WEST ANATOLIA	51.54	49.18	50.41	95.42
MEDITERRANIAN	45.11	38.36	41.85	85.04
MIDDLE ANATOLIA	57.42	31.61	37.67	55.05
WEST BLACK SEA	57.45	31.59	38.10	54.99
EAST BLACK SEA	41.54	33.06	37.42	79.59
NORTH – EAST ANATOLIA	31.05	16.32	23.74	52.56
EAST ANATOLIA	31.04	17.15	24.27	55.25
SOUTH – EAST ANATOLIA	27.02	14.61	21.03	54.07

FIGURE . 16.1 : REGIONAL DIFFERENCES IN NET ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2000 – 2001)

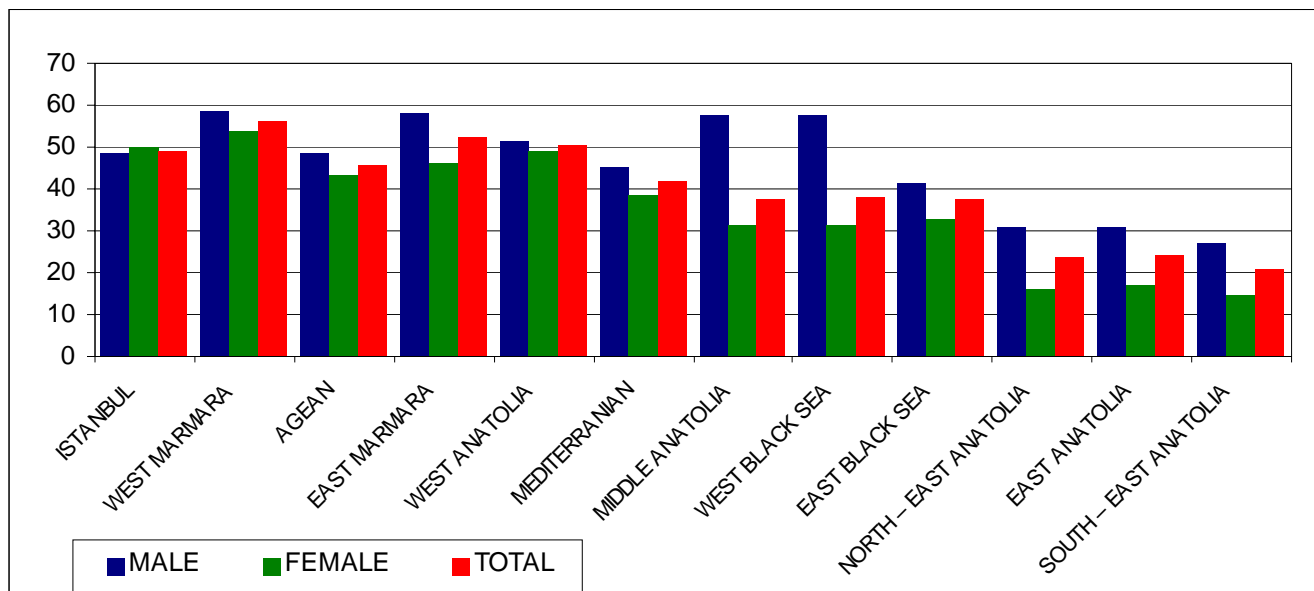
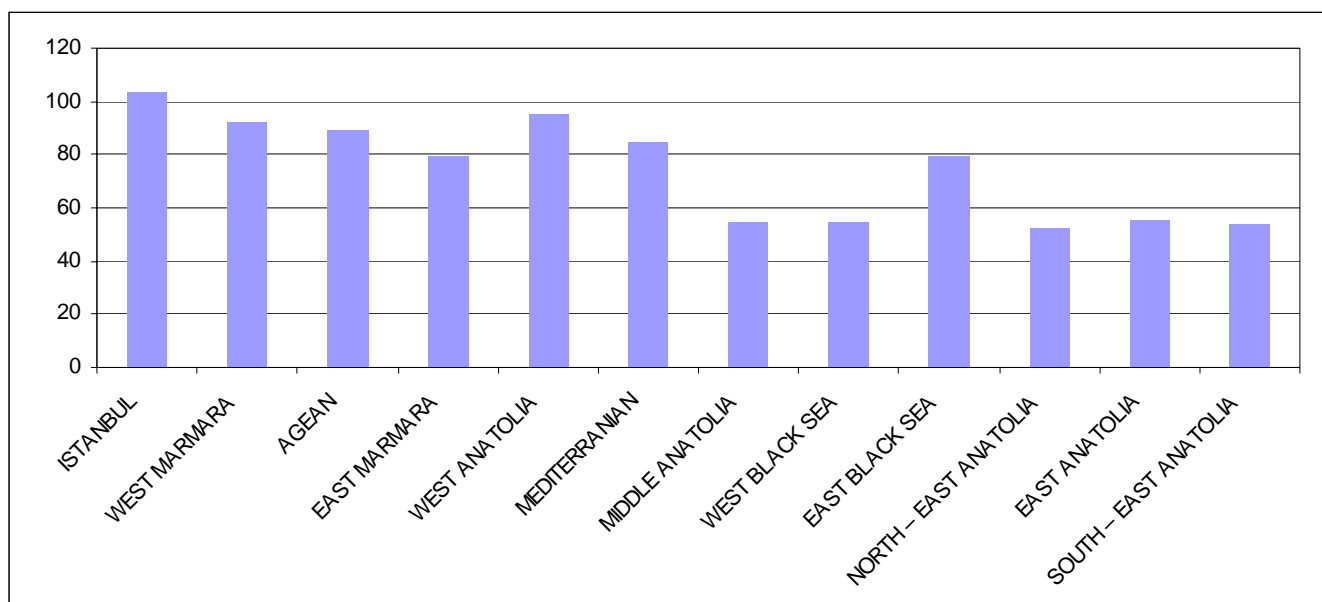


FIGURE . 16.2 : GENDER DIFFERENCES IN REGIONS FOR NET ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2000 – 2001)



3.1.3. Regional differences for number of student per classroom, in detail of educational levels Turkey (2000-2001)

Table 17 and figure 17 show the number of student's per classroom for all regions in detail of educational levels. From table 17 and figure 17 it can be observed that pre-primary education has sufficient number of student per classroom in all NUT's regions, which means that Turkey doesn't need investment in terms of classrooms for pre-primary education at this level of coverage. However, if the government takes on a rigorous program to enhance the coverage investments will need to be increased.

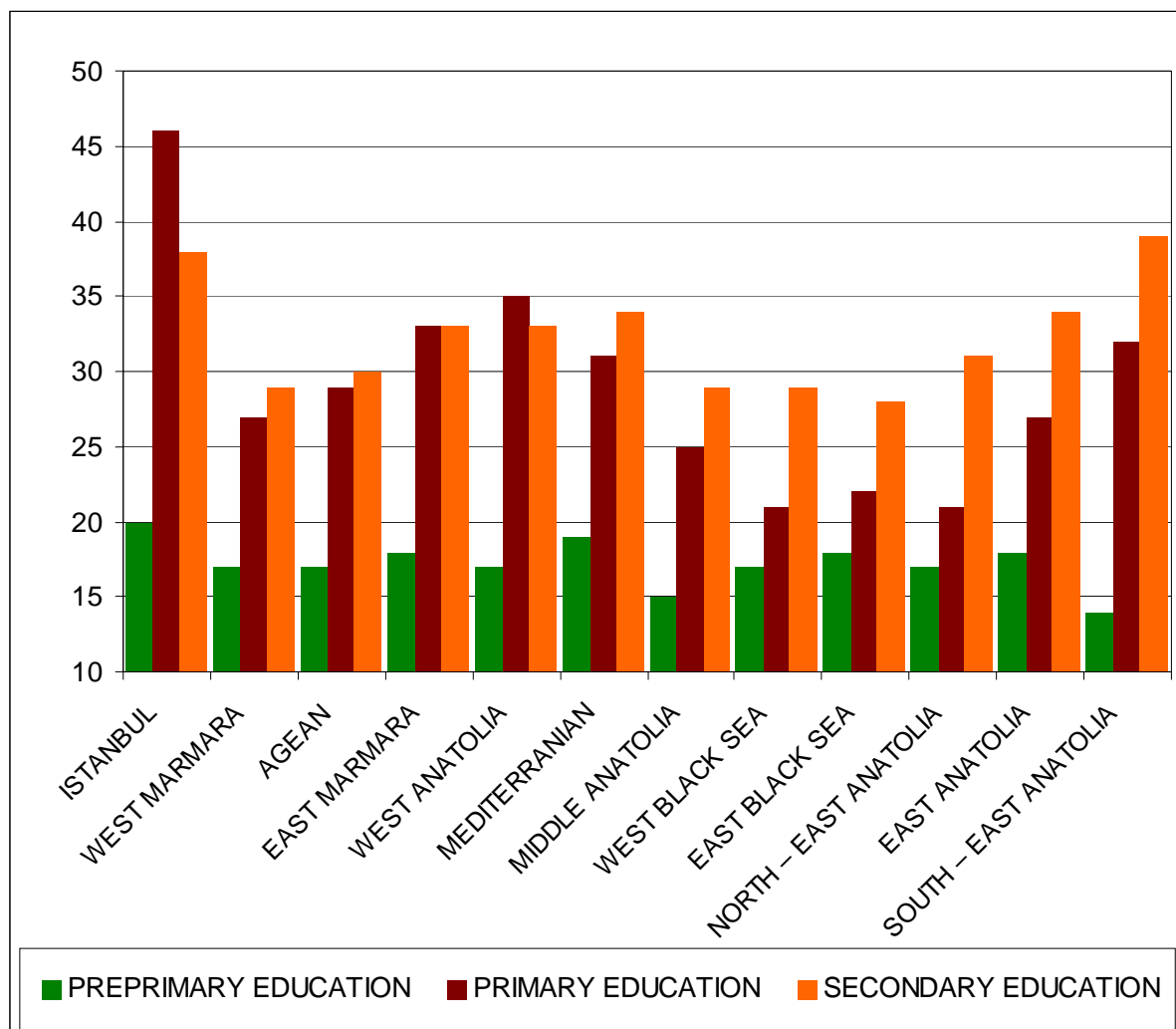
For primary education, excluding the West Black Sea, East Black Sea and North-East Anatolia regions, all regions have very high number of students per classroom, and they are over the ideal interval of 20-25 students per classroom. Istanbul region has 46 students per-classroom, and need immediate investment in classrooms or school units for primary education.

In secondary education, numbers of student per classroom are very high and over the ideal interval in all regions. Again Istanbul region has higher number of student at this level.

**TABLE . 17 : REGIONAL DIFFERENCES FOR NUMBER OF STUDENT
PER CLASSROOM, IN DETAIL OF EDUCATIONAL LEVELS,
TURKEY (2000 – 2001)**

NUTS REGIONS	PRE- PRIMARY EDUCATION	PRIMARY EDUCATION	SECONDARY EDUCATION
ISTANBUL	20	46	38
WEST MARMORA	17	27	29
AGEAN	17	29	30
EAST MARMORA	18	33	33
WEST ANATOLIA	17	35	33
MEDITERRANIAN	19	31	34
MIDDLE ANATOLIA	15	25	29
WEST BLACK SEA	17	21	29
EAST BLACK SEA	18	22	28
NORTH – EAST ANATOLIA	17	21	31
EAST ANATOLIA	18	27	34
SOUTH – EAST ANATOLIA	14	32	39

FIGURE . 17 : REGIONAL DIFFERENCES IN NUMBER OF STUDENTS PER CLASSROOM IN DETAIL OF EDUCATIONAL LEVELS, TURKEY (2000 – 2001)



3.1.4. Regional differences in number of student per teacher, in detail of educational levels, Turkey (2000-2001)

Table 18 and figure 18 show numbers of students per teacher for all regions in detail of educational levels. From table 18 it can be seen that the number of students per teacher are dramatically high in all regions in pre-primary education. West Marmora has 169 students per teachers and it has the highest value among regions. Eastern Marmora has lowest value of 53 students per teacher. All regions have students per teacher over the ideal interval of 20-25. All regions need immediate action for to recruit necessary numbers of teachers to reduce this problem in pre-primary level. The problem originate from

the lack of sufficient places for pre-primary school teacher training, rather than a lack of recruitment. Currently, the problem is tackled by providing assistants to the pre-primary school teachers.

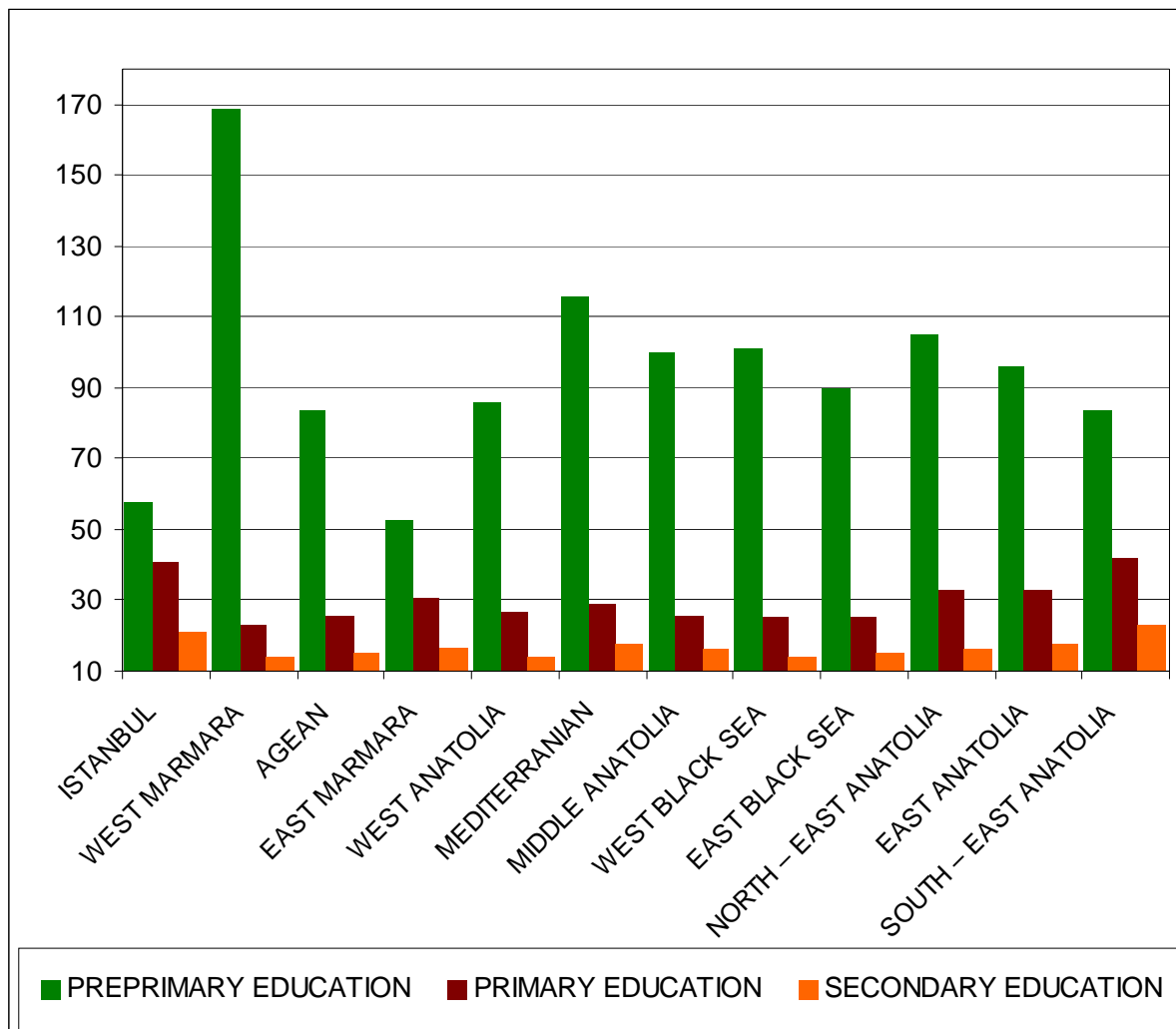
In primary education, West Marmora, West Black Sea, and East Black Sea regions has sufficient number of students per teacher. The Aegean and Central Anatolia regions, the number of students per teacher is just near the upper boundary line of the ideal interval. Other regions certainly need primary school teachers for to reduce number of students per teacher. South-East Anatolia has on the average 42, Istanbul has 41 students per teacher in primary education level.

For secondary education, it seems that there is no problem for none of the regions for number of students per teacher.

TABLE . 18 : REGIONAL DIFFERENCES IN NUMBER OF STUDENTS PER TEACHER IN DETAIL OF EDUCATIONAL LEVELS, TURKEY (2000 – 2001)

NUTS REGIONS	PRE-PRIMARY EDUCATION	PRIMARY EDUCATION	SECONDARY EDUCATION
ISTANBUL	58	41	21
WEST MARMORA	169	23	14
AGEAN	84	26	15
EAST MARMORA	53	31	17
WEST ANATOLIA	86	27	14
MEDITERRANIAN	116	29	18
MIDDLE ANATOLIA	100	26	16
WEST BLACK SEA	101	25	14
EAST BLACK SEA	90	25	15
NORTH – EAST ANATOLIA	105	33	16
EAST ANATOLIA	96	33	18
SOUTH – EAST ANATOLIA	84	42	23

FIGURE . 18 : REGIONAL DIFFERENCES FOR NUMBER OF STUDENTS PER TEACHER IN DETAIL OF EDUCATIONAL LEVELS, TURKEY (2000 – 2001)



3.2. Regional differences in calculated educational indicators during the 2001-2002 school year

3.2.1. Regional differences in gross and net enrollment ratios in primary education, Turkey (2001-2002)

Table 19, figure 19.1 and 19.2 show regional differences of gross enrollment ratios. Table 20, figures 20.1 and 20.2 represent regional differences of net enrollment ratios for primary education in the school year 2001-2002.

From Table 19, figure 19.1 and 19.2 it can be seen that gross enrollment ratios of primary education is higher than 100.0 % in Istanbul, West Marmora,

Aegean, East Marmora regions for males in 2000-2001 school year. It decreased to 98.09 % for West Black Sea region in 2001-2002 school year. Similarly, gross enrollment ratios for primary education are higher than 100.0 % in Istanbul, in West Marmora and in East Marmora regions for females in the 2001- 2002 school year like the 2000-2001. During the 2001-2002 school year, the highest gross enrollment ratios recorded in Istanbul for males and females, there are 116.50 % and 112.13 % respectively. Lowest gross enrollment ratios come from the Eastern Anatolia region; the enrollment is 90.08 % for males and 71.98 % for females.

TABLE . 19 : REGIONAL DIFFERENCES IN GROSS ENROLLMENT RATIOS FOR PRIMARY EDUCATION, TURKEY (2001 – 2002)

NUTS REGIONS	MALE	FEMALE	TOTAL	GENDER RATIO
ISTANBUL	116.50	112.13	114.39	96.26
WEST MARMORA	104.85	102.54	103.73	97.80
AGEAN	101.08	97.51	99.34	96.47
EAST MARMORA	105.73	104.65	105.21	98.98
WEST ANATOLIA	95.66	94.26	94.98	98.54
MEDITERRANIAN	98.79	94.50	96.71	95.66
MIDDLE ANATOLIA	91.19	88.77	90.01	97.35
WEST BLACK SEA	98.09	94.55	96.36	96.39
EAST BLACK SEA	82.34	80.78	81.58	98.11
NORTH – EAST ANATOLIA	93.00	82.32	87.94	88.52
EAST ANATOLIA	90.08	71.98	81.58	79.91
SOUTH – EAST ANATOLIA	98.28	81.38	90.26	82.80

A comparison between 2000-2001 and 2001-2002 school years shows that the gross enrollment ratios for primary education increased in Istanbul, East Marmora, North-East Anatolia, South Anatolia regions for males. It is stable for the Eastern Anatolia region. For females it has been increased in all regions except Western Anatolia and Eastern Black Sea regions.

Table 20, figures 20.1 and 20.2 show that the net enrollment ratios are 100.0 % in Eastern Marmora region for males and females. For males in four regions the net enrollment ratios of primary education are under the 90.0 %; these are Central Anatolia, East Black Sea, North East Anatolia, East Anatolia,

like in the 200-2001 school year. For females, seven regions are under 90.0 %, which were also under the 90.0 % in 2000-2001 school years. A comparison between 2000-2001 and 2001-2002 school years, net enrollment ratios in primary education increased in West Marmora, West Black Sea, North-East Anatolia, East Anatolia and South-East Anatolia regions for males and females. It has been also increased for females in East Marmora and East Black Sea regions.

In gender differences, North-East Anatolia, East Anatolia and South-East Anatolia regions have shown that the gender differences are under the 95.0. However, when the 2000-2001 school year is compared to the 2001-2002 school year excluding the Istanbul region which has extremely high rates, all regions prove to have reduced their gender differences; even in North-East Anatolia it decreased to 93.73 % in one year.

FIGURE . 19.1 : REGIONAL DIFFERENCES IN GROSS ENROLLMENT RATIOS IN PRIMARY EDUCATION, TURKEY (2001 – 2002)

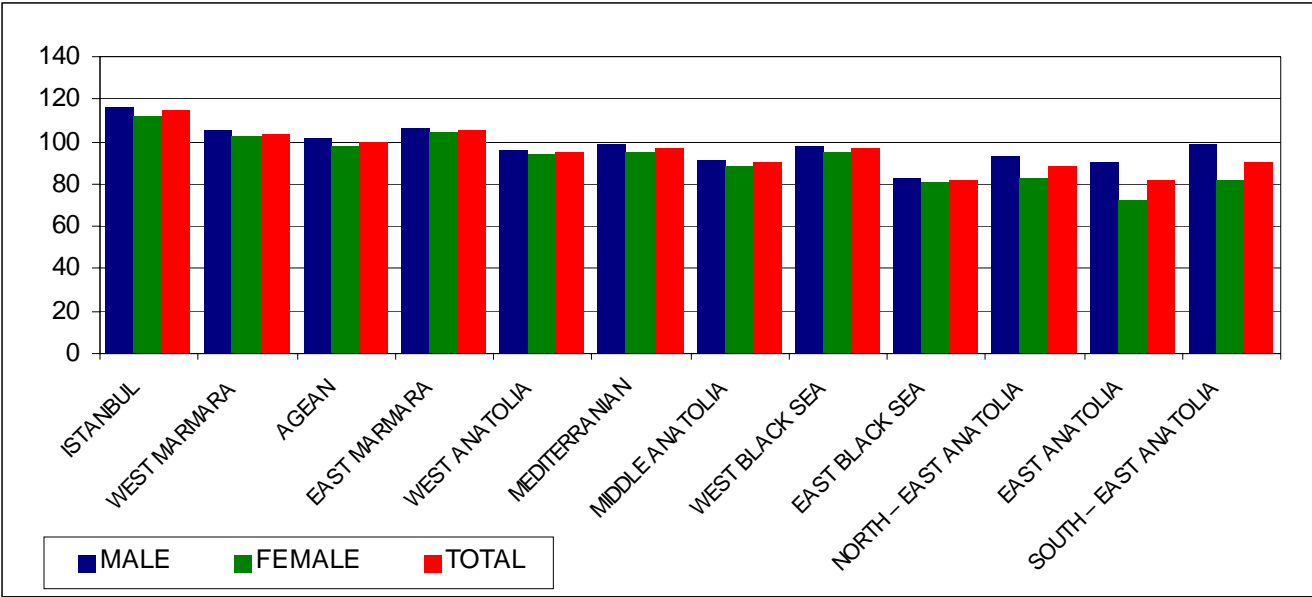


FIGURE . 19.2 : GENDER DIFFERENCES IN REGIONS FOR GROSS ENROLLMENT RATIOS IN PRIMARY EDUCATION, TURKEY (2001 – 2002)

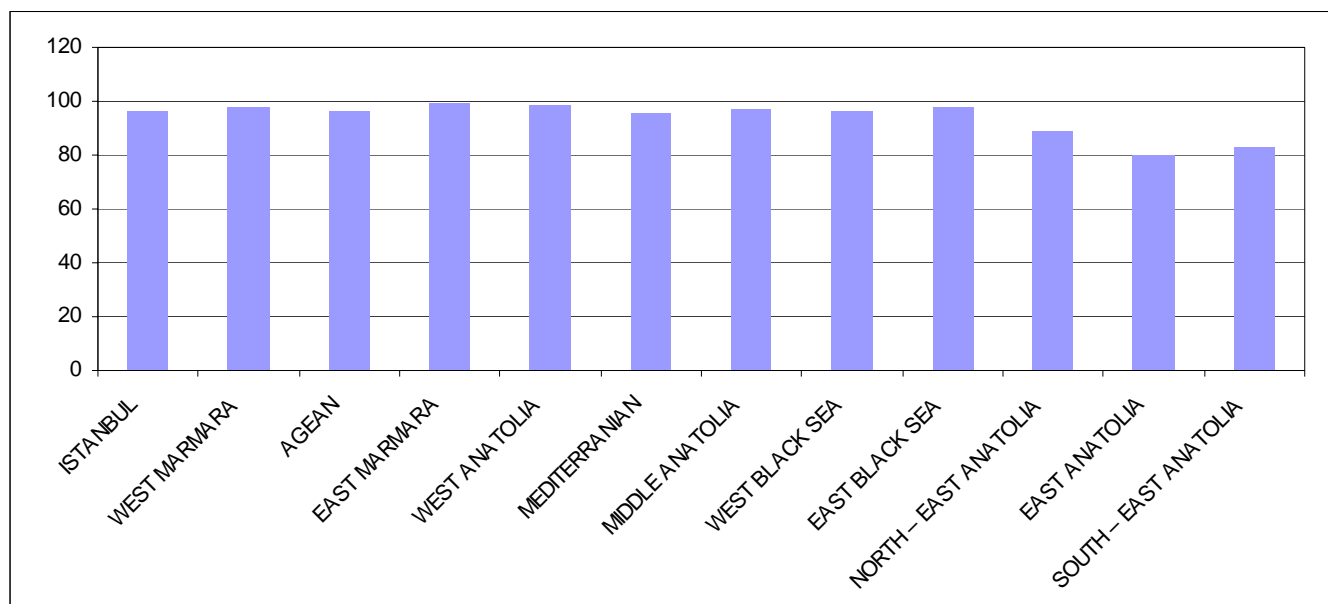


TABLE . 20 : REGIONAL DIFFERENCES IN NET ENROLLMENT RATIOS IN PRIMARY EDUCATION, TURKEY (2001 – 2002)

NUTS REGIONS	MALE	FEMALE	TOTAL	GENDER RATIO
ISTANBUL	99.47	95.30	97.45	95.81
WEST MARMORA	99.13	98.28	98.72	99.14
AGEAN	95.25	93.35	94.33	98.00
EAST MARMORA	100.00	100.00	100.00	100.00
WEST ANATOLIA	90.39	90.25	90.32	99.85
MEDITERRANIAN	91.46	88.85	90.19	97.15
MIDDLE ANATOLIA	85.41	84.60	85.01	99.05
WEST BLACK SEA	91.42	89.82	90.64	98.21
EAST BLACK SEA	77.12	76.72	76.93	99.48
NORTH – EAST ANATOLIA	82.75	77.53	82.13	93.73
EAST ANATOLIA	83.98	68.39	76.54	81.44
SOUTH – EAST ANATOLIA	91.76	77.96	85.22	84.96

FIGURE . 20.1 : REGIONAL DIFFERENCES IN NET ENROLLMENT RATIOS IN PRIMARY EDUCATION, TURKEY (2001 – 2002)

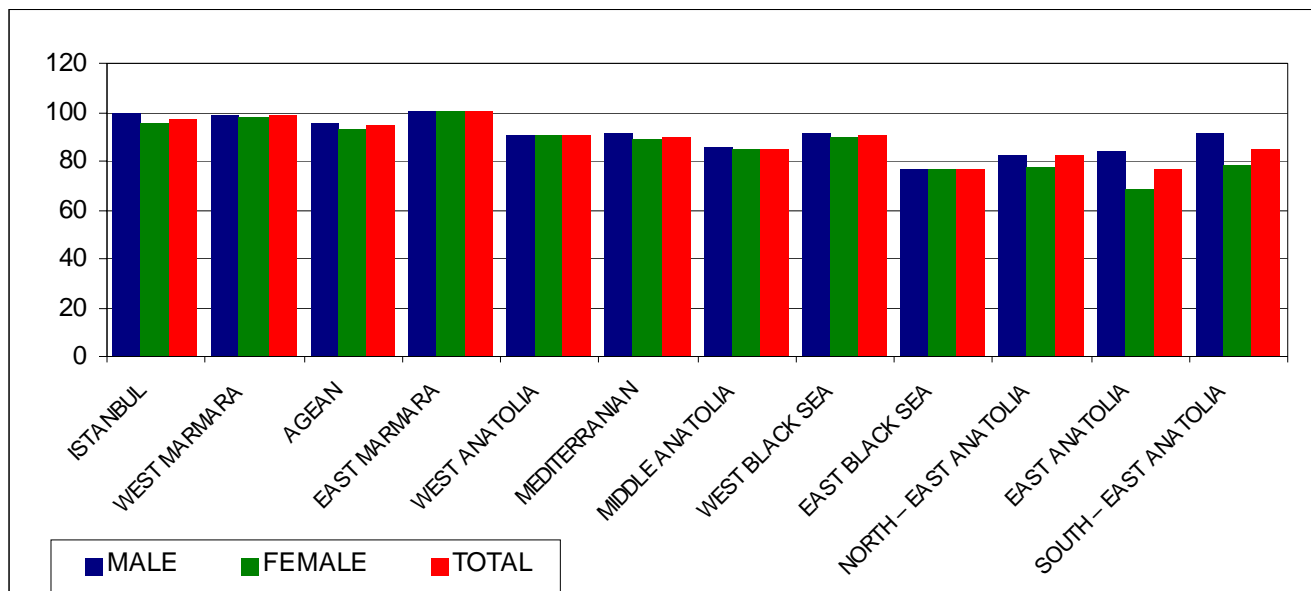
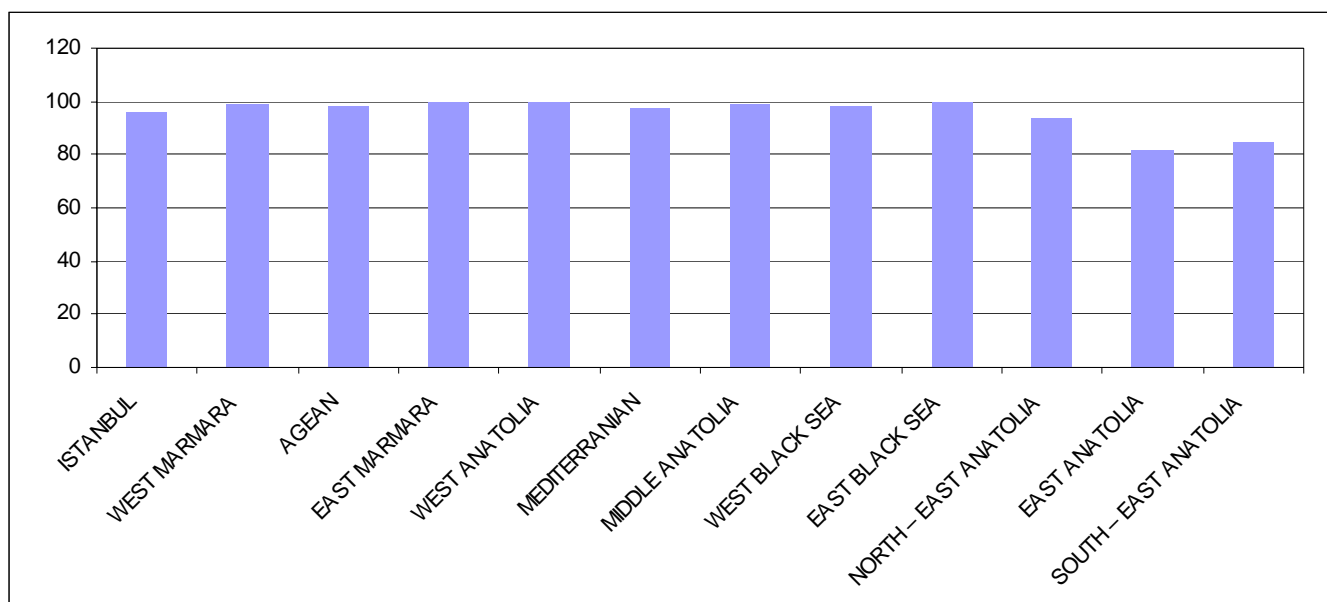


FIGURE . 20.2 : GENDER DIFFERENCES IN REGIONS FOR NET ENROLLMENT RATIOS IN PRIMARY EDUCATION, TURKEY (2001 – 2002)



3.2.2. Regional differences in gross and net enrollment ratios for secondary education, (2001-2002)

Table 21, figures 21.1 and 21.2 represent the regional differences of gross enrollments. Table 22, figures 22.1 and 22.2 show the regional differences of net enrollment ratios.

From Table 21, figures 21.1, and 21.2, highest gross enrollment ratios recorded in Eastern Marmora region for males, and in Western Marmora region for females can be observed; these were 87.72 % and 77.43 % for males and females respectively. North-Eastern Anatolia has the lowest gross enrollment ratio in secondary education for males. For females the lowest gross enrollment ratio in secondary education comes from South-Eastern Anatolia; these were 29.23 % for males and 20.53 % for females.

In comparing gross enrollment ratios for 2000-2001 and 2001-2002 school years, it is seen that gross enrollment ratios in secondary education has sharply decreased in North-Eastern Anatolia, Eastern Anatolia and South-Eastern Anatolia regions for males and females. Aside from these three regions it has increased in all regions for both sexes.

From Table 22, figures 22.1, and 22.2 it is observed that Eastern Marmora region has highest, and North-Eastern Anatolia region has the lowest net enrollment ratio in secondary education for males; these are 62.74 % for Eastern Marmora, and 19.2 % for North-Eastern Anatolia. Net enrollment ratios in secondary education for females is highest in west Marmora (59.78 %), and lowest in North-Eastern Anatolia (11.37 %).

A comparison between 2000-2001 and 2001-2001 school years shows that the net enrollment ratio in secondary education has been increased in Western Marmora, Aegean, Eastern Marmora, West-Central Anatolia, Mediterranean, and East Black Sea regions for both sexes. Beyond these regions it has been increased in Istanbul region for males and it also increased in Central Anatolia and West Black Sea regions for females.

During the 2001-2002 school years the highest gender differences in net enrollment ratio in secondary education level was recorded in Eastern Anatolia region, which is 52.29. In comparing 2000-2001 and 2001-2002 school years, without the Istanbul, West-Central Anatolia, Mediterranean and Eastern Anatolia regions, the gender differences in secondary education were reduced. For all education levels, the regions which have high gender differences in enrollment are those that also are the lowest in average family income. Also, the average number of children are the highest in these regions, which acts against the female children's access to school.

TABLE . 21 : REGIONAL DIFFERENCES IN GROSS ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2001 – 2002)

NUTS REGIONS	MALE	FEMALE	TOTAL	GENDER RATIO
ISTANBUL	72.87	71.90	72.41	98.67
WEST MARMORA	84.26	77.43	81.01	91.89
AGEAN	74.02	63.72	69.00	86.08
EAST MARMORA	87.72	67.66	78.07	77.13
WEST ANATOLIA	78.55	67.76	73.38	86.26
MEDITERRANIAN	70.04	54.92	62.75	78.41
MIDDLE ANATOLIA	65.83	44.06	55.08	66.93
WEST BLACK SEA	68.81	46.81	57.83	68.03
EAST BLACK SEA	63.42	48.30	56.08	76.16
NORTH – EAST ANATOLIA	29.23	15.89	22.65	54.36
EAST ANATOLIA	49.58	22.32	36.31	45.02
SOUTH – EAST ANATOLIA	39.82	20.53	30.52	51.56

FIGURE . 21.1 : REGIONAL DIFFERENCES IN GROSS ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2001 – 2002)

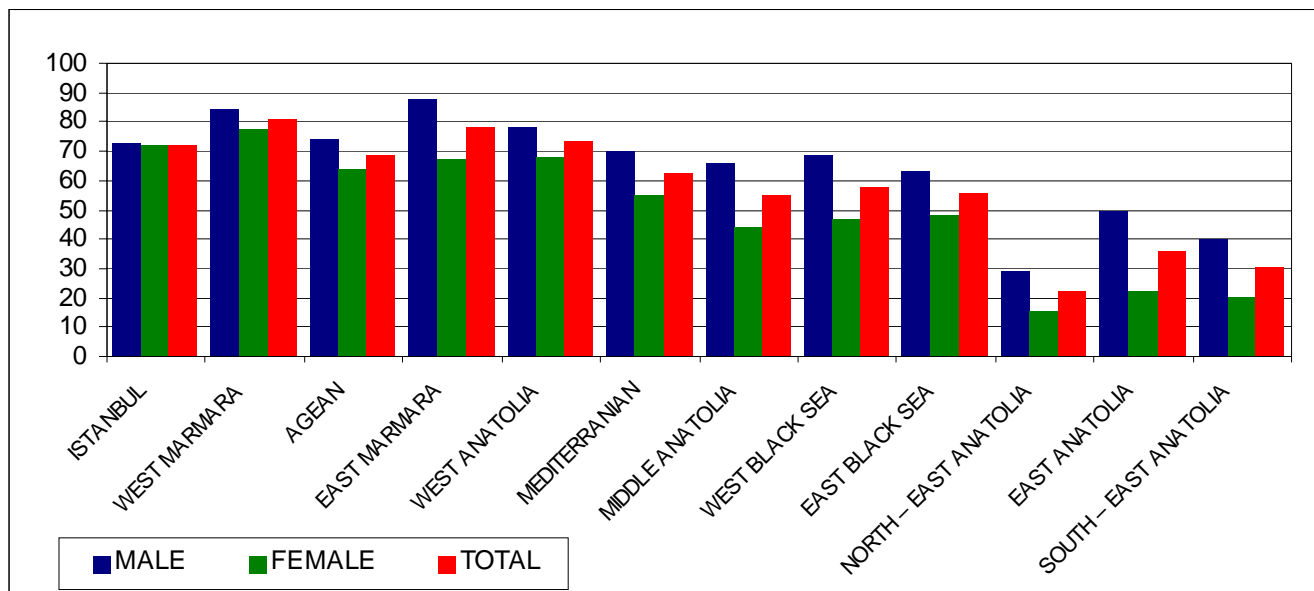


FIGURE . 21.2 : GENDER DIFFERENCES IN REGIONS FOR GROSS ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2001 – 2002)

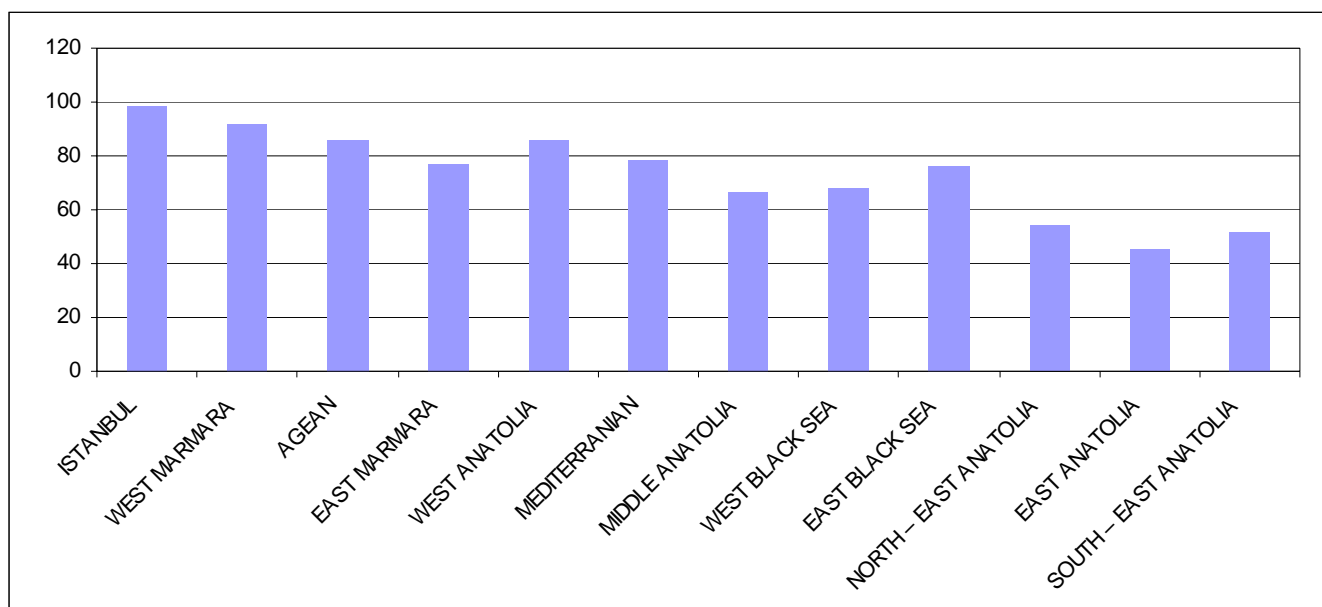


TABLE . 22 : REGIONAL DIFFERENCES IN NET ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2001 – 2002)

NUTS REGIONS	MALE	FEMALE	TOTAL	GENDER RATIO
ISTANBUL	50.26	48.83	49.59	97.15
WEST MARMORA	61.54	59.78	60.70	97.14
AGEAN	52.95	48.12	50.58	90.88
EAST MARMORA	62.74	51.13	57.15	81.50
WEST ANATOLIA	54.65	51.38	53.08	94.02
MEDITERRANIAN	48.55	41.00	44.91	84.45
MIDDLE ANATOLIA	45.76	33.58	39.75	73.38
WEST BLACK SEA	47.82	33.99	40.92	69.78
EAST BLACK SEA	45.01	37.45	41.34	83.20
NORTH – EAST ANATOLIA	19.02	11.37	15.25	59.78
EAST ANATOLIA	30.58	15.99	23.48	52.29
SOUTH – EAST ANATOLIA	24.32	14.22	19.45	58.47

FIGURE . 22.1 : REGIONAL DIFFERENCES IN NET ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2001 – 2002)

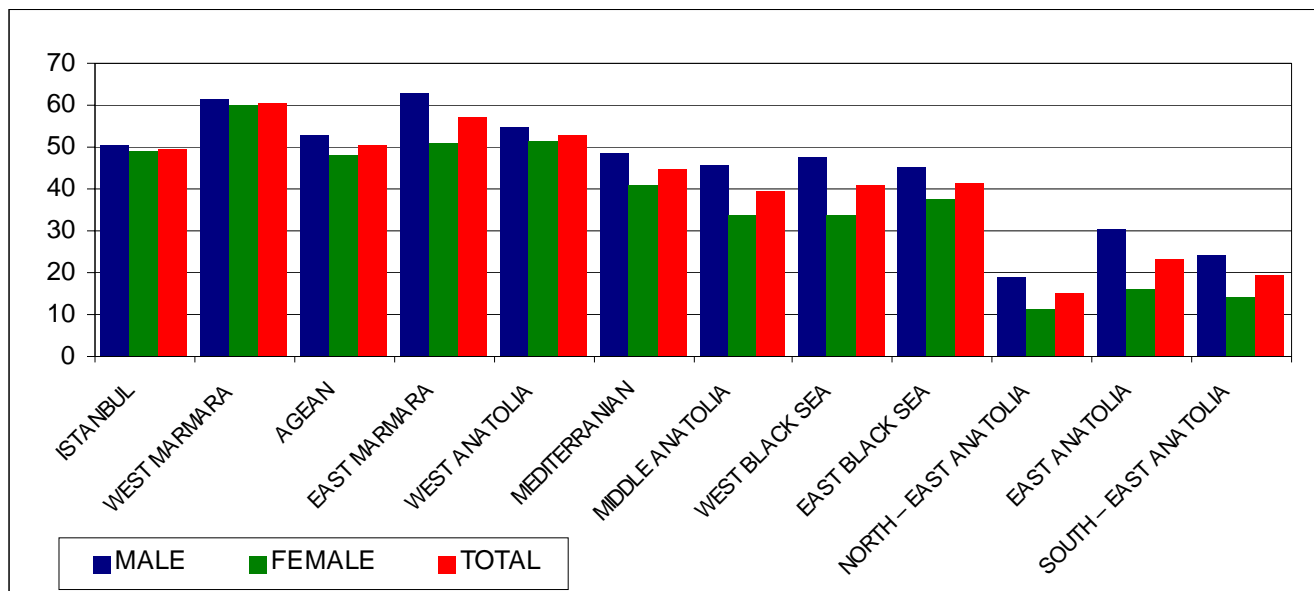
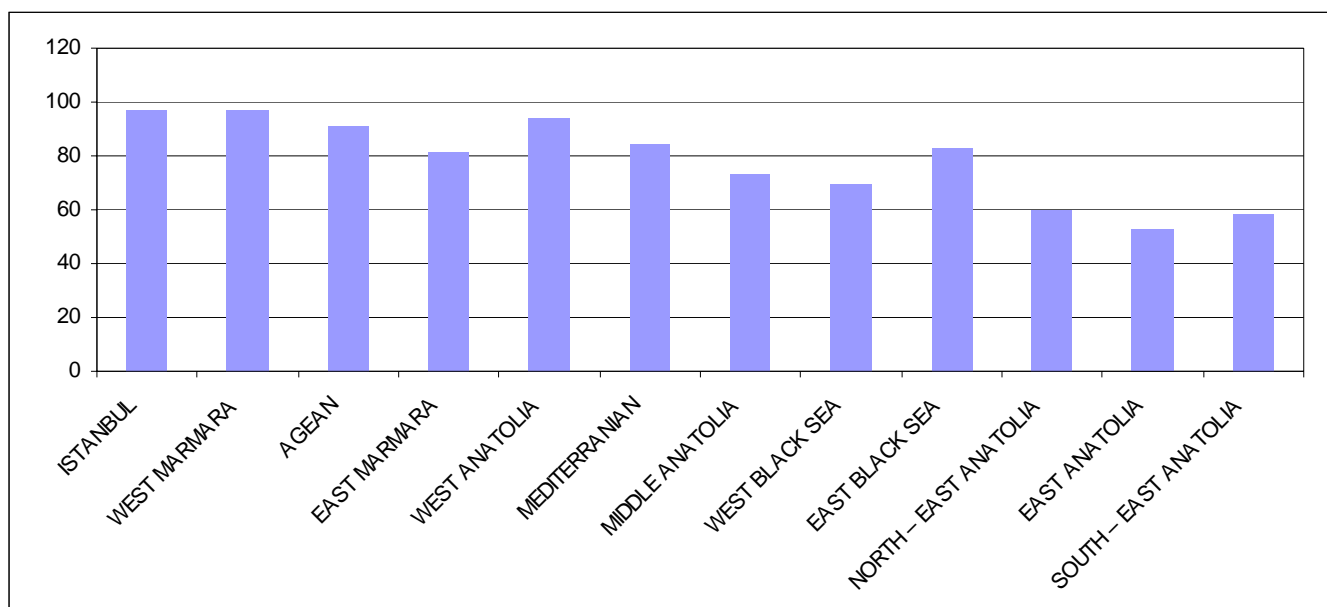


FIGURE . 22.2 : GENDER DIFFERENCES IN REGIONS FOR NET ENROLLMENT RATIOS IN SECONDARY EDUCATION, TURKEY (2001 – 2002)



3.2.3. Regional differences for number of student per-classroom, in detail of educational levels, Turkey (2001-2002)

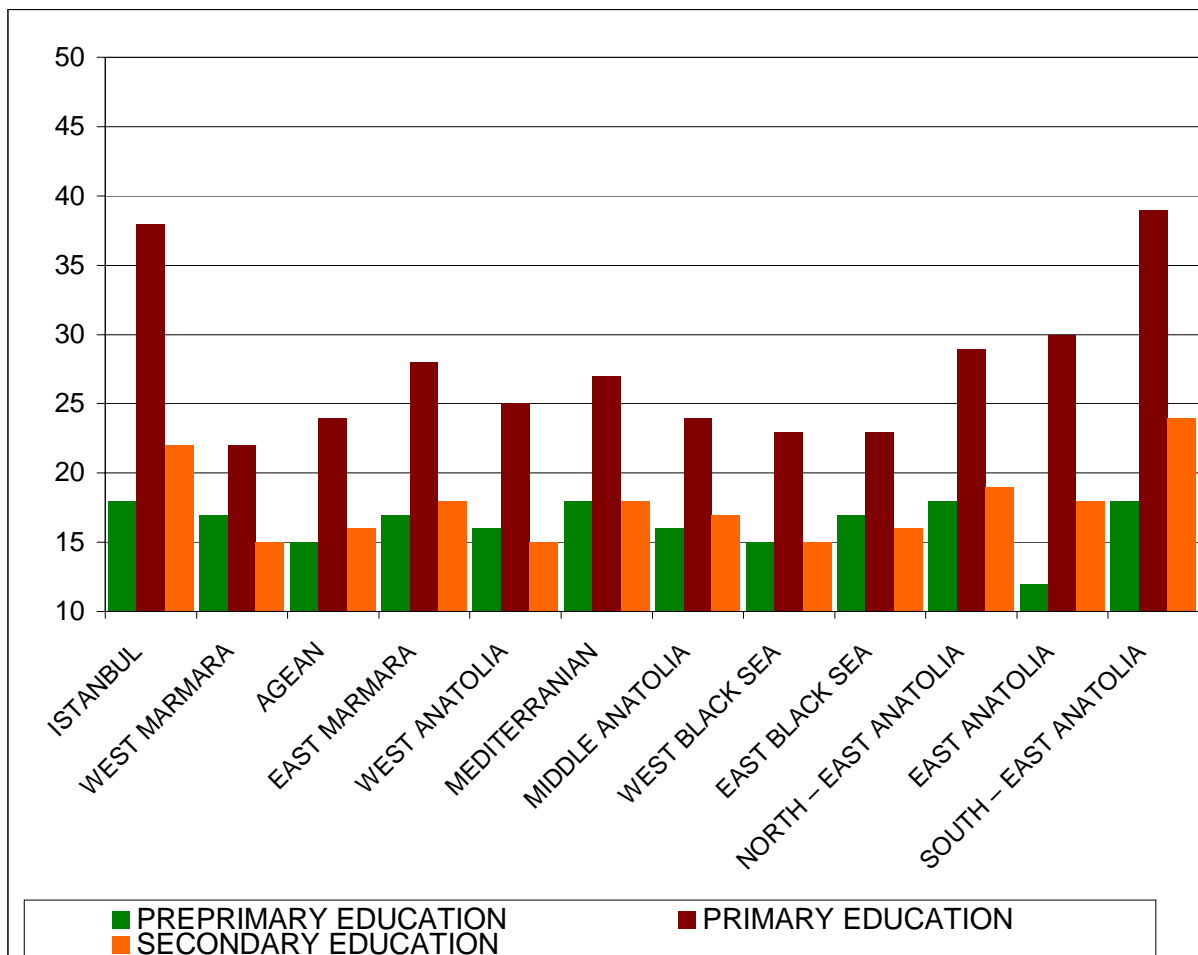
Table 23 and figure 23 represents the number of students per classroom in detail of educational levels for all of regions. From Table 23 and figure 23, we can find out that the numbers of students per classroom are under the ideal interval of 20-25 students in all regions for pre-primary education. For primary education, the number of students per classroom in Western Marmora, Aegean, Western Anatolia, Central Anatolia, West Black Sea regions are all between the ideal interval per-classroom. South-East Anatolia, has the greatest number of students per classroom together with Istanbul; these are 39 for South-East Anatolia and 38 for Istanbul respectively. The number of students per classroom increased in West Black Sea, East Black Sea, North-East Anatolia, East Anatolia, South-East Anatolia regions, and decreased in all other regions between 2000-2001 and 2001-2002 school years.

All regions have sufficient number of students per classroom in secondary education. Very important point is, the number of students per classroom has decreased between 2000-2001 and 2001-2002 in all regions. It means that the Ministry of Education has added new classrooms between these two school years.

TABLE . 23 : REGIONAL DIFFERENCES FOR NUMBER OF STUDENTS PER CLASSROOM IN DETAIL OF EDUCATIONAL LEVELS, TURKEY (2001 – 2002)

NUTS REGIONS	PRE-PRIMARY EDUCATION	PRIMARY EDUCATION	SECONDARY EDUCATION
ISTANBUL	18	38	22
WEST MARMORA	17	22	15
AGEAN	15	24	16
EAST MARMORA	17	28	18
WEST ANATOLIA	16	25	15
MEDITERRANIAN	18	27	18
MIDDLE ANATOLIA	16	24	17
WEST BLACK SEA	15	23	15
EAST BLACK SEA	17	23	16
NORTH – EAST ANATOLIA	18	29	19
EAST ANATOLIA	12	30	18
SOUTH – EAST ANATOLIA	18	39	24

FIGURE . 23 : REGIONAL DIFFERENCES FOR NUMBER OF STUDENTS PER CLASSROOM IN DETAIL OF EDUCATIONAL LEVELS, TURKEY (2001 – 2002)



3.2.4. Regional differences for number of students per teacher in detail of educational levels, Turkey (2001-2002)

Table 24 and Figure 24 represent the number of students per teacher in detail of educational levels for all regions. From Table 24 and Figure it can be seen that number of students per teacher are too high in all regions for pre-primary education like educational year of 2000-2001. West Marmara has 149 students per teacher and it has the highest value among regions. In 2001-2002 educational year Istanbul has the lowest value of 46 students per teacher. All regions have students per teacher over the ideal interval of 20-25. All regions still need immediate action for to recruit necessary numbers of teacher to reduce this problem in pre-primary. Origin of problems and solution is same as 2000-2001 educational year.

In primary education Middle Anatolia, West Black Sea, East Black Sea and North-East Anatolia regions has sufficient number or just near the upper boundary of ideal interval of students per teacher in 2001-2002. Without the this three regions, all regions certainly need primary school teacher for to reduce number of student per teacher.

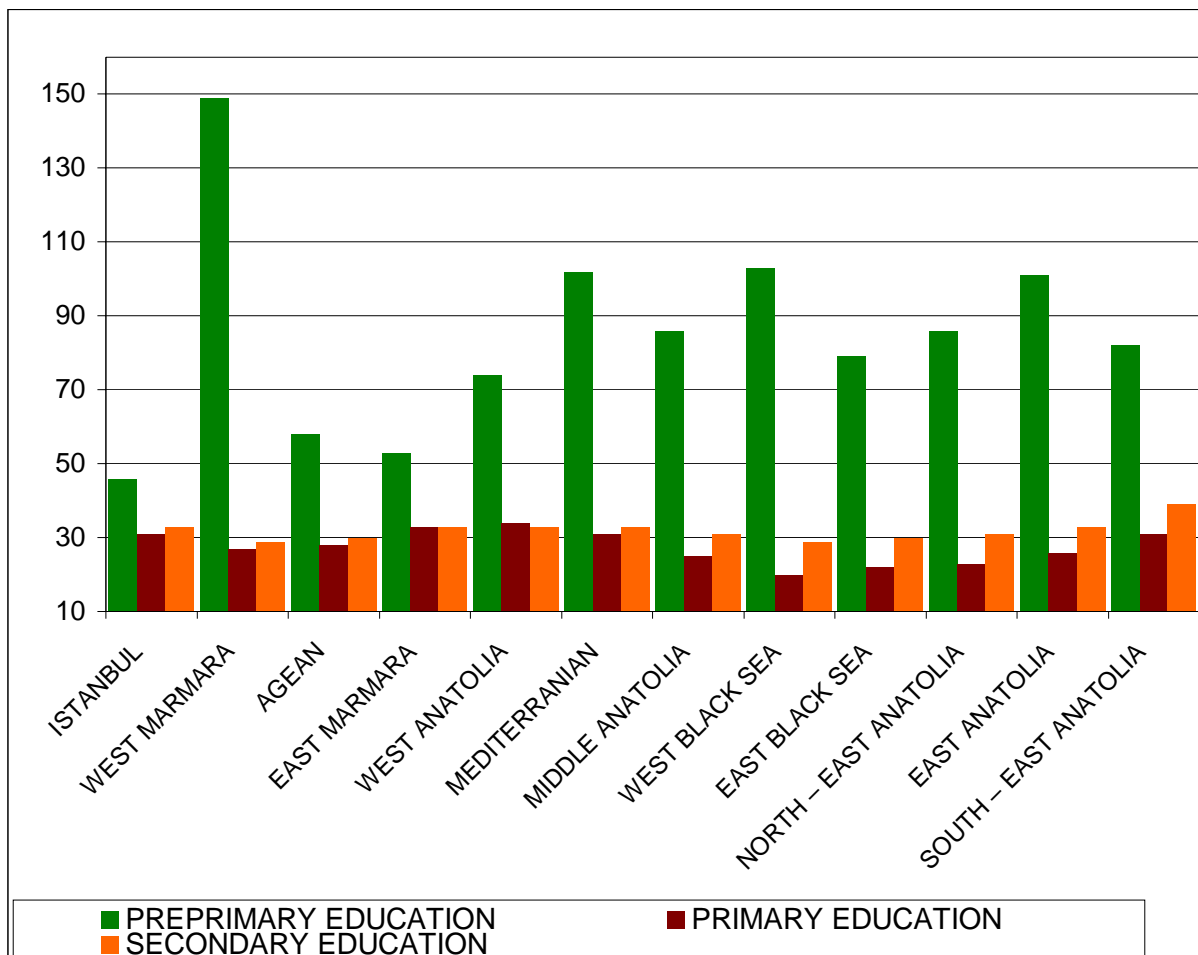
West Anatolia has 34, West Marmora has 33 students per teacher in primary education level. In general educational year of 2001-2002 has better condition than 2000-2001 about number of students per teacher.

Reversely problem of number of student per teacher started for secondary education in educational year of 2001-2002. All regions has average number of students per teacher over the ideal interval.

TABLE . 24 : REGIONAL DIFFERENCES FOR NUMBER OF STUDENTS PER TEACHER IN DETAIL OF EDUCATIONAL LEVELS, TURKEY (2001 – 2002)

NUTS REGIONS	PRE-PRIMARY EDUCATION	PRIMARY EDUCATION	SECONDARY EDUCATION
ISTANBUL	46	31	33
WEST MARMORA	149	27	29
AGEAN	58	28	30
EAST MARMORA	53	33	33
WEST ANATOLIA	74	34	33
MEDITERRANIAN	102	31	33
MIDDLE ANATOLIA	86	25	31
WEST BLACK SEA	103	20	29
EAST BLACK SEA	79	22	30
NORTH – EAST ANATOLIA	86	23	31
EAST ANATOLIA	101	26	33
SOUTH – EAST ANATOLIA	82	31	39

FIGURE . 24 : REGIONAL DIFFERENCES FOR NUMBER OF STUDENTS PER TEACHER IN DETAIL OF EDUCATIONAL LEVELS, TURKEY (2001 – 2002)



IV. CONCLUSION

The present study has yielded time series results regarding the educational indicators of Turkey at national level for the period of 1970-2003 and regional differences of some indicators for school years 2000-2001 and 2001-2002.

Basic findings are given below;

1. Between 1970-2003 the illiteracy ratios have decreased from 29.69 % to 4.63 % for males and 58.20 % to 16.76 % for females. The gender differences gap has increased from 1.96 to 3.62 in same period showing that the increase in female literacy has a slower pace.
2. Adult literacy rate has increased from 71.0 % to 94.9 % for males and 35.6 % to 80.5 % for females. The gender differences gap of adult literacy ratio has closed from 0.50 to 0.85 during the 1970-2003 period.
3. Net enrollment ratio in pre-primary education has increased from 1.0 % to 8.27 % for males and 0.30 % to 6.98% in the 3-5 age group. A similar increase has been recorded from 1.62 % to 15.39 % for male and 0.48 % to 12.99 % for female children in the 4-5 age group between the years 1980-2003.
4. In the 1970-2003 period the net enrollment ratio in primary education has decreased from 96.38 % to 93.24 % for males and increase from 74.38 % to 86.71 % for female pupils. In this period the policy for primary education has changed two times, once in 1973 and in 1996, from a formal request to compulsory enforcement, and also compulsory education was increased from 5 years to 8 years.
5. Gross enrollment ratio in secondary education has increased from 35.04 % to 95.98 % for male and 15.32 % to 71.19 % for female students. Similarly, the net enrollment ratio in secondary education has increased from 30.98 % to 89.78 % for males and 13.54 % to 67.13 % for females between 1970-2003. Both enrollment ratios have shown a very sharp increase after 2001 due to the effect of compulsory education graduates.
6. Tertiary education's gross enrollment ratios are 7.29 % for males and 1.81 % for females during the year 1970. In 2003 they have been increased to 33.80 % for males and 25.36 % for females. Also, the net enrollment ratios in tertiary education has increased from 3.93 % to 17.15 % for males and 1.16 % to 14.89 % for females in same period of time. Gross enrollment ratios in tertiary education excluding the distance education has increased from 7.29 % to 22.83 % for males and 1.81 % to 16.49 % for

females; these were increased from 3.93 % to 15.44 % for males and 1.16 % to 12.44 % for females between 1970-2003. Distance tertiary education have started to give graduates after 1980's.

7. Gender ratios are 84.40 % for pre-primary, 95.20 % for primary, 74.17 % for secondary and 75.03 % for tertiary education levels during the year 2003. These have been increased from 30.00 % for pre-primary in 1980, from 77.21 % for primary, from 43.72 % for secondary and from 24.83 % for tertiary educations in 1970.
8. During the 2003 aside from the primary education, all levels of education have acceptable number of students per teacher at national level. In the primary education the number of students per teacher was just over the accepted interval of 20-25 %, it is 27.29 in 2003.
9. Primary and secondary education levels need seriously investment of classrooms or school units, the average number of students per classroom are 27.19 for primary, 31.74 for secondary educations in 2003.
10. During the 2000-2001 school year, four NUT's regions have less than 90.00 % net enrollment ratio for males and seven regions for females, Middle Anatolia, East Black Sea, North-East Anatolia and East Anatolia have the same structure of differences for both sexes. North-East Anatolia, East Anatolia and South-East Anatolia are the most problematic regions in gender differences in primary education.
11. The highest gross enrollment ratios in secondary education are recorded in East Marmora region for males (80.34 %), West Marmora region for females (68.51 %) and the lowest gross enrollment ratios are recorded in South-East Anatolia region; these are 43.72 % for males and 20.70 % for females. In general, excluding the Istanbul region, all regions have gender differences in secondary education levels in 2000-2001 school years.
12. In 2001-2002, for males five regions, for females two regions have more then 50.00 % net enrollment ratio in secondary levels instead of 12 regions during 2000-2001 school year. Istanbul had 103.21 % gender ratio in favor of female in same school year. This may be due to males do not continue to secondary education for to get income to their family after compulsory education. Excluding Istanbul, Marmora and West Anatolia, in all regions gender differences are below the 90.00 % in net enrollment for secondary education.

13. In the 2000-2001 school year, excluding the Central Anatolia, West Black Sea, East Black Sea, North-East Anatolia regions had more than 25 students per classroom in primary education level. For secondary education, no regions have sufficient number of students per classroom.
14. About the number of students per teacher, all regions seriously need pre-primary education teachers. Sufficient number of teachers can be found in Western Marmora, West Black Sea, East Black Sea for primary education level. All regions have sufficient number of students per teacher in secondary education during the 2000-2001 school year.
15. The 2001-2002 school year shows similar conditions with the 2000-2001 for all educational levels like 2000-2001.
16. In general, Turkey achieved to increase all educational indicators in last 33 years in spite of political and economic instability. Country has potential and ability to adapt to new policies and promote education. For rapid development in education in order to catch European averages.
 - a. The following development attack should be started from four important regions for all educational levels; these are the East Black Sea, North-East Anatolia, South-East Anatolia and East Anatolia.
 - b. By taking into account the availability of financial resources and the need to invest in quality in the existing levels, the fifth age group of pre-primary education and secondary education must be included in compulsory education and also primary class should be added to secondary education increasing it to four years. On the other hand, the education system should be renewed according to the needs of country and European Union membership perspective.

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APPENDIX

APPENDIX.I: POPULATION PROJECTIONS OF EDUCATIONAL AGE GROUPS

TABLE:A.1.1. POPULATION PROJECTIONS BY AGE GROUP OF EDUCATIONAL LEVELS, TURKEY, (2000-2020), FEMALES

(000)

YEARS	AGE GROUPS				TOTAL POPULATION
	3-5 AGES	6-13 AGES	14-16 AGES	17-21 AGES	
2000	2061	5085	1890	3306	33367
2001	2057	5174	1857	3280	33922
2002	2078	5261	1830	3246	34477
2003	2110	5352	1823	3203	35024
2004	2111	5436	1847	3153	35568
2005	2091	5508	1886	3110	36096
2006	2093	5565	1936	3085	36640
2007	2091	5596	1982	3086	37167
2008	2085	5615	2020	3110	37681
2009	2078	5625	2050	3161	38180
2010	2073	5621	2071	3228	38669
2011	2074	5606	2092	3297	39139
2012	2077	5593	2111	3356	39598
2013	2079	5584	2124	3408	40052
2014	2058	5580	2126	3454	40496
2015	2029	5576	2121	3490	40929
2016	2001	5569	2110	3518	41360
2017	1996	5548	2099	3535	41784
2018	1986	5526	2092	3540	42202
2019	1978	5497	2092	3531	42620
2020	1977	5455	2096	3516	43029

TABLE:A.1.1. POPULATION PROJECTIONS BY AGE GROUP OF EDUCATIONAL LEVELS, TURKEY, (2000-2020), MALES

(000)

YEARS	AGE GROUPS				TOTAL POPULATION
	3-5 AGES	6-13 AGES	14-16 AGES	17-21 AGES	
2000	2135	5300	1985	3472	34052
2001	2133	5382	1951	3443	34605
2002	2157	5463	1919	3402	35148
2003	2193	5551	1909	3355	35688
2004	2194	5635	1929	3302	36222
2005	2174	5708	1965	3255	36742
2006	2175	5769	2010	3224	37270
2007	2174	5802	2051	3218	37780
2008	2168	5827	2088	3235	38278
2009	2162	5836	2118	3280	38768
2010	2157	5835	2142	3340	39247
2011	2157	5821	2164	3404	39703
2012	2161	5808	2186	3460	40145
2013	2164	5800	2199	3511	40573
2014	2143	5797	2202	3559	40995
2015	2113	5793	2198	3599	41408
2016	2083	5788	2187	3630	41815
2017	2078	5768	2176	3648	42216
2018	2070	5745	2169	3655	42608
2019	2061	5714	2171	3648	42994
2020	2060	5675	2174	3633	43374

TABLE:A.1.1. POPULATION PROJECTIONS BY AGE GROUP OF EDUCATIONAL LEVELS, TURKEY, (2000-2020), BOTH SEXES

(000)

YEARS	AGE GROUPS				TOTAL POPULATION
	3-5 AGES	6-13 AGES	14-16 AGES	17-21 AGES	
2000	4196	10384	3874	6777	67421
2001	4190	10556	3808	6723	68531
2002	4236	10725	3751	6648	69625
2003	4302	10904	3734	6558	70715
2004	4305	11071	3775	6456	71790
2005	4266	11216	3852	6365	72842
2006	4268	11335	3946	6308	73908
2007	4266	11398	4033	6302	74944
2008	4252	11442	4109	6344	75960
2009	4239	11463	4168	6440	76954
2010	4229	11454	4214	6569	77915
2011	4231	11427	4257	6700	78839
2012	4238	11400	4297	6816	79745
2013	4243	11385	4323	6919	80623
2014	4201	11378	4329	7012	81492
2015	4141	11370	4319	7089	82343
2016	4084	11356	4297	7146	83172
2017	4075	11315	4275	7182	83992
2018	4057	11270	4261	7195	84803
2019	4040	11211	4263	7180	85618
2020	4036	11130	4270	7149	86405

APPENDIX.II: DEFINITION OF NUT'S CLASSIFICATION

In determining the regional development policies of European Union, the regional statistics is one of the most important criteria.

The regional classification system NUTS is used in order to obtain comparable regional statistics among European Union member or candidate countries.

In Turkey, SIS and SPO were developed a classification on this basis, which is known as NUTS, and the related EU institutions in a short time ago approve it.

Briefly, obtaining statistics due to this classification means the followings:

- In Turkey, data will be produced (obtained/gathered) on the basis of this NUTS classification.
- The statistics will be obtained more detailed, various and useful according to this new system.
- Since the number of studies within the narrow regions will be increased, public needs could be determined more accurate and detailed and the governments could decide their regional policies more easily.

Alongside of this classification, SPO makes urban, rural and metropolis definitions. Residences having 0-20 000 population defined as “rural”, 20 001, + population as “urban”, and provinces like Istanbul, Izmir and Ankara as metropolis.

1. Statistical Regions and Provinces Considered Under These Regions (NUTS 1 and 2)

NUTS 1	NUTS 2
Istanbul	Istanbul
West Marmora	Tekirdağ Balıkesir
Aegean	İzmir Aydın Manisa
East Marmora	Bursa Kocaeli
West Anatolia	Ankara Konya
Mediterranean	Antalya Adana Hatay
Central Anatolia	Kırıkkale Kayseri
West Black Sea	Zonguldak Kastamonu Samsun
East Black Sea	Trabzon
North-east Anatolia	Erzurum Ağrı
Central-east Anatolia	Malatya Van
South-east Anatolia	Gaziantep Şanlıurfa Mardin

2. Urban-rural Definition Due To Population Size

A. Definition of Rural

1. 0-5000 population
2. 5001-10000 population
3. 10001-20000 population

B. Definition of Urban

1. 20001-50000 population
2. 50001-100000 population
3. 100001+ population

C. Metropolis

1. Istanbul
2. Ankara
3. Izmir