

# Quantitative Changes in Higher Education Between 1999-2015 in Turkey\*

Türkiye’de Yükseköğretimde 1999-2015 Yılları Arasındaki Nicel Değişimler\*

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## ABSTRACT

Education is the key factor to build and sustain the future of nations and it stands at the center for smart and sustainable growth. Investing on education especially on higher education, is essential for growth and employment as a more skilled and well educated workforce will support further productivity gains, innovation and wealth. Correspondingly, this results in growing and diversifying of higher education system in all countries to compete world-wide in recent decades. The Turkish higher education system has been facing an unprecedented transformation in the last decade. This transformation has been driven by economic and demographic changes. Higher education in Turkey is changing and opening up to increase in size and to respond to increasing demands from society with the efforts of competing in world-wide. The aim of this study is to investigate the quantitative changes in higher education in Turkey shedding light on the expansion in terms of universities, institutions, students, academic staff and schooling ratio in the last fifteen years starting from 1999 till 2015. The results indicate that Turkey has seen a rapid expansion and a substantial rise in the number of enrollment rate in higher education since 1999 but still not enough when compared to OECD countries.

**Keywords:** Higher education, Quantitative changes, Expansion

## ÖZ

Eğitim, ulusların geleceğini inşa etmek ve sürdürülmesini sağlamak için önemli görülmekte ve sürdürülebilir gelişimin merkezinde yer almaktadır. Eğitime yatırım ve özellikle yükseköğretime yatırım büyüme için önemli görülmekte ve daha nitelikli istihdam ve daha iyi eğitilmiş işgücü üretimin, yenilik ve refahın artmasını sağlamaktadır. Bu da son yıllarda ülkelerin dünya genelinde rekabet edebilmelerini sağlayacak yükseköğretim sistemlerinin çeşitlenmesine ve gelişmesine sebep olmuştur. Türkiye’de yükseköğretim sistemi son zamanlarda emsalsiz bir dönüşüme tanıklık etmektedir. Bu dönüşüm ekonomik ve demografik değişimler sonucunda ortaya çıkmıştır. Türkiye’de yükseköğretim dünya genelinde rekabet edebilmek ve toplumun artan taleplerini karşılayabilmek için nicel anlamda büyümekte ve değişmektedir. Çalışmanın amacı Türkiye’de yükseköğretimde 1999-2015 yılları arasındaki son 15 yılda yaşanan eğilimleri üniversite, kurum sayıları, öğrenci ve akademik personel açısından incelemektir. Çalışmanın sonuçları, Türkiye’nin 1999 yılından beri önemli bir gelişim gösterdiğini ve bu gelişimlerin çoğunlukla nicel büyümeler olduğunu ama buna rağmen uluslararası ölçütler ve OECD ülkeleri ile karşılaştırıldığında bu büyümenin yeterli olmadığını ortaya koymaktadır.

**Anahtar Sözcükler:** Yükseköğretim, Nicel değişim, Büyüme

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## INTRODUCTION

Higher education is of paramount importance for economic, social and politic development of a country (Bloom, Canning & Chan, 2006; UNESCO, 2008; World Bank, 1994) and has a vital mission to generate new knowledge and educate people for the rapidly changing and increasingly complex and competitive world (Ransom, Khoo & Selvaratnam, 1998). Moreover, universities are seen as the key agents for improving sustainable development (UNESCO, 2008) and “*engine of development in the new world economy*” (Castella, 1991: 14). The main responsibility of higher education is identified as equipping individuals with the advanced knowledge and robust skills required for government, business and the professions and of course for a sustainable future. Universities educate leaders for future and provide advanced knowledge and technology adapting changing requirements underpinning economic growth. Various reports have proved the inevitable links between the development of higher education and economic development of the countries (UNESCO, 2008; World Bank, 1994). For centuries both individuals and society took advantage of higher education. Higher education helps individuals improve their lifestyles and enriches wider society. Higher education ensures high salaries and productivity and these later makes both individuals and countries richer (World Bank, 2000). Estimated social rates of return were 10 percent or more in many developing countries and this demonstrates that investments in higher education contribute to increase in labor productivity and to higher long-term economic growth, essential for poverty alleviation (World Bank, 1994). Better educated individuals tend to achieve greater success in the labor market and so economies with higher educated people appear to be more dynamic and more competitive in global markets and this resulted in higher income per capita (World Bank, 2000).

Higher education institutions are also seen as the central to the capacity of nations to connect with the new international knowledge system and to adopt, adapt and further develop the new coming technologies (Verspoor, 1998: 57). Verspoor (1998), also added that the most developing countries do not use this power effectively and emphasized that the most developing countries has dropped far below international standards as these countries do not put higher education on the agenda. Developing countries have a small share of scientific and technological capabilities in the world and developing countries account for just 13% of scientists and engineers in the world (Verspoor, 1998).

Underpinning these numerous benefits of higher education, a worldwide priority has been given to higher education and in recent decade and a substantial rise in the proportion of people having higher education has been seen in most developed countries. United States and Canada firstly achieved mass higher education in the 1960s. These two countries were followed by Western Europe and Japan (Altbach, Reisberg & Rumbley, 2009: 17). This trend spread towards other countries after then. The number of students in higher education around the world has increased from 98 million in 2000 to over

150 million in 2007 and this implies a growth of over 50% in this period (van Deuren, 2013). Since 1995, trends in tertiary graduation rates have increased by 20 percent points on average across OECD countries. In 1995, the graduation rate was 20 percent whereas by 2012 it had doubled and the graduation rates reached 42 percent in OECD countries (OECD, 2014: 83).

This poses of course a serious challenge to the developing countries and there occurs a need for many developing countries to catch up (World Bank, 2000). Currently access to higher education has expanded significantly in developing countries (Altbach, Reisberg & Rumbley, 2009; van Deuren, 2013; OECD, 2014; World Bank, 2010). The massive expansion in tertiary enrolments was more obvious in Sub-Saharan Africa, Arab States, East Asia and the Pacific (Tremblay, Lalancette & Roseveare, 2012; World Bank, 2012). China and India were the first two countries having half of the global increase in the number of students in these periods (Kapur & Crowley, 2008). There is a rapid growth particularly in developing countries and it has been seen that spending on universities and higher education institutions have increased significantly in developing countries (Chapman, 2009; Kapur & Crowley, 2008; World Bank, 2000). These changes in the growth of higher education indicate that higher education has been high on the agenda worldwide but particularly in developing countries. In the developing countries, the enrolled students in higher education was more than 47 million in 1995 while 28 million in 1980 (World Bank, 2000: 27).

International comparisons of education have been becoming more and more important so as to develop nationwide policies in order to enhance social and economic prospects of individuals by looking at international standards. The proportion of people having tertiary education continued to expand since 2000 with a growing more than 3% each year. In 2012, nearly one in three adults in OECD countries had higher education qualification. In 2000 the rate of tertiary attainment of 25-64-year-olds was 22% and in 2012 this rate went up to 33%. In OECD countries, adult men (referring to 25-64-year-olds) had higher tertiary attainment rates than adult women in 2000. Gender differences in educational attainment have reversed since then and the proportion of adult women having tertiary education is 34% while this proportion of men is 31% in 2012 (OECD, 2014). The ratio of students to teaching staff is another indicator that shows the quality of education. One teaching staff is responsible for 14 students concerning all tertiary education in OECD countries in 2012. The highest rate of students per teaching staff is in Belgium, Slovenia and Indonesia with 21 students per teaching staff and 12 or fewer students in Spain, Germany, Sweden, Iceland and Norway in 2012 (OECD, 2011). More recently, higher education has become more critical than ever. Turkey has been a part of these trends and started to a growing development on the higher education system and grow up. On the other hand, Vincent Lancri (2008) conducted a research focusing on the effects of the demography on higher education in OECD countries. This study concludes that Turkey was one of the three countries which would see the biggest increase in the number of students in higher education between 2005-2025.

In Turkey this proportion of people of 25-64 year-olds was just 8% in 2000 and rose to 15% in 2012 (OECD, 2014). It is obvious that there is an increase in the rate of tertiary attainment in Turkey but still not enough when compared to OECD average. In Turkey, higher education was identified to be of significant in facilitating both social and economic development process and universities are also acknowledged to be key agents for improving development. Turkey has therefore put in place an initiative to revitalize its higher education so this can contribute more effectively to development path of Turkey. After foundation universities were established in 1980s and public universities after 2006 the higher education system has become not only diversified but also evolved since then (Çetinsaya, 2014; Günay, 2011; Günay & Günay, 2011; Özoğlu, Gür & Gümüş, 2015). After reviving the last fifteen years, it is easy to see the big growth occurred in Turkish higher education. At the edge of 21th century, it has been seen vital to reconsider the Turkish higher education system due to the quantitative development in higher education system. In order to provide effective policy advice, higher education system and its development must be analyzed in an attempt to define a path for Turkey in terms of improving strategies for higher education and formulate balanced strategies for future action.

This study aims to define the quantitative changes in higher education in the last 15 years according to selected indicators. Also this study seeks the answer of the following research question of what has changed quantitatively in higher education from 1999 till 2015 in higher education.

- Changes in number of universities and institutions
- Changes in number of students
- Changes in number of academic staff
- Changes in schooling ratio

The overall aim of the study is to highlight the expansion which was seen recently in Turkish higher education and to analyze long term actions occurred in higher education. The specific objective of this study is to obtain an overview of the major changes in the last 15 years in Turkish higher education and also to bring to the fore what was being done so far and what could be done further in the future. This study will make widely available the lessons for the future of higher education in Turkey. This study hopes to assist policy makers to develop comprehensive institutional strategies that would enhance overall mission and action plans towards achieving development not just in size but in quality.

## METHOD

### Research Design

It was aimed at establishing an overview of changes and expansion in higher education in Turkey in the last 15 years. The research was structured as a descriptive study.

### Data Collection

The study focuses on the years between 1999 and 2015. For this reason the research used secondary data received from

Council of Higher Education (CoHE) published on the web site, <http://www.yok.gov.tr/>, Ministry of National Education (MoNE) on <http://www.meb.gov.tr/> and Assessment, Selection and Placement Center (ASPC) on [www.osym.gov.tr](http://www.osym.gov.tr/).

### Analysis of Data

Percentage and frequency values were calculated with the data received from Council of Higher Education (CoHE), Ministry of National Education (MoNE) and Assessment, Selection and Placement Center (ASPC). The data were published within a five-year period starting from 1999-2000 till 2014-2015 via charts and graphs. The data were analyzed under the headings of universities and institutions, students, academic staff and schooling ratio in the last 15 years. And these data were evaluated and discussed in order to answer the research questions.

## RESULTS

The study aims to define briefly the quantitative changes in higher education in Turkey according to selected indicators and provide a detailed picture of higher education and the development in higher education system in Turkey. The results are given according to these selected indicators such as changes in number of universities and institutions, number of students, number of academic staff and schooling ratio starting from 1999-2000 until 2014-2015.

### A. Changes in number of universities and institutions

This part includes the number of both state and foundation universities and the number of faculty, higher education school and vocational school in Turkey starting from 1999 till 2015. The trend in the number of state and foundation universities and total number of universities between 1999-2000 and 2014-2015 in Turkey is given in the Figure 1.

Figure 1 indicates that in 2000s, Turkey had 53 state universities and 20 foundation universities. The number of both state and foundation universities has increased gradually since 2000. The number of foundation universities has nearly quadrupled since 2000s and the reached up to 76. The number of state universities has doubled since then and at present this time Turkey has 109 state universities.

Changes in the number of faculty, higher education school and vocational school in Turkey within 15 years since 2000s are shown in Figure 2.

As it has been seen in Figure 2, the number of institutions in Turkey has risen since 2000s. The number of faculties has risen from 491 in 2000 to 1304 in 2015. The number of vocational training schools has doubled since 2000 and reached 834. The number of higher education schools has approximately doubled since 2000 and now the number is 280 in 2015.

### B. Changes in student numbers

This part includes changes in the number of students consisting of the number of male and female students, age and gender composition and the number of students according to degrees and education type in the last 15 years starting from 1999-2000 until 2015. Changes in gender compositions in

higher education including both state and foundation universities from 2000 to 2015 are given in Figure 3.

According to Figure 3, the number of both male and female students and the total number of students in higher education have increased gradually since 2000s. The total number of students has quadrupled since 2000 and already reached to six million in total. The number of female students has risen from 602781 to 2786228 (nearly 2.8 million) between 200 and 2015. The number of male students has also increased from 889025 in 2000 to 3276658 in 2015.

Changes in the number of students according to degrees in the last 15 years are given in Figure 4. The numbers of the students given in Figure 4 were calculated by excluding the number of students in open education.

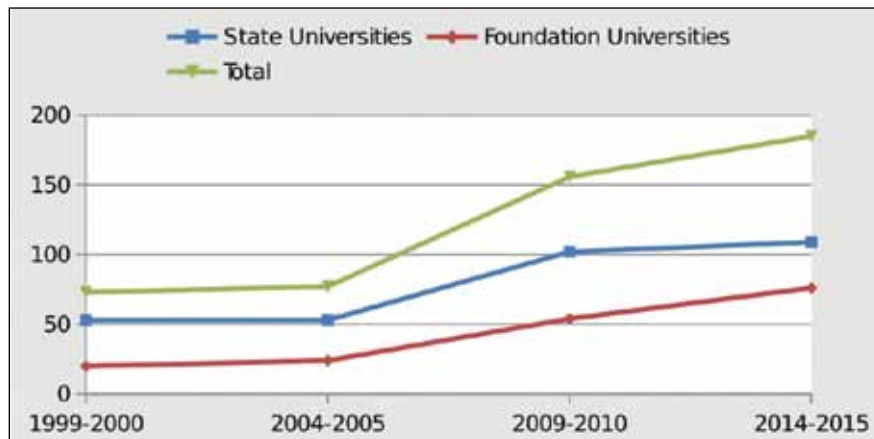
Figure 4 indicates that the number of students in all higher education degrees has increased since 2000. Most importantly, there is also a sharp increase in the number of students in all degrees since 2010. The number of students in vocational training school has risen from 163974 to 921611 between 2000 and 2015. The number of undergraduate students has quadrupled since 2000.

Changes in the Number of Associate Degree and Bachelor Students based on Education Type between 2000 and 2015 are given in Figure 5.

Figure 5 shows that the share of daytime education was %52 percent in 2000s whereas this has changed since 2000 and at this time the share of day time education and open education is almost close to each other with the rate of 45% and 44% respectively in 2015. The increase in the share of open education is too much when compared to daytime education. This development indicates that higher education in the last 15 years is becoming more widespread mostly via open education.

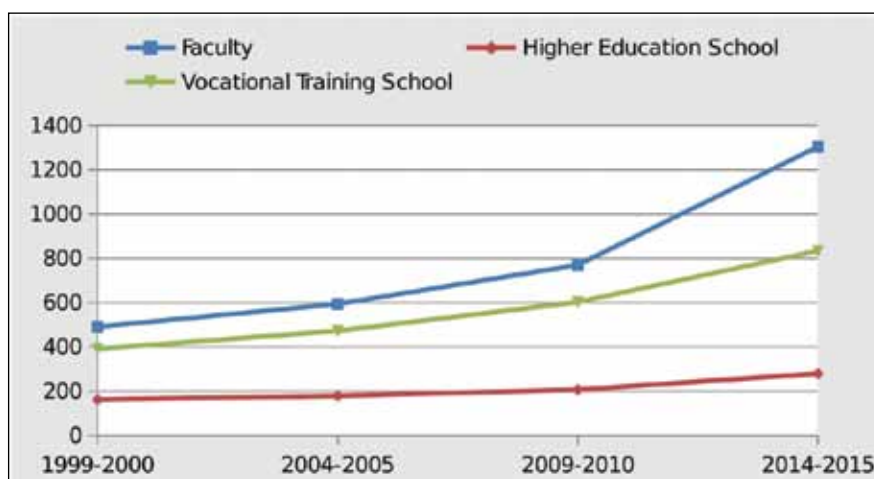
Age composition between the year of 1999 and 2015 in higher education in Turkey is given in Figure 6.

Figure 6 indicates that age composition in higher education has been changing since 2000. This figure includes all levels of education likes associate, bachelor, master and doctorate and also all education types as daytime, evening, open and distance education. The share of students aged 18-22 years old has decreased from 18% to 41.41% between 2000 and 2015. On the other hand, the rate of students aged 23 years and over has risen by 20% currently the rate is 58.44%. This shows that



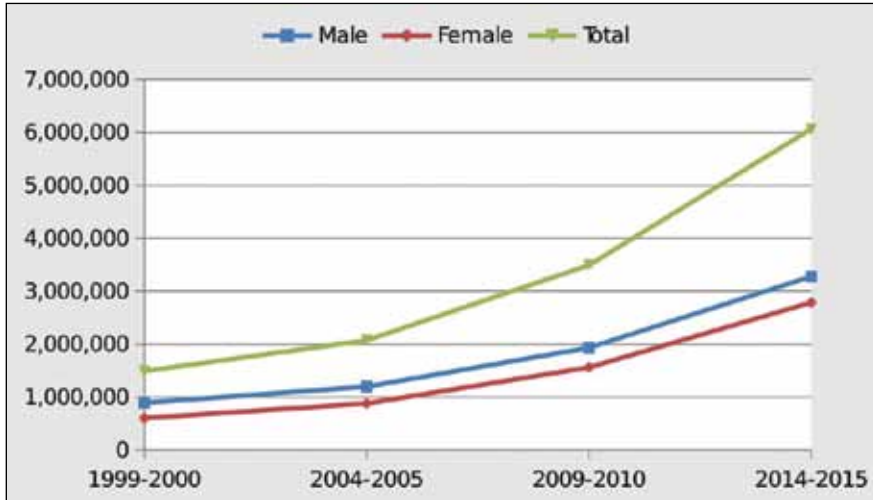
**Figure 1:** Change in the number of universities between 2000 and 2015.

Source: <https://osym.gov.tr/> and <https://istatistik.yok.gov.tr/>



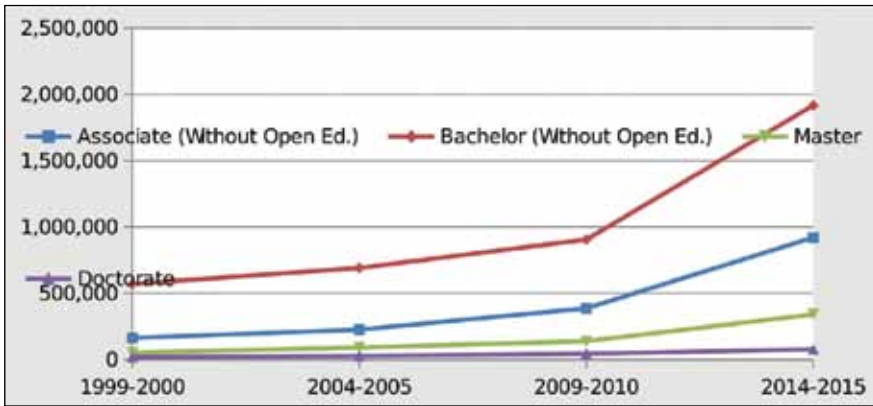
**Figure 2:** Changes in the number of institutions since 2000.

Source: <https://osym.gov.tr/> and <https://istatistik.yok.gov.tr/>



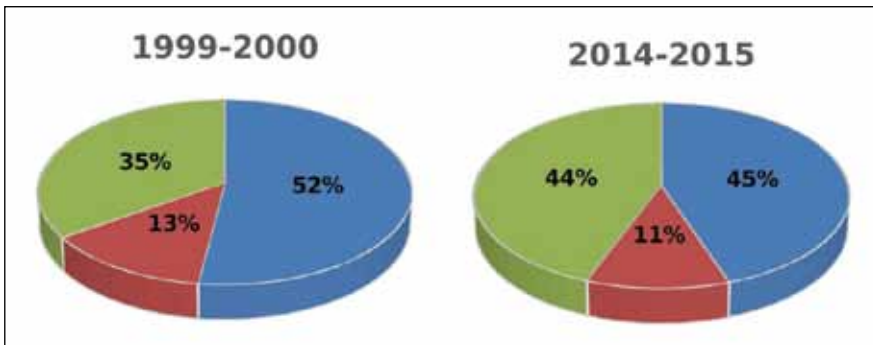
**Figure 3:** Change in gender compositions since 2000.

Source: <https://osym.gov.tr/> and <https://istatistik.yok.gov.tr/>



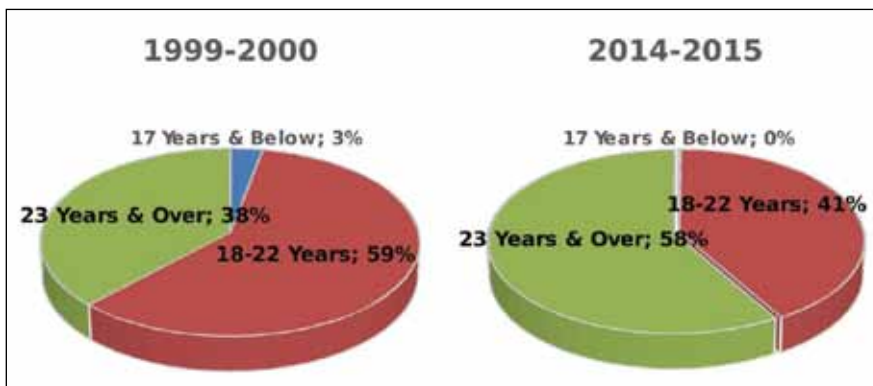
**Figure 4:** Changes in the number of students according to degrees.

Source: <https://osym.gov.tr/> and <https://istatistik.yok.gov.tr/>



**Figure 5:** Changes in the share of both associate degree and bachelor students based on education type between 2000 and 2015.

Source: <https://osym.gov.tr/> and <https://istatistik.yok.gov.tr/>



**Figure 6:** Age composition in higher education.

Source: <https://osym.gov.tr/> and <https://istatistik.yok.gov.tr/>

higher education has become to be spread over later ages. This is also a symbol that higher education has started to become a part of lifelong learning. This indicator also demonstrates that open education has an essential effect on age composition.

### C. Changes in number of academic staff

This part includes both trends in the number of academic staff and students to academic staff ratio and students to teaching staff ratio in the last 15 years in Turkey. The student/teacher ratio measures the number of students per teacher. The number of academic staff is also considered to be another important indicator in higher education.

Figure 7 shows changes in the number of academic staff according the title in the last 15 years from 1999-2000 to 2015 in Turkey.

As Figure 7 indicates, there is a significant increase in the number of all academic staff since 1999 in Turkey. Especially there has been a sharp upward increase in the number of all academic staff since 2010. The number of assistant professors has tripled and the number of research assistants has doubled since 2000s. Number of specialists, translators and education & training planners has been really low.

Figure 8 shows changes in student to academic staff and teaching staff ratio in the last fifteen years since 1999-2000. The student to teaching staff ratio in this study refers to the number of

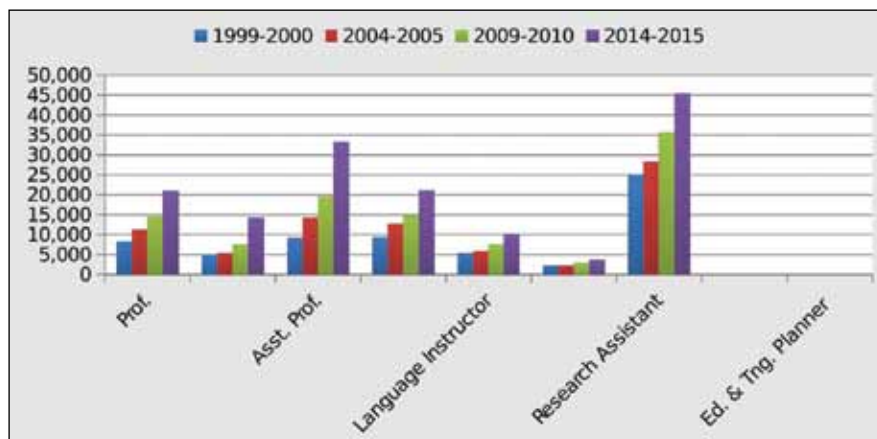
students who are in higher education divided by the number of teaching staff who gives lecture at universities including professors, associate professors, assistant professors, instructors and language instructors. Academic staff are consisted of professors, associate professors and assistant professors, instructors, language instructors, research assistants, specialists, education and training planners and translators.

Figure 8 indicates that the student to academic and teaching staff ratio has been increasing since 1999-2000. The number of students for which an academic staff is responsible was 18.74 students in 1999 whereas this ratio has risen and reached 35.30 students per academic staff in 2015. The student-teaching staff ratio was 32.75 students per teaching staff in 1999-2000. This ratio has increased over time and reached 52.72 students per teaching staff in 2015. This increase is not a good as it reflects teacher workload and the availability of teachers' services to their students. The lower the student/teacher ratio, the higher the availability of teacher services to students.

Changes in schooling ratio from 1999 to 2015 in higher education are given in Figure 9. With this figure, the distinction between male and female schooling ratio is also presented.

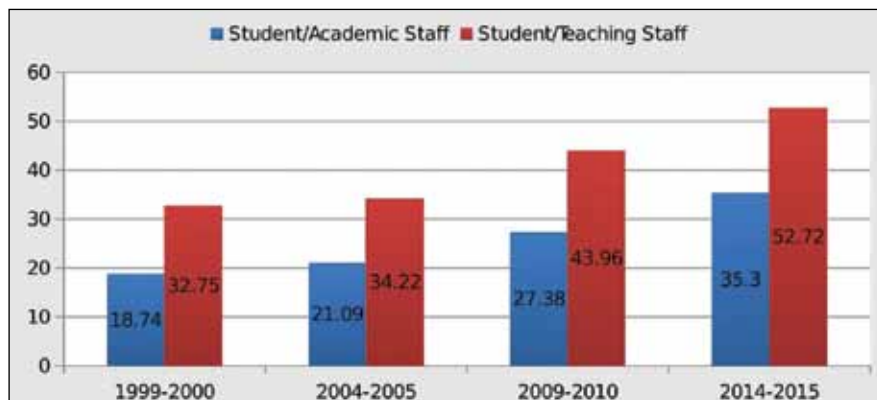
### D. Changes in schooling ratio

Figure 9 indicates that gross schooling rate in higher education was %21 in 1999 and this rate has increased and reached



**Figure 7:** Changes in the number of academic staff.

**Source:** <https://osym.gov.tr/> and <https://istatistik.yok.gov.tr/>



**Figure 8:** Changes in students/academic and teaching staff ratio.

**Source:** <https://osym.gov.tr/> and <https://istatistik.yok.gov.tr/>

%88,94 in 2015. There has been an increase more than four times in the last 15 years. The rapid growth in open education, as mentioned in Figure 5, has an important effect on this growth.

Figure 10 presents the changes in net schooling ratio between 1999 and 2015, the percentage includes the students in open education.

Figure 10 indicates that net schooling rate increased from %11.62 to %39.49 between 2000 and 2015. This ratio provides a clear picture about the higher education age population. This implies that Turkey has improved strongly in tertiary attainment levels over the last fifteen years from 1999 to 2015. The figure also presents that net schooling ratio for female has increased much more than the ratio of male and gender gap shows a tendency to narrow but still the difference in net schooling ratio between the genders is 3 percentage points.

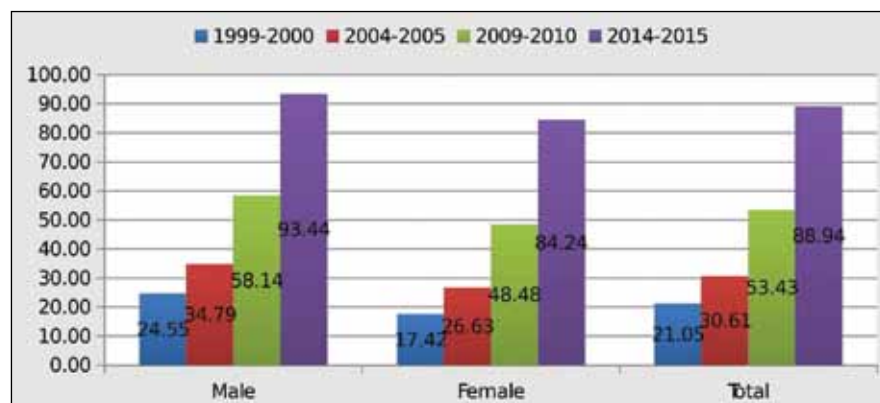
### DISCUSSION, CONCLUSION and SUGGESTIONS\*

The study aims to review the quantitative changes occurred in the last fifteen years in higher education in Turkey. From the present overview, some remarkable findings come clearly to the forefront:

I. Number of universities has doubled in Turkey in the last 15 years. Indeed, in Turkey there has been an upward trend for

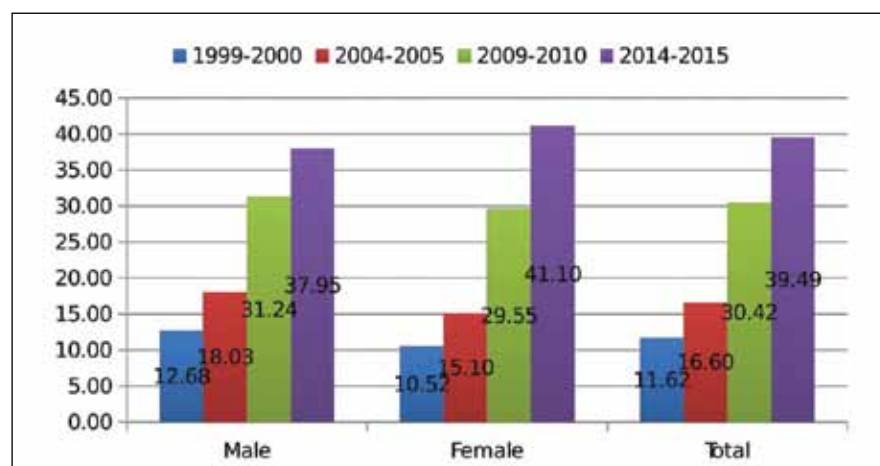
the number of universities to accommodate these enrolment increases since 1933 (Çetinsaya, 2014; Gök, 2016). As well as higher education systems have had to “expand out” in the world (World Bank, 2012; UNESCO, 2014)

- II. Both male and female student enrollment rate has increased since 2000. This increase in the number of students in higher education indicates that Turkey shift from elit higher education in 1970s and 1980s to universal access stage in 2010s (Gök, 2016). Academic institutions worldwide have faced pressures of increasing numbers of students (Altbach & Peterson McGill, 1999). However, total number of both male and female students in higher education in Turkey has remained behind the OECD average (OECD, 2012).
- III. There seems to be a closing gap between day time education and open education. This could be the indicator that more people likely to prefer open education. However, the ratio of open education is so high and should be reduced in line with the developed countries (Çetinsaya, 2014).
- IV. The age composition in higher education has changed and this indicates that higher education in Turkey has spread over later ages.
- V. Student to academic and teaching staff ratio has been increasing and this rising ratio indicates that one academic/



**Figure 9:** Changes in gross schooling ratio including open education in percentage (%).

**Source:** MoNE (MEB). (2015). Milli eğitim istatistikleri: Örgün eğitim 2014/15. Ankara: Ministry of National Education (Milli Eğitim Bakanlığı).



**Figure 10:** Changes in net schooling ratio including open education in percentage (%).

**Source:** MoNE (MEB). (2015). Milli eğitim istatistikleri: Örgün eğitim 2014/15. Ankara: Ministry of National Education (Milli Eğitim Bakanlığı).

teaching staff is responsible for more students than average. This ratio is bigger than the OECD average (14) and even bigger than the biggest ratio (21) among OECD countries (OECD, 2014). The ratio of students to teaching staff is another indicator that shows problems such as teacher workload and the availability of teachers services to their students. The problem related to lack of academic staff has been highlighted for many times by many research and via many reports (Altınsoy, 2011; Çetinsaya, 2014; Özer, 2011).

VI. Gross schooling ratio in higher education in Turkey has come closer to OECD average (OECD, 2012). Net schooling ratio for female students has increased much however the gap is still 3% points.

Higher education in Turkey is still trying to respond to education issues that are high on national policy agendas and so much progress has been accomplished in the last 15 years but not enough when the international standards and changing worldwide needs are considered (OECD, 2014). The development of Turkish higher education since 1999 presents a striking characteristic as a quantitative enhancement. Indeed, the results of the study indicate that Turkish higher education capacity has significantly increased in the last decade. Especially, establishing new universities and institutions all over the country lead natural increase with the number of students and academic staff through universities. This increase in Turkish higher education capacity shows consistency with other countries around the world (Camacho, Messina & Uribe, 2016; Chen, 2004; Krcal, Glass & Tremblay, 2014; OECD, 2014; UNESCO, 2006; World Bank, 2000; Wu & Zheng, 2008).

Turkey has seen an unprecedented expansion in its higher education for fifteen years. Expansion of higher education in Turkey since 2000 took the form of large increases of both enrollments in existing universities and increases in the number of universities and institutions. Essential quantitative enhancement has been ensured by means of taking precautions such as spreading new universities in other cities instead of big cities, establishing new universities and new foundation universities, extending the higher education school and extending evening, open and distance education and so on for massification of higher education since 1980 (Kavak, 2011). Due to government's policy for establishing new universities around the country, there has been a rapid development especially at numbers of foundation universities since 2000. Government has made great efforts to stimulate massification of higher education in the last decade, through increasing quotas in the existing public universities and establishing new not only foundation universities but public universities also (Çetinsaya, 2014; Gök, 2016; Özoğlu, Gür & Gümüş, 2015).

The expansion seen in higher education has triggered a series of challenges in serving the increased number of students. Many issues related to qualitative matters, funding, limited higher education resources, less-qualified academic staff ensued from the expansion in higher education (Altbach & Peterson, 1999; Altınsoy, 2011; Çetinsaya, 2014; Özer, 2011; UNESCO, 2014). This rapidly-increasing led to erosion in faculty salaries, the

hiring of less-qualified instructional staff and a decline in conditions of service (UNESCO, 2014). Expansion in higher education led to debates concerning how to fund expanding academic systems and put considerable financial pressure on higher education system (Altbach & Peterson McGill, 1999; UNESCO, 2014). Access to higher education in Turkey has risen but the resources and the funding should also be increased parallel with the risen, otherwise Turkey should not keep up with these needs. Many countries experiencing rapid growth and expansion in higher education face these challenges (Altbach & Peterson McGill, 1999; Camacho, Messina & Uribe, 2016; Chen, 2004; Krcal, Glass & Tremblay, 2014; Çetinsaya, 2014; University Alliance, 2014; Wu & Zheng, 2008). Changing at an unprecedented rate in higher education in England results in poor quality assurance (University Alliance, 2014). Whereas the expansion in higher education of China leads decline in quality, rapidly rising student-teacher ratios (Wu & Zheng, 2008). Moreover, new universities created in Mexico, in Brazil, in Peru, Colombia and Chile between 2005 and 2010 has raised concerns about the quality of higher education institutions (Camacho, Messina & Uribe, 2016: 2).

Education contributes to development, but this does not mean that the expansion of school attainment necessarily guarantees the economic and social improvement. The quality of education is of vital important and what truly matters is whether students are really learning (UNESCO, 2008). It seems that in the last 15 years, much greater emphases have been placed on quantitative enhancement. However, the quality of education in higher education institutions in Turkey remains as significant. The policy makers and implementers were not able to foresee several problems that would exist in the long run such as poor quality, lack of professional qualification of the graduates, limited resources in higher education, disproportion of supply-demand cycle, and unemployment. Quality of higher education in Turkey has become an issue of importance as Turkey has been facing many changes. Now Turkey must consider how to provide quality assurance in higher education. This means that there a long way to go!

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