

REGIONAL INEQUALITY OF EDUCATION IN TUNISIA: AN EVALUATION BY THE GINI INDEX

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Abstract - *The aim of this paper is to calculate for the first time in Tunisia, the educational inequality as measured by the Gini index and the average years of schooling. It assesses the relationship between these indicators and gender in each governorate, region, rural and urban area. Data from population census, covering the period 1975-2004, is used in order to calculate the regional educational Gini index and the educational attainment and to analyze their evolution. First, we find that the average years of schooling in Tunisia as a whole and in all regions increased allowing the decrease of inequality in education. Second, educational inequality is more important (i) in the inland regions than in the coastal and (ii) in the rural area than in the urban area for each governorate. Finally, this educational inequality is higher for women than for men despite the increase of the educational attainment level.*

Keywords: EDUCATIONAL INEQUALITY, EDUCATIONAL GINI INDEX, GENDER GAP

JEL Classification: I22, I31, D63, C43

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1. INTRODUCTION

It is evident that education is powerfully related to economic growth and social equality. Its effects contribute to advance the different forms of development. It also enhances the individual well-being. However, many studies have shown that the educational gaps between rich and poor families in the country have become wider. It is largely proved that an equitable distribution of human capital can improve the individual's productivity and then overcome poverty. Furthermore, ensuring an equitable distribution of educational opportunities is more important than the equitable redistribution of income because education extends to both the individual and social welfare. The increase of the averages values is not the only way that improve education but also the level of distribution contribute largely to reach this objective.

Inequalities in education are considered to be another source of social and economic inequalities (O'Neil, 1995; Park, 1996; Holsinger, 2005). The level of education and its distribution present different social consequences as children's education, birth rate, fertility rate, delinquency and also distribution of income (Barro and Lee, 2000; Frankema and Bolt, 2006; Lloyd and Hewett, 2004; Qian and Smyth, 2008). Gender equality in educational distribution is considered as one of the most important criteria of development. However, in many developing countries, the inequality of providing educational opportunities between man and woman hamper human development which decelerate social development and then economic growth (Klasen, 2002; Siddhanta and Nandy, 2003). Many factors contribute to worsen the gender difference in access to schooling as cultural, political and institutional obstacles (Shabaya and Konadu-agyemang, 2004).

Several countries had realized the goal of a general education to the entire society. Recently, a particular attention has been attributed to educational equality (Thomas et al., 2001; Castello and Domenech, 2002; Mesa, 2005). The literature presented many indicators used in order to determine the distribution level of education to individuals in the country such as standard deviation, Generalized Entropy, Theil index, Atkinson index and Gini index. However, this last indicator is the most referred in recent papers because it can evaluate the relative level of inequality contrary to, for example, the standard deviation frequently used in the initial studies and which just gives information about the absolute form of the distribution of education.

The education Gini index is similar to the Gini index widely used in studies of growth, poverty and inequality (the income Gini, the wealth Gini and the Land Gini). Actually, the wide use of the Gini index as measure of educational inequality can also be assigned to the improvement of databases that have become more available for a large sample of countries over time and give more various indicators of education¹. At the beginning, the Gini index was calculat-

¹ See Thomas, Wang and Fan (2002) for more details in the usefulness and problems of the various indicators that measure different aspects of education.

ed by means of different data related to school enrollment and education expenditure (Ter Weele, 1975; Maas and Criel, 1982; Sheret, 1982 and 1988). Recently, some studies have used the pupil teacher ratio (Rao and Jani, 2011) or the score of test on cognitive skills (TIMSS and PISA)² (Soares, 2006; Ben David Hadar, 2010). However, many other studies evaluate the Gini of education, based on the distribution of school attainment, thanks to the availability of data on proportions of population with various level of education for developed and also for the majority of developing countries (Lopez, Thomas and Wang, 1998; Thomas, Wang and Fan, 2002; Checchi, 2000; Benaabdelaali et al., 2012; Ibourk and Amaghouss, 2013).

Recently, the improvement in measuring the disparities of the human capital and the abundance of data used for this purpose has provided a powerful tool to examine regional inequality of schooling. Several studies have used different measures in order to calculate educational regional inequality in many countries (Jian et al., 1996; Kanbur and Zhang, 1999; Yang, 2002; Qian and Smyth, 2008; Mesa, 2005; Tomul, 2011; Benaabdelaali and Kamal, 2010; Morales and Paz Terán, 2010). An increasing attention has also been paid to the rural-urban gap and the gender gap because they remain the most important cause of regional inequality. However, up to now there is a limited number of studies, especially concerning countries that are not advanced.

Tunisia is an example of a developing country that has attached a great deal of importance to providing and financing education. Education for all is the main objective of the government since the independence not only because it is one of the basic human rights but also because politicians are convinced that educational advance can generate income and improves the well-being of the society. While there is a growing literature which analyses the impact of education on economic growth and income inequality, to our knowledge, there are no studies that deal with the disparities in education within and between the regions in Tunisia.

The study of the regional inequalities of education in Tunisia is strongly encouraged first by the result of the international educational inequality study of Thomas, Wang and Fan (2002)³. These authors had proved that the distribution of schooling became more equal these last years for many countries, but the improvement is significant for some of them like Tunisia, China and South Korea. They also found that other countries had envisaged the deterioration of the equality of the distribution of education where the Gini index is near 1 like Mali and Afghanistan. These results are explained by disparities in education consid-

² The data of score is generally available for developed countries and for few years (TIMSS and PISA). Sahn and Younger's (2007) used the TIMSS dataset in order to measure world education inequality in math and science knowledge by calculating the Generalized Entropy (GE) index.

³ Thomas, Wang and Fan (2002) had applied the Gini coefficient for a large sample of 140 countries between 1960 and 2000.

ered important within the country or between the regions hence the need to analyze the regional educational inequality. Second, because this educational regional inequality study is made for the countries where there is an improvement in educational equality, China and South Korea (Burt and Park, 2009; Qian and Smyth, 2008) but not for the case of Tunisia. Finally, studies exploring regional dispersion of education, albeit growing in developing countries these recent years, are absent in Arab countries.

This present paper joins this literature but it is the first that measures the regional educational inequality in Tunisia. Our goal is to study the dispersion of education in Tunisia in order to analyze the evolution of this phenomenon while considering the different governorates, regions in particular coastal and inland regions or East and West regions which are essentially characterized by disparities in development and where the difference is important, the gender gap as well as women's education is the priority of the government since the independence and also the distinction between urban and rural area in each governorate. In this work we assess the regional educational inequality by using the Gini index based on school attainment data of the population census for the 24 governorates in 1975, 1984, 1994 and 2004. The choice of the Gini index as a measure of the dispersion of education using school attainment data is largely affected by the availability of regional data in Tunisia for all the population, by gender and by rural and urban areas. The use of this indicator can also facilitate the comparison with other regional educational studies.

The paper is organized as follows. Section 2 presents a review of the related literature on the regional educational inequality. Section 3 outlines the data and the method used to calculate the Gini index. Section 4 presents and analyzes the distribution of the human capital inequality in order to compare between governorates, different regions in Tunisia, urban/rural areas and also between genders. The last section summarizes the main conclusions reached.

2. REGIONAL EDUCATIONAL INEQUALITY: A LITERATURE REVIEW

Actually, there is a significant literature dealing with inequality in education. Yet, despite the abundance of research on this topic, its regional dimension remains underexplored. Recently, attention has been drawn on the issues of equality of education at a regional level following the improvement in data collection on education. A growing number of studies has developed on this topic especially in developing countries that had recognized a high human capital accumulation and a fall in educational inequality during these last decades but disparities in school distribution within the country and between regions and provinces is still important today. However, all these studies confirmed that reducing the Gini coefficient at the national level, this implies a decrease in the educational inequality, can be obtained by reducing the difference in schooling level between regions in the same country.

China, South Korea and Tunisia are the countries that had realized a significant improvement in educational equality (Thomas, Wang and Fan, 2002). This result leads us to pose a question: what is the evolution of their regional educational inequality? For the case of China, Qian and Smyth (2008) had calculated the Gini index of education using data from national census for 1990 and 2000 and they had compared between coastal and inland provinces and also between rural and urban areas. They found that the major cause of educational inequality in China is the large disparity between the rural and urban areas in 2000 in terms of access to school rather than between coastal and inland provinces. Concerning the same topic, Burt and Park (2009) had showed South Korea's remarkable success in reducing inequality in the distribution of education between regions during a period of high economic growth. They calculated the education Gini coefficient for each province and metropolis for 1970, 1980, 1990 and 2000 using the data from the census of the Republic of Korea. They found that rural areas are put at a disadvantage in the distribution of education. Education Gini coefficient has fallen significantly for both female and male in all areas of the country but there is a clear advantage for males in obtaining human capital. However, the gender gap in education dispersion has failed during the past 35 years in South Korea.

Lorel (2008) had analyzed the Brazilian human capital dispersion across regions and states for the year 2000. He proved that there is a significant decrease of educational inequality measured by the Gini index. Despite the fact that this trend is observed by all the regions and states, the disparities in the distribution of schooling remain considerable. This result reflects educational geographical disparities and economic performance between regions.

For other developing countries, Tomul (2011) used the same methodology in order to assess the Gini index of education in all the regions of Turkey for 1975 and 2000 using statistics of the census of population. The author shows a decrease in the level of educational inequality in all the regions. This result can be explained by an increase in the average years of schooling. Mesa (2005) had also analyzed this phenomenon in Philippines from 1980 to 2000. The findings of this analysis suggest the decrease of the education Gini coefficients of all the regions and provinces. However, there are wide disparities in the schooling distribution among these regions and these provinces. Discrepancies are also important in educational performance of provinces within the same region. So educational inequality is more visible at lower levels (provinces) than at higher levels (regions) of analysis.

Morales and Paz Teran (2010) calculated the Gini coefficient for the period 2002-2007 in order to analyze and to know more about the situation of the inequality in educational attainment across Argentina's cities. First, and in the tradition of other works related to developing countries, they found that educational inequality has declined in all the metropolitan areas, but it has increased in other regions. Second, the Gini index revealed the existence of great disparities, although there are no important differences in the average years of schooling between cities. Regional educational inequality has also been studied in

others developing countries like Vietnam (Holsinger et al., 2004; Holsinger, 2009); Ghana (Bernardin, 2012); Israel (Ben David Hadar, 2010).

However, there are few studies exploring the regional educational inequality in Arab countries. These countries had allocated many resources to education in order to allow a majority of the school aged population to attain gradually higher levels. Their final goal is to increase the human capital accumulation. These huge efforts lead to an improvement in the educational equality, but there are no studies concerning this topic. Benaabdelaali and Kamal (2010), using data from the census of population for three years 1982, 1994 and 2004, had calculated the disaggregate Gini index for region and province in Morocco. As the results of many others studies for developing countries, the authors found an increase in the average years of education and a decrease of the Gini index. They also found that women are not given the same educational opportunities as men. This gap between genders can be the main factor that explains the high level of inequality in all the country. They also found that inequality of education is more important within the region and its dynamic is different from a region to another. So the region where the average years of education is high present a more equal distribution of schooling. Educational inequality is less persistent in regions that start with a high Gini index. The disparity between regions⁴ is more important since 1980 and they summarize in education, success and difficulties are localized geographically. Provinces more unequal in terms of schooling are in the regions characterized by a high inequality in the distribution of education.

3. DATA AND METHODS

The educational Gini coefficient is a common measure of recent studies calculating educational inequality (Thomas et al., 2001; Ruggiero et al., 2002 ; Lbourk and Amaghous, 2013). In this paper, we use this Gini index as an indicator of the regional inequality of education in Tunisia. The raw data was taken from the census of population⁵ for the years 1975, 1984, 1994 and 2004 (population 10 years of age and over)⁶ realized by the National Institute of Statistics INS.

We refer to the method developed by Thomas and al. (2001) to estimate the Gini coefficient of education (*GINI*). The value of this coefficient varies between 0 that indicates perfect equality of education and 1 which means perfect inequality of education.

The formula of education Gini⁷ is shown in equation (1):

⁴ The difference between the high level and the low level of the Gini index.

⁵ In our study, the data is just for 4 years because the census of population is realized every 10 years and the last one is in 2004.

⁶ It is a recommendation for the World Bank.

⁷ We refer to this formula because the value of the Gini coefficient is sensitive to the population size which is considered small for the case of the different regions in Tun-

$$\text{Gini} = \left(\frac{N}{N-1} \right) \left[\left(\frac{1}{\mu} \right) \sum_{i=2}^n \sum_{j=1}^{i-1} P_i |y_i - y_j| P_j \right] \quad (1)$$

Gini : the educational Gini index;
 μ : the average years of schooling for the population;
 n : the number of educational levels ($n = 5$)⁸;
 P_i and P_j : the proportions of population with a certain level of schooling;
 y_i and y_j : the years of schooling at different level of education and
 N : the population size.

In order to evaluate the educational Gini coefficient in Tunisia, we calculate the year's stock of the population of all educational levels and of all regions (μ). We note by y_i the number of educational years accumulated when the person reaches a certain level of schooling⁹. The percentage P_i , which measures the proportion of persons with the i level of education in the total population for all the governorates, is obtained from the census of population.

The formula of the average years of education is given by the equation (2):

$$\mu = \sum_{i=1}^n P_i y_i \quad (2)$$

Illiterate : $y_1 = 0$
 Primary school: $y_2 = y_1 + C_p$
 Partial secondary or Professional school : $y_3 = y_2 + C_{psp} = C_p + C_{psp}$
 Secondary school: $y_4 = y_3 + C_s = C_p + C_{psp} + C_s$
 Higher school: $y_5 = y_4 + C_h = C_p + C_{psp} + C_s + C_h$

where:

C_p : the cycle of the primary education ;
 C_{psp} : the cycle of partial secondary or professional school ;
 C_s : the cycle of secondary education and
 C_h : the cycle of tertiary education.

sia. This sensitivity is evaluated by the factor $(N/N-1)$. When the population size is large, the factor $(N/N-1)$ is equal to 1.

⁸ Barro and Lee (1993) had considered 7 categories: illiterate, partial primary, complete primary, partial secondary, complete secondary, partial tertiary and complete tertiary. In this paper and according to the Tunisian education system and to the data proposed by the census, we consider 5 levels of education: illiterate (0 year), primary school (6 years), partial secondary or professional secondary (3 years), secondary school (4 years) and higher school (4 years).

⁹ 0 for illiterate, 6 years for a person with a completed primary level of education. This person accumulates 9 years of schooling if he attends professional or partial secondary level, 13 years for secondary school and 17 years for high school. These groups are both exclusive and collectively inclusive.

4. RESULTS

The objective of this paper is to analyze the educational inequality and educational level in all the country, between the inland and the coastal regions and between rural and urban areas considering gender difference. To reach this goal, we first calculate the average years of study, used to measure educational attainment, for all the population and then by gender. Second, we evaluate the overall educational inequality of all the governorates and for all their rural and urban areas and then for the inland and coastal regions or for the East and West regions according to the administrative decoupage.

Table 1 presents the results of the average years of schooling and the educational Gini index calculated for the population at 10 years and above in all the governorates in Tunisia for 1975, 1984, 1994 and 2004. Table 2 presents the results obtained for the urban and rural areas of all the governorates for 1984 and 2004¹⁰.

According to these results, we find an improvement of the educational attainment and equality in Tunisia between 1975 and 2004. In general, the average years of schooling (μ) increased by 2.9% and inequality decreased by 31.1%. For all the governorates and for all the urban and rural areas, these average years of education (μ) achieved an increase and where the values of educational Gini index (Gini) had realized a decrease (Table 1 and 2). The governorates that started in 1975 with a low number of years of education (Kasserine, Sidi Bouzid, Kairouan, Siliana and Jendouba) recognized a high growth rate of this variable in 2004 (respectively 3.5%, 3.4%, 3%, 3.3% and 3.1%).

The educational Gini index is higher in the governorate of the inland area which means a high dispersion of education (Kairouan, Kasserine, Sidi Bouzid and Jendouba) but it is low in the coastal area (Tunis, Ben Arous, Ariana, Sousse and Monastir) between 1975 and 2004. This finding justifies the fact that the distribution of education is more equal (the educational Gini index is low) in the regions where the population was the most educated and the average years of schooling is high. The rate of decrease of the Gini coefficient in Tunisia is 31.1% but is more significant in the governorates where the difference of the average years of school between 1975 and 2004 is also high (Sousse (3.84), Bizerte (3.58), Monastir (3.62), Nabeul (3.42)). All these governorates are located in the coastal regions characterized by a significant level of educational attainment.

The average years of education is more important and the educational Gini index is low in the urban area compared to those of the rural area in each governorate (Table 2). The educational Gini index in urban and rural area had exhibited a remarkable decline since 1975 where their values for all Tunisia are about 0.51 and 0.71 respectively. However, the decrease of the Gini index in

¹⁰ We start at 1984 because in 1975 we have just data for the rural and urban areas for all Tunisia but not for each governorate.

urban area is less important than that in the rural area except in the governorate of Zaghouan, Jendouba and Kairouan. This result can be explained by a high rate of migration in these governorates from the rural to the urban area of the young population, who leaves school at an earlier age in order to find a job in the coastal region or generally in the capital. The high rate of illiteracy and poverty in these governorates can also contribute to explain these results.

Table 1. Average years of schooling and education Gini index in Tunisia (1975, 1984, 1994 and 2004)

	1975		1984		1994		2004		Growth rate of μ (%) (1975-2004)	Gini decrease ratio (%) (1975-2004)
	μ	Gini	μ	Gini	μ	Gini	μ	Gini		
Tunis	4.72	0.49	6.63	0.44	8.06	0.36	8.54	0.35	2.0	-28.7
Tunis sud	2.60	0.64	-	-	-	-	-	-	-	-
Manouba*	-	-	-	-	-	-	6.98	0.39	-	-
Ariana *	-	-	5.12	0.51	6.80	0.41	8.19	0.37	-	-
Ben Arous*	-	-	6.05	0.46	7.70	0.36	8.36	0.34	-	-
Nabeul	3.21	0.59	4.60	0.52	6.10	0.42	6.44	0.40	2.5	-32.2
Zhaghouan*	-	-	3.59	0.61	4.92	0.51	5.56	0.48	-	-
Bizerte	2.95	0.63	4.40	0.55	5.90	0.45	6.54	0.42	2.7	-32.7
Beja	2.33	0.67	3.59	0.64	4.99	0.52	5.62	0.48	3.0	-28.2
Jendouba	2.20	0.70	3.28	0.66	4.68	0.55	5.33	0.51	3.1	-27.4
Kef	2.53	0.64	3.69	0.62	5.18	0.50	5.87	0.47	2.9	-25.8
Siliana	2.15	0.68	3.34	0.65	4.86	0.52	5.53	0.49	3.3	-27.9
Kairouan	2.05	0.74	3.03	0.68	4.63	0.54	4.86	0.53	3.0	-27.8
Kasserine	1.88	0.70	3.03	0.67	4.57	0.56	5.11	0.52	3.5	-25.4
Sidi bouzid	1.97	0.72	3.39	0.67	4.92	0.52	5.29	0.51	3.4	-29.6
Sousse	3.55	0.57	5.19	0.52	6.76	0.42	7.40	0.38	2.5	-33.2
Monastir	3.89	0.54	5.45	0.48	7.04	0.39	7.51	0.36	2.2	-32.6
Mahdia	2.50	0.67	3.17	0.61	5.11	0.49	5.74	0.45	2.9	-32.0
Sfax	3.63	0.55	5.08	0.52	6.46	0.42	6.97	0.40	2.2	-26.5
Gafsa	2.85	0.61	4.39	0.56	6.14	0.45	5.89	0.49	2.5	-18.9
Tozeur	-	-	4.26	0.55	6.10	0.43	5.91	0.47	-	-
Kebili*	-	-	3.56	0.60	5.79	0.45	6.01	0.47	-	-
Gabes	2.79	0.63	4.36	0.56	5.88	0.44	5.87	0.48	2.6	-23.8
Medenine	2.63	0.63	4.12	0.57	5.85	0.44	5.79	0.47	2.7	-26.0
Tatouine*	-	-	3.59	0.59	5.53	0.46	5.48	0.49	-	-
Total	2.80	0.63	4.51	0.56	6.07	0.45	6.55	0.43	2.9	-31.1

Source : the values were calculated based on the data obtained from the census of population in Tunisia of 1975, 1984, 1994 and 2004 (population 10 years of age and over).

* The governorate of Ariana and Ben Arous were created in 1983, Kebili in 1981, Manouba in 2000, Tatouine in 1981 and Zhaghouan in 1976.

Table 2. Average years of schooling and education Gini index in rural and urban areas (1984 and 2004)

Urban						
	μ 1984	Gini 1984	μ 2004	Gini 1984	$\Delta\mu$ (2004-1984)	Gini decrease ratio(%) 1984-2004
Tunis**	6.63	0.44	8.54	0.35	1.91	-21.1
Ariana	6.42	0.44	8.41	0.36	1.99	-18.4
Ben Arous	6.48	0.44	8.67	0.33	2.19	-24.1
Manouba*	-	-	7.46	0.38	-	-
Nabeul	5.61	0.45	7.36	0.37	1.75	-18.9
Zaghouan	5.16	0.48	7.24	0.38	2.08	-20.8
Bizerte	5.74	0.46	7.75	0.36	2.01	-21.5
Beja	5.34	0.52	7.31	0.39	1.97	-23.6
Jendouba	5.73	0.49	7.75	0.38	2.02	-22.3
Kef	5.30	0.50	7.13	0.40	1.82	-19.0
Siliana	5.59	0.49	7.38	0.39	1.78	-20.8
Kairouan	5.23	0.52	7.25	0.40	2.01	-22.0
Kasserine	4.93	0.53	6.78	0.43	1.84	-18.8
Sidi Bouzid	5.51	0.51	7.49	0.39	1.98	-21.9
Sousse	5.83	0.48	7.97	0.36	2.14	-25.9
Monastir**	5.85	0.45	7.51	0.36	1.65	-20.0
Mahdia	5.36	0.49	7.06	0.39	1.70	-20.1
Sfax	6.45	0.42	8.18	0.34	1.73	-18.5
Gafsa	5.30	0.49	6.61	0.45	1.31	-7.6
Touzeur	4.84	0.50	6.22	0.45	1.38	-8.8
Kebili	4.40	0.55	6.35	0.46	1.94	-17.3
Gabes	5.50	0.47	6.55	0.45	1.04	-4.1
Medinine	4.98	0.49	6.12	0.45	1.14	-7.8
Tatouine	4.47	0.51	6.06	0.46	1.59	-10.2
Total	5.93	0.46	7.62	0.38	1.68	-17.7

Rural						
	μ 1984	Gini 1984	μ 2004	Gini 1984	$\Delta\mu$ (2004-1984)	Gini decrease ratio(%) 1984-2004
Tunis**	-	-	-	-	-	-
Ariana	3.65	0.57	6.14	0.42	2.49	-26.4
Ben Arous	3.02	0.64	5.54	0.43	2.51	-33.5
Manouba*	-	-	5.65	0.44	-	-
Nabeul	3.30	0.61	5.22	0.45	1.92	-25.5
Zaghouan	3.03	0.65	4.56	0.53	1.52	-19.4
Bizerte	2.62	0.68	4.70	0.50	2.08	-25.8
Beja	2.75	0.70	4.50	0.53	1.75	-23.8
Jendouba	2.71	0.69	4.44	0.54	1.73	-21.2
Kef	2.63	0.69	4.65	0.52	2.02	-24.0
Siliana	2.77	0.69	4.50	0.53	1.73	-21.9
Kairouan	2.26	0.73	3.74	0.58	1.48	-20.2
Kasserine	2.19	0.73	4.01	0.57	1.82	-22.3
Sidi Bouzid	2.65	0.70	4.60	0.54	1.95	-22.5
Sousse	3.55	0.63	5.21	0.46	1.65	-25.9
Monastir**	3.53	0.61	-	-	-	-
Mahdia	2.70	0.67	4.70	0.49	2.0	-26.8
Sfax	2.89	0.65	4.88	0.48	1.98	-27.0
Gafsa	2.75	0.70	3.93	0.61	1.17	-12.3
Touzeur	3.06	0.66	5.16	0.50	2.10	-24.7
Kebili	3.19	0.62	5.61	0.48	2.42	-21.8
Gabes	2.64	0.69	4.45	0.53	1.81	-22.3
Medinine	2.74	0.69	4.72	0.52	1.97	-24.9
Tatouine	2.92	0.65	4.58	0.53	1.65	-19.2
Total	2.79	0.67	4.60	0.52	1.81	-22.77

Source: the values were calculated based on the data obtained from the census of population in Tunisia of 1984 and 2004 (population 10 years of age and over).

* The governorate of Manouba was created in 2000.

** Tunis is the capital and there is no rural area. For the governorate of Monastir, all the areas are urban in 2004.

Table 3. Average years of schooling, educational Gini index by gender in Tunisia (1975 and 2004)

Male						
	μ_{1975}	Gini1975	μ_{2004}	Gini 2004	$\Delta\mu^{**}$	Gini decrease ratio % (75-2004)
Tunis	5.51	0.42	9.18	0.30	3.66	-27.9
Tunis sud	3.46	0.53	-	-	-	-
Manouba*	-	-	7.57	0.34	-	-
Ariana *	-	-	8.72	0.33	-	-
BenArous*	-	-	8.95	0.30	-	-
Nabeul	3.86	0.51	7.15	0.35	3.28	-31.0
Zhagouan*	-	-	6.36	0.40	-	-
Bizerte	3.60	0.56	7.11	0.37	3.51	-33.9
Béja	3.01	0.58	6.34	0.41	3.33	-29.5
Jendouba	3.02	0.59	6.17	0.42	3.15	-28.7
Kef	3.37	0.52	6.62	0.40	3.24	-23.0
Siliana	2.94	0.57	6.35	0.41	3.40	-28.3
Kairouan	2.89	0.65	5.68	0.45	2.78	-29.6
Kasserine	2.73	0.55	6.11	0.43	3.38	-21.7
Sidi bouzid	3.06	0.58	6.29	0.42	3.23	-26.8
Sousse	4.57	0.46	8.06	0.33	3.48	-28.7
Monastir	4.86	0.44	8.07	0.32	3.21	-28.2
Mahdia	3.59	0.53	6.65	0.38	3.06	-29.4
Sfax	4.63	0.43	7.71	0.34	3.07	-20.3
Gafsa	3.83	0.49	6.58	0.44	2.74	-10.7
Tozeur	-	-	6.40	0.42	-	-
Kebili*	-	-	6.59	0.42	-	-
Gabès	3.86	0.50	6.45	0.43	2.59	-14.0
Medenine	3.72	0.49	6.43	0.42	2.70	-14.8
Tatouine*	-	-	6.11	0.44	-	-
Total	3.69	0.52	7.25	0.38	3.55	-27.9
Female						
	μ_{1975}	Gini 1975	μ_{2004}	Gini 2004	$\Delta\mu^{**}$	Gini decrease ratio % (75-2004)
Tunis	3.90	0.55	7.90	0.39	4.00	-29.4
Tunis sud	1.68	0.75	-	-	-	-
Manouba*	-	-	6.38	0.45	-	-
Ariana *	-	-	7.65	0.41	-	-
BenArous*	-	-	7.76	0.38	-	-
Nabeul	2.53	0.67	6.11	0.44	3.57	-33.23
Zhagouan*	-	-	4.78	0.55	-	-
Bizerte	2.27	0.70	5.96	0.47	3.69	-31.8
Béja	1.62	0.77	4.92	0.55	3.29	-27.8
Jendouba	1.37	0.80	4.55	0.58	3.17	-27.2
Kef	1.68	0.75	5.16	0.54	3.47	-28.2
Siliana	1.31	0.79	4.72	0.57	3.40	-28.3
Kairouan	1.17	0.84	4.09	0.61	2.91	-27.2
Kasserine	1.00	0.84	4.17	0.60	3.16	-28.9
Sidi bouzid	0.81	0.87	4.34	0.59	3.52	-32.5
Sousse	2.57	0.68	6.74	0.43	4.16	-35.9
Monastir	2.91	0.63	6.95	0.40	4.03	-35.7
Mahdia	1.46	0.79	4.91	0.52	3.45	-34.1
Sfax	2.61	0.66	6.23	0.46	3.62	-30.7
Gafsa	1.84	0.73	5.24	0.55	3.39	-24.8
Tozeur	-	-	5.43	0.51	-	-
Kebili*	-	-	5.44	0.52	-	-
Gabès	1.74	0.75	5.31	0.52	3.57	-30.0
Medenine	1.61	0.75	5.17	0.51	3.56	-32.4
Tatouine*	-	-	4.91	0.52	-	-
Total	1.89	0.74	5.86	0.49	3.96	-33.5

Source : the values were calculated based on the data obtained from the census of population in Tunisia of 1975 and 2004 (population 10 years of age and over).

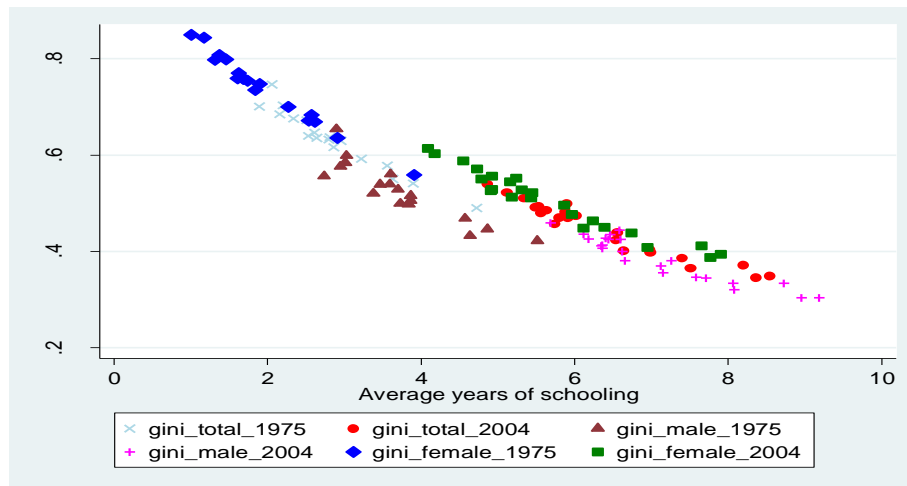
* The governorate of Ariana and Ben Arous were created in 1983, Kebili in 1981, Manouba in 2000, Tatouine in 1981 and Zhaghouan in 1976.

** $\Delta\mu = \mu_{2004} - \mu_{1975}$

Table 3 examines the average years of schooling and the Gini index in Tunisia regarding gender for 1975 and 2004.

The average years of schooling for men is higher than that for women in Tunisia and for all the governorates between 1975 and 2004. The difference between this average for the two years ($\Delta\mu = \mu_{2004} - \mu_{1975}$) is more important for women than for men (respectively 3.96 years and 3.55 years) which means that women, who started with a low average of schooling years, had largely improved their education level in comparison to men during this period. This finding is observed in most Tunisian governorates except some in the west: Beja ($\mu_{\text{men}} - \mu_{\text{female}} = 0.04\text{years}$) and Kasserine ($\mu_{\text{men}} - \mu_{\text{female}} = 0.22\text{years}$). All the governorates in Tunisia have realized a decline in their Gini coefficient both for men and women. Nevertheless, the educational inequality is low for men compared to the educational disparity of women. The same result is obtained by considering urban and rural areas. The Gini index is high for women and in the rural area especially in the governorates of Kasserine, Gafsa and Kairouan¹¹. This result can be attributed to historical fact where people attach more importance to education of men than of women particularly in the inland region or the West region and also in the rural area. However, since the independence more importance had been paid to the education of women which explains the increase in its average years of education in all the country. Nowadays, the enrollment rate of women in the higher level of education is more important than of men (61.6%)¹².

Figure 1. The relationship between the average years of schooling (μ) and the educational Gini index (Gini)



¹¹ See Appendix: Tables 8 and 9.

¹² Statistics of the Ministry of Higher Education 2011-2012.

Figure 1 illustrates the relationship between the average years of schooling and the human capital distribution for the population and by genders in Tunisia for 1975 and 2004.

This figure shows the negative relationship between the educational Gini index and the average years of education. So an improvement on the level of education for all the population contributes largely to reduce the disparity in the distribution of education between people in general and specifically between women and men. The Gini index for women and for men is closer for the year 2004 compared to the year 1975.

In order to give more information about the dispersion and the level of attainment of education between the coastal and the inland areas or between the East regions and West regions which are largely considered since the independence less developed than the other regions and also between the rural and urban area, we regroup the 24 governorates in 7 regions according to the découpage administrative or administrative divisions (District of Tunis, North East, North West, Center West, Center East, South West, South East)¹³. Our objective is to compare them and to analyze the situation of each one. We try to verify if the situation of the West regions has improved in terms of education these last years and if the gap between them and the East regions has narrowed. This analysis is important because it can help us to locate exactly the problems of education inequality and of gender dispersion of education in different regions of the country by considering the separation between the inland and the coastal regions or the West and the East regions and between the rural and the urban areas.

Table 4 presents the average years of schooling and the educational Gini index for different regions in Tunisia for 1975 and 2004 and their evolution during this period. Table 5 distinguishes between urban and rural area for each governorate.

The decomposition of the coefficient of the Gini can explain the disparity within the coastal and inland regions. The results of table 5 show that the Gini index has declined in the inland regions where the distribution of human capital is more unequal and the average years of study is low (Center West, North West). In all regions, the average years of schooling has registered a remarkable increase especially in the Center West (3.32%) and the North West (3.10%). Thanks to the efforts of government who has allocated a lot of resources to education (between 6 and 7% of the GDP during this decade¹⁴) and who tries to reduce the gap between the coastal and the inland regions by ensuring a general education for all without any discrimination by gender or by region in order to enhance economic growth and reduce poverty.

¹³ *District of Tunis*: Tunis, Tunis Sud, Manouba, Ariana, Ben Arous. *North East*: Nabeul, Zaghouan, Bizerte. *North West*: Beja, Jendouba, Kef, Siliana. *Center West*: Kairouan, Kasserine, Sidi Bouzid. *Center East*: Sousse, Monastir, Mahdia, Sfax. *South West*: Gafsa, Tozeur, Kebili. *South East*: Gabes, Medenine, Tatouine.

¹⁴ Statistics of the WDI 2012 of the World Bank.

Table 4. The evolution of the average years of schooling and the educational Gini index for Tunisian regions in 1975 and 2004

	1975		2004		1975-2004	1975-2004
	μ	Gini	μ	Gini	Growth μ (%)	Gini decrease (%)
District of Tunis	3.66	0.568	8.02	0.366	2.06	- 28.7
North East	3.08	0.610	6.24	0.434	2.05	-32.4
North West	2.30	0.675	5.59	0.490	3.10	-27.3
Center West	1.97	0.725	5.09	0.524	3.32	-27.6
Center East	3.39	0.585	6.90	0.402	2.50	-31.1
South West	2.85	0.616	5.94	0.481	2.53	-18.9
South East	2.71	0.634	5.72	0.481	2.67	-24.9
Total	2.80	0.637	6.55	0.439	2.96	-31.1

Source: the values were calculated based on the data obtained from the census of population in Tunisia of 1975 and 2004 (population 10 years of age and over).

Table 5. The evolution of the average years of schooling and the educational Gini index for rural and urban area in Tunisian regions in 1984 and 2004

Urban						
	μ_{1984}	Gini ₁₉₈₄	μ_{2004}	Gini ₂₀₀₄	$\Delta \mu$ (1984-2004)	Gini decrease (%)
District Tunis	6.57	0.446	8.27	0.358	1.69	-19.6
North -East	5.66	0.460	7.45	0.371	1.79	-19.1
North-West	5.45	0.506	7.39	0.396	1.94	-21.7
Center- West	5.16	0.525	7.17	0.412	2.01	-21.3
Center-East	5.77	0.478	7.68	0.368	1.91	-22.9
South-West	5.09	0.504	6.39	0.458	1.30	-9.0
South-East	5.13	0.488	6.24	0.456	1.10	-6.4
Total	5.93	0.468	7.62	0.385	1.68	-17.7
Rural						
	μ_{1984}	Gini ₁₉₈₄	μ_{2004}	Gini ₂₀₀₄	$\Delta \mu$ (1984-2004)	Gini decrease (%)
District Tunis	3.55	0.584	5.77	0.430	2.22	-26.3
North -East	3.00	0.646	4.83	0.497	1.82	-23.0
North-West	2.72	0.697	4.52	0.538	1.80	-22.8
Center- West	2.38	0.726	4.12	0.567	1.74	-21.7
Center-East	3.10	0.656	4.93	0.481	1.82	-26.5
South-West	2.95	0.668	4.90	0.534	1.94	-19.9
South-East	2.74	0.686	4.58	0.530	1.83	-22.7
Total	2.79	0.679	4.60	0.525	1.81	-22.7

Source: the values were calculated based on the data obtained from the census of population in Tunisia of 1984 and 2004 (population 10 years of age and over).

Table 6. Development indicators by governorates and by regions

	Illiteracy rate 2004 (%)	Net migration rate 2004*	Poverty rate 2005 (%)	Unemployment rate of graduates 2010(%)	Unemployment rate 2010 (%)
Tunis	14.4	-27200	6.2	13.6	14.2
Ariana	15.7	37896	8.0	10.9	10.8
Ben Arous	14.0	9721	12.0	15.2	12.2
Mannouba	20.4	36939	7.8	24.8	15.3
District of Tunis	15.4	57356	8.5	16.1	13.1
Nabeul	21.4	7055	5.8	24.1	11.4
Zaghouan	30.6	-785	20.5	11.5	4.9
Bizerte	24.2	-2823	16.4	22.3	12.8
North East	23.5	3447	14.2	19.3	9.7
Béja	32.1	-9601	14.9	31.3	11.5
Jendouba	34.7	-9936	10.8	40.1	17.7
Kef	30.0	-11155	14.2	27.9	12.4
Siliana	31.1	-11692	16.8	27.9	15.6
North West	32.3	-42384	14.2	31.8	14.3
Sousse	18.5	22194	7.0	19.6	13.0
Monastir	15.4	16954	4.8	18.7	6.1
Mahdia	27.7	-2452	8.0	28.8	12.2
Sfax	20.0	11392	9.5	18.5	7.4
Center East	20.0	48088	7.3	21.4	9.7
Kairouan	35.7	-22984	23.1	37.9	10.6
Kasserine	32.5	-16923	28.4	38.9	20.7
Sidi Bouzid	33.6	-14058	28.0	41.0	14.7
Center West	34.1	-53965	26.5	39.3	15.3
Gabès	21.0	-2367	17.4	39.4	18.1
Médenine	19.2	2696	11.0	32.6	13.9
Tataouine	20.8	-2455	18.9	39.1	23.6
South East	20.1	-2126	15.7	37.0	18.5
Gafsa	22.1	-7783	15.7	47.4	28.3
Tozeur	19.2	-586	16.1	42.8	14.5
Kébili	20.5	-1716	15.7	24.0	17.0
South West	21.2	-10085	15.8	38.1	19.9
Total	22.9	-	14.0	23.3	13.0

Source : INS(National Institute of Statistics).

* Net migration rate is the difference of immigrants and emigrants of an area.

It can be explained too by the change of the mentality of people, independently from their geographical locations, who realize the importance of education for both women and men, and the acquisition of knowledge in their life particularly for their well-being. However, these disparities in the distribution of education are greater in the West regions despite their decrease which can be attributed essentially to the local immigration or the rural exodus where the migration flows from the inland regions to the coastal regions are important. The region of Center West has the most important rate of migration (-53965) followed by the region of the North West (-42384) (Table 6). In addition, educated people who study in the East regions or in the capital choose not to return to their birth region because is almost no probability to find a job. In fact, the unemployment rate of graduates' persons is higher in the regions of the Center

West (39.3%), the South West (38.1%) and the North West (31.8%) in 2010. These inland regions or West regions are characterized by a lack of investment. The available infrastructure (airport, ports, roads, hospitals, universities...) are also less developed compared to those of the coastal regions. Poverty is considered more important in these regions where the rate is about 26.5% in the Center West and 14.2% in the South West in 2005 (table 6). This situation discourages the educated persons who prefer to escape these regions which lead to their impoverishment in terms of human capital and then worsen the level of inequality of education.

In table 7 we present the average years of education and the Gini index of education for women and men in different regions in Tunisia.

Table 7. The evolution of the average years of schooling and the educational Gini index for Tunisian regions by gender (1975 and 2004)

Male						
	μ_{1975}	μ_{2004}	Gini 1975	Gini 2004	$\Delta \mu^*$	Gini decrease (%)
District of Tunis	4.49	8.61	0.480	0.321	3.66	-27.9
North East	3.73	6.87	0.538	0.377	3.40	-32.5
North West	3.09	6.37	0.569	0.412	3.28	-27.4
CenterWest	2.89	6.03	0.598	0.441	3.13	-26.0
Center East	4.41	7.62	0.471	0.344	3.21	-26.6
South West	3.83	6.52	0.497	0.432	2.74	-10.7
South East	3.79	6.33	0.502	0.436	2.65	-14.4
Total	3.69	7.25	0.528	0.380	3.55	-27.9

Female						
	μ_{1975}	μ_{2004}	Gini 1975	Gini 2004	$\Delta \mu^*$	Gini decrease (%)
District of Tunis	2.79	7.42	0.658	0.410	4.63	- 29.4
North East	2.40	5.62	0.685	0.491	4.01	- 32.5
North West	1.50	4.84	0.783	0.565	3.33	- 27.9
CenterWest	0.99	4.20	0.856	0.603	3.20	- 29.5
Center East	2.38	6.21	0.696	0.458	3.82	- 34.1
South West	1.84	5.37	0.735	0.528	4.76	- 24.8
South East	1.67	5.13	0.756	0.523	4.01	- 31.2
Total	1.89	5.86	0.747	0.496	3.96	-33.5

Source: the values were calculated based on the data obtained from the census of population in Tunisia of 1975 and 2004 (population 10 years of age and over).

* $\Delta \mu = \mu_{2004} - \mu_{1975}$

The results prove that the gap between men and women, in terms of educational inequality and of the average years of study were maintained between the years 1975 and 2004. The educational Gini index realized a decrease for both sexes and for all regions but it is higher for female compared to male in all regions particularly in the Center West where inequality is the highest.

The average years of education had increased for both genders. The increase of the average years between 1975 and 2004 is more important for women in all the regions of Tunisia but the distribution of human capital for men

became more equal. This improvement of the number of schooling years is the result of the educational policy adopted by the government and which leads to an increase of the enrolment rate for each level of education of women and men but those of women are more important in particular for the age between 19-23 years which refers to the higher education level¹⁵.

5. CONCLUSION

The main purpose of this paper is to provide an indicator of human capital inequality in Tunisia for a large period in order to estimate its development between different governorates, urban and rural areas, regions and genders. Our objective is to distinguish between the West regions, considered less developed and facing problems of disparity, and the East regions considered more developed, where the population is concentrated and present less disparity in terms of education. In order to calculate this indicator, we have used the data of the population census for the proportion of individual that have reached a certain level of education for 1975, 1984, 1994 and 2004 and we have determined the average years of schooling which is used to assess the educational Gini index.

Three main findings are obtained through using the educational Gini index and the average years of study as a measure of the distribution of human capital and the educational attainment level of the population. First, the level of education in Tunisia for all the governorates and by gender has improved and the educational Gini index decreased between 1975 and 2004. So a negative relationship between the educational inequality and the average years of study has been confirmed. Second, in each governorate the Gini index of education is higher in the rural areas compared to those of the urban area. Third, the average years of study for men is higher than that for women which implies that the educational inequality is more important for this last category. Finally, with the decomposition of the educational Gini index by regions we find that this indicator is high in the inland area of the country (the West regions) and is low in the coastal regions (the East regions) which can be explained by the rural exodus. This result is verified by considering the difference between men and women.

¹⁵ See appendix : Table 10.

APPENDIX

Table 8. The evolution of the average years of schooling and the educational Gini index for the rural and urban areas for male (1984 and 2004)

	Male Urban				Male Rural			
	μ 1984	Gini 1984	μ 2004	Gini 2004	μ 1984	Gini 1984	μ 2004	Gini 2004
Tunis	7.55	0.380	9.18	0.304	-	-	-	-
Ariana	7.38	0.380	8.94	0.327	4.60	0.488	6.67	0.366
Ben arous	7.48	0.370	9.26	0.292	3.95	0.548	6.19	0.360
Manouba	-	-	8.02	0.332	-	-	6.34	0.370
Nabeul	6.34	0.400	7.82	0.329	4.20	0.525	5.81	0.394
Zaghouan	6.34	0.404	7.91	0.329	4.20	0.540	5.42	0.445
Bizerte	6.61	0.395	8.28	0.317	3.44	0.598	5.37	0.430
Beja	6.24	0.450	7.95	0.337	3.74	0.604	5.27	0.448
Jendouba	6.94	0.401	8.53	0.318	3.75	0.595	5.31	0.455
Kef	6.29	0.431	7.88	0.344	3.58	0.606	5.41	0.441
Siliana	6.80	0.418	8.14	0.330	3.82	0.592	5.38	0.447
Sousse	7.05	0.395	8.58	0.312	4.79	0.525	6.03	0.394
Monastir	7.00	0.381	8.07	0.320	4.90	0.507	-	-
Mahdia	6.57	0.408	7.80	0.336	4.19	0.530	5.72	0.408
Sfax	7.42	0.351	8.79	0.302	4.30	0.520	5.79	0.394
Kairouan	6.38	0.437	7.97	0.348	3.45	0.617	4.61	0.498
Kasserine	6.21	0.424	7.72	0.360	3.34	0.606	5.04	0.473
Sidi Bouzid	7.20	0.400	8.43	0.330	3.97	0.570	5.61	0.451
Gabes	6.73	0.382	7.04	0.410	3.98	0.561	5.15	0.477
Medenine	6.42	0.393	6.72	0.410	3.99	0.576	5.45	0.470
Tataouine	5.93	0.420	6.63	0.426	4.01	0.554	5.29	0.480
Gafsa	6.57	0.407	7.21	0.409	3.96	0.588	4.81	0.533
Tozeur	5.83	0.420	6.70	0.417	4.27	0.580	5.69	0.448
Kebili	5.95	0.433	6.90	0.410	4.41	0.527	6.23	0.440
Total	6.98	0.392	8.23	0.337	3.93	0.569	5.44	0.443

Source : the values were calculated based on the data obtained from the census of population in Tunisia of 1984 and 2004 (population 10 years of age and over).

Table 9. The evolution of the average years of schooling and the educational Gini index for the rural and urban areas for female (1984 and 2004)

	Female Urban				Female Rural			
	μ 1984	Gini 1984	μ 2004	Gini 2004	μ 1984	Gini 1984	μ 2004	Gini 2004
Tunis	5.66	0.513	7.90	0.394	-	-	-	-
Ariana	5.44	0.519	7.86	0.402	2.62	0.656	5.58	0.477
Ben arous	5.42	0.512	8.08	0.371	1.98	0.759	4.85	0.500
Manouba	-	-	6.90	0.425	-	-	4.94	0.511
Nabeul	3.55	0.473	6.88	0.408	2.34	0.696	4.63	0.513
Zaghouan	3.95	0.560	6.57	0.434	1.78	0.782	3.72	0.612
Bizerte	4.86	0.526	7.23	0.400	1.70	0.775	4.02	0.580
Beja	4.44	0.590	6.69	0.451	1.70	0.802	3.75	0.616
Jendouba	4.52	0.578	7.03	0.438	1.63	0.799	3.64	0.636
Kef	4.34	0.574	6.42	0.468	1.69	0.786	3.91	0.613
Siliana	4.42	0.573	6.65	0.454	1.69	0.787	3.63	0.629
Sousse	4.59	0.578	7.36	0.405	2.23	0.738	4.41	0.537
Monastir	4.6	0.535	6.95	0.408	2.21	0.719	-	-
Mahdia	4.16	0.580	6.36	0.448	1.28	0.817	3.80	0.573
Sfax	5.36	0.504	7.57	0.391	1.48	0.790	4.01	0.561
Kairouan	4.12	0.606	6.57	0.460	1.01	0.862	2.93	0.673
Kasserine	3.62	0.639	5.88	0.498	0.99	0.862	3.05	0.661
Sidi Bouzid	3.69	0.614	6.58	0.459	1.27	0.831	3.65	0.628
Gabes	4.19	0.559	6.05	0.489	1.34	0.809	3.82	0.590
Medenine	3.69	0.571	5.53	0.493	1.39	0.796	4.05	0.567
Tataouine	3.06	0.584	5.54	0.496	1.83	0.752	3.93	0.572
Gafsa	3.95	0.577	6.03	0.498	1.50	0.810	3.11	0.688
Tozeur	3.86	0.575	5.76	0.494	1.79	0.742	4.65	0.550
Kebili	2.93	0.669	5.81	0.509	2.01	0.710	5.02	0.534
Total	4.84	0.544	7.01	0.429	1.63	0.790	3.81	0.601

Source: the values were calculated based on the data obtained from the census of population in Tunisia of 1984 and 2004 (population 10 years of age and over).

Table 10. The enrolment rate in 2010

	Enrolment rate 6 years			Enrolment rate 6-11 years		
	Male	Female	Total	Male	Female	Total
District of Tunis	99.45	100	99.71	99.04	99.16	99.10
North East	99.8	99.8	99.8	97.7	98.0	97.8
North West	98.58	98.88	98.74	96.51	96.11	96.32
Center East	99.90	99.61	99.76	98.38	97.90	98.38
Center West	97.80	97.96	97.88	95.05	94.16	94.62
South East	99.8	99.5	99.6	98.6	98.2	98.4
South West	99.72	99.74	99.73	97.86	97.89	97.88
Total	99.32	99.45	99.43	97.83	97.44	97.64
	Enrolment rate 12-18 years			Enrolment rate 19-23 years		
	Male	Female	Total	Male	Female	Total
District of Tunis	86.77	90.18	88.40	50.28	60.51	55.14
North East	77.7	80.5	79.0	32.9	38.6	35.7
North West	77.54	80.41	78.99	36.76	46.54	41.61
Center East	79.19	80.35	79.72	44.2	48.25	46.12
Center West	68.77	67.16	67.96	30.01	31.72	30.93
South East	82.8	85.9	84.3	39.3	48.6	44.3
South West	81.29	86.49	83.81	39.92	52.64	46.15
Total	79.1	81.42	80.22	41.71	48.44	45.03

Source : The Ministry of Education 2010.

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LES INÉGALITÉS RÉGIONALES EN MATIÈRE D'ÉDUCATION EN TUNISIE : UNE ÉVALUATION PAR L'INDICE DE GINI

Résumé - L'objet de cet article est de calculer, pour la première fois en Tunisie, l'inégalité en matière d'éducation à travers l'indice de Gini et la durée moyenne des études. Il s'agit en particulier d'évaluer le lien entre ces deux indicateurs et le genre dans chaque gouvernorat, région, zone urbaine et rurale. Les données issues des recensements de la population, sur la période 1975-2004, sont utilisées afin de calculer l'indice de Gini régional de l'éducation et le niveau d'éducation atteint, et d'analyser leur évolution respective. Nos résultats montrent que, premièrement, la durée moyenne des études, pour la Tunisie et dans toutes les régions, a fortement augmenté expliquant ainsi la baisse considérable de l'inégalité de l'éducation. Deuxièmement, l'inégalité en matière d'éducation s'avère plus importante (i) dans les régions de l'intérieur par rapport aux régions côtières et (ii) dans les régions rurales par rapport aux régions urbaines au sein de chaque gouvernorat. Enfin, l'inégalité en matière d'éducation est d'autant plus élevée chez les femmes que chez les hommes malgré l'amélioration de leur niveau scolaire.

Mots-clés : INDICE DE GINI DE L'ÉDUCATION, DISPARITÉ DE GENRE, INÉGALITÉ DE L'ÉDUCATION