

Education and Consumption Differentials: Evidence from an Emerging Country

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Abstract

This paper investigates the effects of education level on consumption in an emerging country by using the 2004 Turkish Household Budget Survey. Education level is very important in determining consumption quintiles. There is no person with a graduate degree found in the poorest twenty percent and only 0.18 percent of poorest quintile consists of people with a bachelor degree. Regression analysis shows that one extra year of schooling increases consumption by 10.2 percent on average and people with a graduate degree consume about 201.6 percent more than illiterate people in Turkey.

Keywords: *Education level, Consumption, Turkish Household Budget Survey.*

The views expressed in this paper are those of the author and do not necessarily represent the official views of the Central Bank of the Republic of Turkey.

Introduction

It is well documented that education plays an important role in economic growth and development. Disparity in education constitutes the main reason for the income and consumption inequality among people as discussed in Card (1999), Cohn and Addison (1998) and Psacharopoulos (1985, 1994). It is an investment for lifetime accumulation wealth. In

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average, people with a graduate degree earn more than people with an undergraduate degree and college graduates earn more than high school graduates and so on. Consumption inequality is lower than income inequality normally and education is still a key factor in consumption inequality as discussed by Cutler and Katz (1992), Deaton and Paxson (1994), Krueger and Perri (2003) and Mayer and Jencks (1993).

In this paper, I investigate the effects of education level on consumption distribution using the 2004 Turkish Household Budget Survey (HBS). This survey was conducted by the Turkish Statistical Institute (Turkstat) at household and individual levels.

This paper examines the general features of education level of people as regard consumption using the household budget survey. Regression analysis results indicate that one extra year of schooling increases consumption by 10.2 percent on average and people with a graduate degree consume about 201.6 percent more than illiterate people in Turkey. The remainder of the paper is organized as follows. The next section gives details about the Turkish education system. Section 3 is concerned with data. Section 4 presents the regression results. Section 5 concludes the paper.

Data

The data used in this paper is the micro-data of the 2004 Turkish Household Budget Survey (HBS). The HBS was conducted involving 8544 sample households for a year from January to December in 2004. Around 720 sample households were surveyed each month and monthly consumption and income data were obtained in the survey month. Over the next month, 720 different sample households were investigated and their consumption and income data were collected for that month. This monthly data was indexed to the end of year, December 2004, in order to enable the drawing of comparisons among sets of different monthly data.

As seen from the Table 1, education level is very important in determining consumption quintiles. 18.8 percent of the poorest household heads are illiterate and this rate is much higher than the percentage of the illiterate people to overall population, 7.7 percent. Illiterate people consist of only 2.4 percent of the richest quintile. There is no person with a graduate degree in the poorest twenty percent and only 0.18 percent of poorest quintile consists of people with a bachelor degree. As expected, people with more education consume more in average.

Table 1. Education Level of Household Head

	Poorest 20 %	2 nd Quintile	3 rd Quintile	4 th Quintile	Richest 20 %	Overall Population
Illiterate	18.78	7.14	5.85	4.35	2.36	7.70
Below Primary	8.66	4.92	4.80	4.29	2.66	5.07
Primary	58.81	59.04	52.84	46.75	30.54	49.63
Secondary	7.26	11.12	11.94	11.60	9.98	10.38
High School	6.09	15.62	18.90	22.16	25.87	17.72
Associate	0.23	0.82	1.99	3.60	5.55	2.43
Bachelor	0.18	1.35	3.63	6.96	21.44	6.68
Graduate	0.00	0.00	0.06	0.29	1.59	0.39

Source: Author's calculation from HBS, 2004

The educational level of the population is not at a level comparable to EU countries. In Turkey, 62 percent of household heads have less than a secondary school education. The Turkish government passed a law that extended the compulsory education at the end of secondary school in 1997 in order to increase the level of education. Moreover, only 9.5 percent of household heads have more than high school degrees and this percentage is much lower than the percentages in many developed countries.

Table 2. Education Level of Spouse

	Poorest 20 %	2 nd Quintile	3 rd Quintile	4 th Quintile	Richest 20 %	Overall Population
Illiterate	43.39	18.85	15.89	12.41	4.97	19.39
Below Primary	8.13	7.37	6.93	5.03	3.44	6.24
Primary	44.11	62.10	57.82	57.28	37.53	52.07
Secondary	1.79	5.48	6.67	6.64	8.92	5.97
High School	1.92	6.07	11.97	16.30	24.58	11.89
Associate	0.00	0.07	0.46	1.14	5.63	1.37
Bachelor	0.00	0.07	0.26	1.21	13.90	2.87
Graduate	0.00	0.00	0.00	0.00	1.02	0.19

Source: Author's calculation from HBS, 2004

Table 2 shows that 96.3 percent of the poorest household spouses have less than a secondary school education. There is no household in the poorest quintile in which the spouse has more than a high school education. Only 5.0 percent of the richest quintile consists of illiterate spouses, lower than the overall percentage of illiterate spouses, 19.4 percent. The spouses with a bachelor degree compose 13.9 percent of the richest quintile and this percentage in the overall population stands at 2.9 percent. It is remarkable that all of the spouses with a graduate degree are in the richest quintile.

It can be said that the education level of household spouses is also very significant factor in affecting consumption levels.

19.4 percent of the overall population consists of illiterate household spouses and this percentage is very high compared to the education level of household heads. Moreover, only 4.6 percent of household spouses hold more than a high school degree. The percentage of people holding more than high school degree is 7.7 among household heads. It can be noticed that there is an education gap in genders since household heads are usually male.

The Results

The standard model for measuring the relation between education and permanent income or consumption is the Mincerian equation (1974), namely:

$$\text{Log}(c_i) = \alpha + \beta_1 s_i + \beta_2 (\text{age}-s_i-6) + \beta_3 (\text{age}-s_i-6)^2 + \varepsilon_i \quad (1)$$

In this equation, c_i is the consumption of the person, s_i is the years of schooling, and $(\text{age}-s_i-6)$ is potential experience. The coefficient β_1 is returns to schooling and shows the percentage increase in consumption associated with one extra year of schooling. The coefficient β_2 represents the percentage increase in consumption for one extra year of potential experience. The reason for putting the square of potential experience into the equation is to capture a concave relation between potential experience and consumption that would be the situation if people’s human capital investment after school declines by their age.

Table 3. Regression Results of Consumption

		Coefficients
	Years of Schooling	.10167** (.00321)
	Years of experience	.06288** (.00571)
	Years of experience squared	-.00100** (.00009)
	Constant	20.63185** (.09497)
Adj. R ²		0.2625
No. of Obser.		3508

Note: Standard errors are reported under the coefficients, ** indicate the level of significance at the 1% level.

As seen in Table 3, one extra year of schooling increases consumption by 10.2 percent on average after controlling for experience. This is lower than the calculation of Duygan and Guner (2006) where they calculated that one extra year of schooling increases earnings by 12.5 percent on average using the 2002 HBS. Thus, it supports the assertion based on the information that consumption inequality is lower than income inequality according to Turkish data. In the dataset, only the education levels of people are given instead of years of schooling. Therefore, years of schooling are calculated using this conversion table.

Table 4: Conversion Table of Years of Schooling

	Years of Schooling
Illiterate	0
Below Primary	2
Primary	5
Secondary	8
High School	11
Associate	13
Bachelor	15
Graduate	17

This conversion table might underestimate the years of schooling for high school dropouts. Moreover, there may be people with a Ph.D degree that take more than two years to obtain after a bachelor degree. The annual consumptions are used as consumption, c_i of household heads in the Mincer equation. Returns with regard to one extra year of experience is 6.3 percent as shown in the Table 3. If education levels are used as categorical variables using dummy variables instead of years of schooling in the Mincer regression, the regression results in the Table 5. The illiterate group is the omitted category in the regression.

As shown in Table 5, people with some primary education consume about 30.8 percent more than illiterate people. Primary school graduates consume about 52.6 percent more than illiterate people and about 21.8 percent more than some primary education holders. The spending difference between secondary and primary school graduates is about 25.8 percent. Bachelor degree holders consume about 18.0 percent more than people with an associate degree. The average spending difference is 45.5 percent between bachelor and graduate degree holders and this is the highest difference between subsequent education levels. Therefore, it can

be said that having a graduate degree increases consumption greatly. This is because only 0.39 percent of household heads have graduate degree. Moreover, people with graduate degree consume 201.6 percent more than illiterate people.

Table 5: Regression Results of Consumption by Education Levels

		Coefficients
	Below Primary	.30813** (.10261)
	Primary	.52633** (.07457)
	Secondary	.78432** (.08111)
	High School	1.09396** (.07767)
	Associate	1.38078** (.09377)
	Bachelor	1.56100** (.08222)
	Graduate	2.01651** (.17664)
	Years of experience	.06339** (.00579)
	Years of experience squared	-.00101** (.00009)
	Constant	20.62254** (.11124)
Adj. R ²		0.2633
No. of Obser.		3508

Note: Standard errors are reported under the coefficients, ** indicate the level of significance at the 1% level..

Summary and Concluding Remarks

This paper explores the effect of education level on consumption distribution and consumption behavior of people using 2004 Turkish Household Budget Survey. The HBS presents information about the education level of individuals, incomes and consumption of people. As a result of regression analysis, one extra year of schooling increases consumption by 10.2 percent on average. People with an elementary school degree consume about 52.6 percent more than illiterate people. This difference constitutes 201.6 percent for people with a graduate degree. Moreover, the difference is 45.5 percent between bachelor and graduate degree holders and this is the highest difference between subsequent education levels.

REFERENCES

- Card D. (1999) "The casual effect of education on earnings." In: *Handbook of Labour Economics*, O.Ashenfelter and D.Card (eds.), Amsterdam: North Holland
- Cohn, E., and J.T. Addison. (1998), "The economic returns to lifelong learning." *Education Economics*, vol. 6, no. 3, pp. 253–308.
- Cutler, D., and L. Katz. (1992). "Rising inequality? Changes in the distribution of income and consumption in the 1980's." *American Economic Review*, vol. 82, no. 2, pp. 546–551.
- Deaton, A. and C. Paxson. (1994). "Intertemporal choice and inequality." *Journal of Political Economy*, vol. 102, no. 3, pp. 437–467.
- Duygan, B. and N. Guner. (2006) "Income and consumption inequality in Turkey: What role does education play?" In: *The Turkish Economy: The Real Economy, Corporate Governance and Reform and Stabilization Policy*. S. Altuğ and A. Filiztekin (eds.), Chapter 2, Oxon, OX: Routledge Curzon Studies in Middle Eastern Economies.
- Krueger, D., and F. Perri. (2002). "Does income inequality lead to consumption inequality." NBER Working Paper no. 9202.
- Mayer, S. and C. Jencks. (1993). "Recent trends in economic inequality in the United States: Income versus expenditures versus well-being." In: *Poverty and Prosperity in the USA in the Late Twentieth Century*, Papadimitriou, D and E. Wol. (eds.), Chapter 27, New York, NY: St. Martin's Press.
- Mincer, J. (1974). "Schooling, experience, and earnings", New York, NY: National Bureau of Economic Research.
- Psacharopoulos, G. (1985). "Returns to education: A further international update and implications", *Journal of Human Resources*, vol. 20, no.4, pp. 583–604.
- Psacharopoulos, G. (1994). "Returns to investment in education: A global update", *World Development*, vol. 22, no.9, pp. 1325–1343.