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TAM METİN KİTABI

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Aralık 2016 / December 2016

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DOES SPATIAL INCOME STRUCTURE HAVE AN INFLUENCE ON SPATIAL CONSUMPTION: EVIDENCES FROM RURAL AND URBAN ASPECTS IN TURKEY?

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Abstract

Analyzing consumption theories is important for policy makers to correctly implicate their policies toward controlling AD and thus, controlling macroeconomic equilibrium on the benefit of the society. Economists generally draw upon a common theoretical framework by assuming that consumers base their expenditures on a rational and informed assessment of their current and future economic circumstances—especially current income as Keynesian stated. This "rational optimization" assumption can be testable in line of "spatial aspect" with the inclusion of distance factor in to the model.

This study deals with how income level of teachers working in Turkish education sector is determining their consumption patterns in the light of different consumption theories such as Modigliani, Keynesian, Monetarist etc.. For this reason, to produce first hand data (i.e. raw data), we used 1392 questionnaires in the metropolitan cities such as Mersin and Adana in the south part of Turkey. With these questionnaires, we reached the composite data for teachers working at private and state schools (including gender differences as well) and hence, we aimed to analyze the differentiation in consumption patterns in regard of private and state distinction. We also analyzed that if living in urban and rural areas (measured with distance variables) creates any differentiation in consumption patterns. In the line of Least Square Method, double logarithmic function analyze type, and linear function analyze type are used to measure income-consumption elasticity. Besides, to measure the influence of distance in consumption pattern changes we also employed gravity equation method. Therefore, we humbly answer a question that spatial income distribution had any effect on consumption pattern changes and thus, test validity of the different theories. Initial test results indicate that distance matters for consumption patterns.

1. Introduction

Whether or not there is a powerful correlation between current income and consumption as asserted by well-known Keynesian theory needs to be questioned since when income distribution has been destroyed by Turkish government policies. In recent years, even if Turkish economy has shown very good progress until the 2007-8 Global Financial crises, since then it has been experiencing a sluggish recovery period. Of course this situation has created fluctuations in income (even for per capita income). Therefore, it is worth analyzing the whether or not effect of any change in income distribution or in income level matters for determining the consumption path against the Keynesian proposition implying that average propensity to

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consume declines as income level increases. This assertion may create many challenges by counterparts.

Distortion in income distribution has found its reflection both on regional aspect and in education sector in Turkey. For this reason we chose high schools in Adana and Mersin to analyze how teachers in different income scale, of course, with the assumption that private schools pay higher than state ones expand on any goods and services. Located in Çukurova region in south-central Turkey, Mersin and Adana represent 7th and 5th biggest provincial economy in Turkey as of 2013. Spatial literature allows us to analyze in detail. This means that when we enable "distance" variable to be represented in a model, we are also able to analyze the main question in rural aspect. For some teachers live/work in urban area and some do in rural area. For instance, if a representative of teachers works at private or state high school, his/her consumption path would be influenced by how much distance his/her house to downtown for shopping.

In this sense, the study sheds some light on which consumption theory effectively explains this empirical case. Therefore, we seek to find out the correct answer upon different consumption theories for *"How does distance affect the consumption path based upon either same or different income scale level?"* Following this introduction, next section gives some feedback about consumption theories. Third section focuses on data and methodology. Fourth one gives some different perspective to test results. Last concludes including policy implications.

2. What Is about Consumption Theories and High-School Teachers?

To analyze the main question articulated above, the paper sheds some light on a potential relationship between consumption theories and consumption path of high-school teachers. The relatively high share of consumption expenditures in GDP in capitalist economies provides necessary foundation to stress the importance of consumption expenditures. Advancing technology, changing lifestyles and, as a result, changing consumption patterns create critical opportunities in testing the validity of income-consumption models prevailing in the literature.

Our purpose here is to investigate the validity of Keynesian consumption model. The literature hosts a great variety of theories on consumption expenditures, but we limit ourselves with those validity of which has already been tested. We start with briefly presenting the consumption theories of this nature. According to the intertemporal optimization model developed by Irving Fisher, a consumer would prefer the unique pattern of consumption that maximizes her utility under a two-period specification; i.e., if she saves more in the first period, she would consume more in the following one, or alternatively, if she consumes more by way of borrowing – negative saving – in the first period, then she would consume less to compensate such borrowing, both leading to the optimization of utility.

According to lifetime income hypothesis proposed by F. Modigliani and R. Brumberg, consumption expenditures are a function of both current income and expected lifetime income. Under this approach, consumers seek to sustain their consumption throughout their lives and therefore plan their consumption and saving behaviors for longer periods of time. Also, current value of wealth, as a stock variable, is considered to be an explanatory variable within consumption function (Sivri, Eryüzlü, 2010: 91).

Just like the case under lifetime income hypothesis, permanent income hypothesis describes consumption as dependent upon not current income but an estimation of longer-term

income. This theory was firstly introduced by Milton Friedman. According to this hypothesis, given a person's current level of income and prospective level of income expected to be gained in the future, permanent income is defined as regular expenditure rate that is sustainable during the rest of her life, and it is considered to be the determinant of that person's consumption behaviors (Dornbusch, Fischer, Startz, 2004: 377).

One of the most important approaches in the field of macroeconomics is symbolized by the absolute income hypothesis. According to this hypothesis, as one's income increases, consumption expenditures would increase as well. However, increase in consumption is in the same direction as the increase in income with no guarantee for equal change. On the other hand, saving would stand for a larger share of total income as the real income gets greater (Keynes, 2010: 90-91). Laying the foundations of consumption function on psychological factors, the relative income hypothesis developed by J. Duesenberry has the characteristics of a critique of the absolute income hypothesis. Consumption, from what this hypothesis suggests, depends not only on current income but also on the social environment surrounding consumer, as manifested by Keynes. Consumption decision of an individual is not independent from that of anyone else since each and every decision is strongly affected by the level of relative income prevalent in the social group in which those individuals live (Pehlivan, Ulkulu: 2007: 42). The most remarkable discovery of this hypothesis is that one's consumption enlarges as her income increases while consumption does not decrease with the same amount as her income diminishes.

Table 1 provides some figures about the number of students, high-school by state and private in between 2005 to 2012. Between those years while the number of schools declines along with the share of state high-schools in total, private ones indicates an increase. In the same period, the number of teachers working for private ones in percentage relatively increased.

Table 1: The number of High-Schools and Teachers

	Total number of schools	State Schools	Private Schools	Total Number of Teachers	Teachers (State)	Teachers (Private)
2005/2006	42825	41047	1778	575176	541113	34063
2006/2007	42590	41116	1474	590494	556102	34392
2007/2008	42373	40775	1598	636493	599844	36649
2008/2009	42448	40727	1717	650831	610117	39914
2009/2010	42223	40613	1610	692579	648479	44060
2010/2011	42078	40382	1696	726033	679380	46653
2011/2012	41780	39964	1816	751666	615956	51766

Source: Turkish Statistical Institute, 2013

Table 2 gives some information about comparison of average salary of high-school teachers with developed countries listed in OECD and the salary of Turkish teachers are relatively lower than OECD average. When we articulate the figures in Table 2 teachers in Turkey relatively lower than most of the OECD countries. Other compelling interpretation could be that there is a slight difference between salaries of junior and senior teachers in Turkey as the gap increases for OECD countries. Even though this is not in our focus but this may influence the consumption path of teachers. Therefore, whether or not a slight or big gap may be linked to experience can be the topic of another study.

Table 2: Salaries in Selected OECD Countries (in US Dolar in PPP for per year)

	Starting Salary	Salary after 15 year experience
Australia	34613	48322
Austria	31301	43693
Belgium (Fl)	32085	43413
Belgium (Fr.)	31315	44407
Canada	33334	36849
Chile	17383	23623
Czech Republic	14982	20083
Denmark	43491	50832
UK	30209	44569
Estonia	11451	13806
Finland	30387	37004
France	23666	30132
Germany	47400	58642
Greece	23003	28304
Hungary	10454	13013
Iceland	23488	24891
Ireland	33401	34854
Israel	18892	27174
Italy	27200	32669
Japan	26401	43741
Korea	27181	48251
Luxembourg	66083	80897
Mexico	13083	16990
Netherlands	36928	52290
New Zealand	20223	42755
Norway	33352	37583
Poland	10982	14808
Portugal	20998	29424
Scotland	30078	47984
Slovakia	10291	13858
Slovenia	24488	32191
Spain	33083	42339
Sweden	30059	34867
Switzerland	47350	
Turkey	23484	23539
USA	37595	46150
OECD average	28054	38136

Source: OECD, 2013

Available studies in related field indicate that in addition to low salaries, there are some serious problems that negatively influence teachers' motivation; e.g., inadequacy of physical and social conditions (Oltesi, 2011 p. 1047). These are very important topics in economics of education since income-consumption relations put some lights on living standards of teachers and also enable us to comment about relative conditions of teachers in their group.

The paper uses questionnaire technique to collect data, which detail information is provided in related section. Total income per month variable in data comprises additional income and some other unexpected source of income in addition to regular salary of teachers. According to the data collected, average salary of teachers is about TL. 3704,3 on average. Adding the additional and unknown sources of income, TL. 137,97 and TL. 80,91 respectively, total income increases up to TL. 3923,23 on average. Besides, majority of teachers earns salary in the range of TL. 2500-5000, those who are working at state schools earn TL. 3855,91 on average which is higher than those in private one with TL. 3306,47 on average. In terms of comparison of income level in urban and rural area, while those who are working in urban area earn TL. 3666,08 on average, those who are working in urban ones earn TL. 3791,41 on average. Another information informed by the data tells us that gender differs in income: in terms of average values women teachers earn TL. 3943,74, which is more than what men earn, TL. 3525,62.

When distribution of side jobs, which has a significant share in total income, is examined, the following Table 3 is obtained. In order to better analyze the variables determining side jobs, the data is divided into three different income brackets. Teachers earning less than TL. 2500, between TL. 2500 and 5000, and above TL. 5000 constituted the first, second and third bracket respectively. When the table is studied, percentage of those who have side jobs seems to be similar among three brackets. Differences in figures originate in the size of each bracket. However, another detail to be noted is that as the salary increases teachers make more money from side jobs. Teachers in the lowest salary group gain the least from side jobs while those who are classified under the highest salary group gain the most from side jobs. In other words, total income of the teachers working for higher salaries increases faster as compared to those who work for lower salaries. Another implication to be drawn from the table is that experience is in direct proportion to the average amount of earnings from side jobs. The said experience gap is is not significant between middle and high income groups while it becomes prominent when the lowest-income group is compared to these middle income and high income groups as a whole.

Table 3. Additional Income From Side Jobs of Teachers in Cukurova Region

	Total number of teachers	Side job holders	%	Public	Private	Average gains (TL)	Average experience (Year)
TL 0-2500	283	34	12,01	15	19	805	5,5
TL 2500 - 5000	775	93	12	49	44	1.222,71	11,38
TL 5000 and above	304	45	13,47	31	14	1.369,44	12,17

As an independent item constituting total income, "other incomes" are totally dependent on subjective conditions, which have nothing to do with teaching profession. Thus, we find unnecessary to analyze this item of income in this paper. Independent variables affecting salaries and total income are indicated in Table 4 and Table 5 below respectively.

Table 4: Variables Affecting Salary

	Dependent Variable			P value	
Independent Variables	SALARY				
	Coefficient	Standard Error	t- Value	Error term	R^2
TEC	17,46591	3,510064	4,975951	0,0000	0,439775
K	160,9515	61,88447	2,600858	0,0094	
ES İŞ	1768,471	60,76529	29,10351	0,0000	
İL DUMMY	-16,17221	60,05854	-0,26931	0,7898	
C	2468,793	74,59436	33,09824	0,0000	

In the Table 4 above, the dependent variable is salaries while independent variables are TEC (experience), K (working in public sector vs. private sector), ES İŞ (employment status of spouse), İL DUMMY (working at the city center vs. in the county). When the table is examined in detail, experience, public sector (k=1) and employment status of spouse are found to be statistically significant. Nevertheless, the impact of working at the city center vs. in the county on salaries is found to be statistically insignificant. R^2 is 0,43, representing a good explanatory power for a cross-section analysis.

Table 5: Variables Affecting Total Income

	Dependent Variable				
Independent Variables	TOTAL INCOME				
	Coefficient	Standard Error	t- Value	P Value	R^2
TEC	22,64096	4,663589	4,854836	0,0000	0,33
K	23,75711	82,32339	0,288583	0,7730	
ES İŞ	1882,817	80,79721	23,303	0,0000	
İL DUMMY	37,78707	80,61556	0,468732	0,6394	
C	2633,753	99,14116	26,56569	0,0000	

When the dependent variable, salaries, is replaced by total income and the gains from side jobs and other incomes are incorporated into the new analysis, working at public sector vs. private sector and working at the city center or vs. in the county become statistically insignificant and R^2 falls from 0,43 to 0,33. In other words, experience and employment status of spouse explain both salaries and total income while working at public sector has a significant impact on salaries, not on total income.

When the Table 6 is examined, all expenditure items are observed to rise as income increases. Food expenditures stand for the highest share in all three income brackets. Housing expenditures rank number two for the first and second group teachers, whereas course-training expenditures stand for second largest expenditure item for those who earn TL 5000 or more. It is is possible to interpret this data as follows: teachers falling in high-income bracket are seeking to invest in personal development in order to become more qualified people. Third largest share belongs to housing expenditures for the first and second group teachers and to transportation expenditures for third group teachers.

In order to find out whether the expenditure items indicated in the table below are required goods or luxury goods, we should first identify if their consumption increases decreasingly or if increases increasingly.

Table 6: Expenditure Items

	TL 0 -2500		TL 2500 -5000		TL 5000+		All	
	Value (TL)	%	Value (TL)	%	Value (TL)	%	Value (TL)	%
Information	43,00	3,47	53,43	2,28	60,18	1,91	53,92	2,43
Communication	59,54	4,86	85,74	3,59	108,18	3,35	85,80	3,79
Housing	196,25	13,24	361,09	13,86	362,63	9,97	327,94	12,04
Food	318,75	21,43	570,07	21,92	725,37	21,62	557,90	21,75
Transportation	136,87	10,95	254,09	10,27	337,31	10,04	234,29	10,85
Clothing	141,47	10,09	196,98	7,98	266,14	8,31	202,29	8,46
Course – Training	56,57	4,05	284,79	8,56	399,43	10,75	242,13	8,17
Book	32,69	3,74	71,84	2,89	96,68	2,85	73,61	3,05
Self-care	63,85	4,53	71,53	2,82	97,75	2,96	76,16	3,20
Caretaker	5,27	0,82	68,74	2,18	111,17	3,24	61,56	2,05
Healthcare	20,22	1,80	58,75	2,16	65,88	1,90	54,25	2,02
Smoking	40,63	2,79	52,29	1,96	61,80	1,66	52,20	2,06
Social activity	48,78	3,46	64,66	2,55	136,33	3,54	78,63	2,97
Utility bills	145,83	9,87	281,20	9,53	291,95	8,85	228,42	9,44
Other	103,61	6,42	264,01	8,45	378,63	9,15	258,90	8,20
Total	1.484,83	100,00	2.633,69	100,00	3.499,34	100,00	2.687,01	100,00

Examining expenditure items in the table one by one, it is possible to observe that communication, informatics, housing, food, transportation, caretaker, healthcare, smoking and utility bills expenditures increase as income rises; however this increase tends to decrease at higher levels of income. Therefore, these goods can be considered as required goods while clothing, book, self-care and social activity stand for luxury goods for teachers. That is to say as teachers' income increases, rate of increase in clothing, book, self-care and social activity expenditures tend to rise by degrees.

Income elasticity of expenditure measures the rate of response of quantity demanded due to a 1% raise or lowering in consumer's income. Table 7 below hosts the data indicating income elasticity of expenditure and the variables putting an impact on total expenditures.

Table 7: Variables Affecting Total Expenditures

	Dependent Variable				
Independent Variables	LOG (TOTAL EXPENDITURE)				
	Coefficient	Standard Error	t- Value	P Value	R^2
LOG(TG)	0,478854	0,03977	12,04046	0,0000	0,307226
CCK	0,034717	0,012988	2,672688	0,0076	
CİNS	-0,10893	0,024697	-4,411402	0,0000	
EŞ İŞ	0,121623	0,032987	3,686999	0,0002	
İL DUMMY					
K	0,053835		0,040942	0,0246	
TEC	0,004964	0,001558	3,186048	0,0015	
C	3,701996	0,214644	11,76566	0,0000	

In the table 7 above, the dependent variable is logarithm of total expenditures while independent variables consist of LOGTO (logarithm of total income), CCK (number of children), CİNS (gender), EŞ İŞ (employment status of spouse), İL DUMMY (working at the city center vs. in the county), K (working in public sector vs. private sector), and TEC (experience) respectively. When the table is examined, it is seen that income elasticity of expenditure is 0,47, which comes to mean that a 1% increase in incomes leads to 0,47%-increase in total expenditures of teachers. This also means that as income increases, expenditures would increase as well. Looking at other variables, number of children, gender, employment status of spouse, working at public sector and experience are observed to have statistically significant effects on total expenditures, whereas working at the city center vs. in the county seems to have no significant effect on total expenditures. Number of children has a positive impact on total expenditures while gender has a negative impact on total expenditures of men teachers (men=1). Having an actively-employed spouse positively affects total expenditures; moreover working at public sector and having more experience also put a positive impact on total expenditures.

3. Data and Methodology

Data

In the context of this study, raw data was collected by way of questionnaire, applied to the teachers working in the provinces of Mersin and Adana. Apart from central districts, questionnaires were also applied in the following districts: Tarsus, Erdemli, Silifke, Çamlıyayla and Anamur. The data was gathered in 2012 and sample consisted of 1302 teachers, which was considered to have been representing all of the teachers in this province. Questionnaire form included the variables that were deemed to have a possible impact on teachers' income and consumption relationship. These variables are age, gender, marital status, number of children, experience, employing sector, place of duty (city center or county), number of cars, number of houses, employment status of spouse, if any, informatics expenditures, communication expenditures, housing expenditures, food expenditures, transportation expenditures, clothing expenditures, course-training expenditures, book expenditures, self-care expenditures, caretaker expenditures, healthcare expenditures, smoking expenditures, utility bills expenditures, social activity expenditures, other expenditures, total expenditures, side jobs, salaries, other incomes falling outside the scope of this total, and total income, which represents the total of these three income items. Dummy variables were employed to adopt a consistent approach to measure gender, marital status, working at public sector vs. private sector, working at the city center vs. in the county, and having a working vs. non-working spouse. As is known, dummy variable helps reduce the second and subsequent variables to a single group of variable to construct a variable composed of two two levels. Explanation of the dummy variables (0 or 1) used in this study are as follows: women teachers: 0, men teacher: 1; single teacher: 0, married teacher: 1; teacher working at private sector: 0, at public sector: 1; teacher who has a non-working spouse: 0, working spouse: 1; and teacher working at the city center: 0, in the county: 1.

The average age of respondents is 37, being 42,7% of them are women and 57,3% of them are men. 19,4% of teachers are single while 70,6% are married. Out of married teachers, 71,68% have a working spouse whereas 28,32% have a non-working spouse. In addition, 16,32 of married teachers have no child while 26,32%, 44,78%, 11,06% and 1,36% of them have one, two, three and four children respectively. There are two teachers, one with five and one with six children.

The average year of experience of respondents is 11. 27,66% of teachers work at private sector while 72,34 % work at public sector. Lastly, 69,47 of teachers work at the city center, 30,53% of them work in counties.

Methodology

The gravity model is one of the most commonly used specifications in empirical trade research, and has been accepted as being "extremely successful empirically" in their ability to explain variance in bilateral trade volumes (Deardoff 1984). Learner and Levinsohn (1995) state that gravity models 'have produced some of the clearest and most robust empirical findings in economics.' We use, in challenge, this method to see how it reacts to measure changes in consumption path of different income groups among teachers.

The basic idea behind the gravity model comes from the gravity theory in physics. Newton's law of universal gravitation states the gravitational attraction between two bodies is proportional to the product of their masses and inversely proportional to the square of the distance between them. The physical bodies are the exporting and importing countries, and their "mass" is their economic mass. In other words, the idea is that the bigger the sizes of the economies, the bigger the trade, and the greater the distance, the lower the trade. Thus, the basic gravity model can be written as

$$M_{ij} = G\left(\frac{E_i E_j}{D_{ij}^2}\right)$$

where M_{ij} is the level of trade (exports, imports, or total trade) between countries i and j, E is the economic mass of country i, D_{ij} is the distance between i and j, and G is the gravitational constant. This can be viewed in logarithmic form as

$$\ln M_{ij} = \beta_0 + \beta_1 \ln(E_i E_j) + \beta_2 \ln D_{ij}.$$

From an econometric point of view, this is a very simple specification where the parameter β_1 is the elasticity of trade with respect to the mass of the countries. In empirical trade models, the economic mass is typically proxied by the GDP (or some function of it) of the countries. It is also most common to extend the basic equation by including a number of factors that potentially facilitate or inhibit trade, such as cultural, geographical, and political characteristics. Such extended models are referred to as the "augmented" gravity models.

Although the gravity model has had a huge empirical success for a long time, a theoretical foundation in economics was not provided until Anderson (1979) derived the gravity equation from a model that assumed product differentiation. Bergstrand (1985, 1989) then associated the gravity equation with simple monopolistic competition. Helpman and Krugman (1985) justified the gravity model in a differentiated product framework with increasing returns to scale. Deardoff (1998) has shown that the gravity model characterizes many models and can be justified from standard trade theories. Anderson and van Wincoop (2003) derived an operational gravity model from a CES expenditure system. Helpman et al. (2008) has recently generalized their model by accounting for firm heterogeneity and fixed trade costs, and also for asymmetries between the volume of exports from j to i and the volume of exports from i to j.

We will assemble data enabled by 1392 questionnaires in 2012 and estimate an augmented gravity model in the format of the double logarithmic regression model for our sample. Even though this method has been mostly used for trade issue, we humbly modify this

method for testing consumption theories. In this sense we also aim to contribute to gravity literature by showing that there is another angle in this field of research.

4. Evaluation of Test Results

In order to test the variables affecting consumption propensity of teachers, who are divided into three brackets of income[1] in this model in line with relative income hypothesis, we employ double logarithmic regression model. It is the models with an independent variable of distance that are defined as models with distance. The expressions in parenthesis indicate margin of error probabilities. Here, we define the models used in this study as follows:

Table 8: Comparison of the Six Models in Income Scale for Adana

ADANA						
	MODEL I	MODEL II	MODEL III	MODEL IV	MODEL V	MODEL VI
	LOG(Y)					
LOG(TG)	1,13612 (0,0000)	1,032125 (0,0000)	0,602134 (0,0000)	0,609469 (0,0000)	0,414410 (0,0279)	0,421968 (0,0279)
LOG(U)	-0,045315 (0,0009)		-0,022852 (0,1728)		-0,023008 (0,4461)	
MED	0,123951 (0,4636)	0,087641 (0,6094)	0,348891 (0,0038)	0,319697 (0,0071)	0,062599 (0,8319)	0,050317 (0,8521)
LOG(HANE)	0,203691 (0,1510)	0,233623 (0,1051)	0,102858 (0,1711)	0,115503 (0,1215)	0,104682 (0,4536)	0,090489 (0,5122)
KURUM	-0,046387 (0,6563)	-0,003968 (0,9697)	0,180180 (0,0090)	0,189753 (0,0074)	0,153603 (0,1584)	0,162466 (0,1329)
C	-1,363011 (0,2774)	-0,708460 (0,5677)	2,282681 (0,0092)	2,196828 (0,0121)	4,125363 (0,0120)	4,052127 (0,0131)
R^2	0,448602	0,420418	0,209153	0,304310	0,085245	0,079548
F	15,29513 (0,0000)	17,22783 (0,0000)	22,93339 (0,0000)	28,10441 (0,0000)	1,753949 (0,1364)	2,052532 (0,0931)

While constructing models in Table 8, the variables affecting consumption propensity of teachers, who are divided into three income groups according to relative income hypothesis, have been taken into consideration. Double logarithmic regression model has been utilized. It is the models with an independent variable of distance (to the city center) that are defined as models with distance. The expressions in parenthesis indicate margin of error probabilities. Here,

LOG(Y): Logarithm of total expenditure

LOG(TG): Logarithm of total income

LOG(U): Distance

MED: Marital status (0: Single -1: Married)

Log(Hane): Logarithm of the number of households

Kurum: 0: Working at state high school -1: Working at private high school

C: Constant

Model I and II demonstrate models with and without distance for middle-income teachers. Variables and related coefficients in the models are defined as follows:

[1] According to household data generated by TurkStat for the year 2013, there are three income brackets: very high-income, high-income and middle-income.

Model 1: Adana Middle-Income Group with Distance

Log(T) = -1,3686+1,1361 Log(TG) +(-0,0653) Log(I)+ 0,1139 MSD +0,2026 Log(HANE)+(-0,0481) KURUM
(0,2774) (0,0000) (0,0369) (0,4636) (0,1510) (0,6563)

R^2 = 0,448602 F Value = 15,29513
(0,0000)

Model 2: Adana Middle-Income Group without Distance

Log(T) = -0,7084+1,0121 Log(TG)+ 0,0876MSD +0,2336 Log(HANE)+(-0,0039) KURUM
(0,5677) (0,0000) (0,6094) (0,1051) (0,9697)

R^2 = 0,420418 F Value = 17,22783
(0,0000)

Model III and IV demonstrate models with and without distance for high-income teachers.

Model 3: Adana High-Income Group with Distance

Log(T) = 2,3826+0,6831 Log(TG) +(-0,0218) Log(I)+ 0,3488 MSD +0,1816 Log(HANE)+0,3043 KURUM
(0,0092) (0,0000) (0,1728) (0,0038) (0,1711) (0,0093)

R^2 = 0,309153 F Value = 22,93339
(0,0000)

Model 4: Adana High-Income Group without Distance

Log(T) = 2,1968+0,6094 Log(TG) + 0,3196 MSD +0,1155 Log(HANE)+ 0,3897 KURUM
(0,0121) (0,0000) (0,0071) (0,1215) (0,0074)

R^2 = 0,304310 F Value = 28,10441
(0,0000)

Model V and VI demonstrate models with and without distance for very high-income teachers.

Model 5: Adana Very High-Income Group with Distance

Log(T) = 4,1253+0,4144 Log(TG) +(-0,0230) Log(I)+ 0,0869 MSD +0,1946 Log(HANE)+ 0,1536 KURUM
(0,0120) (0,0270) (0,4461) (0,8319) (0,4536) (0,1584)

R^2 = 0,085245 F Value = 1,751949
(0,1304)

Model 6: Adana Very High-Income Group without Distance

Log(T) = 4,052127+0,421968 Log(TG)+ 0,058317 MSD +0,090489 Log(HANE)+ 0,162466 KURUM
(0,0131) (0,0299) (0,8521) (0,5122) (0,1329)

R^2 = 0,079548 F Value = 2,052532
(0,0931)

When the test results of the models specified for the province of Adana are examined, it is concluded that distance to the city center hardly affects high-income groups in terms of income-consumption relationship. In other words, as the level of income drops down, the models with distance are become significant in middle-income groups, suggesting accordingly that using the models with distance would generate more reliable results for low-income groups.

Table 9 shows the results of a similar modelling as applied to the province of Mersin.

Table 9: Comparison of the Six Models in Income Scale for Mersin

MERSIN						
	MODEL I	MODEL II	MODEL III	MODEL IV	MODEL V	MODEL VI
	LOG(Y)					
LOG(TG)	0,737532 (0,0000)	0,737580 (0,0000)	0,687394 (0,0000)	0,682294 (0,0000)	0,484048 (0,0000)	0,491414 (0,0000)
LOG(U)	-0,049428 (0,0006)		-0,014812 (0,0379)		-0,009285 (0,2868)	
MED	-0,083798 (0,5190)	-0,092905 (0,5149)	0,192135 (0,0016)	0,198796 (0,0014)	0,179312 (0,0113)	0,179531 (0,0133)
LOG(HANE)	0,269851 (0,0204)	0,248823 (0,0404)	0,093103 (0,0309)	0,090158 (0,0453)	0,213877 (0,0031)	0,211462 (0,0040)
KURUM	0,122636 (0,0332)	0,133135 (0,0271)	0,067155 (0,0306)	0,074667 (0,0160)	0,152899 (0,0009)	0,157212 (0,0005)
C	1,662472 (0,1176)	1,509633 (0,1738)	1,952633 (0,0004)	1,963836 (0,0004)	2,861955 (0,0017)	2,798002 (0,0021)
R^2	0,432456	0,372496	0,371493	0,364424	0,221511	0,217566
F	17,98271 (0,0000)	17,66004 (0,0000)	45,63684 (0,0000)	55,47419 (0,0000)	12,80427 (0,0000)	15,71035 (0,0000)

Model 1: Mersin Middle-Income Group with Distance

Log(Y) = 1,662+0,7375 Log(TG)+ (-0,049)(Log(U)+(-0,0837)MED +0,2699 Log(HANE)+ 0,1226 KURUM
(0,1176) (0,0000) (0,0006) (0,5190) (0,0204) (0,0332)

R^2 = 0,432456 F Value = 17,98271
(0,0000)

Model 2: Mersin Middle-Income Group without Distance

Log(Y) = 1,5096+0,7376 Log(TG)+ -0,0929 MED +0,2488 Log(HANE)+ 0,1331 KURUM
(0,1738) (0,0000) (0,5149) (0,0404) (0,0271)

R^2 0,372496 F Value = 17,66004
(0,0000)

Model 3: Mersin High-Income Group with Distance

Log(Y) = 1,9526+0,6859 Log(TG) +(-0,0148) Log(U)+ 0,1921 MED +0,0931 Log(HANE)+ 0,0691 KURUM
(0,0004) (0,0000) (0,0379) (0,0016) (0,0309) (0,0306)

R^2 = 0,371493 F Değeri = 45,63684
(0,0000)

Model 4: Mersin High-Income Group without Distance

Log(Y) = 1,9638+0,6802 *Log(TG)+* 0,1987 *MED* +0,0903 *Log(HANE)+* 0,0746 *KURUM*
(0,0004) (0,0000) (0,0014) (0,0453) (0,0160)

R^2 = 0,364424 F Value = 55,47419
(0,0000)

Model 5: Mersin Very High-Income Group with Distance

Log(Y) = 2,8619+0,4863*Log(TG) +(-0,0093) Log(U)+* 0,1798*MED* +0,2178*Log(HANE)+* 0,1513 *KURUM*
(0,0017) (0,0000) (0,2868) (0,0113) (0,0031) (0,0009)

R^2 = 0,221511 F Value = 12,80427
(0,0000)

Model 6: Mersin Very High-Income Group without Distance

Log(Y) = 2,7980+0,4914 Log(TG)+ 0,7595 MED +0,2134 Log(HANE)+ 0,1572 KURUM
(0,0021) (0,0000) (0,0133) (0,0040) (0,0006)

R^2 = 0,217566 F Value = 15,71055
(0,0000)

When the test results of the models specified for the province of Mersin are examined, it is concluded, in analogy to the results for Adana, that distance to the city center hardly affects high- and very high-income groups, particularly in terms of income-consumption relationship. In other words, as the level of income drops down, the models with distance are become significant in middle-income groups, suggesting accordingly that using the models with distance would generate more reliable results for low-income groups.

Table 11: Comparison of the four models Total Income and Salary for Adana

ADANA				
	MODEL I	MODEL II	MODEL III	MODEL IV
	LOG(Y)			
LOG(TG)	0,545786 (0,0000)	0,552044 (0,0000)		
Log(M)			0,646492 (0,0000)	0,646797 (0,0000)
LOG(U)	-0,023446 (0,0712)		-0,024041 0,0606	
MED	0,226745 (0,0081)	0,211035 (0,0134)	0,152167 (0,0777)	0,135943 (0,1141)
LOG(HANE)	0,124328 (0,0358)	0,131883 (0,0261)	0,140353 (0,0165)	0,148180 (0,0165)
KURUM	0,160803 (0,0010)	0,165374 (0,0007)	0,109482 (0,0257)	0,113892 (0,0257)
C	2,842695 (0,0000)	2,784414 (0,0000)	2,188522 (0,0000)	2,103511 (0,0000)
R^2	0,501339	0,497764	0,515118	0,511356
F	91,28984 (0,0000)	113,2727 (0,0000)	96,38700 (0,0000)	118,5601 (0,0000)

Table 11: Comparison of the four models in Total Income and Salary for Mersin

MERSİN				
	MODEL I	MODEL II	MODEL III	MODEL IV
	LOG(Y)			
LOG(TG)	0,645478 (0,0000)	0,651949 (0,0000)		
Log(M)			0,708154 0,0000	0,718888 (0,0000)
LOG(U)	-0,015857 (0,0021)		-0,017456 0,0005	
MED	0,130508 (0,0087)	0,131344 (0,0086)	0,096505 0,0481	0,098106 (0,0461)
LOG(HANE)	0,149207 (0,0000)	0,142123 (0,0001)	0,131083 0,0002	0,123098 (0,0005)
KURUM	0,109460 (0,0000)	0,116131 (0,0000)	0,096886 0,0000	0,104248 (0,0000)
C	2,360926 (0,0000)	2,160756 (0,0000)	1,839782 0,0000	1,741641 (0,0000)
R^2	0,615918	0,611003	0,633464	0,627888
F	288,1158 (0,0000)	293,7150 (0,0000)	258,3656 (0,0000)	316,0633 (0,0000)

The test results of distance-included relative income hypothesis in relation to total income and salary are summarized in Table 10 and Table 11. The models summarized in Table 10 and Table 11 reflect Adana and Mersin respectively, with an effort dedicated to investigating how non-salary income affects the distance. Similarly, double logarithmic regression model is employed for that purpose.

Under this specification, the models within which distance to the city center is taken as independent variable are defined as models with distance, and vice versa. The expressions in parenthesis indicate margin of error probabilities. Variables used in these models are defined as follows:

LOG(Y): Logarithm of total expenditure

LOG(TG): Logarithm of total income

LOG(U): Distance

MED: Marital status (0: Single -1: Married)

Log(Hane): Logarithm of the number of households

Kurum: 0: Working at state high school -1: Working at private high school

C: Constant

Model 1: Adana Total Income with Distance

Log(Y) = 3,8466+0,5457 Log(TG) +(-0,0234) Log(U)+ 0,2167 MED +0,1243 Log(HANE)+ 0,1688 KURUM
(0,0000) (0,0000) (0,0712) (0,0081) (0,0358) (0,0010)

R^2 = 0,501339 F Değeri = 91,68984
(0,0000)

Model 2: Adana Total Income without Distance

Log(T) = 2,7644+0,3520 Log(TG)+ 0,2139 hSD +0,1318 Log(HANE)+ 0,1653 EUR/hf
(0,0000) (0,0000) (0,0134) (0,0261) (0,0007)

R^2 = 0,497764 F Değeri = 113,2327
(0,0000)

Model 3: Adana Salary with Distance

Log(T) = 2,1885+0,6404Log(h) +(-0,0340) Log(U)+ 0,1521hSD +0,1403Log(HANE)+ 0,1094 EUR/hf
(0,0000) (0,0000) (0,0608) (0,0777) (0,0165) (0,0257)

R^2 = 0,515118 F Value = 96,88700
(0,0000)

Model 4: Adana Salary without Distance

Log(T) = 2,1885+0,6404 Log(h)+ 0,1521 hSD +0,1403 Log(HANE)+ 0,1094 EUR/hf
(0,0000) (0,0000) (0,0777) (0,0165) (0,0257)

R^2 = 0,515118 F Value = 96,88700
(0,0000)

Model 5: Mersin Total Income with Distance

Log(T) = 2,2689+0,6434 Log(TG) +(-0,0138) Log(U)+ 0,1303 hSD +0,1492 Log(HANE)+ 0,1094 EUR/hf
(0,0000) (0,0000) (0,0021) (0,0087) (0,0000) (0,0000)

R^2 = 0,615924 F Value = 238,1358
(0,0000)

Model 6: Mersin Total Income without Distance

Log(T) = 2,1607+0,6519 Log(TG)+ 0,1313 hSD +0,1421 Log(HANE)+ 0,1161 EUR/hf
(0,0000) (0,0000) (0,0086) (0,0001) (0,0000)

R^2 = 0,611003 F Value = 292,7150
(0,0000)

Model 7: Mersin Salary with Distance

Log(T) = 1,8991+0,7082 Log(h) +(-0,0174) Log(U)+ 0,0965hSD +0,1318 Log(HANE)+ 0,0968 EUR/hf
(0,0000) (0,0000) (0,0005) (0,0481) (0,0002) (0,0000)

R^2 = 0,633464 F Value = 258,3656
(0,0000)

Model 8: Mersin Salary without Distance

Log(T) = 1,7418+0,7138 Log(h)+ 0,0981 hSD +0,1252 Log(HANE)+ 0,1042 EUR/hf
(0,0000) (0,0000) (0,0461) (0,0005) (0,0000)

R^2 = 0,627488 F Value = 315,0421
(0,0000)

Moreover, in the scope of all of the models above, which were constructed considering both total income and salary with a view to testing relative income hypothesis in a more reliable fashion, the models with distance produce significant estimation results. To conclude, it is inferred from all these models that distance to the city center acts as a factor putting down the household expenditures of teachers.

5. Conclusion and Policy Implications

Inadequate teacher salaries cause many of above-stated required expenditures not to be increased sufficiently, which in turn restrain teachers from creating self-development possibilities. Being clearly lower than all of OECD countries, salaries do not make any significant progress in advancing years even though level of experience increases.

Working at public schools has a significant and positive impact on teachers' income as compared to working at private schools, whereas no statistically significant impact has been identified for the relationship between income and expenditures of the teachers working at the city center vs. in the county. Number of children and experience, even if just a drop, have a positive impact on expenditures. Teachers who have high salaries gain more from side jobs and side jobs are directly proportionate to experience. As the year of experience rises, gains from side jobs increase as well.

It is clearly seen that the distance acts as an important variable in income-consumption models for teachers. Both Keynesian and wealth-based income-consumption models estimated a negative impact of distance to the city center. On the other hand, it has been estimated under relative income hypothesis that distance to the city center has almost no impact on total expenditure, particularly in very high-income group. This particularly implies that as income decreases distance to the city center would put a greater impact on consumption expenditure.

References

ÇAKMAK Ö. (2008) "Eğitimin Ekonomiye ve Kalkınmaya Etkisi" Dicle Üniversitesi Ziya Gökalp Eğitim Fakültesi Dergisi, 33-41

ÇELİKTEN M., ŞANAL M., YENİ Y. (2005) "Öğretmenlik Mesleği ve Özellikleri" Erciyes Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 207-237

DURA C. (1996) "Eğitim ve Ekonomi İlişkileri", Erciyes Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 19-47

GÜMÜŞ E., ŞİŞMAN M. (2012) "Eğitim Ekonomisi ve Planlaması" Pegem A Yayıncılık

GÜZEL H. (2011) "Investigation of Demographic Properties and Motivation Factors of Physics Teachers" Educational Sciences Theory & Practice 1046-1053

KUMAR K., HOLLA J., GUHA P. (2008) "Engel Curve Method for Measuring Poverty" Indian Institute of Management

ÖZTÜRK N. (2005) "İktisadi Kalkınmada Eğitim Rolü" Hacettepe Üniversitesi Sosyoekonomi Dergisi, 27-44

TARI R., PEHLİVANOĞLU F.(2007) "Kocaeli İlinde Tüketici Davranışlarının Gelir Harcama Grupları İlişkisi Açısından Analizi (Tüketim Harcamaları Profili)" Kocaeli Üniversitesi Sosyal Bilimler Enstitüsü Dergisi 192-210

TÜRKAY O. (1986) "Mikroiktisat Teorisi" Ankara Üniversitesi Siyasal Bilgiler Fakültesi ve Basın-Yayın Yüksekokulu Basımevi

YAZICI H. (2009) "Öğretmenlik Mesleği, Motivasyon Kaynakları ve Temel Tutumlar: Kuramsal Bir Bakış" Kastamonu Eğitim Dergisi 33-46

www.tuik.gov.tr. 15.09.2013

www.oecd.org, 15.09.2013

DORNBUSCH Rudiger, FISHER Stanley, STARTZ Richard (2004) "Makroiktisat" Gazi Kitabevi. (Çev. Salih AK)

GÜREŞÇİ PEHLİVAN Gülşün, UTKULU Utku (2007) "Türkiye'nin Tüketim Fonksiyonu: Parçalı Hata Düzeltme Modeli Bulguları" Akdeniz İ.İ.B.F. Dergisi Sayı:14 39-65.

KEYNES, John Maynard (2010) "Genel Teori" Kaldedon Yayınevi.

SİVRİ Uğur, ERYÜZLÜ Hakan (2010) "Rasyonel Beklentiler Yaşam Boyu Sürekli Gelir Hipotezinin Testi" İstanbul Üniversitesi İktisat Fakültesi Ekonometri ve İstatistik Dergisi Sayı:11 90-99.