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The Effect of the Period that Turkey is going Through on the Household Expenditures of Burdur Province: Engel Curve Analysis

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Abstract. Consumers need a variety of goods and services in order to maintain their lives. The consumption patterns of consumers can vary depending on the differences in geographical and socio-economic structure, the time period during which the analysis takes place and the specific circumstances that the country is going through. For this reason, the relationship between income and expenditure has been subject to many studies till today. The aim of the study is to investigate the effect of the geographical diversity and the special situation that Turkey is going through on the household consumption patterns of the Burdur province. In this study, income & expenditure relations of twelve expenditure groups and their position in total expenditures and income elasticity of these expenditure groups shall be estimated with the help of Engel functions by using the data obtained from questionnaires implemented on randomly selected 695 households residing in Center County of Burdur Province between the dates January 03, 2017 and February 28, 2017.As a result of the analysis, it has been found that food and non-alcoholic beverages, alcohol and tobacco products, housing expenses, health services, communication and clothing and foot-wear expenditure groups are in the obligatory class of goods; furniture, home appliances and home care services, culture and entertainment, educational expenses, and restaurant and hotel expenses are in luxury goods class. Therefore, it has been reached to conclusion that the period that Turkey is going through does not have any effect on the household income-consumption pattern of Burdur province.
Keywords. The Engel act, Income hypotheses, Income elasticities.
JEL. D11, D12, D31.

1. Introduction

Consumers require many goods and services in order to survive. However, the consumers don't have sufficient opportunities to cater to all demands under budget restrictions. Distribution of restricted incomes among expenditure groups is significant for the customers who have the opportunity of selecting the combination of goods and services that may maximize their utility. The relationship between income and expenditure has been leading many studies so far due to this significance. Scientific researches investigating the relationship between income and consumption date back to the beginning of the 18th century. Key economists such as Hicks, Hill, Keynes, Friedman, and Dusenberry have put forward significant theories that express the relationship between income and consumption. Although there have been numerous quantitative surveys that have historically overlooked the relationship between income and consumption, this relationship has been clearly articulated by Ernest Engel for the first time.

Studies to examine the relationship between income and consumption go back to the quantitative research of Davies (1795) examining the consumption patterns of rich and poor families and to the study of Eden (1797) on poverty, poverty law

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and prosperity. In the fifty-five year period following Davies and Eden, studies have been continued with non-quantitative traditional methods (Stigler, 1954). This ended with consumption and expenditure surveys implemented by Le Play (1855) to workers' families continuing their lives in Europe, and by Davies (1795) and Eden (1797) to England. The study of the German statistician Engel (1857), which examines the effect of population increases on consumption and production, has been a turning point in this regard and pioneered many studies examining the relationship between income and consumption (Timmer, Falcon & Pearson, 1983). Engel divided the families into three socio-economic classes with a questionnaire that he had applied to 153 families living in the Ducpetiaux region of Belgium, and drew attention to this issue by putting forward the Engel's Law in the direction of the data obtained after the analysis. According to Engel's Law, goods are generally classified into three main categories: normal, luxury and low-priced. This classification has been established by considering the changes in the quantity of goods that consumers buy as their incomes increase. As the incomes of the households increase, while the share of their budget for social and cultural activities, which is defined as luxury goods, increases, the share of the budget for food products regarded as compulsory goods decreases, and on the other hand, the clothing and housing expenditures which are regarded as normal goods, are kept constant (Stigler, 1954; Houthakker, 1957; Le Play, 1982). It has been seen that there are many studies examining the relation between income and expenditure in national and international literature. When these studies are examined, it has been seen that in some part of studies, income-consumption relation is made towards specific expenditure items and for private residential areas and some studies on the other hand, are made towards country-wide or by considering urban-rural distinction and moreover, analyses are usually performed by selecting the ones that give the most appropriate result among many functional forms. It is seen in studies conducted both Turkey in general and at provincial level that expenditure flexibilities calculated for different groups of goods have differences. Being different from each other of the functional patterns utilized in the estimation of the Engel curves in the studies emerges as a result of the differences in the geographical and socio-economic structures of the provinces and of the special conditions that the country is going through in the time period during which the analysis takes place. The aim of this study is both to make contribution to the literature due to the absence of a study that directly examines the income structure of the city, and to investigate the effect of special circumstances that the country is going through on the household income-consumption curves under the light of the data obtained through the questionnaire in the urban area of Burdur. The study will be carried out under three main headings: firstly the relation between income and consumption will be mentioned and then the relevant studies in the national and international literature will be discussed. In the following section, the method to be used in the analysis of the income-consumption relation of the city center of Burdur Province and the results obtained in the analysis will be discussed. At the end of the study, an evaluation will be made according to the analysis results obtained.

2. Literature Review

There have been many studies on income-consumption in the literature and contribution has been provided to the literature. When the literature is examined, it has been seen that the first study on the subject was the one that Ogburn (1916) conducted on the household living in Colombia District of the USA and earning over 2000 dollars. According to the analysis results obtained in the study, the results supporting the law 2 and 3 of the Engel's Law could not be reached. In his study of Houthakker (1952) involving 2200 households from 1937 to 1939 for the United Kingdom; he found that the flexibility values for food, health, alcoholic beverages and tobacco expenses were lower than one. Whereas in Stigler (1954) 's study, the expenditure flexibility values for food, health, alcoholic beverages and

tobacco expenditures were found to be lower than one, and the expenditure flexibility values for clothing, furniture, education and entertainment expenditures were found to be greater than one. In the study of Hauthakker (1957), the validity of the Engel's Law was examined in international level and it was concluded that consumption patterns among the examined countries had differentiated. As a result of the study; it was determined that the flexibility of expenditure for food products was between 0.43 and 0.73, expenditure flexibility for clothing was between 1.04 and 1.78 and the flexibility for housing expenditure of the countries within the scope of analysis, excluding France and Canada, was between 0.48 and 0.91. Crawford *et al.,* (2003) examined the income expenditure patterns of married couples living in the Czech Republic against the assets that he categorized into 8 groups using the 1991 and 1992 budget survey data. As a result of the analysis made, it was seen that while the grain, vegetables and fruit were in the group of compulsory goods, tobacco was found in the luxury goods group. This result has been associated with countries' consumption habits.

When the national literature is examined, Karahasanoglu (1974) reached to a conclusion as a result of the questionnaire which he had conducted on the students continuing to their education in Eskişehir that 39% of the students' total expenditure was for food expenditures. Tansel (1986a) selected the most suitable functional form out of twelve forms for each spending group out of the seven spending groups using data of the State Institute of Statistics (DIE) from 494 households with different socio-economic levels residing in the province of Ankara in 1967, and it was seen as a result of the estimation made that for all functional forms, expenditure flexibility values for food, alcoholic beverages, and tobacco expenditures group was lower than one, the flexibility values for housing, and clothing expenditure group was approximately equal to one, and the flexibility value for health and other expenditure groups was greater than one. Considering the results of Tansel's (1986b) study on the analysis of the Engel's Curve of Turkey using data from the State Statistics Agency (DIE) of 1978-1979 period, it was found that the flexibility value for food and housing expenditures were lower than one, while the flexibility values for furniture and health expenditures were equal to one, the flexibility values for other expenditure items were greater than one.

Ketkar & Ketkar (1987) estimated the income-consumption relation using US Household Survey data for the period of 1972-73 utilizing the Generalized Least Squares Method and found that demographic variables have a decisive influence on expenditure items.

Kasnakoğlu (1991) calculated the expenditure flexibilities of some food groups for Ankara and Erzurum provinces benefiting from the household income and consumption expenditures questionnaire of 1987 period. As a result of the analysis he made, income flexibility values for expenditure groups, excluding cigarette, were found to be lower than those of expenditure flexibilities. In addition, it was determined that income and expenditure flexibilities of Erzurum province were higher than those of Ankara. In the study conducted by Günlük-Şenesen (1994) with the rural, urban and rural-urban classification using 1987 data of Turkey, it was found that the nine functional forms did not give significant results and the different functional form gave significant results for the expenditure groups except for the housing expenditures. Moreover, in the study, it was shown that food expenditures fall into the compulsory goods group, health, restaurant, personal care fall into the normal goods group, furniture, home services, transportation and communication expenses fall into the luxury goods group.

Chatterjee *et al.,* (1994) analyzed the income-expenditure relation for Austria and New Zealand for eight spending groups using 1984 and 1988-89 period data, and for five spending groups using 1984-91 period data and it was found as a result of the prediction made that the demographic properties were effective on consumption.

Using the cross-sectional data of 1964-65, 1974-75 and 1981-82 period, Gergis (1995) analyzed the income-expenditure relation of 11 consumers and 11 food

subgroups of Egyptian consumers by using the Linear Expenditure System, and created Engel curves for these expenditure groups.

If we summarize the other studies addressing the subject as a table (Table-1);

Table 1. *Other Studies Conducted Related to the Subject*

AUTHOR	METHOD	CONCLUSION
Bewley (1982)	The income-expenditure relationship for Austria was examined using household budget data of 1975-76.	As a result of the analysis, it was emphasized that the Engel's law is valid.
Giles & Hampton (1985)	For eight goods group, the income-consumption relationship for New Zealand household was examined.	It was found that the flexibility value of the food expenditure group is lower than one; the flexibility value of transportation, alcoholic beverages is equal to one, whereas the flexibility value of the other goods group is greater than one.
Özer (1992)	The income-consumption relation of the households of Erzurum province was analyzed using the horizontal cross-sectional data of 1991.	It was determined that the Engel's Law applies to Erzurum province and that climate is one of the main factors affecting consumption.
Nişancı (2003)	The income-consumption relation of 1994 was analyzed with Working-Leser Model by using data of Turkey.	It was found that food and housing fall into compulsory goods group, and transportation falls into luxury goods group.
Sarımeşeli (1999)	Using household income consumption survey data of 1987, and analysis was performed for rural and urban areas by the Ordinary Least Squares Method.	Consumption trends for 38 sub-expenditure items were calculated.
Betti (2000)	For 1985-1994 period, he analyzed the income-consumption relation of the household of Italy for seven spending groups.	It was determined as a result of the analysis conducted by non-parametric regression method that the Engel Curves of the groups of food, entertainment and other goods and services, had a linear form.
Ahçıhoca & Ertek (2000)	In Northern Cyprus, the income-consumption relation was examined using a horizontal cross-sectional data set of 300 households.	It was found that the flexibilities for food, rent, electricity, water, gas, transportation and communication expenditures is small, and expenditures on furniture, health, culture, entertainment and other goods are flexible.
Selim (2000)	Income-expenditure trends for the seven goods groups of households in Turkey were calculated using double logarithmic patterns for 1987 and 1994.	It was found that the expenditure flexibilities for the group of transportation, communication, restaurants and other goods and services rise significantly, and while clothing and shoes fell into the group of luxury goods in 1987, when they fell into the group of compulsory in 1987.
Tarı, Çalışkan & Bayraktar (2006)	Linear, semi-logarithmic, full logarithmic and Working-Leser patterns were analyzed using questionnaire data of 2004 that had been applied to Kocaeli University students.	It was reached to a conclusion that housing expenditures were in the compulsory good for all students, communication-transportation and education expenses were in normal goods group.
Tarı & Pehlivanoğlu (2007)	The income-consumption relation for the households of Kocaeli province was analyzed by the horizontal cross-sectional data.	It was found that while food, non-alcoholic beverages, housing, water, electricity, gas and other fuels fall into the compulsory goods group, other goods groups fall into the luxury expenditure group.
TUBITAK (2009)	The income and expenditure trends of 36 state and private university students for the 2007-2008 period were examined using questionnaire data.	It was found that especially the demographic characteristics of the students, the faculty where the students were enrolled, the class level, the place where the student lived, the place where his family lived and whether the students were enrolled in day or night learning, were effective on the income consumption trends of the students.
Özer, Akan & Çalmaşur (2010)	The income-consumption trends of the students were examined by using the horizontal cross-sectional data of Atatürk University students.	It was determined that the groups of food, clothing, footwear and housing expenditure fall in the group of compulsory goods; transportation, communication, personal care, education and teaching, entertainment, socio-cultural, alcoholic beverages, cigarette and tobacco products and other expenditures fall into the group of compulsory goods but they had very close values to unit flexibility. Games of chance expenditures were classified as luxury goods.
Altunç, Aydın & Yıldırım (2016)	The income-expenditure trend for 12 spending groups of households of Muş province central district was examined.	It was found that the flexibility coefficient for the groups of food, clothing, housing, water, electricity, gas and other fuels as well as health expenditure groups, was lower than one, and the flexibility coefficient for other goods group was higher than one.

3. Data Set and Method Used

In the study where the validity of the income-consumption hypothesis was analyzed, survey data obtained by face-to-face interview technique between January 02-February 28, 2017, were used to examine the consumption expenditures of households residing in the Burdur city center during the last one-year period. The sample size to represent the main mass of the study, was determined to be

approximately 382 using a layered sampling method with a 5% significance level and 5% margin of error. Based on the fact that the power of representation is high and some of the questionnaires may be inconsistent or incomplete, 721 households were surveyed, but 641 questionnaires were taken into consideration. In data analysis, SPSS 24 and Eviews 9.0 package programs were used.

Based on the household consumption expenditure survey data, it was first analyzed whether the demographic information had any influence on consumption behaviors and then the shares of 12 expenditures (food and non-alcoholic beverages, alcoholic beverages, housing, education, health, transportation, communication, clothing, culture-entertainment, restaurant, food services, and hotels, various goods and services) groups established according to the COICOP (Classification of Individual Consumption According to Purpose) classification, in total expenditure amounts was tried to be determined.

In estimating the relationship between income and consumption that was put forward by E. Engel many functional forms were proposed till recently, and they have been used in estimating curves. The ones commonly used out of these functional forms are summarized in Table-2 below.

Table 2. *Mathematical Functions*

Function Name	Function Pattern	Flexibility
1. Linear	$Y=b_0+b_1X$	$e=b_1(X/Y)$
2. Semi logarithmic	$lnY=b_0+b_1X$	$e=b_1X$
3. Semi logarithmic	$Y=b_0+b_1lnX$	$e=b_1(1/Y)$
4. Double logarithmic	$lnY= b_0+b_1lnX$	$e=b_1$
5. Inverse function	$Y=b_0-b_1(1/X)$	$e=b_1(1/X.Y)$
6. Log-inverted	$lnY=b_0-b_1(1/X)$	$e=b_1(1/X)$
7. Working-Leser	$Y/X= b_0+b_1lnX$	$e=1+b_1(X/Y)$
8. Linear to ratio	$Y/X= b_0+b_1X$	$e=1+b_1X(X/Y)$
9. Inverse to ratio	$Y/X= b_0-b_1(1/X)$	$e= b_0X(X/Y)$

Note: In the function patterns presented in the table; Y refers to the consumption, X refers to the income variable, b_0 and b_1 the coefficients refer to income flexibility.

Engel curves were developed from linear and nonlinear utility functions developed by consumer theory. Consumer theory has brought some conditions to the Engel curves such as sociality, non-negativity and saturation. Non-negative condition, if it is going to be worked with the group data of the goods, is taking non-negative value for the income flexibility of the group goods. Saturation condition means that consumers with a high income group will reach the saturation level of that commodity after a certain level of income (Tansel, 1986a).

While in some of the studies addressing Turkey or analyzing the income-consumption relation at the provincial or regional level, all of the functional forms in Table 2 were used, a single functional form was used in some part It is important to use the appropriate functional forms of the Engel curves in the correct estimation of income flexibilities.

4. Prediction and Findings

In this study where the validity of the Engel's law was analyzed, the demographic characteristics of the consumers representing the sample set were first discussed (Table-3).

Table 3. *Distribution of Household Head Participating to the Survey by Demographic Characteristics*

Demographic Characteristics		Qty	Ratio (Percent)
In terms of Gender	Female	363	56,63
	Male	278	43,37
In terms of Age	0-30 years old	111	17,32
	30-45 years old	243	37,91
	45-60 years old	225	35,10
	Age of 65 and above	62	9,67
Education Level	Not literate	41	6,40
	Primary education (primary-middle)	249	38,85
	High School	173	26,99
	College/university	156	24,34
	Graduate	22	3,43
Marital Status	Married	521	81,28
	Single	120	18,72
Occupation	Employee	97	15,13
	Worker	60	9,36
	Tradesman and Craftsman	118	18,41
	Self-employed	143	22,31
	Farmer	26	4,06
	Retired	35	5,46
	Housewife	63	9,83
	Unemployed	83	12,95
	Other	16	2,50
House where he resides	Belongs to himself or his relatives	395	61,62
	Rental	239	37,29
	Lodgement	7	1,09
In terms of the household size	1	46	7,18
	2	224	34,95
	3	306	47,74
	4	60	9,36
	5	4	0,62
	6 and above	1	0,16
In terms of number of persons working in household	1	497	77,54
	2	22	15,44
	3	99	3,43
	4	19	2,96
	5	4	0,62
For how many years it has been worked	less than 1 year	17	2,65
	1-5 years	88	13,73
	6-10 years	121	18,88
	11-15 years	136	21,22
	16-20 years	149	23,24
	21 years and above	130	20,29
In terms of automobile ownership	Yes	347	54,13
	No	294	45,87

According to Table 3, 56.63% of the consumers who participated in the survey, namely 363 persons are female, remaining 43.37% (278 persons) are male. According to the survey results; 17.32% of the consumers are in the age group of 18-30, 37.91% are in the age group of 31-45, 35.10% are in the age group of 46-65, and 9.67% are in the age group of 65 and above. In addition, in terms of the education level, 6.40% (41 persons) of the household heads participated in the survey are not literate, 38.85% , namely 249 persons are primary school graduate, 26.99%, (173 persons) are high school graduate, 24.34% (156 persons) have college / university degree, and 3.43% (22 persons) have graduate degree. In terms of marital status, on the other hand, 81.28% (521 persons) of the household head are married and 18.72% (120 persons) are single.

Household head are categorized into eight categories in terms of their occupation: employee, worker, tradesmen /craftsman, self-employed, farmer,

retired, housewife, unemployed and others. 37.21% of the household income comes from salary and wage, 13.17% is real estate income, 24.85% comes from commercial income, 5.62% comes from agricultural income, 17.91% comes from self-employment income and 1.24% comes from aid provided by governorship, municipality, institutions and organizations.

61.62% (395 people) of the household heads live in houses that belong to either themselves or their relatives, 37.29% (239 people) live in rent and 1.09% (7 people) live in the lodgment. In terms of household size, 7.18% is composed of one person, 34.95% is composed of two persons, 47.74% is composed of three persons, 9.36% is composed of four persons, 0.62% is composed of five persons and% 0.16 is composed of six and over. The average size of households participating in the survey is 2,16 persons. When we look at the number of people working per house, 77.54% have one person, 15.44% have two people, 3.43% have three people, 2.96% have four people and 0.62% have five people, and if we look at the working times of the employees; 2.65% (17 persons) have been working for one year, 13.73% have been working for 1-5 years, 18.88% have been working for 6-10 years, 21.22% have been working for 11-15 years, 23.24% have been working for 16-20 years and 20.29% have been working for 21 years and above. In addition, while 54.13% (347 persons) of the household heads who participated in the survey had their own car, 45.87% had no own vehicle.

In this study investigating the validity of the Engel's Law, the analysis was carried out by selecting the most appropriate functional form out of nine functional forms for each spending group. The functions used in the study of Bewley (1982), Giles & Hampton (1985) and Tansel (1986b) were effective in the selection of these functional forms. In all estimated models, household size (Z) was included into the model as another independent variable by considering that the size differences between the households would affect the expenditure patterns and sizes (Houthakker, 1957). In the evaluation of the prediction results, the parameters of the Working-Leser model, which has a relatively higher predictive power, are taken into consideration and the obtained results are given in Table-4.

Table 4. *Parameter Predictions of the Working-Leser Model*

Types of Expenditure	Working-Leser Function
Food and Non-Alcoholic Beverages (H1)	$H_1 = 1{,}236 - 0{,}106lnM + 0{,}025lnZ$ $(18{,}379)(3{,}0244)(16{,}078)$ $R^2 = 0{,}28 \quad dw = 1{,}72$
Alcoholic Beverages, Cigaratte and Tobacco (H2)	$H_2 = 0{,}296 - 0{,}023lnM - 0{,}0035lnZ$ $(5{,}0542)(-3{,}9909)(-0{,}4532)^{**}$ $R^2 = 0{,}27 \quad dw = 1{,}67$
Housing and Rent (H3)	$H_3 = 1{,}1019 - 0{,}0875lnM - 0{,}0365lnZ$ $(11{,}9704)(-9{,}6667)(-3{,}1907)$ $R^2 = 0{,}25 \quad dw = 1{,}74$
Furniture, Houses Appliances and Home Care Services (H4)	$H_4 = 0{,}0676 - 0{,}0046lnM - 0{,}0055lnZ$ $(2{,}5906)(-1{,}7908)^{*}(-1{,}6935)^{*}$ $R^2 = 0{,}26 \quad dw = 1{,}72$
Health (H5)	$H_5 = 0{,}3060 - 0{,}0264lnM - 0{,}7075lnZ$ $(9{,}1573)(-8{,}0460)(-2{,}7635)$ $R^2 = 0{,}28 \quad dw = 1{,}68$
Transportation (H6)	$H_6 = 0{,}116 - (8{,}24E-07)lnM - 0{,}7075lnZ$ $(9{,}1573)(-8{,}0460)(-2{,}7635)$ $R^2 = 0{,}28 \quad dw = 1{,}68$
Communication (H7)	$H_7 = 0{,}1933 - 0{,}0162lnM - 0{,}0059lnZ$ $(9{,}0672)(-7{,}7024)(3{,}9198)$ $R^2 = 0{,}29 \quad dw = 1{,}74$
Entertainment and Culture (H8)	$H_8 = -0{,}0290 + 0{,}0034lnM - 0{,}0017lnZ$ $(1{,}8193) \quad (2{,}1978) \quad (3{,}2765)$ $R^2 = 0{,}29 \quad dw = 1{,}71$
Educational Services (H9)	$H_9 = 0{,}0217 + 0{,}0011lnM + 0{,}0251lnZ$ $(5{,}7885) \quad (6{,}298) \quad (3{,}4655)$ $R^2 = 0{,}24 \quad dw = 1{,}83$
Clothing and Footwear (H10)	$H_{10} = 0{,}1803 - 0{,}0072lnM - 0{,}0027lnZ$ $(3{,}6862)(-2{,}4800)(1{,}8198)$ $R^2 = 0{,}14 \quad dw = 1{,}69$

Restaurant and Hotels (H11)	$H_{11} = 0{,}0246 + 0{,}0040lnM - 0{,}0019lnZ$ $(12{,}096)(13{,}2014)(1{,}6392)^{**}$ $R^2 = 0{,}21 \quad dw = 1{,}86$
Various Good and Services (H12)	$H_{12} = 0{,}0183 + 0{,}0011lnM - 0{,}0051lnZ$ $(10{,}144)(11{,}354)(-2{,}816)$ $R^2 = 0{,}21 \quad dw = 1{,}86$

Note: H in the functional form refers to relevant expenditure item; M refers to the household income level and Z refers to the household size. * Statistically significant at 10% significance level. ** Statistically insignificant at 1%, 5% and 10% significance levels.

When Table-4 is examined, it is seen that the parameters of other expenditure items excluding parameter values of household size function for alcoholic beverages and tobacco products and restaurant and hotel expenditures, are statistically significant according to the Engel curves calculated by Working-Leser functional form. Therefore, expenditure flexibility values and household size flexibility values are calculated for statistically significant expenditure items and the flexibility values obtained are presented in Table-5.

Table 5. *Total Expenditure and Household Size Flexibilities of Burdur Province*

Expenditure Groups	Expenditure Flexibility	Household Size Flexibility
Food and Non-alcoholic Beverages	0,18	0,49
Alcoholic Beverages and Tobacco Products	0,56	0,29*
Housing expenses	0,45	-0,24
Furniture, Home Appliances and Home Care Services	2,04	-0,71
Health Services	0,72	-0,12
Transportation	0,99	0,18
Communication	0,49	0,10
Culture and Entertainment	1,24	0,44
Education Expenditures	1,03	0,35
Clothing and Foot-wear Expenditures	0,80	0,23
Restaurant and Hotel Expenditures	1,24	-0,39*
Various Goods and Services	1,07	-0,59

Note: * Statistically insignificant at of 1%, 5% and 10% significance levels.

When Table-5 is examined, it is seen that the total expenditure coefficients achieved by the analysis conducted for twelve expenditure groups are statistically significant at 5% significance level. When the expenditure flexibility values are examined; it is seen that although food and non-alcoholic beverages, alcoholic beverages and tobacco products, housing expenses, health services, transportation, communication and clothing and footwear expenditures take values between 0 and 1, health services and especially transportation, clothing and footwear expenditures give results that are very close to one Hence, it can be concluded that these expenditure items fall into the group of compulsory goods for the household of Burdur province. Furniture, home appliances and home care products, culture and entertainment, education expenditures and restaurant and hotel expenditure group flexibility values are greater than one, and these expenditure items are classified as luxury goods category for the province

According to survey data of Burdur province, household size flexibility values are statistically significant at 5% significance level except restaurant and hotel expenditures and alcoholic beverages and tobacco products. According to the household size flexibility values, food and non-alcoholic beverages, culture and entertainment, education expenditures and clothing and footwear expenditures react most for the change in the number of households. Furniture, home appliances and home care services, miscellaneous goods and services as well as culture and entertainment expenditures give the least reaction. This situation is because of the difference of compulsory and luxury consumption goods. In addition, negative values in household size flexibility values indicate that expenditure items are influenced negatively from household size, whereas positive values indicate that expenditure items are positively affected by household size.

5. Conclusion

The income-expenditure relation of households residing in the city center of Burdur has been examined by Engel curves. In the study where the Working-Leser functional form was used, flexibility values of food and non-alcoholic beverages, alcohol and tobacco products, housing expenses, health services, communication and clothing and footwear expenditures have a value between zero and one, referring that these expenditure groups fall into the compulsory category of goods. Furniture, home appliances and home care services, culture and entertainment, educational expenditures, restaurants and hotel expenditures are classified as luxury goods. According to this study, which is consistent with the Engel's Law, it is seen that as the income of the households increases, the demand for compulsory goods decreases, the demand for luxury goods increases, whereas the demand for normal goods remains the same. Although this study shows some dissimilarities in terms of the data set used, it shows compatibility with many studies that examine Turkey in general or in the provincial level in terms of the result obtained. For example, results that are similar to studies of Tansel (1984), Kasnakoğlu (1991) and Şenesen & Selim (1995) were obtained. Unlike other studies, restaurant and hotel expenditures were included in the luxury goods group in this study. The greatest factor in this situation is the fact that a large majority of women work as family workers or are housewives who do not take an active role in working life. It has been thought that the reason why transportation expenditures, which are luxurious consumption goods in other studies, take values close to unit flexibility is due to the fact that the surface area of the province is small and the transportation fees are lower compared to those of the nearby provinces, and the ones at the same development level. Moreover, according to the study results, it can be seen that when the period that Turkey is going through is taken into the consideration, Burdur province household expenditure pattern is not influenced by this period positively/negatively.

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