**The Effect of The Period That Turkey is Going Through on The Household Expenditures of Burdur Province: Engel Curve Analysis**

**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 and 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 and 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 ve 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 ve 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 ve 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 ve 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.  |

**TABLE 2.** *Mathematical Functions*

|  |  |  |
| --- | --- | --- |
| Function Name | Function Pattern | Flexibility |
| 1. Linear | Y=b0+b1X | e=b1(X/Y) |
| 2. Semi logarithmic | lnY=b0+b1X | e=b1X |
| 3. Semi logarithmic | Y=b0+b1lnX | e=b1 (1/Y) |
| 4. Double logarithmic | lnY= b0+b1lnX | e=b1 |
| 5. Inverse function | Y=b0-b1(1/X) | e=b1 (1/X.Y) |
| 6. Log-inverted | lnY=b0-b1(1/X) | e=b1 (1/X) |
| 7. Working-Leser | Y/X= b0+b1lnX | e=1+b1 (X/Y) |
| 8. Linear to ratio | Y/X= b0+b1X | e=1+b1 X(X/Y) |
| 9. Inverse to ratio | Y/X= b0-b1 (1/X) | e= b0 X(X/Y) |

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

**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 |

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

|  |  |
| --- | --- |
| Types of Expenditure | Working-Leser Function  |
| Food and Non-Alcoholic Beverages (H1) |  |
|  Alcoholic Beverages, Cigaratte and Tobacco (H2) |  |
| Housing and Rent (H3) |  |
| Furniture, Houses Appliances and Home Care Services (H4) |  |
| Health (H5) |  |
| Transportation (H6) |  |
| Communication (H7) |  |
| Entertainment and Culture (H8) |  |
| Educational Services (H9) | (5,7885) (6,298) (3,4655) |
| Clothing and Footwear (H10) |  |
| Restaurant and Hotels (H11) |   |
| Various Good and Services (H12) |   |

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.

**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.