Determination of Socioeconomic and Demographic Factors Affecting Household Health Care Spending: The Case of Turkey

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Abstract

Healthcare spending is a critical problem for any state that seeks to ensure that its citizens have equal access to essential health services. How do socioeconomic and demographic factors affect health spending in Turkey? The motivation for the study is to find an answer to this question. The aim of the study is to evaluate the determinants of healthcare spending of households, which constitute one of the most essential unions that make up society within a socioeconomic and demographic framework. In this regard, the Tobit model was utilized in the study using official institution data. As a result of the study, it has been determined that socioeconomic and demographic factors have an impact on healthcare spending. It is expected that the results of the study will be beneficial to policy makers, decision makers and those who make research about the factors that will ensure equality in health.

Keywords: Household Healthcare Spending, Health Economics, Micro econometrics, Censored Regression Model, Tobit Model

JEL Code: I12, I18, D12, C34

1. Introduction

One of the most important challenges facing societies is health problems. Being able to speak positively for human life and therefore for the future of society is only possible by being healthy and living in humane conditions. The concept of health can be considered as a human right, a political demand, a development investment or an expenditure (Maharaj, 2010). Health is one of the most important

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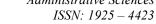
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factors that has an impact on individuals' satisfaction with life (Çebi Karaaslan, Çalmaşur & Emre Aysin, 2020). The World Health Organization (WHO) defines health as a state of complete physical, mental, and social well-being, not just the absence of disease or infirmity. Therefore, being healthy entails more than the absence of disease. In this regard, besides living a long life, a quality life is also a matter of being healthy (Şahin, Toprak & Ünal, 2012).

Individual health is directly affected by equality of access to health services, supply of health services, and financing of health services by the state or individuals. Availability and equitable access to health services have compelled healthcare providers to formulate policies and find solutions since the end of the Second World War. Before this period, health was considered as a marketable commodity that could be purchased and sold. There was no equality in health-care access back then (Maharaj, 2010). There is no agreement on who should offer medical care. Some people believe that healthcare is a universal right and that it should be fully funded by the government. The public should allocate resources consciously, according to this theory. Some argue that healthcare should be left exclusively to the private sector, and that healthcare should be provided in markets with competitive circumstances. In such a case, the price mechanism determines how the market's commodities and services will be distributed among the individuals in the society. On the one hand, health is regarded as a right guaranteed by the state to all individuals without distinction; on the other hand, it is regarded as a commodity obtained solely via the interaction of supply and demand, with a government guarantee for the poor (Feo, 2008). Health services are offered by both the public and private sectors in Turkey. According to the Health Services Fundamental Law, health services in Turkey are planned, coordinated, and financially supported by various health institutions and organizations by the Ministry of Health and Social Welfare, taking into account the opinions of other relevant ministries, in a way that will provide equal, quality, and efficient service throughout the country. The Ministry of Health oversees all activity and processes connected to the provision of health services (T.R. Presidency Legislation Information System, 2021). Similarly, in Turkey, the "Health Transformation Program" went into force in 2003, and it was based on an ethical approach that aimed to provide everyone with equal access to high-quality healthcare (Başol & Işık, 2015).

The healthcare industry is mostly non-profit. However, this does not imply that it is not important in the economy (Barrett, Balloun & Weinstein, 2005). The share of health services in gross domestic product (GDP) is increasing day by day. For a sustainable improvement, determining the place of health services in the economic system, conformity with market operating standards, and attempts to improve the quality of health services are all necessary (Sayım, 2011). Health expenditures in Turkey have an important place among the expenditure items of both the state and the household. Indicators regarding health expenditures for Turkey are given in Table 1.

While total health expenditure in Turkey constituted 4.7% of the gross domestic product in 2019, according to the last published bulletin, total health

expenditure in 2021 constituted 4.9% of the gross domestic product. Considering the situation in terms of households, treatment, medicine, etc. The ratio of out-of-pocket health expenditure to total health expenditure was 16.7% in 2019, and this figure was determined to be 15.9% for 2021, which is the latest updated information (TurkStat, 2021).

Table1.
Indicators on health expenditures 2012-2021.

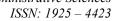|	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total health expenditure (Million TL)										
	74 189	84 390	94 750	104 568	119 756	140 647	165 234	201 031	249 932	353 941
Health expenditure per capita (TL)										
	987	1 108	1 228	1 337	1 511	1 751	2 030	2 434	2 997	4 206
Ratio of total health expenditure to gross domestic product (%)										
	4,7	4,6	4,6	4,4	4,6	4,5	4,4	4,7	5,0	4,9
Ratio of general government health expenditure to total health expenditure (%)										
	79,2	78,5	77,4	78,5	78,5	78,0	77,5	78,0	79,2	79,2
Ratio of private sector health expenditure to total health expenditure (%)										
	20,8	21,5	22,6	21,5	21,5	22,0	22,5	22,0	20,8	20,8

TurkStat, Health Expenditure Statistics

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The relationship between health and economy is actually more related to sustainable development (Çelik, 2011). Development is a broad concept that is quite different from economic growth. Economic development can be achieved with developments in factors such as population, technology, foreign trade, agriculture, finance and human capital (Özyakışır, 2011). According to Grossman, who sees health as a product of human capital, human is considered as an investment tool. Therefore, health spending is critical for development (Şaşmaz et al., 2019). Since health is one of the main components of human capital (Railaitė & Čiutienė, 2020), improving health is one of the most important factors that can improve the quality of human capital and contribute to its development (Giray & Çimen, 2018). Since 1963, 5-year development plans have been implemented with the establishment of the State Planning Organization (1960) in Turkey, and various health-related goals have been determined in these programs. In 1963, articles addressing issues such as the insufficient number of personnel, the density of communicable diseases, the low share of health services, the limited number of hospital beds, and the continuation of the socialization law program of health services (Dikmetaş Yardan & Wilda Kiremit, 2016) came to the fore. Today, concepts such as modern management

practices, evidence and data-based medicine, rational drug use, the fight against obesity, innovative medical education, how to improve the quality of healthcare, the quality of life of employees, accreditation of health service units, the creation of a health database in line with international standards (Dikmetaş Yardan & Yabana Kiremit, 2016), and other concepts that include quality in life come to the fore.

Socioeconomic factors closely affect the overall health status of individuals (Karadağ Çaman & Çilingiroğlu, 2009). According to Niessen et al. (2018), low socioeconomic status impairs the health of the individual, especially by causing chronic diseases. The cost of diseases has a negative impact on people's income. In the literature, macroeconomic parameters related to the health system were commonly used in research studying the determinants of health expenditures. Studies examining health expenditures with macroeconomic variables explain the determinants of public health expenditures by using variables (Abbas & Hiemenz, 2011; Khan, Razali & Shafie, 2016; Tosun, 2018; Yar, Doğan Çulha & Atilla, 2019; Wang, 2009) such as total population, number of hospitals, number of hospital beds, social security institution expenditures, unemployment rate, unregistered employment rate, GDP, death rates and urbanization rate.

According to the World Health Organization, the social determinants of health are the circumstances in which people are born, grow up, live, work, and age. People's chances of being healthy, their risk of disease, and their life expectancy are all determined by these factors. The unequal distribution of social determinants contributes to health inequalities (WHO, 2021). According to Şener, Aslan and Yiğit (2019), the increase in healthcare spending has a positive effect on the level of health. In this regard, policies on how much money will be allocated to the sector and how it would be distributed are required. Mukherjee, Haddad, and Narayana (2011) investigated the relationship between caste hierarchy and healthcare spending in India, which is very sharply stratified socioeconomically. According to their findings, per capita healthcare spending was found to be appropriate for the status in the caste hierarchy. Households with high health demands are at a disadvantage since they are more likely to spend more money on healthcare. Ilinca et al. (2019) conducted another study examining inequality in healthcare use from a socioeconomic perspective. In this study, inequalities in all kinds of care services that support richer population groups, especially preventive healthcare and inpatient care services, are examined. While the findings explained the inequality in benefiting from health services with differences in living conditions and educational achievement, the region of residence differed only in the use of preventive care services. According to Varoğlu (2020), individuals with low social and economic life levels cannot benefit sufficiently from healthcare services. On the other hand, individuals who choose to benefit sufficiently from healthcare services become impoverished. According to Soucat et al. (1997), lower socioeconomic groups use health facilities more than higher socioeconomic groups. Parker and Wong (1997) determined that household healthcare spending is sensitive to changes in income levels, with low-income uninsured groups responding the most to changes in income levels. In their study, Hotchkiss, Rous, Karmacharya, and Sangraula (1998) concluded that income, housing, and sanitary conditions influence healthcare expenses, and that the average healthcare spending in the city

is much lower than in the country. Households with very low incomes set aside a considerable portion of their resources to cover the costs of medical treatment when a member becomes ill (Van Doorslaer et al., 2005). Chronic diseases have a particularly negative impact on the incomes of individuals who are in poor socioeconomic status (Nielsen et al., 2018). Individuals who cannot afford the costs of treatment may have to leave the treatment at the expense of their health (Van Doorslaer et al., 2005). Because health cannot be substituted (Başol & Işık, 2015). Many studies investigating the relationship between household healthcare spending and income have found that income level is a positive determinant of healthcare spending (Rous & Hotchkiss, 2003; Bhabesh & Himanshu; 2007). When life risk exceeds a particular threshold, healthcare expenses become income-independent and perfect. In their study of household healthcare spending, Molla, Chi and Mondaca (2017) determined that the presence of chronic diseases and family income were the most effective and statistically significant drivers of household healthcare spending. Sekhar (2006), Rout (2008), Olasehinde and Olaniyan (2017), Ahmadi and Taheri (2017) all identified a positive relationship between income and household healthcare spending.

In studies examining the demand for healthcare spending, income elasticity of health demand has also been examined. Income elasticity of demand shows the relationship between income fluctuations and the quantity demanded (Yaylalı, 2003, p. 151). While some studies examining income and healthcare spending suggest that health is a luxury good because income elasticity is greater than 1 (Kleiman, 1974; Parkin, McGuire & Yule, 1987; Rous & Hotchkiss, 2003), studies that find income elasticity less than 1 suggest that health is a necessity (Barros, 1998; Karatzas, 2000; Olasehinde & Olaniyan, 2017).

There are studies in the literature that show that the gender factor is crucial for household healthcare spending and that expenditures vary by gender. According to Irving and Kingdon (2008), gender differences are of great importance in the distribution of household health expenditures, and policies should be established to address this. Owens (2008) claims that women utilize more health services and spend more on healthcare than men. According to the research results of Mbanefoh, Soyibo, and Anyanwu (1997), treatment costs, which are a type of health expenditure, are not the same for men and women and differ significantly. Bora Başaran and Şahin (2008) examined the demographic, economic and health-related variables that determine health expenditures in Turkey and found that women spend more out-of-pocket health expenditures than men. Batra, Gupta, and Mukhopadhyay (2014) investigated the role of gender in care expenditures and treatment-seeking behavior among adults, and the results found that female adults' healthcare expenditures were much lower than male adults. Discrimination based on gender is the explanation behind this. According to Okatan and Işık (2020), healthcare spending does not differ by gender.

Education degree is one of the factors that affect household attitudes toward health (Yumuşak & Yıldırım, 2009). According to Rout (2008) and Ahmadi and Taheri (2017), there is a positive relationship between household education and

healthcare spending. According to Niessen et al. (2018), the increase in education level affects health positively. According to Olasehinde and Olaniyan (2017), individuals with primary and secondary education had much lower health expenses than those without education. The Grossman model is very important in health economics, it relates health to human capital and draws a basic framework. Monheit and Grafova (2018)'s study is based on the Grossman model, evaluated health expenditures as an investment in health, and the results of their study revealed that increased parental education causes higher family health expenditures. Shahraki and Ghaderi (2021) suggest that an increase in the education level of female-headed households leads to a decrease in the healthcare spending of the household. According to Bhabesh, and Himanshu, (2007), education has no significant effect on household healthcare spending. Aregbeshola and Khan (2021) discussed the determinants of out-of-pocket health expenditures and revealed that household heads having primary and secondary education increases the likelihood of out-of-pocket health expenditures.

The incidence and costs of respiratory disorders are rising due to rising smoking rates around the world and in our country (Hacıevliyagil, 2006). According to Arısoy et al. (2012) smokers spend substantially more on healthcare than non-smokers. Therefore, options for financing the higher health-care costs associated with smoking are being investigated. According to Okatan and Işık (2020), healthcare spending of smokers is much higher compared to non-smokers. Alcohol, like cigarettes, is harmful to one's health. As people's health deteriorates, the demand for health services and, as a result, healthcare spending rises (Casswell & Thamarangsi, 2009). In India, Bonu et al. (2005) investigated the impact of tobacco or alcohol usage on hospitalization costs and poverty. Poor people have been shown to be more prone to borrow or sell their assets to finance the costs of alcohol-related hospitalization.

Especially in Turkey, there are almost no studies examining health expenditures from a micro viewpoint and considering many factors. This aspect makes this study very valuable. What are the determinants of such a vital expenditure item for Turkey? The answer sought to this question was the motivation for the study. The aim of the study is to contribute to the literature of Turkey by examining the determinants of healthcare spending from a micro viewpoint and determining the socioeconomic and demographic factors that affect the healthcare spending of the households. In addition, considering the size of the share of the health sector in GDP, it is planned to present various suggestions to policy makers, regulatory and supervisory institutions.

In the study, the method section comes after the introductory section, which also contains a focus on the literature. The data set, dependent and independent variables, and research method are all defined in the method section. The findings on descriptive statistics and statistical analysis results are presented in the third section. The study's findings are presented in the final section, which includes a discussion of the literature and policy recommendations in addition to the study's overall findings.

2. Methodology

2.1. Sample

Household Budget Survey which was conducted by the Turkish Statistical Institute was used in the study.

Sampling frame: The first flow sampling frame for 2016-2019 Household Budget Survey was obtained from National Address Database.

Final sampling unit selection frame: Blocks were selected by the probability proportional to size sampling from the blocks (in urban areas or rural areas who have municipality organizations) and from the villages formed by using the above-mentioned frame for the selection of households. The sample units are systematically selected from each block.

Final sample unit: Household live at the address is defined as the final sampling unit.

Sampling method: Stratified two-stage cluster sampling method is used.

Estimation dimension: The estimation level of 2016-2019 Household Budget Survey is whole Turkey.

Field Application: Household information was compiled by interview, registration and observation methods. Each 13 interviewer recorded the data on consumption expenditures and income of 6 sample households monthly on average as a result of 6 times of visit including 1 visit prior to the survey month, once during the first, the second, the third and fourth weeks and once following the end of the survey month. Prior to the survey month, the information about the socio-economic status of the households is obtained in the first visit to the sample households and how to fill the book of record is explained. During the visits in the survey month, consumption expenditures of the sample household on food, clothing, health, transportation, communication, education, culture, entertainment, housing, furniture etc. are obtained through the books of record and interviewing method. Information about employment status, economic activities, occupations, performance in jobs and income of the household members in the survey month and during the last year was compiled in the last interview at the end of the survey month (Turkish Statistical Institute, [TurkStat], 2021). The study included 47611 household heads living within Turkey's borders.

2.2. Variables

Dependent variable

The dependent variable used in the study is the healthcare spending of the households. These healthcare spending are out-of-pocket healthcare spending. The

dependent variable is not already in the household consumption data set, so it was obtained by the researchers by combining the subgroup health expenditures (pharmaceutical products, pregnancy tests, contraceptive mechanical devices, medical products not classified elsewhere, corrective eyeglasses and contact lenses, hearing aids, repair of therapeutic instruments and equipment, and other therapeutic instruments and equipment, general practitioners, specialist physicians, dental services, medical analysis laboratory and x-rays, spa services, corrective gymnastic treatment, ambulance services, leasing of therapeutic equipment, and other paramedical services, hospital stays)in the data set.

Independent Variable

The independent variables are; gender (male; female), age, education level (did not complete school-primary school; secondary school; high school; university), marital status (single, married), number of people continuing education in the household, number of children (0-12 years old), number of elderly individuals in the house (65 years of age and older), number of employed people in the household, employment status (employed, unemployed), income level (income levels for each year are combined by dividing into quantiles: lowest income level is the first income level; second income level; third income level, highest income level is the fourth income level), household spending value, automobile ownership (yes; no), second home ownership (yes; no), credit card ownership (yes; no), savings (yes; no), having a life insurance (yes; no), smoking status (yes; no), alcohol use (yes; no), and access to health services (easy; moderate; difficult).

2.3. Analysis method

Microsoft Excel was used to prepare the survey data to be used in the study for necessary analysis, and the Stata 17 was used for summary statistics and advanced analysis. The Tobit Model was used to examine the socioeconomic and demographic factors that affect the household healthcare spending, as well as their effect sizes.

James Tobin (1958) established Tobit Model, often known as censored regression models, which are well-known regression models applied to microeconometric problems with censored results (Zhang et al., 2021). Tobit Model allow the data set to be censored from either the right or left side. In the case of a censored dependent variable, least squares estimations are inefficient, hence a Tobit Model based on maximum likelihood estimation is preferable (Schulup & Brunner, 2018; Tobin, 1958). The Tobit Model was used because the dependent variable used in the study was censored. When it comes to research focusing on health, it is possible to find examples of use in the literature (Austin, Escobar & Kopec, 2000; Austin, 2002; Abeldaño, 2017; Gong et al., 2019; Mohammadpour et al., 2020; Lin & Cheng, 2011).

3. Results
3.1. Descriptive statistics

Table 2 shows the summary statistics for the variables included in the study.

Table 2: The summary statistics for the variables that will be included in the model.

Variables	Percentage	Mean	Std. Deviation
Monthly Healthcare Spending (TL)		83.25	301.77
Demographic Indicators			
Gender			
Male	83.42		
Female	16.58		
Age		50.91	14.83
Educational Status			
None-Primary School	32.02		
Middle School	28.59		
High School	14.87		
University	24.51		
Marital Status			
Single	18.52		
Married	81.48		
Number of Individuals Continuing		0.83	1.07
Number of Children in the House		1.08	1.34
Number of Elderly People in the House		0.35	0.64
Socioeconomic Indicators			
Number of Employed People in the House		1.21	0.95
Employment Status			
Employed	65.06		
Unemployed	34.94		
Income Level			
1. Income Level	25.00		
2. Income Level	25.00		
3. Income Level	25.00		
4. Income Level	25.00		
Household Spending Value (TL)		3908.36	3374.38
Vehicle Ownership			
Yes	43.14		
No	56.86		
Second House Ownership			
Yes	8.49		
No	91.51		
Having Credit Cards			
Yes	50.57		
No	49.43		
Having Savings			
Yes	32.29		
No	67.71		
Life Insurance			
Yes	11.68		
No	88.32		
Alcohol Use			
Yes	5.97		
No	94.03		
Smoking			
Yes	52.23		
No	47.77		
Access to Healthcare Services			

Easy	63.74
Moderate	12.04
Difficult	24.21

The average healthcare spending of households between 2016 and 2019 was 83.2 TL. In 83.4% of the households participating in the study, the household head is male. The average age of the household head is 50.9, 24.5% is a university graduate, 81.5% is married, and 65.1% is found to be employed, respectively. The average number of individuals continuing their education in the households is 0.8, the average number of children in the households is 1.1, the average number of elderly people in the households is 0.3, and the average number of employed people in the households is 1.2, respectively. Furthermore, 8.5% of the households have second houses, 43.1% have a car, 32.3% have savings, 11.7% have life insurance, and 50.6% have individuals who use credit cards, 63.7% have easy access to healthcare, 52.2% have individuals who smoke, and finally, 6% have individuals who drink alcohol, respectively.

3.2. Model estimation

The Tobit Model, one of the censored regression methods, was used to determine the demographic and socioeconomic factors affecting the healthcare spending of the households. The emergence of censored regression models is that there is a value of 0 in consumption goods expenditures, that is, there are observations that do not spend at all. In his work with households in 1958, Tobin censored households with zero consumption expenditure (Tobin, 1958). In Tobit models, the dependent variable is usually zero for one part of the population and positive for the other part. In the case of such censored data, Tobit model estimates are theoretically superior to least squares method estimates (Wilson and Tisdell, 2002). The zero value that should be used in the Tobit model is not a random zero, it is a true zero value. It is the value of the dependent variable for economic reasons, and precisely for this reason, the Tobit model was used by censoring from the left, otherwise, the OLS results would be biased and inconsistent.

The independent variables in the model were tested for multicollinearity using variance inflation factors (vif). While the vif between 5 and 10 indicates an average multicollinearity problem, a value smaller than 5 shows no multicollinearity problem (Çebi Karaaslan et al., 2022). It is not multicollinearity if it is smaller than vif 5. The null hypothesis, that the error terms have constant variance, was evaluated with the Breusch-Pagan / Cook-Weisberg test (P<0.0001) for the homoscedasticity test (Breusch and Pagan, 1979). In this way, robust standard errors were utilized because it was determined that there was heteroscedasticity. In Table 3, the estimation results of the Tobit model and the vifs of the independent variables are presented.

The established model is statistically significant at all significance levels. According to the results presented in Table 3, gender, age, education level, marital status, number of people continuing their education in the household, number of children in the household, number of elderly people in the household, number of employed people in the household, income level, household spending value, vehicle

ownership, second house ownership, savings status, life insurance ownership, smoking and access to healthcare have statistically significant effects on household healthcare spending.

Table 3: Estimation results of the tobit model and variance inflation factors of independent variables.

Variables	β	Robust Std. Error	P	Vif
Demographic Indicators				
Gender (reference: male)				
Female	43.620*	9.527	0.000	1.97
Age	7.072*	2.115	0.001	2.63
Education Level (reference: university)				
None-Primary School	-22.977*	6.675	0.001	2.42
Middle School	-1.029	6.556	0.875	2.00
High School	-2.391	7.303	0.743	1.46
Marital Status (reference: married)				
Single	-61.029*	7.925	0.000	1.96
Number of People Continuing Education	-23.120*	3.620	0.000	2.53
Number of Children in the House	18.079*	2.959	0.000	2.89
Number of Elderly in the House	45.148*	4.586	0.000	1.76
Socioeconomic Indicators				
Number of Employed People in the House	-20.020*	3.076	0.000	1.94
Employment Status (reference: unemployed)				
Employed	4.397	6.745	0.515	2.19
Income Level (reference: 1. income level)				
2. Income Level	40.980*	6.440	0.000	1.68
3. Income Level	48.987*	6.111	0.000	2.06
4. Income Level	80.716*	8.993	0.000	3.12
Household Spending Value (TL)	28.277*	3.555	0.000	1.53
Vehicle Ownership (reference: no)				
Yes	-17.022*	5.628	0.002	1.31
Second House Ownership (reference: no)				
Yes	25.093*	9.515	0.008	1.07
Having Credit Cards (reference: no)				
Yes	21.180*	5.227	0.000	1.48
Having Savings (reference: no)				
Yes	-23.920*	5.131	0.000	1.25
Life Insurance				
Yes	43.550*	8.082	0.000	1.23
Alcohol Use (reference: no)				
Yes	-12.984	10.023	0.195	1.06
Smoking (reference: no)				
Yes	-26.727*	5.172	0.000	1.13
Access to Healthcare Services (reference: easy)				
Moderate	5.013	5.377	0.351	1.06
Difficult	-7.556***	4.483	0.092	1.20
Constant	-216.165*	34.126	0.000	
σ	395.887	38.449		
N	47611	Log likelihood		-222649.257
Censored	19098	Pseudo R^2		0.008

Uncensored	28513 P		0.000

*,*** shows significance at the 0.01 and 0.10 levels, respectively.

Table4 shows the marginal effect estimation results. Coefficient interpretations will be made using the marginal effects.
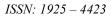
Table 4: Marginal effect estimation results.

Variables	dy/dx	Std. Error	P
Demographic Indicators			
Gender (reference: male)			
Female	15.043*	3.231	0.000
Age	2.385*	0.703	0.001
Education Level (reference: university)			
None-Primary School	-7.705*	2.274	0.001
Middle School	-0.351	2.238	0.875
High School	-0.814	2.488	0.743
Marital Status (reference: married)			
Single	-19.989*	2.465	0.000
Number of People Continuing Education	-7.796*	1.160	0.000
Number of Children in the House	6.096*	0.949	0.000
Number of Elderly People in the House	15.224*	1.453	0.000
Socioeconomic Indicators			
Number of Employed People in the House	-6.751*	0.997	0.000
Employment Status (reference: unemployed)			
Employed	1.481	2.259	0.512
Income Level (reference: 1. income level)			
2. Income Level	13.325*	2.017	0.000
3. Income Level	16.026*	1.963	0.000
4. Income Level	27.056*	3.168	0.000
Household Spending Value (TL)	9.535*	1.090	0.000
Vehicle Ownership (reference: no)			
Yes	-5.733*	1.848	0.002
Second House Ownership (reference: no)			
Yes	8.592*	3.309	0.009
Having Credit Cards (reference: no)			
Yes	7.135*	1.708	0.000
Having Savings (reference: no)			
Yes	-8.019*	1.662	0.000
Life Insurance			
Yes	15.047*	2.859	0.000
Alcohol Use (reference: no)			
Yes	-4.341	3.300	0.188
Smoking (reference: no)			
Yes	-9.019*	1.668	0.000
Access to Healthcare Services (reference: easy)			
Moderate	1.700	1.828	0.353
Difficult	-2.538***	1.494	0.089

*,*** shows significance at the 0.01 and 0.10 levels, respectively.

According to the marginal effects shown in Table 4, female household heads are 15.04% more likely to make healthcare spending compared to men. An increase of 10 years in the age of the head of household increases the probability of making healthcare spending by 2.38%. In terms of educational status, the probability of making healthcare spending is 7.71% less in households where the head of the

household has not completed school or is a primary school graduate, compared to those with a university degree. Household heads who are single are 19.99% less likely to spend on healthcare than those who are married. The probability of making healthcare expenses reduced by 7.80% as the number of people in the family continued their education. The increase in the number of children in the household increased the probability of making healthcare spending by 6.10%. The increase in the number of elderly individuals in the household increased the probability of making healthcare spending by 15.00%. The likelihood of making healthcare expenses reduced by 6.75% as the number of employed people in the household increased.

When compared to households with the lowest level of yearly disposable income, households with level 2, level 3, level 4, and level 5 are 13.33%, 16.03%, and 27.06% more likely to make healthcare spending, respectively. Vehicle-owning households are 5.73% less likely than non-vehicle-owning households to spend money on healthcare. Households with a second house ownership are 8.59% more likely than those without to spend money on healthcare. Households with savings are 8.10% less likely than households with no savings to spend on healthcare. Owning life insurance increased the likelihood of incurring health expenses by 15.05%. When compared to non-smokers, households with at least one smoker are 9.10% less likely to spend on health. When compared to those who do not, households who have difficulty accessing health services are 2.54% less likely to spend on healthcare.

4. Discussion

In the study, socioeconomic and demographic factors affecting the healthcare spending of the households were examined using the Tobit Model. The results of the study are consistent with economic expectations and previous studies in the literature.

Female household heads are more likely to make healthcare spending compared to men. There are studies in the literature indicating that there is a significant relationship between the gender factor and healthcare spending (Batra et al., 2014; Bora Başaran & Şahin, 2018; Irving & Kingdon 2008; Owens, 2008). This could be due to the fact that women in some societies are assigned more duties than men, particularly in marriage, and that women who work at home are also psychologically and physically exhausted from working in an income-generating job. Furthermore, this scenario creates menopause, which is a significant human and financial strain in the lives of women (Whiteley et al., 2013). It could also be related to the fact that, as a result of the damaging impacts of these processes, they apply to health institutions more frequently than males throughout their lives. Menopausal symptoms, according to Keshishian et al. (2016), have a considerable negative impact on women's quality of life and raise health expenses.

When it comes to educational level, the fact that the head of the family has not completed high school or is a primary school graduate reduces the probability

of making health expenses when compared to those who have a university degree. This situation could be indirectly related to the fact that education opens the door to greater income levels by training qualified workers and offering career opportunities (Günkör, 2017). In other words, those with a higher degree of education may earn more money than people with a lower level of education, allowing them to set aside more money for better living conditions. Similarly, Sekhar (2006) determined that an educated person spends more on health than an ignorant person. Rout (2008), Ahmadi and Taheri (2017), and Niessen et al. (2018) all found similar outcomes in their research. The number of persons in the family who are pursuing their education has decreased the likelihood of making healthcare spending. This could be due to the fact that individuals are protected by health insurance throughout their educational careers, which makes a beneficial contribution to the family's budget.
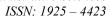
Household heads who are single are less likely to spend money on healthcare than those who are married. The number of persons in the family may be directly related to this issue. There are studies in the literature that have come up with similar conclusions (Chu et al., 2005; Hjortsberg, 2003).

The increase in the age of the head of household increases the probability of making healthcare spending. In line with this finding, an increase in the number of elderly people in a household increased the likelihood of making health-related expenses. This could be due to the fact that elderly people are more likely to have health problems and have them more frequently. Similar findings have been reported in the literature (Mohanty et al., 2014, Ahmadi & Taheri, 2017, İşcan & Göker, 2018; Okatan & Işık, 2020).

The increase in the number of children in the household has increased the probability of making healthcare spending. According to Shahraki and Ghaderi (2021), having a child under the age of seven increases household healthcare spending. The fact that children have more health problems than adults may be due to parents' predisposition to be more sensitive when their children are sick and to seek out private examination and private hospital more frequently. Households with significant health demands include those with a large number of children and the elderly people.

The increase in the number of employed people in the household has reduced the probability of making healthcare spending. This could be due to the fact that official employees are covered by insurance. Increases in household disposable income increase the likelihood of making healthcare spending, and the households with the lowest healthcare spending are those in the lowest income group. The likelihood of making healthcare spending increased as the household spending value increased. A high household expenditure value is also associated with a high level of income, and households with a high-income level may be more likely to pay expensive prices for health services, even if they are covered by insurance. On the other hand, low-income households may choose not to receive health services due to the limited income. There are studies in the literature that support these findings. According to Rous and Hotchkiss (2003), higher-income

households receive more healthcare and often from more expensive providers. Similarly, Bhabesh, and Himanshu (2007) suggest that as the disposable income of the household increases, the individual pays more attention to his own life, resulting in higher healthcare expenses.

When measured as an indicator of income, households with a second house ownership are more likely to spend money on healthcare than those without. Households who have savings are less likely to spend money on healthcare compared to those with no savings. People who prefer to save money may find it difficult to forego insurance and pay additional fees. Having a life insurance has reduced the probability of incurring healthcare spending. This may be related to the wide coverage of insurance.

When compared to non-smokers, households with at least one smoker are less likely to spend money on healthcare. This could be because the portion of the household budget spent on cigarettes diminishes the individual's own human capital investment and does not pay enough attention to health. A study in the literature supports this notion, finding that expenditure on smoking reduces spending on education and medical care (Xin et al., 2009).

Households who have trouble accessing healthcare are less likely to make healthcare spending compared to those who do not. Given that rural communities with limited access to healthcare are more likely to turn to alternative medicine, and income is a scarce resource for individuals living in rural areas, there may be a trend toward alternative medicine in such areas. As a result, people in rural areas are more susceptible to changes in health spending based on their income (Borah, 2006). Similarly, according to Olasehinde and Olaniyan (2017) in the literature, the longer it takes to get to the nearest health facility, the greater the health-care costs. In a study conducted by Hjortsberg (2003), it was determined that living in the countryside and being far from a health facility reduced the likelihood of seeking professional help.

5.   Conclusion and Policy Recommendations

Health expenditure accounts for a significant portion of overall household expenditure, and in developing countries such as Turkey, where financial resources are scarce, individuals with low socioeconomic status either cannot get healthcare or become poor as a result of doing so (Flores et al., 2008; Varoğlu, 2020). On this basis, it is critical to understand which factors affect health expenditures and to what extent, in order to be able to develop health systems, plan the most efficient health policies, facilitate access to health services and ensure equality in this regard. Inequalities in the use of health services make it important to investigate the socioeconomic and demographic factors that affect healthcare spending.

In this study, socioeconomic and demographic factors affecting the healthcare spending of households were examined. As a result of the study, it was

determined that the factors related to the household's gender, age, and level of education, the number of children in the household, the number of elderly people in the household, household income and financial wealth indicators, the presence of a smoker in the household, and the difficulty of accessing health services were all found to be effective.

Those who have trouble accessing health services, those with a poor education level, those with low income, and families with at least one individual who uses tobacco products make relatively lower healthcare spending as compared to other groups. Based on this finding, it is recommended to give additional importance to tobacco control programs, to implement action plans to increase the level of education within the scope of human capital accumulation, and to work towards eliminating inequalities in low-income households who have difficulty accessing health services. The study's findings are hoped to provide guidance to policymakers and decision-makers.

The study has some limitations. The study's data is based on the responses of household heads, therefore it's possible that the data may be biased. Since the data used in the study are cross-sectional, a clear causal relationship cannot be established. Variables such as the rural-urban distinction for the household's place of residence, the health status of the household members, and whether there is a person in the household with a disease with a high treatment cost are not included in the data set because the variables used in the study are the variables included in the questionnaire.

A good life for individuals, and therefore for societies, is only possible by living healthy. This study examined the determinants of household health expenditures specifically for Türkiye. However, the impossibilities faced by individuals and households in accessing health services are also a problem for many other developing countries similar to Turkey. For this reason, problems related to the fair distribution and effective use of scarce resources in health economics are considered as important areas for future research, and it is recommended to examine this issue in the context of underdeveloped and developing countries.

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