

# MAIN ECONOMIC FACTORS AFFECTING THE DETERMINATION OF HAPPINESS: A RESEARCH ON TURKEY

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## *Abstract*

The concept of happiness includes many elements such as social and physical environment, demographic characteristics, economic conditions and expectations. Today, the topic of happiness has increasingly become a significant issue in economics. This study examined the effects of health, education, and household incomes on happiness. This study utilized the data Life Satisfaction Survey prepared for the 2004-2019 period (TSI) by Turkey Statistical Institute. This study used the ordered Logit approach, and the variable coefficients were evaluated using Odds-Ratio and Marginal Effects. As a result of the analysis, it was seen that health has the most significant effect on happiness. Findings also show that while income statistically has a significant positive impact on happiness, education has a negative impact but does not have a statistically significant relationship.

**Key Words:** *Happiness Economics, Healthy, Education, Income.*

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# MUTLULUĞUN BELİRLENMESİNDE ETKİLİ OLAN TEMEL EKONOMİK FAKTÖRLER: TÜRKİYE ÜZERİNE BİR ARAŞTIRMA

## Öz

Mutluluk kavramı sosyal ve fiziksel çevre, demografik özellikler, ekonomik koşullar, beklentiler gibi birçok unsuru barındırmakta olup başlangıçta psikoloji ve felsefe alanlarında sıklıkla incelenmiştir. Günümüzde ise iktisatta önemi artan bir konu olmuştur. Bu çalışmada ise sağlık, eğitim ve hane halkı gelirinin mutluluk üzerindeki etkisi incelenmiştir. Çalışmada 2004-2019 dönemi için Türkiye İstatistik Kurumu (TÜİK) tarafından hazırlanmış olan Yaşam Memnuniyeti Anket verilerinden yararlanılmıştır. Sıralı Logit yönteminin kullanıldığı çalışmada, yapılan regresyon analiziyle değişkenlere ait katsayılar yorumlanmıştır. Yapılan analizler sonucunda mutluluk üzerindeki en büyük etkiye sağlığın sahip olduğu görülmüştür. Gelirin mutluluk üzerinde istatistiksel olarak anlamlı pozitif bir etkiye sahipken eğitimin negatif bir etkiye sahip olduğu fakat istatistiksel olarak anlamlı bir ilişkiye sahip olmadığı anlaşılmıştır.

**Anahtar Kelimeler:** *Mutluluk Ekonomisi, Sağlık, Eğitim, Gelir.*

## INTRODUCTION

Happiness is a notion that has been studied extensively from ancient times to the present. In this process, happiness is an inner state concerned with material or spiritual terms and by both together. Albert Schweitzer defined happiness as good health and a bad memory. According to Don Marquis, happiness is a process of appearing among unhappiness. Hippocrates described happiness as a reduction in pain (Dumludağ, 2011, p. 31). As seen in the definitions, happiness is a multidimensional concept (Nikolaev, 2013, p. 6). Moreover, it has been the most important quest of human beings from the past to the present. Therefore, it has been accepted as the eventual effort of people (Martinez, 2014, p. 10).

Until recently, the concept of happiness has been studied especially many times in psychology, sociology and medicine. The issue that leads researchers in different fields to examine happiness is the desire to understand the factors that affect people's happiness (Blanchflower and Oswald, 2004, p. 1360). Although it hasn't found a place in economics for a long time, significant studies have started under the name of happiness economy. It should be noted that still, this concept approached with suspicion (Rousseau, 2009, p. 114). The main factor that causes happiness to be examined by economists is the direct relationship thought to exist between happiness and well-being (Dumludağ, 2011, p. 37). Experimental studies have provided evidence that individual well-being measurements collected through surveys are essential indicators of current happiness for future behaviours (Clark et al., 2006, p. 53).

It is possible to say that happiness basically depends on personality traits and therefore is a genetic or congenital factor to a great extent (Ferrer-i-Carbonell, 2013, p. 37). On the other hand, Frey and Stutzer (2002) stated that happiness depends on three factors. The first is demographic and personality factors such as age, gender, nationality, education, health, and family conditions. The second is economic factors, especially income, inflation, and unemployment. Finally, the third is political factors, such as the degree of government centralization and the scope of their possibilities to participate in politics.

Many studies in happiness economics examine the connection between education, health, income with happiness. The first study of happiness in economics was on the relationship between happiness and income made by Easterlin (1974). The basic assumption of the economic theory is consumption increases happiness, which is explained by the utility theory. Based on the theory is the finding that consumption affects the benefit. Since it is difficult to measure consumption with questionnaires, the household variable is used in studies examining the relationship between happiness and income (Yinanç, 2020, p. 21). A positive correlation has been expected between income growth and happiness. However, as a result of some studies, it was observed that the average level of happiness remained at the same level even if per capita income increased (Frey and Stutzer, 2002, p. 6). Therefore, while examining the relationship between income and happiness, factors such as changing expectations, ambition, stress, and desire for material should be considered (Ferrer-i-Carbonell, 2005, p. 998- 999; Çirkin, 2015, p. 55). Besides, these factors pose an obstacle to the increase in happiness of everyone whose income increases (Easterlin, 1995, p. 4). Firstly, basic needs such as food, security, and shelter are the first elements that a person should have for happiness. However, meeting only vital needs weakens the relationship between happiness and income. For this reason, it is stated that the increase in the income of low-income individuals is more effective on happiness than high-income individuals (Servet, 2017, p. 20).

When examining the relationship between education and happiness, some studies showed a positive correlation among variables while others showed a weak connection. The first judgment that comes to mind about this topic is that as the level of education increases, happiness increases at the same rate. Because education facilitates people to reach their goals, affects their social activities and social relations, has an impact on their harmony with the social environment, enables them to be employed in higher-income jobs, enables them to receive better quality health care and has an effect on many other factors (Putnam, 2001, p. 51; Tenaglia, 2007, p. 17; Cuñado and Gracia, 2012, p. 187). On the other hand, the people whose education level has increased are also increasing in parallel. The increase in expectations can also increase the

dissatisfaction of individuals with their current position in their jobs and their income. Therefore, it is possible to say that the effect of education on happiness will occur indirectly (Dumludağ, 2011, p. 68; Şimşir, 2013, p. 13; Çirkin, 2015, p. 38; Servet, 2017, p. 21).

Health is one of the essential variables thought to have the highest effect on happiness. However, just like education, the relationship between health and happiness has a complex structure. It is a generally accepted view that poor health conditions will significantly reduce the happiness of individuals (Frey and Stutzer, 2002, p. 4). On the other hand, according to a study conducted in America, healthy people cannot be happy all the time. Unhealthy people are not always unhappy because individuals can sometimes be happy by adapting to the situation in which they are uncomfortable (Groot 2000: as cited in Dumludağ, 2011, p. 59).

Happiness is a complex and abstract concept that is hard to explain. Surveys generally make its measurement. In these questionnaires, with the Ordered questions asked to individuals, their level of happiness and life satisfaction are investigated (Gökdemir and Veehoven, 2014, p. 342). In Turkey, the first studies in this area were carried out in 2003 by TSI, and its results were published in the Life Satisfaction Survey in 2004. TSI, with this study, aimed at measuring satisfaction in formal education, health, social security, justice and revenue services, and the individual perceptions of happiness of people living in Turkey. Thereby, this study also allows the examination of the changes in these areas over time. When the literature consists of studies on testing the factors affecting happiness examined, it is seen that especially age, marital status, gender, health, education, and income variables come to the fore. In the economics literature, many aspects are discussed, such as education, health and income development and growth. In this study, individuals living in Turkey have been examined to see the influence of household income, health, and education on happiness from 2004-to 2019. The wide range of dates examined in the study and the fact that the period that is different from other studies has been handled allows the comparison of happiness with health, household income and education over time contributes to the literature.

## LITERATURE STUDY

The results obtained from happiness studies show differences from country to country and within the same country. There are several reasons for this situation. Firstly, it originates from the team's point of view in conducting the review. Secondly, measuring happiness is a complex process. Third, the criteria and requirements of happiness differ from country to country and from society to society. These reasons listed can be reproduced (Gül, 2017, p. 34). Several studies were investigated in this section, including health, household income, and education.

The first research on happiness in the economics literature made by Easterlin in 1974 is a study named “Does Economic Growth Improve the Human Lot? Some Empirical Evidence.” With the study, Easterlin found that while the increase in real income increases happiness up to a certain level, it does not improve after a certain level, but there is not a significant increase. In other words, the rise in happiness does not provide continuity. This situation is known as the Easterlin Paradox in the literature. In this case, Easterlin advised governments to move towards gross national happiness rather than a gross domestic product after the point where they meet their basic needs as a result of economic growth.

Clark and Oswald (1996) also mentioned the relationship between education and happiness in their study, through which they investigated the relationship between happiness and income. For this purpose, they used data obtained from 5000 British workers. As a result of the study, they found that while the income was fixed, happiness decreased as the education level increased.

Gerdtham and Johannesson (2001) examined the relationship between happiness and socioeconomic variables in Sweden. For this purpose, they conducted research with a sample of more than 5000 people. The study found that income, health, and education increase happiness during unemployment, urbanization, and celibacy decrease happiness. They also concluded that happiness is lower in men when evaluated according to gender, and it is low among the 45- 64 age group.

Peiró (2002) examined the relationship between happiness and socioeconomic conditions of individuals in 15 countries using World Values Survey data for the period 1995-1996. The logit model was applied to variables to examine the relationship in question. As a result of the study, there were several conclusions about happiness. He concluded a strong relationship between health, age, marital status and happiness. He commented that the relationship between unemployment and income, and happiness was weak. He also found that happiness was relatively independent of economic factors.

Hellevik (2003) examined why the increase in happiness and income in Norway from 1985 to 2001 was not in line. He also emphasized the relationship between health and happiness. At the end of the study, he commented that individuals' subjective evaluations of their health strongly coincided with their happiness levels. He stated that happiness was not determined by personality traits and was also affected by changes in the individual's circumstances. When the relationship between household income and happiness was examined, he commented that those with low income had a greater chance of feeling happy than those with higher income.

Andrén and Martinsson (2006) made a review on life satisfaction in Romania. For this, they benefited from the surveys made to 1770 people. According to the results obtained, while increasing the life satisfaction of the living standard and health, the economic situation decreases the life satisfaction of education and living in the countryside.

Borooah (2006) examined the factors affecting happiness due to interviews with 113,000 people from 80 countries using 1999-2002 Values Survey Integrated Data data. The evaluations have concluded that the most critical factor affecting individuals' happiness is health. In addition to health, other essential factors affecting happiness are; social life, work, family, neighbourhood relations, religious beliefs, and a good standard of living.

Tenaglia (2007) examined the relationship between education and some socio-economic variables in which it has income and happiness. For this purpose, an ordered probit model was applied to the variables. As a result of the study, they found that income is one of the variables that increase happiness. Income is an important determinant of happiness, especially for

individuals under the influence of external views. On the other hand, he found that education has a negative effect on happiness.

Guo and Hu (2011) examined the relationship between national happiness and economic performance in their study for the United States of America. The study consisted of two stages. First, they used the regression method to measure the relationship between individual happiness and demographic and socio-economic characteristics. In the next stage, they examined the effect of national economic indicators on national happiness. Demographic and socio-economic variables used in the study's first phase were health, marital status, family income, number of children, ethnicity, and age. The main result of the analysis was that there was a significant relationship between national happiness and individual income and well-being.

Pedersen and Schmidt (2011) examined the effects of economic and demographic factors on happiness by using the European Community Household panel data in their study. As a result of the analysis, they determined a relationship between happiness and income in a group of Southern European countries. They commented that the difference between average and individual income changes in these countries significantly affected happiness. Another result they have reached was that it was an important determinant of happiness in health.

Cuñado and Gracia (2012) used European Social Survey data to examine the relationship between education and happiness in Spain. They used Ordinal Logit Models while examining this relationship. They concluded that there is a direct and indirect relationship between analysis, education, and happiness. The indirect effect of education on happiness arises through income and employment status. The direct result occurs through employment status and socio-economic variables.

Şimşir (2013) analyzed the effects of the variables of income level, employment, job status, sector, gender, age, marital status and place of residence on happiness in 2010 using the data of the Life Satisfaction Survey. For this, he applied an ordered logistic regression model to variables. In the study, it was found that there was a significant relationship between happiness and age, marital status and place of residence.

Köksal and Şahin (2015) examined the relationship between happiness and income. They applied hierarchical regression analysis to the Life Satisfaction Survey data calculated by TSI in 2012. As a result of the study, they commented that monthly household income positively affected happiness.

Servet (2017) studied the relationship between happiness and prosperity by examining household income, age, gender, education level, and health in Turkey between 2004 and 2014. For this purpose, he used the data calculated by TSI in the Life Satisfaction Survey. He applied the Ordered Logit method to the data. As a result of the analysis, he stated that individuals' income, meeting needs, health and well-being levels positively affected happiness.

Öndes (2019) studied the factors affecting the level of happiness for 81 provinces using the 2015 Life Satisfaction Survey data. For this purpose, it has benefited from the spatial econometrics approach. Factors consisting of working life, housing, population, income-wealth, health, security, education and social life were included in the analysis. The econometric analysis carried out in Turkey showed the rate of population, housing, safety and happiness to reduce the rate of education, income-wealth, social life, working life, and the health results achieved to increase happiness.

Yinanç (2020) in Turkey with happiness at work on the study the relationship of education and socioeconomic variables. The Life Maturity Survey Micro Data Set calculated in 2017 was used. The ordered logit model is used as an econometric method in the study. According to the finding obtained at the end of the study, individuals with the highest and lowest education level are the happiest individuals.

## DATA

A life satisfaction survey has been carried out regularly by TSI since 2003 to measure the general happiness perception of individuals, social value judgments, general satisfaction in basic life areas and satisfaction with public services, and to monitor the change in satisfaction levels over time. This study was used life Satisfaction survey data for 2003 and 2019. In the Life Satisfaction Survey conducted by TSI, a 5-point Likert scale, 1 = Very Happy, 2 = Happy, 3 = Moderate, 4 = Unhappy, 5 = Very Unhappy, was used to measure

life satisfaction. These answers were distributed to these scales by TSI as a percentage. In this study, scales subjected to analysis were transformed as 1 = Low, 2 = Medium, 3 = High. The Ordered Logit method was used in the analysis.

## METHOD

In cases where the dependent variable has more than two values, when there is an ordered structure between the options, Multinomial models are not successful. In this case, ordered models are used. In ordered Logit models, the dependent variable has the feature of being Ordered and its qualitative feature (Uğurlu, 2015, p. 22).

These models are a natural extension of two-level probability models created with the hidden variable approach. The latent regression model is given in the following equation (Akkuş and Özkoç, 2016, p. 130):

$$Y^* = \sum_{k=1}^K \hat{b}_k X_k + \varepsilon$$

As in the two-level dependent variable models, cannot be observed and is considered as the hidden tendency of the observed event. The error term  $\varepsilon$  shows a certain symmetrical distribution with 0 mean like normal or logistic. In this study, since there are 3 ordered categories of relative variables, the relationship between observed levels and trends can be shown as follows (Akkuş and Özkoç, 2016, p. 130):

$$Y_i = 1, \quad Y^* \leq \mu_1 (= 0)$$

$$Y_i = 2, \quad \mu_1 < Y^* \leq \mu_2$$

$$Y_i = 3, \quad \mu_2 < Y^*$$

$$i = 1, 2, 3, 4, 5, \dots, N.$$

Considering the categories of variables below, the marginal effects were examined.

$$\text{logit}[P(y \leq 1)] = \log\left[\frac{P(y=1)}{P(y=2)+P(y=3)}\right] = \mu_1 - \sum_{k=1}^K \hat{b}_k X_k$$

$$\text{logit}[P(y \leq 2)] = \log\left[\frac{P(y=1)+P(y=2)}{P(y=3)}\right] = \mu_2 - \sum_{k=1}^K \hat{b}_k X_k$$

The  $B_1$  regression coefficient estimated in the logistic response function is not as easy to interpret as in a linear regression model. In the logistic regression model prepared according to the starting point on the X axis, it is difficult to measure the effect of one unit increase in the X variable. When interpreting the coefficient  $B_1$  the logistic response function obtained by multiplying the odds estimate of  $P_i(X_i)/(1 - P_i(X_i))$  with  $\exp(b_1)$  is used for one unit increase in X (Bircan, 2004, p. 196).

Table 1. Ordered Logit Estimation Results for 2003-2019 Year in Turkey

Parameter Estimates									
Dependent Variable: Happiness		Odds Ratio	Std. Error-odds	Coef	Std. Error- coef	Z	Sig.	95% Confidence Interval	
								Lower Bound	Upper Bound
Location	Education	.4822391	.3776488	-0.729	0.783	-0.93	0.352	-2.264	0.806
	Income	3.450779	2.176882	1.2386	0.631	1.96	0.050	0.002	2.475
	Healthies	25.11405	19.68206	3.223427	0.7837073	4.11	0.00	1.687	4.759
Threshold	/cut1	5.739	1.132	5.739	1.132	-	-	3.519	7.959
	/cut2	9.300	1.598	9.300	1.598	-	-	6.167	12.434
Number of obs		63							
LR chi2(3)		67.46							
Prob > chi2		0.0000							
Pseudo R2		0.4873							

As shown in Table 1, it is observed that income and health have a positive effect on happiness. It is determined that when their level becomes more accessible, when they are married and when they are healthy, the happiness level of the individual increases, and the increase in the level of welfare increases the happiness. In terms of educational status, was found no significant relationship with the level of happiness. According to findings, it is understood that the most critical factor affecting happiness is health. In the literature, the

level of education in studying the relationship between Turkey finds happiness there is much meaningless work. Therefore, the result obtained in this study regarding the educational status is similar to the literature. According to the Odds Ratio, healthy individuals are about 25 times more likely to be happy. At the same time, those satisfied with their income are more likely to be happy 3.5 times. In Table 2 below, the marginal effects are examined considering the categories of variables.

Table 2. Marginal effects after Ordinal Logit

Y = Pr(Happiness_three_category ==1) (predict, outcome(1))							
= .14613289							
Variable	dy/dx	Std. Err.	z	P>z	[ 95% C.I. ]	X	
Education_i	.0910026	.0973	0.94	0.350	-.0997	.281705	2
Income_i	-.1545501	.08832	-1.75	0.080	-.327645	.018545	2.03175
Health_i	-.402213	.1351	-2.98	0.003	-.667	-.137426	2
y = Pr(Happiness==2) (predict, outcome(2))							
= .71155277							
Variable	dy/dx	Std. Err.	z	P>z	[ 95% C.I. ]	X	
Education_i	-.0019816	.04072	-0.05	0.961	-.081793	.07783	2
Income_i	.0033654	.0693	0.05	0.961	-.132463	.139193	2.03175
Health_i	.0087584	.18004	0.05	0.961	-.344119	.361635	2
y = Pr(Happiness==3) (predict, outcome(3)) = .14231434							
Variable	dy/dx	Std. Err.	z	P>z	[ 95% C.I. ]	X	
Education_i	-.0890209	.0966	-0.92	0.357	-.278347	.100305	2
Income_i	.1511847	.08326	1.82	0.069	-.011998	.314368	2.03175
Health_i	.3934547	.13485	2.92	0.004	.129154	.657756	2

According to the model's probability change table, individuals who are content with their health are 0.39 more likely to be happy. Individuals satisfied with their income are more likely to be happy by 0.15. Although the possibility of being happy for those confident with their education seems to decrease, this result is statistically insignificant at the 5% level. At the same time, the relationship appears to be opposite in the first category, and it supports the results (Table 2).

As a result of the analysis, the health variable seems to have the most significant impact on happiness in Turkey. This result is in line with the results obtained in the studies of Gerdtham and Johannesson (2001), Peiro (2002), Hellevik (2003), Andren and Mortinsson (2006), Borooah (2006), Pedersen and Schmidt (2006) and Servet (2017). On the other hand, the education variable has a statistically unimportant and negative effect on happiness. The studies of Clark and Oswald (1996), Andren and Martinson (2006), and Tenaglia (2007) concluded similarly to the results obtained in this study. It was determined that there is a statistically significant and positive relationship between income/household income and happiness. This result is a similar result obtained in studies by Gerdtham and Johannesson (2001), Tenaglia (2007), Pedersen and Schmidt (2011), Köksal and Şahin (2015) and Servet (2017) as a show found similar results.

## RESULT

The concept of happiness, which has been studied in medicine, sociology and psychology for many years, has also started to attract the attention of economists in recent years. The w study area of the concept of happiness in the economy is income. Secondly, studies examined the relationship between happiness with different macroeconomic variables. The striking point in the studies carried out is that the results obtained differ from country to country, and other effects were also accepted in studies conducted in the same countries. That's because happiness is influenced by various elements, including social and physical surroundings, economic consequences, personal qualities, and country conditions. Therefore, interpretations have been made by considering many different factors.

In this study, conducted by TSI Life Satisfaction Survey using data for Turkey, the relationship between happiness, education, health, and household income was examined for the 2004-2019 period. This study used the Ordered Logit method. According to the analysis results, it has been observed that healthy individuals are about 25 times more likely to be happy. At the same time, those satisfied with their income are more likely to be happy 3.5 times. Finally, there was no statistically significant relationship between education and happiness.

Findings can be interpreted that among the variables of education, income and health, the health variable has the most critical effect on happiness. Accepting health as the most vital factor necessary for the continuation of life causes people to see health as one of the most significant sources of happiness. Household income appears to have a substantial effect on happiness after health. As income level increases, factors improve that such as improvements in living conditions and ease of meeting requests and hence impact happiness. When it comes to the level of education increases, people's expectations increase too, and their goals and their desire to change their living standards improve.

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