



Investigation of Factors Affecting Life Satisfaction of Individuals with Ordinal Regression Analysis

Alper Cüneyt TÜRKMEN^{1*}, Hülya ŞEN²

¹Eskişehir Osmangazi Üniversitesi, Eskişehir, Türkiye; ORCID: [0000-0003-3211-5059](https://orcid.org/0000-0003-3211-5059)

²Hacettepe Üniversitesi, Ankara, Türkiye; ORCID: [0000-0002-9095-3643](https://orcid.org/0000-0002-9095-3643)

* Corresponding author: alpercuneytturkmen@gmail.com

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Abstract



More than one factor can affect the life satisfaction of individuals. Examples of these are factors such as gender, educational status, marital status, health status, income status, social life, environmental factors and economic security. The aim of this study is to determine the factors affecting the life satisfaction of individuals by making use of the 2019 Life Satisfaction Survey data made by the Turkish Statistical Institute (TUIK). The satisfaction variable of the dependent variable was selected and analyzed with the SPSS package program. With the Ordinal Logistic Regression Analysis, the happiness levels were examined according to their socio-demographic characteristics and the results obtained were interpreted statistically. In the analyzed results; It has been revealed that demographic characteristics and time can change satisfaction, in addition to these, education, health status, income status are statistically significant in terms of life satisfaction.

Keywords: life satisfaction, ordinallogisticregression analysis, proportionalodds model (pom)

1. Introduction

Life satisfaction research is research conducted to measure individuals' perspectives on events. The variables of life satisfaction and future expectation of individuals were examined and interpreted with ordinal regression analysis.

Life satisfaction is the individual's ability to enjoy life and enjoy the situations in life. The first conceptual emergence of life satisfaction takes place in Neugarten's work [1]. Life satisfaction and life satisfaction can also be expressed semantically similarly.

The main purpose of the Life Satisfaction Survey is; It is to monitor the change of these satisfaction levels in the process by measuring the happiness of individuals in general, social values, satisfaction in the fields of "health and social security, education, working life, income, personal security and justice services, personal development, hope for the future" in their basic life, and satisfaction with public services. [2].

Life satisfaction, in other words, life satisfaction is the emergence of results according to the life options chosen by the individual in line with the impression of life. At the same time, life satisfaction is defined as "a psychological feature caused by people's outlook on life, their expectations of life and their level of satisfaction" [3].

The terms "quality of life", "happiness" and "well-being" imply different meanings. Sometimes it is expressed as a general term for all values, sometimes it refers to specific values. This general term and specific values refer to the four qualities of life. These four qualities are specified as:

1. The environment is livable
2. The individual's life skill
3. The benefit of external elements of life
4. Appreciation in life

Quality of life consists of a combination of subjective and objective factors that include happiness, health, good physical condition, intimacy, security, and social feelings of the individual's mental state [4].

Logistic regression analysis is divided into three groups. The first one is binary logistic regression (bistate logistic regression), multinomial logistic regression (multinomial logistic regression) and ordinal logistic regression (ordinal logistic regression), which is determined by the number of dependent variables and the type of scale. Binary logistic regression is used when the dependent variable is in the form of data with two categories, and multinomial logistic regression is used when the dependent variable is in the form of data with more than two classifications and no order. The ordinal data form of the dependent variable with at least two categories is the ordinal (ordered) logistic regression model [5].

Goodness of fit is evaluated as it is important in the ordinal logistic regression model and all regression models. It happens that the independent variables model of the model created under the conditions where the goodness of fit, which is the measure of sufficiency in expressing the dependent variable, does not meet the necessary conditions. Thus, the test of goodness of fit with the independent variable that is different when establishing the model can yield more reliable results in determining the independent variables of the dependent variable [6].

2. Literature Review

The literature on the concepts of life satisfaction and ordinal regression is given below under headings.

2.1 Life Satisfaction

When the studies on life satisfaction in Turkey are examined, it is seen that the number of studies is low. Other studies can be summarized as follows;

The life satisfaction of individuals was investigated by discriminant analysis by using the TUIK-2007 survey data on life satisfaction. Differences in life satisfaction were observed according to certain distinctions. These are rural-urban and gender differences. On the other hand, the correct classification percentage of the answers to the question "satisfied with public service" in the rural-urban distinction was found to be 90% [7].

Kahyaoğlu [8]. used Sequential Probit Models in his study titled "Life Satisfaction and Variables Affecting Life Satisfaction and Econometric Application: The Case of Turkey" and the results were interpreted statistically and economically. As a result of the study, it was seen that women were happier than men and that the relationship between age and happiness was U-shaped. At the same time, it has been determined that health, income, living in the city, and increases in welfare increase happiness levels.

In the study conducted by Akin and Şentürk [9], the relationship between individuals' happiness levels and socio-demographic characteristics was examined and the results obtained by applying sequential logistic regression analysis were compared with previous studies on the subject. In the results obtained, it was stated that the level of happiness by years was not similar in terms of socio-demographic characteristics, but generally the same results.

Dursun and İftar [10], in their study titled "The Effect of Work-Family Conflict of Female Employees on Job and Life Satisfaction", the results were interpreted statistically. As a result of the study, it was concluded that female employees have a negative effect on job and life satisfaction.

Filiz [11] applied the questionnaire consisting of employee satisfaction and life satisfaction scales to 186 academicians working at Osmangazi University; It has been concluded that it has an effect on colleagues, management status, development and advancement advantages, wages and workplace life satisfaction.

In the study conducted by Arı and Yıldız [12], the factors affecting life satisfaction of individuals were analyzed using ordinal logistic regression models.

On life satisfaction studies, it has been determined that 141 young people's impressions of the various emotional, social and behavioral effects of young people in life, and that positive life satisfaction makes young people look ahead with optimism [13].

According to the results of the research at the provincial level in 2013 on the impressions of life satisfaction, the symptoms of both the happiest and the unhappiest provinces were analyzed by considering the social, economic and political (2009-2014 local elections). According to the results, the happy provinces are compared to the unhappy provinces; unemployment, sales in residences, increase in divorce, electricity use per capita, population density was lower. The number of cars per capita (per thousand), the rate of households owning a home, the net enrollment rate in primary schools, and the number of hospital beds per capita (one hundred thousand) were higher [14].

Palmore and Luikart (1972), in their studies, determined that organizational activities, beliefs and internal control variables are the most important factors that determine life satisfaction.

Schyn (2002) in his study of 42 countries for the relationship between life satisfaction and income level revealed that the factors in the relationship between them were stronger in poor countries [15].

Ramachandran et al. (2012), in research studies affecting life satisfaction of elderly people living in Japan and India, it was determined that although they have a lower socio-economic status, their life satisfaction is higher in people living in India [16].

2.1 Ordinal Regression

Ordered logistic regression models; It has been applied recently in many fields such as medicine, economics, biology and agriculture. The literature review of the studies in which the ordinal logistic regression model was applied can be listed as follows.

Studies applied by Emeç (2002), [17]. in the examination of consumption expenditures in the Aegean Region, in the same way with sequential logistic regression methods, Choi et al. (2004) [18]., ordinal logistic regression models were examined by fitting them with data expansion. It was applied by Ayhan (2006) to examine the factors affecting nurses' intention to quit their job in Turkey [19].

According to Nizam (2007), using the ordinal logistic regression method, the capacity utilization of inpatient treatment institutions in Turkey was examined. Using the statistical data of 2005 by Nizam and Akdeniz (2007), the current occupancy usage conditions of the inpatient treatment institutions of the Ministry of Health; He applied the analysis as "low", "medium" and "high" levels. With the purpose of the model, estimation was made from the categorized logits consisting of medium and high [20].

Demirtas et al. (2008), in the study applied by; In the design of kitchen fixtures, a two-stage approach has been made on the condition of optimizing the design levels according to the visual perceptions of the users by adding the user feelings to the design process. According to the results of linear and ordinal logistic regression, the relationship between users' general preference scores and word scores was examined [21].

In the study conducted by Das and Rahman (2011), malnutrition risk factors of children were determined by using the data of "Bangladesh Demographic and Health Survey 2004" with ordinal logistic regression analysis [22].

In the study conducted by Akın and Şentürk (2012), sequential logistic regression analysis was applied to examine the relationship between the happiness levels of individuals and their socio-demographic characteristics, and the results were compared with previous studies on the subject. In the results obtained, it was stated that the level of happiness by years was not similar in terms of socio-demographic characteristics, but generally the same results.

Yavuz et al. (2013), determining the factors affecting the urban satisfaction of university students by applying ordinal logistic regression analysis [23].

Yakut et al. (2015), the classification success of the Human Development Index was compared by applying sequential logistic regression and artificial neural networks. In the study, the data of 81

countries between 2010 and 2012 were applied to the United Nations Development Program Human Development Index [24].

In the study applied by Aytekin and Tunalı (2017); In the application of binary logistic regression analysis, the life satisfaction of the research assistants, which is the dependent variable, was examined on the condition that the model fit was not met with the assumption of ordered logistic regression and multinomial logistic regression analyzes [25].

Usta et al. (2018), using logistic regression analysis, determined the reasons for university students' absenteeism. The "non-attendance tendency" was examined as a three-order category, which is the dependent variable, and the effects of variables such as gender, grade level and faculty were investigated [26].

3. Material and Method

3.1 Purpose of the research

The aim of this study is to benefit from the survey data of the life satisfaction survey conducted on 9212 people in 2019 by the Turkish Statistical Institute (TUIK);

- To determine the life satisfaction levels of individuals (Education, Health, Work life, Future expectations, Income, Service, Personal Security)
- To determine the effect of health and general services on life satisfaction,
- To determine the factors affecting the life satisfaction of individuals,
- Analyzes and comments were made on the factors affecting happiness with ordinal (ordinal) logistic regression and their socio-economic effects.

For this purpose, estimations were made for dependent variable life satisfaction through the SPSS package program and the results were analyzed.

3.2 Research Method

In the method of the research, the data sets of the Life Satisfaction Survey (YMA) questionnaire were used by the Turkish Statistical Institute (TUIK) to determine the effects on life satisfaction. IBM SPSS Statistics 18.0 program was used in the analysis. Samples used in this study, dependent and independent variables, and hypotheses are defined under the subtitle.

In the Life Satisfaction Research study, life satisfaction (happiness) of individuals as dependent variables, gender, age, marital status, education level, health status, working status, social life, relatives, friends, neighbor relations and public services satisfaction are used as independent variables.

3.3 Research Model and Hypotheses

The schematic model of the hypotheses to be tested in the Life Satisfaction Survey is shown in Figure 1. In the model of the study, the demographic characteristics of individuals, satisfaction in their individual situations and satisfaction with public services were established and estimated as variables. Then, the hypotheses according to the model were listed.

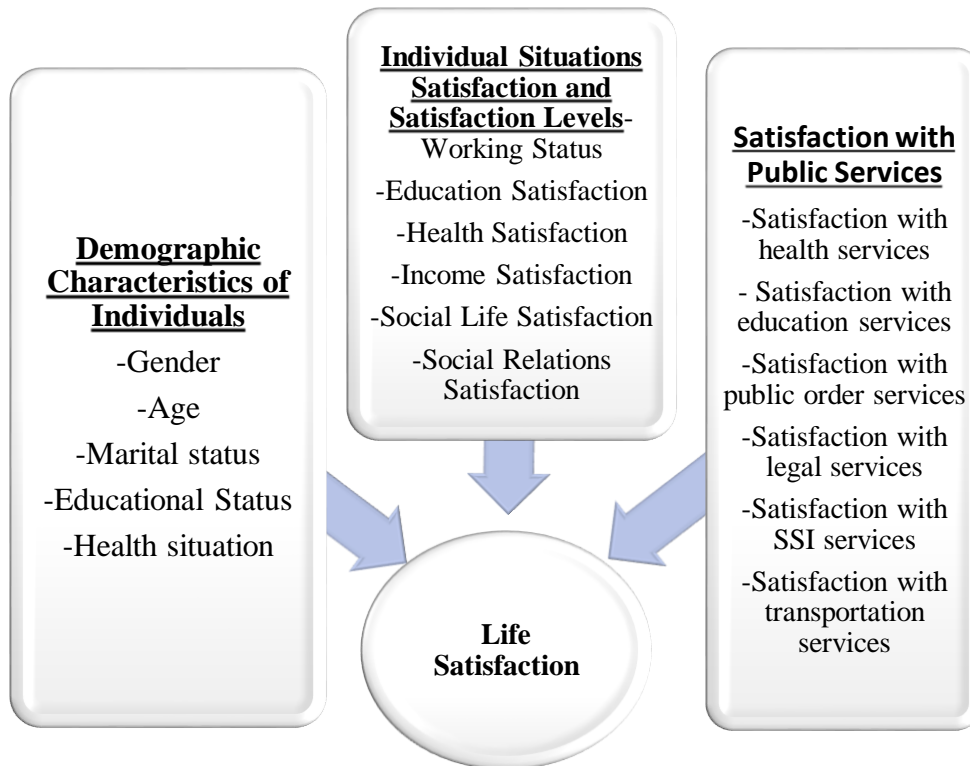


Figure 1: Life Satisfaction Survey Model

Hypotheses on Life Satisfaction.

H₁: In the demographic characteristics of individuals in Life Satisfaction;

- Gender, there is a significant difference between.
- There is a significant difference between age.
- Marital Status, there is a significant difference between.
- There is a significant difference between Educational Status.
- There is a significant difference between Health Status.

H₂: The status and level of Individuals' Life Satisfaction;

- There is a significant difference between Employment Status.
- There is a significant difference between Education Satisfaction.
- There is a significant difference between Health Satisfaction.
- There is a significant difference between Income Satisfaction.
- There is a significant difference between Social Life Satisfaction.
- There is a significant difference between Social Relations Satisfaction.

H₃: In public services in Individuals' Life Satisfaction;

- There is a significant difference between satisfaction with health services.
- There is a significant difference between satisfaction with education services.
- There is a significant difference between satisfaction with public order services.
- There is a significant difference between satisfaction with legal services.

- There is a significant difference between satisfaction with SGK services.
- There is a significant difference between satisfaction with transportation services.

4. Results

4.1 Demographic Predictors of Life Satisfaction

In this study, data related to the 2019 Life satisfaction survey conducted by TURKSTAT were used. The research was studied with a total of 9212 data.

4.1.1 Gender

In the gender profile of the research, it is seen that 54% of the respondents are female and 46% are male.

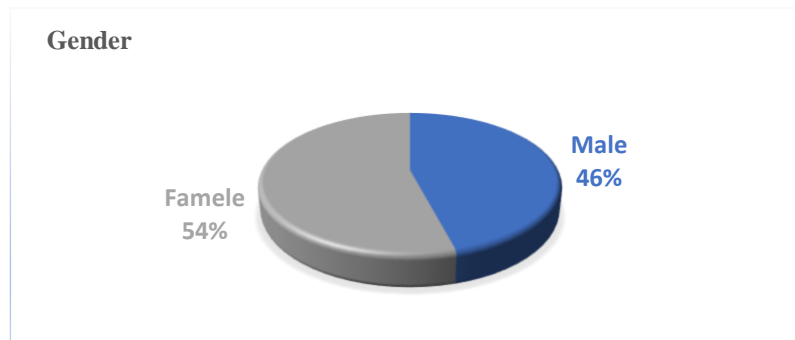


Figure 2: Gender Distribution of Individuals

4.1.2. Age

In the study conducted by TUIK with a sample of 9212 people, the ages of the respondents were between the ages of 18 and 97. Ages are grouped as 18-24, 25-34, 35-49, 50-64 and over 65 years old. According to the observed values, the highest participation is between the ages of 35-49 with 32%.

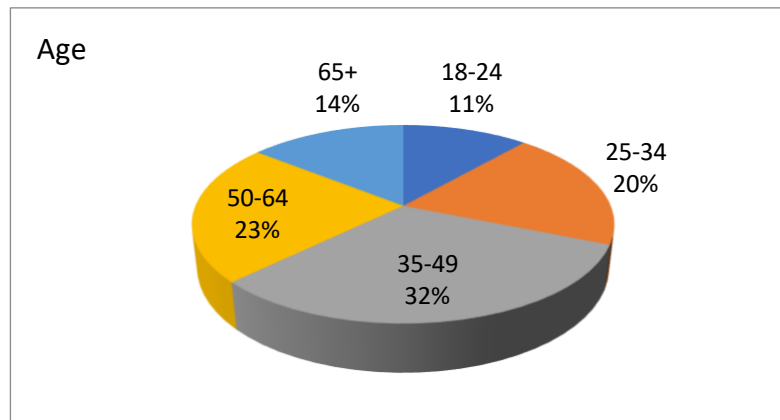


Figure 3: Age Distribution of Individuals

4.1.3. Marital status

Considering the marital status distribution of the respondents, it is seen in Figure 4 that the difference between them is high. According to these distributions; 73% of the participants are married, 17% are never married, 7% are widowed and 3% are divorced.

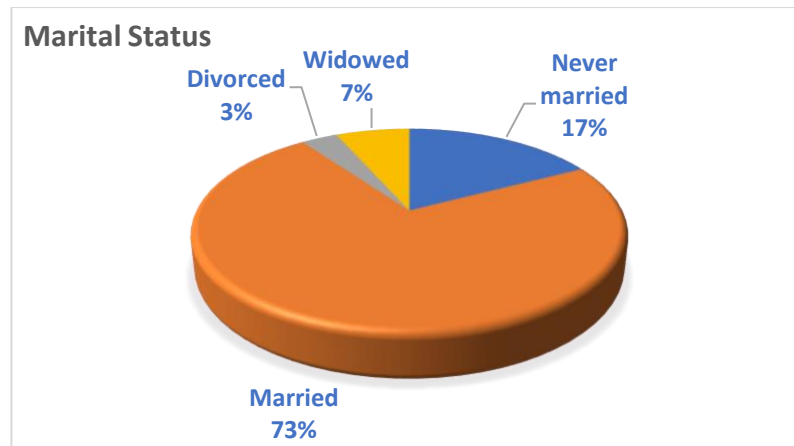


Figure 4. Distribution of Individuals in Marital Status

4.1.4. Level of education

When the education level distributions of the respondents are examined, in the education organized by categorization, 35% of the highest participation is composed of primary school graduates. Respectively, it consists of 20% General-Vocational High School graduates, 19% Higher Education graduates, 14% did not finish school, and finally 12% General-Vocational Secondary School graduates.

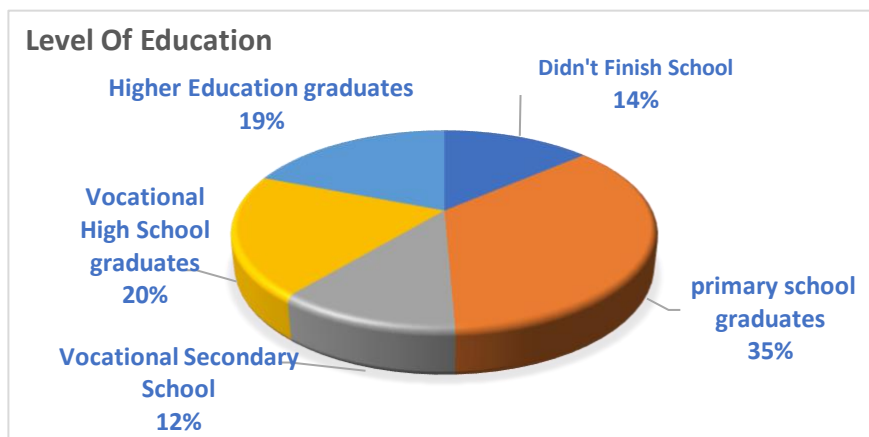


Figure 5. Distribution of Individuals Education Levels

4.2. Descriptive Statistics of Variables

A total of 9212 people between the ages of 18 and 97 participated in the Turkey-wide 2019 life satisfaction survey by the Turkish Statistical Institute (TUIK). In the descriptive statistics of the variables, the distribution of the happiness level of the individual, the results of the analysis of what makes the individuals happy the most and who makes the individuals happy the most are stated.

4.2.1. How Happy Are You

Figure 6 shows that 47% of the respondents feel happy, approximately 33% feel moderate, approximately 10% feel unhappy, approximately 7% feel very happy, and approximately 3% feel very unhappy. According to these values, it is seen that individuals feel happy the most and feel very happy and very unhappy at the least.

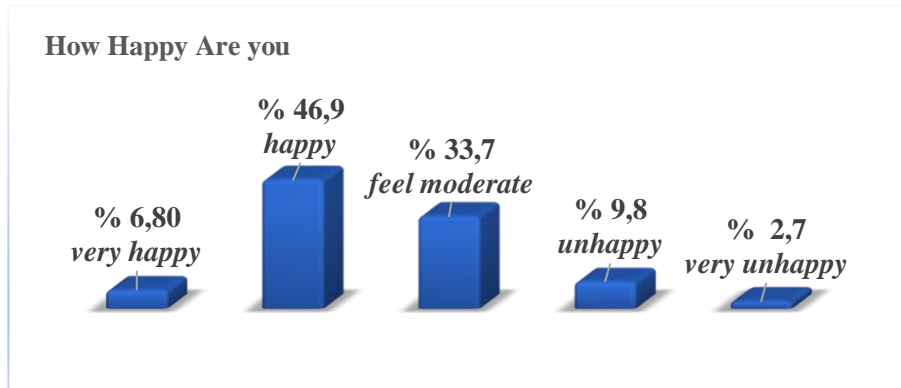


Figure 6. Distribution of Individuals in Happiness Level

4.2.2. What Makes You Happiest in Life

In the distribution of what makes individuals happy the most, the distribution of the percentages of success, work, health, love, money and other options in the question of what makes them happiest in life is shown in the graph, and when we look at what makes individuals happy the most, it is seen that 71% is health, approximately 15% is love. It can be seen in figure 7 that is 8% is success, 4% is money, 2% is work, and only a few are others.

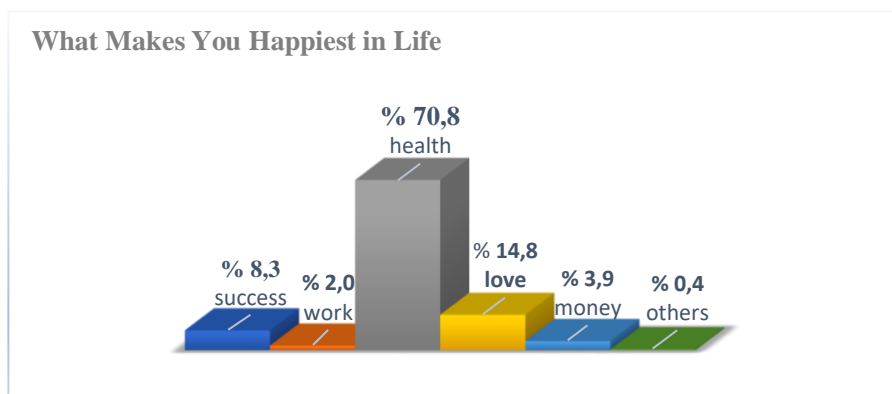


Figure 7. Distribution of What Makes Individuals Happy Most

4.2.3. Who Makes You Happiest in Life

In the distribution of who makes the individuals the happiest, the distribution of the percentages of the self, children, mother/father, friends, nephews, grandchildren, spouse, whole family and other in the question of who makes the most happy in life is shown and interpreted in Figure 8.

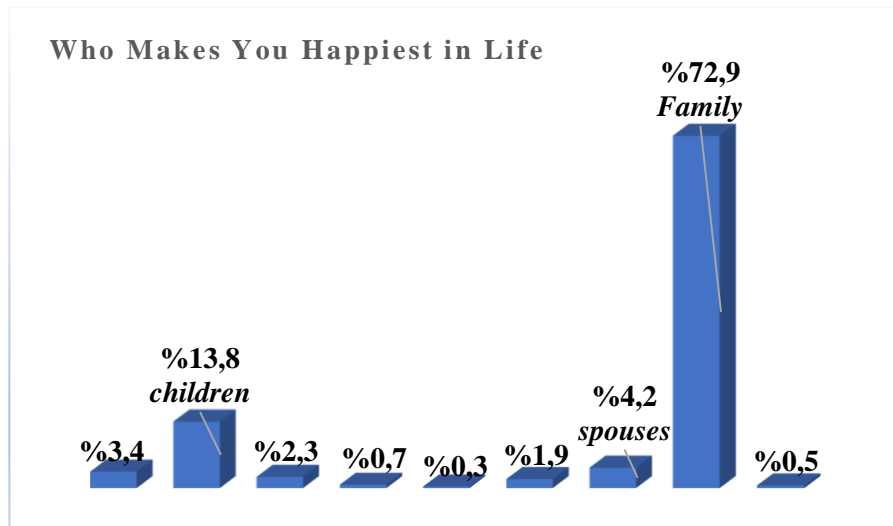


Figure 8. Distribution of Who Makes Individuals Happiest Most

When we look at who makes the individuals happiest in life, it is seen that 73% is the whole family. Considering other factors, it is seen in figure 8 that approximately 14% are children, 4% are spouses, approximately 3% are their own, and approximately 2% are parents and grandchildren.

4.3. Happiness Levels

By making use of the TUIK 2019 Life Satisfaction Survey data; The results of the analysis of happiness levels according to gender, age, marital status, education level, industry, future expectation and health status are shown in the tables.

4.3.1. Happiness Levels by Gender

Table 1. Happiness Levels by Gender

Variables	Categories	Participant Percentages %	Happy	Moderately Happy	Unhappy
Gender	Men	45,9	49,6	36,3	14,2
	Women	54,1	57,3	31,5	11,2

The results obtained according to the information in Table 1; When the gender variable is examined, it is observed that women (57.3%) are happier than men (49.6%). It is seen that men (14.2%) are also unhappy compared to women (11.2%). As a result, women are happier than men.

4.3.2. Happiness Levels by Marital Status

Table 2. Happiness Levels by Marital Status

Variables	Categories	Participant Percentages %	Happy	Moderately Happy	Unhappy
Marital status	Single	17,3	47,4	38,9	13,7
	Married	72,8	56,7	32,3	11,0
	Divorced	3,3	28,5	41,4	30,1
	His wife is dead	6,6	50,6	30,9	18,5

Happiness levels by marital status are shown in Table 2. Looking at marital status, those with the highest level of happiness are married individuals. (56.7%). The happiness rate of single individuals is seen as

(47.4%). Looking at the level of unhappiness, divorced individuals were the highest. According to the conclusion to be drawn from this, it can be observed that there is an increase in happiness after marriage.

4.3.3. Happiness Levels by Age Distribution

Happiness levels by Age Distribution are shown in Table 3.

Table 3. Happiness Levels by Age Distribution

Variables	Categories	Participant			
		Percentages %	Happy	Moderately Happy	Unhappy
Age	18-24	11,5	56,1	33,5	10,4
	25-34	19,7	54,7	32,6	12,7
	35-49	31,6	52,0	35,2	12,8
	50-64	22,9	50,4	35,2	14,4
	65 +	14,3	59,9	29,4	10,7

When the happiness levels are examined according to the age distribution, it is seen that the happiest group is the individuals over the age of 65. (59.9%) In this age range, a generalization may occur as the anxieties of individuals do not appear in life. In addition, when the levels of unhappiness are examined, the highest level is the 50-64 age group (14.4%). Afterwards, when the levels of unhappiness are examined, it is seen that the age range of 25-34 and 35-49 is approximately the same. If a generalization is made especially for the 25-34 age range (12,7), it can be concluded that various reasons such as problems in life and anxiety about finding a job increase.

4.3.4. Happiness Levels by Educational Status

Considering the education levels, it is seen that the happiest group is 57.1% of the individuals in the category of those who have not completed a school. However, as the level of education increases, the happiness rate decreases. The reason for this can be expressed as that with the increase in the education level of the individuals, their expectations in life will increase in the same way and unhappiness will arise when faced with the reason that it does not result.

Happiness levels by Educational Status are shown in Table 4.

Table 4. Happiness Levels by Educational Status

Variables	Categories	Happy	Moderately Happy	Unhappy
Education Status	Out of School	57,1	28,1	14,8
	Primary school, primary education	53,2	33,8	13,0
	Vocational Secondary School	53,5	34,0	12,5
	Vocational High School	52,0	36,1	11,9
	High education	54,5	34,6	10,9

4.3.5. Happiness Levels by Industry

Table 5. Happiness Levels by Industry

Variables	Categories	Happy	Moderately Happy	Unhappy
Industry	Private sector	50,4	36,7	12,9
	Public sector	57,0	35,1	7,9

Happiness levels according to the sector they work in are shown in Table 5. Considering the level of happiness according to the sector in which they work, the happiest group is the employees in the public sector, which is 57.0%. Looking at the employees in the private sector, it can be stated that 50.4% are happy. According to this result, although the private sector salary is higher, it can be said that the reason for happiness differs due to difficult and tiring conditions.

4.3.6. Happiness Levels by Health Status

It is seen that the individuals with the highest level of happiness according to their health status are those who state their health status as very good 67.6%. On the other hand, as the health status of the individuals is poor, the level of happiness of the individuals decreases, and in parallel, the individuals with the highest level of unhappiness are those who state their health status as "very bad" 47.9%.

Happiness levels by Health Status are shown in Table 6.

Table 6. Happiness Levels by Health Status

Variables	Categories	Happy	Moderately Happy	Unhappy
Health Status	Very good	67,6	28,1	4,3
	Good	60,5	30,4	9,0
	It will do	41,4	45,6	13,0
	Bad	35,7	34,7	29,6
	Too bad	24,3	27,8	47,9

4.4. Assumptions of Sequential Regression Analysis

The results of the models of the data are shown by the ordinal logistic regression analysis. It was observed that the validity of the parallel lines assumption was ensured when the model's assumption was applied.

4.4.1. Examining the Model's Goodness of Fit

The goodness of fit of the model can be found by using Chi-Square and Deviation values. These values of the model are indicated in the table.

Table 7. Goodness of Fit Test Results

	Chi-Square	Sd	Possibility
Pearson	7558,125	7602	,637
Deviation	6411,631	7602	1,000

H_0 : Model data is OK.

H_1 : Model data is not available.

Considering the results of the model's goodness-of-fit analysis, the probabilities are greater than 0.05. In line with these results, the H_0 basic hypothesis, in which the model is in harmony, cannot be rejected. As a result, the model has goodness of fit.

4.4.2. Parallelism Assumption Test

The setup of " H_0 null hypothesis" and " H_1 alternative hypothesis" in testing the parallel curves assumption is as follows.

- **H_0 :** The associated regression coefficients are the same in all categories of the dependent variable.
- **H_1 :** The associated regression coefficients are different in all categories of the dependent variable.

Table 8. Parallelism Test

Model	-2 Log Likelihood	Chi-Square	Sd	Possibility
Basis Hypothesis	221,358			
General	189,561	31,797	27	,240

H_0 : Parameter estimates pass through the same breakpoint.

H_1 : Parameter estimates do not pass through the same breakpoint.

Since $p > 0.05$, H_0 cannot be rejected and in this case, it is expressed in all categories of parameters where the dependent variable, satisfaction, is equal to each other. Thus, the situation can be stated about the suitability of the model established after the assumption is made.

4.4.3. Evaluation of Goodness of Fit with Pseudo R^2 Values

The goodness of fit of the model, in which the percentage of the dependent variable is explained by the independent variables, was examined through R^2 . However, since R^2 results are not a good criterion in Logistic Regression, these analyzes are low.

Table 9. Pseudo (Pseudo) R^2 Goodness of Fit Test Results

CoxandSnell	,237
Nagelkerke	,278
McFadden	,140

Looking at the results, the Cox and Snell R^2 value is 0.237, while the Nagelkerke R^2 value (0.278), which is used to eliminate the limitation, is slightly higher. In addition to these, McFadden R^2 has a value of 0.140.

4.4.4. Interpretation of the Model's Parameter Estimates

To interpret the independent variables in the model, the probability (p) values in the variables are checked. There are 5 variables in the model, which are marital status, employment status, health status, income status and satisfaction with social life. Values of these probability values less than 0.05 are statistically significant variables. The values of the significant variables belonging to the Wald Test and the significance tests of the parameters are used.

SPSS does not give odds ratios in ordinal regression analysis. In order to interpret the parameter values, which are "interpretation according to the odds ratio", the values are interpreted by taking the odds values as "e prime" in excel. Interpretations are made by determining the reference category (0a) in the results. According to the determined reference category, the interpretation of the variable to other categories is done. In Table 10, the estimation values of the parameters of the model, the probability (p) values and the odds ratio "e prime" values are shown. The results were interpreted according to the odds ratio values. Odds ratio can be between 0 and infinity, it cannot be less than zero due to its formula.

When the odds ratio is less than 1, the probability relative to the reference category has a reducing effect. When the odds ratio is greater than 1, the probability relative to the reference category has an increasing effect.

Table 10. Estimated Values of the Parameters of the Model

Variables	Coefficient ($\hat{\beta}$)	Standard error	Wald	Sd	Odds Oranı (e^{β})	Probability (p) value
Dependant Variables						
[Happiness =1]	-4,296	,319	180,828	1		,001
[Happiness =2]	-2,056	,316	42,285	1		,001
Independent Variables						
[Marital status =1]	,024	,109	,050	1		,822
[Marital status =2]	-,531	,093	32,542	1	0,588	,001
[Marital status =3]	,538	,146	13,567	1	1,712	,001
[Marital status =4]	0 ^a	.	.	0		.
[Working Status =1]	-,044	,052	,713	1		,398
[Working Status =2]	,300	,382	,616	1		,432
[Working Status =3]	0 ^a	.	.	0		.
[Health situation =1]	1,587	,199	63,468	1	4,891	,001
[Health situation =2]	1,223	,177	47,530	1	3,399	,001
[Health situation =3]	,906	,181	25,167	1	2,475	,001
[Health situation =4]	,610	,184	10,921	1	1,840	,001
[Health situation =5]	0 ^a	.	.	0		.
[Income status =1]	1,361	,198	47,237	1	3,902	,001
[Income status =2]	1,250	,109	131,345	1	3,491	,001
[Income status =3]	,787	,110	50,882	1	2,197	,001
[Income status =4]	,362	,105	11,888	1	1,436	,001
[Income status =5]	0 ^a	.	.	0		.
[Social life =1]	1,440	,198	53,015	1	4,222	,001
[Social life =2]	1,313	,121	117,584	1	3,717	,001
[Social life =3]	,859	,123	48,784	1	2,360	,001
[Social life =4]	,541	,119	20,767	1	1,719	,001
[Social life =5]	0 ^a	.	.	0		.

According to the data of the independent variables in Table 10, it is seen that certain categories of 4 independent variables out of 5 independent variables yield significant results. The categories that are significant out of these 4 variables will be interpreted, and the non-significant working status variable will not be interpreted. The first argument to be interpreted is the "marital status" variable.

Marital Status: When the chart is examined, the reference category is "His wife died". Significant categories should be interpreted according to this category. It is concluded that individuals who give the answer "married" to this question are 0.58 times happier than those who answer "his wife is dead", and individuals who answer "divorced" are 1.71 times happier than those who do not give the same answer.

Health Status: When the chart is examined, it is seen that the reference category has a category that gives the answer "very bad". Therefore, meaningful categories are interpreted according to this reference category. Here, individuals with "very good" health status are approximately 5 (4,89) times happier than individuals who answer "very bad". In the next stage, individuals who gave the answer "good" were 3.39 times happier than those who stated "very bad" health status, and those who gave the answer "moderate" were 2.47 times happier than the same individuals. The conclusion to be drawn from this situation is the expected and consistent result, since the happiness levels of the individuals are higher than the individuals with "very poor" health status, the better the health status.

Income Status: In terms of income, it is seen that the reference category has a category that gives the answer "very bad". Meaningful categories are interpreted according to this reference category. Here, individuals with a "very good" income status are approximately 4 (3.90) times happier than those who answer "very poor". The second category is 3.49 times happier than the individuals whose income status

is "very bad" and those who answer "moderate" are 2.19 times happier than the same individuals. Individuals in the last category "bad" are 1.43 times happier than individuals who give the same answer. As a result, it is seen that happiness levels increase when the income is good.

Social Life: It is observed that individuals whose reference category is in the variable "not satisfied at all" have 4.22 times more happiness than individuals who are "very satisfied". Those who are "satisfied" are 3.71 times happier, and individuals who give the answer "moderate" are 2.36 times happier than those who give the same answer. According to these results, it is seen that those who are satisfied with their social life, entertainment, cultural and sports activities are happier.

5. Conclusion

Life satisfaction survey is a research conducted by TUIK on individuals aged 18 and over to measure individuals' perspectives on events. It aimed to measure individuals' happiness levels, general life satisfaction, satisfaction with health, education, public services, social security, justice, public order, transportation and municipal services. Based on the data set, in the thesis study, the variables of life satisfaction and future expectation of individuals were examined and interpreted with ordinal (sequential) regression analysis.

Based on the results of the analysis in the study, according to gender, women are happier, individuals who are married in marital status are happier, and when it is categorized by age distribution, the happiness levels of individuals over the age of 65 are higher. It has been concluded that individuals with good income status are happier. As a result of the descriptive statistics of the variables, it is seen that the individuals generally feel happy. It has been seen that health and family are the most sources of happiness in life. In addition, being in good health is one of the determining factors of happiness. Other factors affecting the life satisfaction of individuals are health services, education services, public order services and transportation services, which are public satisfaction levels.

In the study, life satisfaction of individuals is one of the most important factors that increase life satisfaction with their gender, age, marital status, education status, monthly income, as well as their social life and good health status.

Based on these results, it has been seen that the happiness level of individuals is generally high. According to TUIK survey data, women are happier than men. According to another variable marital status, married individuals were found to be the happiest. It has also been observed that individuals aged 65 and over are the happiest. Happiness in education level, on the other hand, increased the level of unhappiness with the effect of the expectation on the individual. It is seen that happiness increases in those who have a good increase in income status.

Education, health, income status, satisfaction in social life and public services are the most important factors in line with the work that affects the life satisfaction and quality of individuals. In the light of these studies; Individuals with very good health status are more happy than individuals with health problems. These problems affect various problems and quality of life.

As a result, the improvement of the health conditions of the individuals, the access to health services and the increase in the opportunities will allow the quality and life satisfaction of the individuals to be higher. The same conditions cover education status and education services and other services. Increasing the level of education and educational services received will enable individuals to advance their own development and pave the way for the achievements to be achieved.

Income status and working status are also important factors affecting life satisfaction of individuals. The fact that individuals can have and receive the opportunities they want, their comfort in working situation significantly affects their quality of life. Therefore, further improvement of income levels and working conditions will be of great importance in increasing life satisfaction.

As a result, in the analysis findings; It has been concluded that the demographic characteristics and time can change the satisfaction with the demographic characteristics, as well as the health status, education and income status are statistically significant in terms of life satisfaction.

In general, the aim of this thesis is to determine the levels and situations that affect the life satisfaction of individuals and to determine new approaches and to aim to reach the theoretical studies to a higher level.

References

- [1] Neugarten, B. L. (1961). Life satisfaction and social interaction in the aging. *Journal of Gerontology*, 16, 344–346.
- [2] TÜİK. (2019). Yaşam Memnuniyeti Araştırması Mikro Veri Seti Life Satisfaction Survey 2019. <http://library1.nida.ac.th/termpaper6/sd/2554/19755.pdf>
- [3] Ülker Tümlü, G. ve Receptoğlu, E. (2013). Üniversite Akademik Personelinin Psikolojik Dayanıklılık ve Yaşam Doymu Arasındaki İlişki. *Yükseköğretim ve Bilim Dergisi*, 3(3), 205–213. doi:10.5961/jhes.2013.078
- [4] Veenhoven, R. (2000). The Four Qualities Of Life Ordering concepts and measures of the good life. *Annals of Operations Research*, 97(1–4), 131–141. doi:10.1023/A
- [5] DolgunNA, Saraçbaşı O. Lojistik Regresyon Çözümlemesi. Ankara: Hacettepe Üniversitesi Yayınları; 2015.
- [6] Alpar R. Uygulamalı Çok Değişkenli İstatistiksel Yöntemler. Ankara: Detay Yayıncılık; 2017.
- [7] Gürsakal, S. ve Öngen, K. B. (2008). 2007 Yaşam Memnuniyeti Anketinin İstatistiksel Yöntemler İle Analizi. *Uludağ Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 27(1), 1–14.
- [8] Kahyaoğlu, O. (2008). Yaşam Memnuniyeti Ve Yaşam Memnuniyetini Etkileyen Değişkenler İle Ekonometrik Uygulama: Türkiye Örneği. *Dokuz Eylül Üniversitesi*.
- [9] Akın, H.B.ve Şentürk, E. (2012). “Bireylerin Mutluluk Düzeylerinin Ordinal Lojistik Regresyon Analizi İle İncelenmesi”, *Öneri Dergisi*, 10: 183- 193.
- [10] Dursun, S. ve İftar, E. (2014). Kadın Çalışanların Yaşamış Oldukları İş Aile Yaşamı Çatışmasının İş ve Yaşam Doymu Üzerine Etkisi. *Atatürk Üniversitesi İktisadi ve İdari Bilimler Dergisi*, 3, 127–137.
- [11] Filiz, Z., (2014). An Analysis of the Levels of Job Satisfaction and Life Satisfaction of the Academic Staff. *Social Indicators Research*, vol.116, no.3, 793-808.
- [12] Arı, E. ve Yıldız, Z. (2016). Bireylerin Yaşam Memnuniyetini Etkileyen Faktörlerin Sıralı Lojistik Regresyon Analizi ile İncelenmesi *Uluslararası Sosyal Araştırmalar Dergisi The Journal of International Social Research*, 9(42), 1362–1374. www.sosyalarastirmalar.com adresinden erişildi.
- [13] Proctor, C. L., Linley, P. A. ve Maltby, J. (2009). Youth life satisfaction: A review of the literature. *Journal of Happiness Studies*. Doi:10.1007/s10902-008-9110-9
- [14] Beşel, F. (2015). 2013 Yılı Yaşam Memnuniyeti Araştırması Sonuçlarının İl Bazlı Ekonomik, Sosyal ve Siyasi Analizi. *Karabük University Journal of Institute of Social Sciences*. doi:10.14230/joiss102
- [15] Schyns, Peggy (2002), “Wealth of Nations Individual Income and Life Satisfactionin 42 Countries: A Multilevel Approach”, *Social Indicators Research*, Vol; 60, 5-40.
- [16] Ramachandran, Rathi and Radhika R (2012), “SocioEconomic Status, Life Satisfaction in Cross Cultural Perspective: The Elderly Japan and India”, *International Journal of Humanities and Social Science*”, Vol; 285-292.
- [17] Emeç, H. (2002). Ege Bölgesi Tüketim Harcamaları İçin Sıralı Logit Tahminleri ve Senaryo Sonuçları. *Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 4(2), 13–29.
- [18] Chen, C.-K. ve Hughes Jr., J. (2004). Using Ordinal Regression Model to Analyze student satisfaction questionnaires. *Association for Institutional Research*, 1, 1–12.
- [19] Ayhan, S. ve Yıldız, Z. (2006). Sıralı Lojistik Regresyon Analiziyle Türkiye’deki Hemşirelerin İş Bırakma Niyetini Etkileyen Faktörlerin Belirlenmesi. *Osmangazi Üniversitesi, Fen Bilimleri Enstitüsü Yüksek Lisans Tezi*.
- [20] Nizam, D. K. ve Akdeniz, H. A. (2008). Türkiye ’de Yataklı Tedavi Kurumlarının Kategorize Edilen Yatak Kapasitelerinin Sıralı Logistik Regresyon Analizi. *Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 10(4), 1–18.
- [21] Demirtaş, E. A., Anagün, AS. ve Köksal, G. (2008). Mutfak Armatürü Tasarımının Kullanıcıların Görsel Algılarına Göre Lojistik Regresyon Yoluyla Belirlenmesi. *Endüstri Mühendisliği Dergisi*, (7),17–31.
- [22] Das S ve Rahman RM. (2011). Application of ordinal logistic regression analysis in determining risk factors of child malnutrition in Bangladesh. *Nutrition Journal*, 1–11.
- [23] Yavuz, S., Deveci, M., Karabulut, T. ve Şentürk, E. (2013). Sıralı Lojistik Regresyon Analiziyle Üniversite Öğrencilerinin Kent Memnuniyetini Etkileyen Faktörlerin Belirlenmesi: Erzincan Üniversitesi Örneği. *Cumhuriyet Üniversitesi İktisadi ve İdari Bilimler Dergisi*, 15(1), 95–114

- [24] Yakut, E., Gündüz, M. ve Demirci, A. (2015). İnsani Kalkınmışlık Düzeyinin Sınıflandırma Başarılarının Karşılaştırılmasında Sıralı Lojistik Regresyon Analizi ve Yapay Sinir Ağları Yöntemlerinin Kullanılması. *Journal of Business Research- Turk*, 7(4), 172–172. doi:10.20491/isader.2015415532
- [25] Tunalı, D. ve Aytekin, A. (2017). Öyp Araştırma Görevlilerinin Yaşam Doyumlarının İkili Lojistik Regresyon Analizi İle İncelenmesi. *International Journal of Management Economics and Business*, 13(31), 0–0. doi:10.17130/ijmeb.20173126273
- [26] Usta, H. G., Ugurlu, C. T. ve Simsek, A. S. (2016). Üniversite Öğrencilerinin Devamsızlık Tutumları: Değişkenler Arası Lojistik Yordayıcılık. *International Journal of Social Science*, 169–182.