ELDERLY ANALYSIS OF TURKEY; TSI DATA FOR 2011-2015¹

TÜRKİYE YAŞLI ANALİZİ; 2011-2015 TUIK VERİLERİ

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Abstract: Introduction: Old age is a biological, chronological and social process that is hard to prevent. It is foreseen according to the projections made for the future that the world's population will reach to 7.5 billion in the year 2020 and the population group aged sixty and above will reach to 1 billion. The needs of aging population change by the years. In this regard, society's knowledge about the elderly population is important in terms of creating health policies about elderly people and planning the services to be offered to them. The purpose of our study is to conduct an analysis on elderly population in our country for the period between 2011 and 2015 by some variables and to create a data source relevant to the subject. **Material and Method:** This study was based on TSI-News Bulletin / data of Elderly Statistics – 2015. The variables were determined for the period 2011-2015. Data obtained from this study were analyzed with E-Views 8.0 program. The factors affecting the industrial production at most were established following the regression and correlation analyses conducted. The method of panel data analysis was used in analysis of data. **Findings:** One-unit of increase in the number of elderly people by years increases the number of dependent people by 0,003 units. One-unit of increase in the number of patients with Alzheimer by years increases the number of total dependent people by 0,002 units. A percentile increase in the number of total married elderly people by years increases the total number of happy elderly by 4.2 units. One-unit of increase in the number of total dependent people by years increases the total number of unhappy people by 1.16 units. One-unit of increase in the number of elderly satisfied with their health condition by years increases the number of happy individuals by 1.54 units. One-unit of increase in the number of total dependent people by years increases the number of those not satisfied with their health condition by 3.21 units. **Conclusion:** There is a correlation between variables. It has been determined that as none of the variables include unit root, they can be used in future analyses. The causality relation between the variables of old age statistics can be analyzed.

Key Words: Elderly, Turkey, Analysis

Öz: Giriş: Yaşlılık, önüne geçilmesi mümkün olmayan biyolojik, kronolojik ve sosyal bir süreçtir. Yapılan projeksiyonlarda 2020 yılında dünya nüfusunun 7.5 milyara, altmış yaş ve üstü nüfus grubunun 1 milyara ulaşacağı tahmin edilmektedir. Nüfusun yaşlanması ile birlikte yaşlanan nüfusun gereksinimleri de değişmektedir. Bu anlamda toplumların yaşlı popülasyonlarını tanımları, yaşlılar ile ilgili sağlık politikalarının oluşturulmasında ve onlara verilecek hizmetlerin planlanmasında önemlidir. Bu gerekçe ile planladığımız çalışmamızın amacı, ülkemizdeki yaşlı popülasyonunun 2011-2015 arasındaki dönem için bazı değişkenlere göre analizini yapmak ve konu ile ilgili göre veri kaynağı oluşturmaktır. **Gereç ve Yöntem:** Bu araştırma TUIK-Haber Bulteni / İstatistiklerle Yaşlılar-2015 verileri temel alınarak yapılmıştır. Değişkenler 2011-2015 arasındaki dönem için belirlenmiştir. Bu araştırmadan elde edilen veriler E-Views 8.0 programı ile analiz edilmiştir. Yapılan regresyon ve korelasyon analizleri sonucunda sanayi üretimini en çok etkileyen faktörler belirlenmiştir. Veriler analiz edilirken panel veri analizi metodundan faydalanılmıştır. **Bulgular:** Yıllar bazında yaşlı sayısındaki bir birimlik artış toplam bağımlı insan sayısını 0,003 birim artırmaktadır. Yıllar bazında alzheimer'lı hasta sayısındaki bir birimlik artış toplam bağımlı insan sayısını 0,002 birim artırmaktadır. Yıllar bazında toplam evli yaşlı sayısındaki yüzde birlik artış toplam mutlu yaşlı sayısını 4.2 birim artırmaktadır. Yıllar bazında toplam bağımlı sayısındaki bir birimlik artış toplam mutsuz kişi sayısını 1.16 birim artırmaktadır. Yıllar bazında toplam sağlık durumundan memnun yaşlı sayısındaki bir birimlik artış toplam mutlu kişi sayısını 1.54 birim artırmaktadır. Yıllar bazında toplam bağımlı sayısındaki bir birimlik artış toplam sağlık durumundan memnun olmayan kişi sayısını 3.21 birim artırmaktadır. **Sonuç:** Değişkenler arasında korelasyon bulunmaktadır. Değişkenlerin hiçbirisinin birim kök içermediği bundan dolayı da ileriki analizlerde kullanılabilecekleri belirlenmiştir. Yaşlılık istatistikleri değişkenleri arasında nedensellik ilişkisi incelenebilmektedir.

Anahtar Kelimeler: Yaşlı, Türkiye, Analiz

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INTRODUCTION

Old age is a biological, chronological and social process that is hard to prevent. Old age is a period in which individuals lose status, dependence and the risk of accident increase, physical abilities diminish and many chronic diseases occur. World Health Organization has defined the old age as “Decrease in the ability to adapt to environmental factors” (Gülen M et al., 2013).

The share of elderly within the total population outreached children in 1998 for the first time in the world. 10% of the world population is composed of the individuals aged sixty five and above. It is predicted in the projections that world population will reach to 7.5 billion in the year 2020 and the population group aged sixty and above will reach to 1 billion. Approximately 800 thousand people reach old age every month all over the world (Kutsal A. 2012).

Turkey goes through a process similar to the demographic developments in many countries. Length of life has extended in parallel to the decrease in high mortality and then in high fertility rates. Moreover, age structures of population also changed and a transition has been experienced from young age groups to advanced age groups (Tezcan S& Seçkiner P; 2012). Today, the elderly population in Turkey (65 years and older) reached to 6 million

495 thousand and 239 people in 2015. While the proportion of elderly people in total population was 8% in 2014, this proportion increased to 8.2% in 2015. The proportion of elderly population was 43.8% for males and 56.2% for females (TSI Elderly Statistics 2015). The needs of aging population are also changing. The studies point out that elderly population use health services more than young population. Elderly population tends to stay at hospitals more. The need felt for long-term care services has increased due to chronic diseases and dramatic increases in disabilities (Gökçe K, 2003). In this sense, it is thought that the society’s knowledge about the elderly population is important in terms of creating health policies about elderly people and planning the services to be offered to them. The purpose of our study is to conduct an analysis on elderly population in our country for the period between 2011 and 2015 by some variables and to create a data source relevant to the subject.

MATERIAL and METHOD

This study was based on TSI-News Bulletin / data of Elderly Statistics – 2015. The variables were determined for the period 2011-2015.

Data Analysis

Data obtained from this study were analyzed with E-Views 8.0 program. The factors affecting the industrial production at most were established following the regression and cor-

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relation analyses conducted. The method of panel data analysis was used in analysis of data.

Research Hypotheses

- ✓ **H1:** Total number of elderly people has a positive effect on the number of dependent people.
- ✓ **H2:** Total number of patients with Alzheimer has a positive effect on the number of dependent people.
- ✓ **H3:** Total number of married people has a positive effect on the number of happy elderly people.
- ✓ **H4:** Increase in total number of dependent people has a positive effect on the number of unhappy people.
- ✓ **H5:** The total number of elderly people satisfied with their health condition has a positive effect on the number of happy elderly people.
- ✓ **H6:** Total number of dependent people has a positive effect on those not satisfied with their health condition.

- ✓ **H7:** The number of those whose source of happiness is children has a positive effect on the number of married people.
- ✓ **H8:** The number of those whose source of happiness is spouse has a positive effect on the number of married people.
- ✓ **H9:** There is no relation between the variables.
- ✓ **H10:** There is no unit root in any of the variables.
- ✓ **H11:** There is causality between the variables of aging statistics.

FINDINGS

H1: Total number of elderly people has a positive effect on the number of dependent people.

With reference to the regression analysis, the coefficient of the total number of elderly people has been found positive. Accordingly, one-unit of increase in the number of elderly people by years increases the number of dependent people by 0,003 units.

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DependentVariable: DEPENDENT

Method: LeastSquares

Date: 04/02/16 Time: 23:25

Sample: 2011 2015

Includedobservations: 5

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ELDERLY	0.003412	3.20E-05	106.7172	0.0000
R-squared	0.795977	Meandependent var		11.46000
Adjusted R-squared	0.795977	S.D. dependent var		0.531977
S.E. of regression	0.240288	Akaikeinfocriterion		0.162903
Sumsquaredresid	0.230954	Schwarzcriterion		0.084791
Loglikelihood	0.592742	Hannan-Quinnriter.		-0.046743
Durbin-Watson stat	0.466294			

H2: Total number of patients with Alzheimer has a positive effect on the number of dependent people.

With reference to the regression analysis, the coefficient of the total number patients with

Alzheimer has been found positive. Accordingly, one-unit of increase in the number of patients with Alzheimer by years increases the number of total dependent people by 0,002 units.

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DependentVariable: DEPENDENT

Method: LeastSquares

Date: 04/03/16 Time: 00:33

Sample: 2011 2015

Includedobservations: 5

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ALZ	0.002372	0.000231	10.28403	0.0005
R-squared	-20.176392	Meandependent var		11.46000
Adjusted R-squared	-20.176392	S.D. dependent var		0.531977
S.E. of regression	2.448044	Akaikeinfocriterion		4.805312
Sumsquaredresid	23.97168	Schwarzcriterion		4.727200
Loglikelihood	-11.01328	Hannan-Quinncrier.		4.595666
Durbin-Watson stat	0.407562			

H3: Total number of married people has a positive effect on the number of happy elderly population.

With reference to the regression analysis, the coefficient of the total number of married el-

derly people has been found positive. Accordingly, a percentile increase in the number of total married elderly people by years increases the total number of happy elderly by 4.2 units.

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DependentVariable: HAPPY

Method: LeastSquares

Date: 04/03/16 Time: 00:35

Sample: 2011 2015

Includedobservations: 5

Variable	Coeffici- ent	Std. Error	t-Statistic	Prob.
LOG(MARRIED)	4.203526	0.096063	43.75780	0.0000
R-squared	0.116523	Meandependent var		59.56000
Adjusted R-squared	0.116523	S.D. dependent var		3.238518
S.E. of regression	3.043996	Akaikeinfocriterion		5.241075
Sumsquaredresid	37.06364	Schwarzcriterion		5.162963
Loglikelihood	-12.10269	Hannan-Quinnccriter.		5.031429
Durbin-Watson stat	1.157155			

H4: Increase in total number of dependent people has a positive effect on the number of unhappy people.

With reference to the regression analysis, the coefficient of the total number of dependent

people has been found positive. Accordingly, one-unit of increase in the number of total dependent people by years increases the total number of unhappy people by 1.16 units.

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DependentVariable: UNHAPPY

Method: LeastSquares

Date: 04/03/16 Time: 00:45

Sample: 2011 2015

Includedobservations: 5

Variable	Coeffici- ent	Std. Error	t-Statistic	Prob.
DEPENDENT	1.160735	0.070656	16.42797	0.0001
R-squared	-0.894903	Meandependent var		13.36000
Adjusted R-squared	-0.894903	S.D. dependent var		1.316435
S.E. of regression	1.812144	Akaikeinfocriterion		4.203755
Sumsquaredresid	13.13547	Schwarzcriterion		4.125643
Loglikelihood	-9.509388	Hannan-Quinnccriter.		3.994109
Durbin-Watson stat	1.018279			

H5: The total number of elderly people satisfied with their health condition has a positive effect on the number of happy elderly people.

With reference to the regression analysis, the coefficient of the total number of elderly pe-

ople satisfied with their health condition has been found positive. Accordingly, one-unit of increase in the number of elderly satisfied with their health condition by years increases the number of happy individuals by 1.54 units.

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DependentVariable: HAPPY

Method: LeastSquares

Date: 04/03/16 Time: 00:47

Sample: 2011 2015

Includedobservations: 5

Variable	Coeffici- ent	Std. Error	t-Statistic	Prob.
SATISFIED	1.546344	0.072762	21.25198	0.0000
R-squared	-2.720355	Meandependent var		59.56000
Adjusted R-squared	-2.720355	S.D. dependent var		3.238518
S.E. of regression	6.246525	Akaikeinfocriterion		6.678784
Sumsquaredresid	156.0763	Schwarzcriterion		6.600672
Loglikelihood	-15.69696	Hannan-Quinnccriter.		6.469138
Durbin-Watson stat	2.116250			

H6: Total number of dependent people has a positive effect on those not satisfied with their health condition.

With reference to the regression analysis, the coefficient of the total number of dependent

people has been found positive. Accordingly, one-unit of increase in the number of total dependent people by years increases the number of those not satisfied with their health condition by 3.21 units.

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DependentVariable: NOT SATISFIED

Method: LeastSquares

Date: 04/03/16 Time: 00:52

Sample: 2011 2015

Includedobservations: 5

Variable	Coeffici- ent	Std. Error	t-Statistic	Prob.
DEPENDENT	3.210675	0.184448	17.40696	0.0001
R-squared	-0.631454	Meandependent var		36.92000
Adjusted R-squared	-0.631454	S.D. dependent var		3.703647
S.E. of regression	4.730609	Akaikeinfocriterion		6.122841
Sumsquaredresid	89.51464	Schwarzcriterion		6.044729
Loglikelihood	-14.30710	Hannan-Quinnccriter.		5.913195
Durbin-Watson stat	0.740969			

H7: The number of those whose source of happiness is children has a positive effect on the number of married people.

With reference to the regression analysis, the coefficient of those whose source of happi-

ness is children has been found positive. Accordingly, one-unit of increase in the number of those whose source of happiness is children by years increases the total number of married people 63.155 units.

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DependentVariable: MARRIED

Method: LeastSquares

Date: 04/03/16 Time: 00:55

Sample: 2011 2015

Includedobservations: 5

Variable	Coeffici- ent	Std. Error	t-Statistic	Prob.
CHILDREN	63,155	4244.361	14.87978	0.0001
R-squared	-2.194421	Meandependent var		1430570.
Adjusted R-squared	-2.194421	S.D. dependent var		119542.7
S.E. of regression	213658.0	Akaikeinfocriterion		27.55900
Sumsquaredresid	1.83E+11	Schwarzcriterion		27.48088
Loglikelihood	-67.89749	Hannan-Quinnccriter.		27.34935
Durbin-Watson stat	0.805137			

H8: The number of those whose source of happiness is spouse has a positive effect on the number of married people.

With reference to the regression analysis, the coefficient of those whose source of happi-

ness is spouse has been found positive. Accordingly, one-unit of increase in the number of those whose source of happiness is spouse by years increases the total number of married people 30.02 units.

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DependentVariable: MARRIED

Method: LeastSquares

Date: 04/03/16 Time: 00:59

Sample: 2011 2015

Includedobservations: 5

Variable	Coeffici- ent	Std. Error	t-Statistic	Prob.
SPOUSE	30.02	37187.57	8.073618	0.0013
R-squared	-9.407827	Meandependent var		1430570.
Adjusted R-squared	-9.407827	S.D. dependent var		119542.7
S.E. of regression	385658.6	Akaikeinfocriterion		28.74015
Sumsquaredresid	5.95E+11	Schwarzcriterion		28.66204
Loglikelihood	-70.85037	Hannan-Quinnccriter.		28.53050
Durbin-Watson stat	1.872378			

H9: There is no relation between the variables.

The results related to the correlation analysis are indicated below.

0,3-0,5 indicates low correlation

0,5-0,8 indicates medium correlation

0,8-1 indicates high correlation

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	ALZ	DE- PEN- DENT	CHILD- REN	SPO- USE	MAR- RIED	SA- TISFI- ED	NOTSA- TISFI- ED	HAPPY	UNHAPPY	EL- DERLY
ALZ	-									
DEPENDENT	0,98	-								
CHILDREN	-0,48	-0,47	-							
SPOUSE	-0,41	-0,37	-0,29	-						
MARRIED	0,99	1,00	-0,49	-0,36	-					
SATISFIED	0,63	0,49	-0,48	-0,40	0,55	-				
NOTSATISFIED	-0,54	-0,45	0,88	-0,24	-0,50	-0,75	-			
HAPPY	0,63	0,52	-0,80	-0,08	0,57	0,91	-0,95	-		
UNHAPPY	-0,70	-0,72	0,73	-0,37	-0,73	-0,32	0,74	-0,58	-	
ELDERLY	1,00	0,99	-0,51	-0,35	1,00	0,57	-0,53	0,60	-0,74	-

H10: There is no unit root in any of the variables.

According to the unit root analysis made, due to the fact that the probability values are

higher than the confidence level of 0.05, H0 hypothesis is accepted. Therefore, it has been determined that none of the variables include unit root, so they can be used in future analyses.

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Groupunitroot test: Summary

Series: ALZ, DEPENDENT, CHILDREN, SPOUSE, MARRIED, SATISFIED, NOTSATISFIED

HAPPY, UNHAPPY, ELDERLY

Date: 04/03/16 Time: 01:56

Sample: 2011 2015

Exogenousvariables: Individualeffects

Automaticselection of maximumlags

Automaticlaglengthselectionbased on SIC: 0

Newey-West automaticbandwidthselectionandBartlettkernel

Balancedobservationsforeach test

Cross-				
Method	Statistic	Prob.**	sections	Obs
Null: Unitroot (assumescommonunitrootprocess)				
Levin, Lin &Chu t*	2.45557	0.9930	10	40
Null: Unitroot (assumesindividualunitrootprocess)				
Im, PesaranandShin W-stat	1.21184	0.8872	10	40
ADF - FisherChi-square	18.3276	0.5658	10	40
PP - FisherChi-square	21.4319	0.3721	10	40

** ProbabilitiesforFishertestsarecomputedusing an asymptoticChi-squaredistribution. Allothertestsassumeasymptoticnormality.

GRANGER CAUSALITY TEST

H11: There is causality between the variables of aging statistics.

When the causality relations between the variables are analyzed, it has been determined

that prob values are higher than 0.05 and H0 hypothesis must be accepted. Therefore, the causality relation between the variables of elderly statistics can be analyzed.

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PairwiseGrangerCausalityTests

Date: 04/03/16 Time: 01:58

Sample: 2011 2015

Lags: 1

NullHypothesis:	Obs	F-Statistic	Prob.
DEPENDENT does not GrangerCause ELDERLY	4	2.12452	0.3828
ELDERLY does not GrangerCause DEPENDENT		2.13759	0.3819
MARRIED does not GrangerCause ELDERLY	4	1.09418	0.4857
ELDERLY does not GrangerCause MARRIED		1.37588	0.4494
ALZ does not GrangerCause ELDERLY	4	11.4379	0.1830
ELDERLY does not GrangerCause ALZ		3.31625	0.3197
HAPPY does not GrangerCause ELDERLY	4	124.988	0.0568
ELDERLY does not GrangerCause HAPPY		0.11121	0.7951
UNHAPPY does not GrangerCause ELDERLY	4	0.38470	0.6466
ELDERLY does not GrangerCause UNHAPPY		11.0986	0.1856
CHILDREN does not GrangerCause ELDERLY	4	377.819	0.0327
ELDERLY does not GrangerCause CHILDREN		6.02651	0.2463
SPOUSE does not GrangerCause ELDERLY	4	0.47818	0.6148
ELDERLY does not GrangerCause SPOUSE		253.043	0.0400
SATISFIED does not GrangerCause ELDERLY	4	175.314	0.0480
ELDERLY does not GrangerCause SATISFIED		0.18493	0.7415
NOTSATISFIED does not GrangerCause ELDERLY	4	0.57015	0.5883
ELDERLY does not GrangerCause NOTSATISFIED		10729.1	0.0061

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MARRIED does not GrangerCause DEPENDENT	4	2.97272	0.3346
DEPENDENT does not GrangerCause MARRIED		3.86099	0.2997
ALZ does not GrangerCause DEPENDENT	4	26.0123	0.1233
DEPENDENT does not GrangerCause ALZ		0.42400	0.6326
HAPPY does not GrangerCause DEPENDENT	4	20.0189	0.1400
DEPENDENT does not GrangerCause HAPPY		0.26003	0.6998
UNHAPPY does not GrangerCause DEPENDENT	4	0.12697	0.7821
DEPENDENT does not GrangerCause UNHAPPY		2.56187	0.3555
CHILDREN does not GrangerCause DEPENDENT	4	0.45251	0.6230
DEPENDENT does not GrangerCause CHILDREN		0.06406	0.8422
SPOUSE does not GrangerCause DEPENDENT	4	0.43917	0.6274
DEPENDENT does not GrangerCause SPOUSE		93.2039	0.0657
SATISFIED does not GrangerCause DEPENDENT	4	50118.0	0.0028
DEPENDENT does not GrangerCause SATISFIED		0.08206	0.8224
NOTSATISFIED does not GrangerCause DEPENDENT	4	0.85070	0.5257
DEPENDENT does not GrangerCause NOTSATISFIED		106.281	0.0616
ALZ does not GrangerCause MARRIED	4	171.775	0.0485
MARRIED does not GrangerCause ALZ		1.04832	0.4925
HAPPY does not GrangerCause MARRIED	4	102.535	0.0627
MARRIED does not GrangerCause HAPPY		0.17387	0.7485
UNHAPPY does not GrangerCause MARRIED	4	0.21223	0.7252
MARRIED does not GrangerCause UNHAPPY		6.44165	0.2389
CHILDREN does not GrangerCause MARRIED	4	8.72100	0.2079

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MARRIED does not GrangerCause CHILDREN		2.05674	0.3876
SPOUSE does not GrangerCause MARRIED	4	0.36345	0.6546
MARRIED does not GrangerCause SPOUSE		8549.68	0.0069
SATISFIED does not GrangerCause MARRIED	4	104.826	0.0620
MARRIED does not GrangerCause SATISFIED		0.13681	0.7745
NOTSATISFIED does not GrangerCause MARRIED	4	0.78005	0.5394
MARRIED does not GrangerCause NOTSATISFIED		7402.21	0.0074
HAPPY does not GrangerCause ALZ	4	0.34120	0.6634
ALZ does not GrangerCause HAPPY		0.29260	0.6843
UNHAPPY does not GrangerCause ALZ	4	65.1934	0.0784
ALZ does not GrangerCause UNHAPPY		39.6303	0.1003
CHILDREN does not GrangerCause ALZ	4	1.76459	0.4108
ALZ does not GrangerCause CHILDREN		3.63322	0.3076
SPOUSE does not GrangerCause ALZ	4	33.4542	0.1090
ALZ does not GrangerCause SPOUSE		44.2612	0.0950
SATISFIED does not GrangerCause ALZ	4	1.16038	0.4763
ALZ does not GrangerCause SATISFIED		0.14167	0.7708
NOTSATISFIED does not GrangerCause ALZ	4	0.33998	0.6639
ALZ does not GrangerCause NOTSATISFIED		5.07811	0.2659
UNHAPPY does not GrangerCause HAPPY	4	0.21262	0.7249
HAPPY does not GrangerCause UNHAPPY		26.7003	0.1217
CHILDREN does not GrangerCause HAPPY	4	0.07839	0.8262
HAPPY does not GrangerCause CHILDREN		11.3292	0.1839

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SPOUSE does not GrangerCause HAPPY	4	0.80419	0.5346
HAPPY does not GrangerCause SPOUSE		4.80546	0.2725
SATISFIED does not GrangerCause HAPPY	4	0.00018	0.9915
HAPPY does not GrangerCause SATISFIED		0.42503	0.6322
NOTSATISFIED does not GrangerCause HAPPY	4	0.60707	0.5786
HAPPY does not GrangerCause NOTSATISFIED		0.03425	0.8835
CHILDREN does not GrangerCause UNHAPPY	4	1.98815	0.3927
UNHAPPY does not GrangerCause CHILDREN		0.00249	0.9682
SPOUSE does not GrangerCause UNHAPPY	4	19.3544	0.1423
UNHAPPY does not GrangerCause SPOUSE		91.7245	0.0662
SATISFIED does not GrangerCause UNHAPPY	4	6.70481	0.2346
UNHAPPY does not GrangerCause SATISFIED		1.87091	0.4019
NOTSATISFIED does not GrangerCause UNHAPPY	4	9.38385	0.2009
UNHAPPY does not GrangerCause NOTSATISFIED		0.01948	0.9117
SPOUSE does not GrangerCause CHILDREN	4	0.06031	0.8467
CHILDREN does not GrangerCause SPOUSE		91.6234	0.0663
SATISFIED does not GrangerCause CHILDREN	4	5.37298	0.2593
CHILDREN does not GrangerCause SATISFIED		0.17914	0.7451
NOTSATISFIED does not GrangerCause CHILDREN	4	14.3708	0.1642
CHILDREN does not GrangerCause NOTSATISFIED		7.41772	0.2240
SATISFIED does not GrangerCause SPOUSE	4	1.30566	0.4577
SPOUSE does not GrangerCause SATISFIED		31.1425	0.1129
NOTSATISFIED does not GrangerCause SPOUSE	4	5.40609	0.2586

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SPOUSE does not GrangerCause NOTSATISFIED		0.06705	0.8387
NOTSATISFIED does not GrangerCause SATISFIED	4	1.53328	0.4325
SATISFIED does not GrangerCause NOTSATISFIED		0.04996	0.8600

DISCUSSION

It is observed in the analyses conducted in our study that one-unit of increase in the number of elderly people by years increases the number of dependent people by 0,003 units. The rate of elderly dependence corresponds to the number of elderly people per 100 people at working age. The rate of elderly dependence in Turkey was 11.82% in 2014. While the number of elderly people who must be cared by 100 employees in 2014 in Turkey was 12, this number is expected to be 15 in the year 2023 (TSI, 2015).

Another finding obtained from the study is that one-unit of increase in the number of patients with Alzheimer by years increases the number of total dependent people by 0,002 units. In parallel to the rapid increase of elderly population, frequently observed diseases in old-age become a problem in the society. Alzheimer disease is observed frequently in old age. Alzheimer is a progressive and degenerative disease leading to neuronal loss and decreased metabolic activity in some parts of the brain and affecting remembrance, speaking and emotions. This disease starting with

memory disorders progresses with the disability of mental functions and changes of personality. In the last stage, patients become fully dependent individuals who have lost their verbal and motor skills (Akyar&Akdemir,2009).

It has been determined in the study that satisfaction from the health condition in elderly people and being independent regarding functions increase the number of happy elderly people. While the rate of elderly people saying that they are happy in Turkey was 63.4% in 2013, this rate dropped to 62.8% in 2014. Concerning the general level of happiness analyzed on the basis of sex, it was determined that 63% of elderly men and 62.7% of elderly women stated that they were happy in 2014 (TSI 2015). It is stated in literature that aging is an important determiner in terms of getting satisfaction from life (Birtane et al., 2000), being dependent for functions decreases the life satisfaction especially in elderly people (Tajvar, 2008; İnal, 2003; Eser, 2005). As the mobility reduces by aging, person's ability to do their work decreases and it becomes difficult to meet the needs, this condition negatively affects the life satisfaction.

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Conclusion and Evaluation

- One-unit of increase in the number of elderly people by years increases the number of dependent people by 0.003 units.
- . One-unit of increase in the number of patients with Alzheimer by years increases the number of total dependent people by 0.002 units.
- A percentile increase in the number of total married elderly people by years increases the total number of happy elderly by 4.2 units.
- One-unit of increase in the number of total dependent people by years increases the total number of unhappy people by 1.16 units.
- One-unit of increase in the number of elderly satisfied with their health condition by years increases the number of happy individuals by 1.54 units.
- One-unit of increase in the number of total dependent people by years increases the number of those not satisfied with their health condition by 3.21 units.
- One-unit of increase in the number of those whose source of happiness is children by years increases the total number of married people 63.155 units.

- One-unit of increase in the number of those whose source of happiness is spouse by years increases the total number of married people 30.02 units.
- There is a correlation between the variables.
- It has been determined that as none of the variables include unit root, they can be used in future analyses
- The causality relation between the variables of old age statistics can be analyzed.

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