

Tenure and Dwelling Type Preference in Turkey: 2006-2010 Comparison

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Abstract

The aim of this study is to analyse the effect of individual characteristics, facilities in the dwelling and 2008 financial crisis on tenure and dwelling type preference of households in Turkey. Within this scope, the study selected 2006, representing the pre-crisis period, and 2010, representing the post-crisis period. Analyses pooled Household Budget Survey 2006 and 2010 raw data. The study included 8,474 household regarding the year 2006 and 10,067 household regarding the year 2010, making a total of 18,541 households. Analyses using Multinomial Logit Model (MNL) to examine both tenure and dwelling type showed that important factors determining preference were individual characteristics such as household size, age of household head, household income and presence of natural gas, hot water, cable system, central heating within the dwelling and number of rooms. There were significant differences in tenure and dwelling type preference between 2006 and 2010.

Keywords: *tenure preference; dwelling preference; multinomial logit model; financial crisis*

JEL Classification: *C25; D12; R21*

Introduction

The construction sector and basic housing manufacture constitute an important component of the economy in Turkey, as well as in many other countries. According to Turkish Statistical Institute (TSI) data, the sector's share of the gross domestic product in 2006 was 6.4%, whereas this share was 5.7% in 2010. The sector is vulnerable to changes in macroeconomic and microeconomic conditions. Thus, the effect of both bears examination.

As a consequence of globalization and urbanization in Turkey, changes in the country's demographics have arisen. There has been a switch from a large family structure with many children to a nuclear family structure with few (Ünal, 2013). As an important part of the construction sector is dwelling manufacture, this change causes provision of different alternatives to consumers in terms of largeness, location, social opportunities and equipment.

Examination of consumer behaviour and expectations along with macro indications are necessary to make economic predictions prudential, reliable, and realistic. Today, housing goes beyond only shelter and offers a life style to consumers. Hence, studies on consumer behaviour have gained importance.

There are many methods and studies examining consumer behaviour in housing market in literature. Initial studies are hedonic price models analysing the price of dwelling properties. Rosen (1974) has realized a leading study relating to the effect of the property of a product on its price. Palmquist (1984); Cropper, Deck and McConnell (1988); Lee, Chung and Kim (2005) are made important studies using the hedonic price model to determine factors affecting housing price. Ellickson (1981), however, suggested that hedonic price function provides limited information on consumer behaviour. It fails to illustrate pleasure and income effects in large scale logit modelling of the housing market. In a leading housing preference logit study, Quibley (1976) estimated dwelling type and settlement preference in Pittsburgh using Nested Multinomial Logit Model (NMLM). Lerman (1977) and Anas (1982) examined dwelling type and settlement decision considering travel preference. Blijie and Vries (2006) showed that transportation facilities were important in housing preference. Boersch-Supan and Pitkin (1988) examined demographic and financial factors affecting housing preference. Fischer and Aufhauser (1988) determined that demographic and income variables had a significant effect in housing choice using NMLM. Kim (1992) estimated the preference probability of dwelling type in rental housing market by using hierarchical logit model. Results of the study revealed that income, household size and education level affected probability of rental housing preference. Ahmad (1994) estimated tenure preference with probit model. He showed that income, age and education of household head are significant and determinative factors for both tenants and landlords. Tu and Goldfinch (1996) showed that dwelling properties as well as individual characteristics were important in housing demand. Cho (1997) aimed to find basic factors affecting tenure and dwelling type preference in his study. Age, education level and occupation of household head and presence of school-age child within the house proved to have an effect. Pazarlıoğlu (2007) studied with 2003 Turkey Household Budget Survey data to determine factors affecting dwelling type preference in Turkey. He showed with MNLM that dwelling properties as well as demographic variables had an effect.

The housing market shrank considerably due to the financial crisis which began in the United States with mortgage credits in 2007 and started to affect Turkey later that year. Initial causes of the crisis were difficulties in paying back sub-prime mortgage credits, decrease in real estate prices and deterioration of mortgage financial organizations (Demir et al., 2008). Examination of the effect of the crisis on worldwide consumer preferences relating to housing market forms the starting point of this study. Its aim is to research the effect of individual characteristics, facilities in the dwelling and the 2008 housing crisis on preference in tenure (landlord – tenant) and dwelling (detached house – apartment house) in Turkey. In order to determine the effect of the crisis on consumer preference in Turkey, which had its earliest effects in 2007, the study used 2006 as representative of pre-crisis period. As the crisis in Turkey fully manifested at the end of 2008 and in 2009, the year 2010 represents the post-crisis period. MNLM informed the analysis performed by pooling 2006 and 2010 Household Budget Survey data.

The second section of the study, will introduce the econometric method. The third, will explain the data set and variables used in the analysis, including model results and interpretations. The last section will offer a general assessment of the study.

Theoretical Framework

The study assumes that consumers examine all present alternatives in housing selection process and make a choice considering the alternative with the highest utility level. Thus, housing preference primarily relies on random utility theory (Carrasco and Ortuzar, 2002).

Random Utility Models

Random utility theory assumes that a decision-maker has unique analytical skill and will choose the alternative to provide him the maximum utility. Random utility models consist of deterministic sections representing observed properties and stochastic sections representing unobservable properties (Hensher et al., 2005).

When decision-maker n encounters a preference among J alternatives, he gains utility from each alternative at a certain level. Utility to be acquired from j alternative by decision-maker n is shown with U_{nj} , $j = 1, \dots, J$, and the decision-maker is supposed to choose the alternative which will provide the highest utility. The decision-maker will choose i if $U_{ni} > U_{nj}$ ($\forall j \neq i$) (McFadden, 1973). However, the researcher cannot observe the utilities of the decision-maker, only properties of alternatives of the decision-maker x_{nj} $\forall j$, and some characteristics of the decision-maker s_n . The researcher defines a function relating to these factors to predict utilities of the decision-maker (Koning and Ridder, 2003):

$$V_{nj} = V(x_{nj}, s_n) \quad (1)$$

This function is agent utility. Utility status that the researcher could not or has not observed by the researcher is $V_{nj} \neq U_{nj}$. The utility is:

$$U_{nj} = V_{nj} + \varepsilon_{nj} \quad (2)$$

V_{nj} shows utility level of alternative j for decision-maker n . V_{nj} is a deterministic function of explanatory variables and parameters. ε_{nj} represents stochastic section of the model (McFadden, 1984). Distribution as well as characteristics of ε_{nj} depends on V_{nj} specification (Train, 2003).

Multinomial Logit Model

MNLM from qualitative preference models based on selection from more than two alternatives is the most popular model for unordered preferences and depends on random utility model. MNLM is designed to handle J number of preference where $J \geq 1$. The probability of selection of m th preference by i th individual according to MNLM appears in equation (3) (Davidson and MacKinnon, 1999):

$$P(Y_i = m | x_i) = \frac{\exp(x_i \beta_m)}{1 + \sum_{j=2}^J \exp(x_i \beta_j)} \quad m > 1 \quad \beta_1 = 0 \quad (3)$$

Y_i is dependent variable vector for the individual i and x_i is independent variable vector. x_i represents characteristics not changing according to preferences of the individual. β_j measures

the contribution of independent variable vector to the probability of preference of j alternative whereas β_m measures the contribution of independent variable vector to the probability of preference of j alternative. Estimated equations enable the acquisition of probability set of preference of the number J for a decision-maker with x_i characteristics. The maximum likelihood method helps estimate MNLM.

There are two important disadvantages of MNLM. First of them is that it is difficult to determine that error terms have Gumbell distribution. The other disadvantage is the assumption that error terms are independent. Considering both situations together reveals the Independence of Irrelevant Alternatives (IIA) assumption, the most important restriction of MNLM.

IIA Assumption

According to IIA assumption, the ratio of preference probability of two alternatives is independent of whether there are any other alternatives in preference set or not. Whether IIA assumption is valid is an experimental question. Statistical examination is required, using Hausman-type IIA test statistics.

The basic hypothesis of Hausman-type IIA test is that the difference ratio formed by two preference alternatives within a model is independent of the presence of another preference alternative, or that IIA assumption is valid. Test statistic is in equation (4):

$$\chi^2 = (\hat{\beta}_s - \hat{\beta}_f)' [\hat{V}_s - \hat{V}_f]^{-1} (\hat{\beta}_s - \hat{\beta}_f) \quad (4)$$

According to statistics s represents estimations based on restricted set and f represents estimations based on all preferences set. Statistics shows χ^2 distribution with k degrees of freedom (McFadden, 1984).

Another test used in testing of IIA assumption is Small and Hsiao (1985) IIA test. Sample is divided into two equal sub-samples to realize Small and Hsiao test. Unrestricted MNLM is estimated for each sub-sample.

$\hat{\beta}_u^{S_1}$ shows estimations obtained with unrestricted MNLM applied to the first sub-sample whereas $\hat{\beta}_u^{S_2}$ shows estimations obtained from the second sub-sample; weighted average of parameters is given in equation (5):

$$\hat{\beta}_u^{S_1 S_2} = \left(\frac{1}{\sqrt{2}} \right) \hat{\beta}_u^{S_1} + \left[1 - \left(\frac{1}{\sqrt{2}} \right) \right] \hat{\beta}_u^{S_2} \quad (5)$$

Afterwards, a restricted sample uses a selected value of the dependent variable and the second sub-sample. MNLM permits estimation of this restricted sample and $\hat{\beta}_r^{S_2}$ estimations. Small-Hsiao statistics illustrating χ^2 distribution with $(K+1)$ degrees of freedom, where K is number of independent variables, is in equation (6) (Long and Freese, 2001).

$$SH = -2 \left[L(\hat{\beta}_u^{S_1 S_2}) - L(\hat{\beta}_r^{S_2}) \right] \quad (6)$$

Econometric Model and Experimental Results

Data Set and Variables

Analysis pooled and used “Household Budget Survey Data Set” 2006 and 2010 data carried out by TSI. Using MNLM of multinomial choice models explained effects of explanatory variables consisting of year dummy, individual characteristics and facilities in the dwelling on dependent variable, illustrating joint tenure and dwelling preference. This study sample consists of 8,474 households regarding the year 2006 and 10,067 households regarding the year 2010, making a total of 18,541 households.

In 2006 and 2010 data sets, dwelling type is generally classified as “detached house and apartment house”. Tenure type, on the other hand, consists of “landlord, tenant, lodging and other” choices. “Lodging” means housing which belongs to the state or to one’s own workplace. “Other” represents housings such as a father’s or relative’s house, for which the household makes no payment or pays a price much below market price. As households do not possess the house and mostly pay rents in lodging and other alternatives, the study classifies these alternatives “tenant”. Thusly, tenure type is “landlord and tenant”. In this case, tenure and dwelling type being the dependent variable of the study consists of four alternatives: *landlord - detached house*, *landlord - apartment house*, *tenant - detached house*, *tenant - apartment house*.

Table 1. Descriptive Statistics

Variables	2006 - 2010		2006		2010	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
<i>Year</i>						
Year 2006	0.4570	0.4982	-	-	-	-
Year 2010	0.5430	0.4982	-	-	-	-
<i>Tenure and Dwelling Type</i>						
Landlord - Detached house	0.3506	0.4772	0.3695	0.4827	0.3347	0.4719
Landlord - Apartment house	0.3019	0.4591	0.3180	0.4657	0.2884	0.4530
Tenant - Detached house	0.1257	0.3315	0.1111	0.3142	0.1379	0.3449
Tenant - Apartment house	0.2218	0.4155	0.2014	0.4011	0.2390	0.4265
<i>Settlements</i>						
Rural	0.3115	0.4631	0.3081	0.4617	0.3143	0.4643
City	0.6885	0.4631	0.6919	0.4617	0.6857	0.4643
<i>Household size</i>	3.9220	1.9039	4.0806	1.8928	3.7884	1.9031
<i>Household income /1000</i>	17.5061	16.3450	16.3674	14.4441	18.4646	17.7325
<i>Age of household head</i>						
15-34 year-old	0.1886	0.3912	0.1999	0.4000	0.1791	0.3835
35-44 year-old	0.2623	0.4399	0.2794	0.4488	0.2479	0.4318
45-54 year-old	0.2495	0.4327	0.2472	0.4314	0.2514	0.4338
55+ year-old	0.2996	0.4581	0.2735	0.4457	0.3216	0.4671
<i>Education of Household Head</i>						
Without diploma	0.1298	0.3361	0.1208	0.3260	0.1373	0.3443
Primary school	0.4877	0.4999	0.5088	0.5000	0.4700	0.4991
Secondary school	0.1061	0.3080	0.1071	0.3092	0.1053	0.3069
High school	0.1664	0.3724	0.1656	0.3717	0.1671	0.3731
University and above	0.1100	0.3129	0.0977	0.2969	0.1203	0.3253
<i>Facilities in the Dwelling (1:present)</i>						
Central heating	0.2709	0.4444	0.2337	0.4232	0.3023	0.4593
Natural gas	0.1983	0.3987	0.1476	0.3548	0.2409	0.4276
Hot water	0.7655	0.4237	0.7272	0.4454	0.7978	0.4017
Cable system	0.0442	0.2055	0.0439	0.2049	0.0444	0.2060
Indoor garage	0.4008	0.1978	0.0294	0.1689	0.0504	0.2187
Number of rooms	3.4998	0.8171	3.4910	0.7849	3.5071	0.8432

Source: Authors’ own elaboration based on Household Budget Survey 2006 and 2010 Data Sets carried out by TSI.

Descriptive statistics regarding variables used in practice appear in Table 1 for 2006 and 2010 pooled data set and for each year separately. 45.7% of variables in combined data set belong to 2006 while 54.3% belongs to 2010. Regarding the distribution of dependent variable, the highest level is for those who are landlords and reside in a detached house, whereas the lowest ratio is for those being tenant in a detached house. On year-based examination, decrease appeared in 2010 for landlords while there was an increase for tenants.

Studies have revealed that demographic and socioeconomic variables affect tenure and dwelling type preference. In this study, settlements, individual number living in the house, age and education status of household head are used demographic variables. Total annual usable income of the house serves as socioeconomic indication. 2010 data were deflated compared to 2006 and obtained data were included in the analysis by being divided into 1,000. With the purpose of examining effect of preference properties, presence of central heating, natural gas, hot water, cable system, indoor garage and number of rooms in the dwelling were used as explanatory variables in the analysis.

Estimation Results

On analysis of housing preference, many alternatives should be considered. On making housing preference, households should make three different decisions: tenure, dwelling and location (Yates and Mackay, 2005). In this study, joint tenure and dwelling type preference were examined in a model. There is no certainty about which tenure or dwelling type households give preference (Cho, 1997). Hence, estimation was made with MNLM, assuming households simultaneously decide tenure and dwelling type. Before examining MNLM results of which base category shows those residing in “landlord-detached house”, χ^2 statistics illustrating common effect of independent variables on housing preference, Small-Hsiao test used to research validity of IIA assumption and test results of combinability of two alternatives were examined.

Table 2. LR and Wald Tests for Independent Variables

Variables	df	LR Test - χ^2	Wald Test - χ^2
Year 2010	3	270.985***	264.293***
City	3	1877.014***	1703.954***
Household size	3	270.564***	254.494***
Household income / 1000	3	322.019***	264.494***
35-44 year-old	3	163.356***	160.895***
45-54 year-old	3	729.084***	696.361***
55+ year-old	3	1648.500***	1453.757***
Primary school	3	27.341***	27.000***
Secondary school	3	61.442***	60.433***
High school	3	129.561***	125.846***
University and above	3	178.383***	161.699***
Central heating	3	908.583***	184.932***
Natural gas	3	61.852***	755.281***
Hot water	3	426.916***	57.900***
Cable system	3	84.325***	389.434***
Indoor garage	3	32.008***	65.519***
Number of rooms	3	189.230***	32.755***

Source: Authors' own elaboration based on the LR and Wald tests for independent variables.

Notes: *** significant at the %1 level; df: degrees of freedom, LR: Likelihood Ratio

H_0 hypothesis claiming that “All parameters associated with given variable(s) are 0” can be examined with Likelihood Ratio (LR) or Wald test. Results for both tests are given in Table 2. Accordingly, all parameters appeared statistically significant with a significance level of 1%.

Table 3. Small-Hsiao Test of IIA Assumption

Omitted Alternative	Landlord Apartment	Tenant Detached	Tenant Apartment
$\ln L_1$	-4553.075	-5944.122	-4824.896
$\ln L_2$	-4534.871	-5925.874	-4801.647
χ^2	36.408	36.498	46.499
df	36	36	36
$P > \chi^2$	0.450	0.446	0.113

Source: Authors' own elaboration based on the Small-Hsiao test of IIA assumption.

Notes: $\ln L_1$: log-likelihood values obtained with unrestricted MNLM; $\ln L_2$: log-likelihood values obtained with restricted MNLM with a selected value of dependent variable; df: degrees of freedom

Hausman test was the first tool to examine IIA assumption in MNLM. However, as χ^2 test statistics were negative, the estimated model could not meet asymptotic assumptions of Hausman test. Hence, the Hausman test could not inform any decisions. Results of Small-Hsiao test applied thereafter appear in Table 3. The H_0 hypothesis, claiming that "Odds (outcome- J vs outcome- K) are independent of other alternatives" could not be rejected. IIA assumption is valid for the model.

Table 4. LR and Wald Tests for Combining Alternatives

Alternative Tested		df	LR Test- χ^2	Wald Test- χ^2
Landlord-Apartment	Tenant-Detached	17	4530.891***	2337.533***
Landlord- Apartment	Tenant- Apartment	17	1957.698***	1568.433***
Landlord- Apartment	Landlord- Detached	17	7760.742***	3537.620***
Tenant- Detached	Tenant- Apartment	17	2216.880***	1294.103***
Tenant- Detached	Landlord- Detached	17	2246.515***	1716.402***
Tenant- Apartment	Landlord- Detached	17	6812.211***	3582.587***

Source: Authors' own elaboration based on the LR and Wald tests for combining alternatives.

Notes: *** significant at the %1 level; df: degrees of freedom

Dependent variable consists of tenure and dwelling type 4 alternatives. LR and Wald tests reveal combinability of any two of these alternatives. Test results are in Table 4. H_0 hypothesis claiming that "All coefficients except intercepts associated with a given pair of alternatives are 0 (i.e., alternatives can be collapsed)" is rejected for each alternative pair with a significance level of 1%. In this case, a significant difference appeared between dependent variable alternatives, and no class could be combined.

In MNLM model given in Table 5, dependent variable is tenure and dwelling type variable consisting of "landlord - detached house, landlord - apartment house, tenant - detached house, tenant - apartment house" alternatives. Base category in the model is determined as "landlord - detached house". Explanatory variables were year and settlement dummy, household size, household income/1000, age and education of household head, presence of central heating, natural gas, hot water, cable system, indoor garage and number of rooms in dwelling. MNLM appear with coefficients, relative risk ratios (RRR) and standard errors for 3 alternatives other than base category.

Examining year effect, it is seen that there is a significant difference in tenure and dwelling type preference in 2010 with respect to 2006. "Landlord - apartment house" was preferred less with respect to "landlord - detached house" in 2010 while both dwelling types were preferred more for tenants. Results indicate it can be concluded that households has preferred to become tenant more after 2008 financial crisis in Turkey.

People living in the city prefer other alternatives to "landlord - detached house". They mostly prefer being tenants in apartments, while those living in rural areas mostly reside in detached houses for which there are landlords.

Table 5. MNLM Estimation Results

Landlord - Detached Variables	Landlord-Apartment		Tenant - Detached		Tenant - Apartment	
	Coef.	RRR	Coef.	RRR	Coef.	RRR
Year dummy (base:2006)	-0.2898***	0.7484	0.6026***	1.8268	0.2098***	1.2334
Settlement dummy (base:rural)	1.9244***	6.8507	1.2795***	3.5949	2.0555***	7.8107
Household size	-0.1842***	0.8318	-0.1196***	0.8873	-0.2445***	0.7831
Household income / 1000	0.0165***	1.0167	-0.0421***	0.9588	-0.0061**	0.9939
<i>Age of household head (base:15-34 year-old)</i>						
35-44 year-old	0.1884**	1.2073	-0.5245***	0.5918	-0.4967***	0.6086
45-54 year-old	-0.0157	0.9844	-1.2925***	0.2746	-1.4187***	0.2420
55+ year-old	-0.2293***	0.7951	-2.2682***	0.1035	-2.4131***	0.0895
<i>Education of Household Head (base: without diploma)</i>						
Primary school	0.3941***	1.4831	0.1547*	1.1673	0.3208***	1.3782
Secondary school	0.7117***	2.0375	0.4000***	1.4918	0.7565***	2.1308
High school	0.9209***	2.6405	0.6667***	1.9478	1.1267***	3.0856
University and above	1.3676***	3.9257	1.1834***	3.2655	1.7880***	5.9775
<i>Facilities in the Dwelling (base:absent)</i>						
Central heating	2.1112***	8.2584	-0.2160	0.8058	1.5997***	4.9513
Natural gas	0.4793***	1.6150	-0.4088**	0.6645	0.4527***	0.9938
Hot water	1.2682***	3.5546	0.0266	1.0269	0.8526***	2.3458
Cable system	1.4515***	4.2696	0.2964	1.3450	1.5893***	4.9003
Indoor garage	-0.7453***	0.4746	-0.3659**	0.6936	-0.5975***	0.5502
Number of rooms	0.2160***	1.2411	-0.3240***	0.7233	-0.0062	0.9938
Constant term	-3.6870***	0.0250	0.8817***	2.4149	-1.3284***	0.2649

Source: Authors' own elaboration based on the results of MNLM.

Notes: *** significant at the %1 level, ** significant at the %5 level, * significant at the %10 level; RRR: Relative Risk Ratios; Main category for dependent variable: those residing in landlord - detached house

Household size is negative for all alternatives. As number of individual increases in the household other alternatives are preferred less with respect to "landlord - detached house". For each individual added to the household, the probability of being a tenant decreases by 22%.

Income is one of the most important variables affecting demand of a product or a service. Renting or purchasing a dwelling makes a great difference to the budget of the household. The fact that shares divided from budget for dwelling is high renders the relationship between income and housing preference more important. As income levels of households increase, probability of being a landlord in an apartment with respect to "landlord - detached house" increases by 2% while probability of both dwelling types decreases for tenants. Households of which income level is increased prefer being landlords.

Demographic structure of households has a profoundly effect on housing preference. The probability of being tenants for both dwelling type decreases with advancing ages. Education level of household head is another variable that affects dwelling preference. From primary school to university education, households prefer residing in apartments rather than detached houses. As education level gets higher, households prefer "landlord - apartment house", "tenant - detached house" and "tenant - apartment house" alternatives more. The fact that household head is a university graduate increases probability of being a tenant in a detached house with respect to "landlord - detached house" 3.27 fold, probability of being a landlord in an apartment 3.93 fold and probability of being a tenant in an apartment 5.98 fold.

Along with individual characteristics, facilities in the dwelling have significant effect on tenure and dwelling preference. The presence of central heating, natural gas, hot water and cable system within the dwelling increases probability of preference. Presence of central heating increases probability of being a landlord for the apartment 8.26 fold. Among facilities in the dwelling, only natural gas has a negative and significant effect on being a tenant in a detached house. Presence of an indoor garage causes a negative effect on probability of preference of

“landlord - apartment house”, “tenant - detached house” and “tenant - apartment house” alternatives. While rising number of rooms increases probability of being a landlord in the apartment, it decreases probability of preference of both dwellings for tenants.

Conclusions

Housing (sheltering) is one of humans’ most basic needs after breathing and feeding. Moreover, housing is an economic value that has an important place within expense items of households. Consumer tendencies and expectations call for analysis to make proper predictions in economics and industry and to develop valid policies. Hence, factors that affect tenure and dwelling preference of households were examined in this study.

The aim of this study is to analyse effects of 2008 financial crisis arising in United States with mortgage credits, demographic, socioeconomic factors and facilities in the dwelling on tenure and dwelling preference of households in Turkey. It pooled 2006 and 2010 Household Budget Survey data and used MNLM as the econometric method. In the study, the dependent variable consists of four alternatives: “*landlord - detached house, landlord - apartment house, tenant - detached house, tenant - apartment house*”.

LR and Wald χ^2 statistics, which show common effect of independent variables on housing preference for obtained MNLM estimation, were calculated and parameters were statistically significant. Small-Hsiao test was applied for IIA assumption being an important restriction of MNLM. Test result showed that MNLM met IIA assumption. Lastly, LR and Wald tested combinability of dependent variable alternatives, indicating that alternatives cannot be combined.

MNLM results show that settlement has a significant effect on tenure and dwelling type preference of households. According to the result of the model, households living in cities prefer “landlord - apartment house”, “tenant - detached house” and “tenant - apartment house” alternatives more. Households living in rural areas mostly reside in their own houses and detached houses. Result is compatible with expectations for Turkey. Increase in household size causes less preference of “landlord - apartment house”, “tenant - detached house” and “tenant - apartment house” alternatives. Crowded families tend to be landlords of detached houses. Household income has a particular effect on tenure preference; as income increases, households prefer being landlords. Age and education of household head are also important determinants on tenure and dwelling type preference. As age of household head advances, households tend towards “landlord - detached house”, and with the advancement of education level other alternatives are preferred more with respect to “landlord - detached house”.

In case of a preference, preference properties are as relevant as individual characteristics. Presence of central heating, natural gas, hot water and cable system causes a remarkable increase of probability of preference for apartments. In case of presence of indoor garage, on the other hand, “landlord - apartment house”, “tenant - detached house” and “tenant - apartment house” alternatives are preferred more. Increase in number of rooms in the housing increases the probability of being landlord.

The study concerned the years 2006 and 2010 with the purpose of examining the effect caused on housing preference of households by crisis affecting the whole world was used. Households preferred less to be landlords in apartments with respect to “landlord - detached house” in 2010 whereas they preferred to be tenants in both dwelling types. While the reasons of the crisis are difficulties of households in paying back housing credits in United States and decrease in real estate prices, the fact that households did not prefer purchasing housing in post-crisis period meets expectations. After the 2008 crisis, households in Turkey preferred more strongly to become tenants.

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