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ANALYSIS OF HOUSING OWNERSHIP AND HOUSING TENDENCIES IN THE CONTEXT OF REVENUE AND ACCESSIBILITY: THE CASE OF KAYSERI CITY

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Abstract

Housing ownership and housing acquisition trend varies within different purposes in different parts of the city. In terms of income level and accessibility, housing mobility is oriented differently, taking into account personal and household issues. Within the scope of the survey, the statistics obtained from the questionnaires applied to 454 householders with different social levels from different regions of the city of Kayseri reveal whether or not these three variables have an effect on each other. In addition, in Kayseri, it's examined in which aspects of people living in different neighborhoods lead housing choices in terms of transportation and accessibility.

1. INTRODUCTION

Cities are places where economic, social and environmental usages are combined. In these places, the objects that arise as a result of the production activities are called products, and the products that arise as a result of working activities are called services. It is seen that such activities are continuously renewed and consumed in the settlement areas. The areas where the regeneration and consumption activities are carried out intensively in the settlement areas are the places where the people are most wanted to reach and the measurement of the degree of convenience in this transportation is called accessibility. Accessibility is considered as one of the key concepts that closely correlate with the discipline of planning and directs the development of the city in the future. The concept that makes the accessibility concept important is that both the distribution of functions in the city and the interactions between the functions are consistent [1].

Accessibility is a widely discussed issue in today's literature. Although there are many definitions of accessibility, it is generally expressed as follows. Accessibility is an expression of the advantages that a given region, corridor or area have within the framework of accessibility indicators compared to other dentified areas . These accessibility indicators may be represented differently. Considering the public transport system, these indicators; travel cost indicators are categorized in three ways as daily accessibility indicators and potential accessibility indicators [2]. Accessibility demand varies according to different uses in the city. For example, accessibility indicators for housing and meeting daily needs may vary according to the characteristics of residential areas and the demand in this area. When viewed at the urban scale, residential areas, housing choice of the people to choose the housing, housing needs are coming up in sub-headings such as. Housing is one of the most basic needs of people. There is also a difference in the expectations and accessibility priorities of housing as people tend to maximize their current situation and the socio- economic conditions of individuals change. These differences are, in

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family households, representing the smallest building blocks of human communities is observed in different ways [3].

Since the housing meets the basic housing needs of people, it has a very broad denominator. The economic, social and enviromental aspects of the housing are now subject to many researches. The relationship between residential location selection and accessibility is interpreted differently by economic perspectives. For example , in the site selection models based on neo- classical economy, it is preferable to choose the place in the budget that provides the highest benefit within the budget boundaries, in other words, to ensure the maximum level of economic sustainability of individuals [5]. The changes in the historical process and the housing preferences of people are constantly changing. Residential areas, which are one of the most common land use types in the city, can be considered as the main factor in the formation of cities since they have a directing effect on the development of functions in urban areas . In this context, the changing needs of the people and the choice of places in time create the cities of today and cause the emergence of different city models [6].

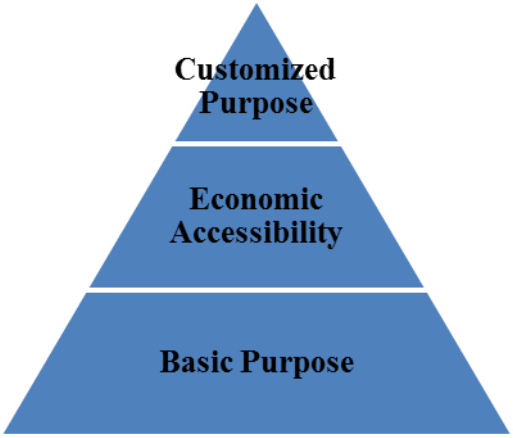

Figure 1. Housing Acquisition- Accessibility Relationship [4].

In the demand triangle of Figure 1, households prefer housing to meet the need for living due to their socio- economic structure. After this purpose, it is seen that the issue of economic accessibility in housing selection takes place because of the tendency to provide maximum benefit in case the socio- economic structure reaches a higher level . In households with the highest level of socio- economic structure, the purpose of housing is shaped according to the needs of households [4]. In this context, the tendency of individuals in seeking to acquire housing changes at three levels depending on the differences in socio-economic structure and the sensitivity towards accessibility is also in the second step.

In the traditional place selection theories, the city is considered to have an unchanging structure, and it receives a lot of criticism. Static and dynamic models are used to understand the location of the city. In a single-centered urban arrangement in the static model, transportation costs are increasing as it moves away from the city center and this situation has an impact on accessibility . In the dynamic model, since the changing parameters in the city are effective, changing and developing economic structure, changing rent conditions, changing the quality of the areas that can be established as a competitive advantage, and changes in the transportation network are seen as important in the choice of housing [6]

In the urban models that have continued to develop since the 1960s, the housing location selection, the changes in income levels and the closest location to the work place are preferred. The thought that was advocated during this period shows that the differentiation of transportation types based on the development of technology becomes ineffective with the shortening of the time spent traveling between spaces . In the 1970s, it is seen that public uses and urban facilities are effective in the distance from the

central area in the use of land in housing. In the 1980s, studies on whether more specific issues are effective in choosing housing are common. In the period in question, contrary to the previously developed theories, the opposite of old theories are dominant depending on the existence of technology. In this period, the development of public transportation and private vehicles and bringing the city to a close level in terms of transportation are among the basic conditions that are effective in the selection of households . In this period, basically three factors emerge. These are the mobility characteristics of the household , the characteristics of the housing and its surroundings, and the accessibility factor. The information relating to the socio households in population-based demographics characteristics, household characteristics (age, gender, education level, occupation, income level, etc.). There is an impact on housing acquisition trend. The characteristics of the dwelling house and its surroundings include the physical characteristics of the dwelling (width, number of rooms, cleaning, maintenance etc.) and the characteristics of the residential environment (education-health-sports equipment, green space and presence of shopping-commerce areas etc.). In the context of accessibility, evaluations are made regarding urban social facilities, working areas, health services and access to important transportation axes and nodes [8]. Towards the end of the 20th century, the increase in the production of passenger cars and a great ease in transportation has been one of the main factors affecting the consideration of accessibility in housing selection by people [6;7].

When the literature is examined, it is seen that in many studies, the households who live or prefer to live in different parts of the city are willing to live in the central region or the periphery of the city according to their different characteristics. The most striking examples of this are the increase in the level of income demand and the increase in the demand for more distances. As household income increases, the tendency of the city to prefer housing areas at more remote locations is affected by this change. According to Dökmeci and Berköz (2000), individuals in the young and middle age group prefer to live in the urban area, while older individuals prefer to live in the city center. Different studies show that individuals are willing to bear higher rental costs in areas close to the center of the city in order to minimize transport costs. As a result of this preference, a "substitution effect" or exchange between transportation costs and land values occurs. Therefore, the more the distance from the central business area, the more the rent and housing prices fall [10; 11; 12].

Large families tend to prefer to live in cheaper, multi-room and large residences due to the distance to the city center. As a result of the being a normal good of the housing, its income flexibility is high. Therefore, the increasing income of households leads to an increase in demand for new housing [13; 14].

Transportation system is one of the factors that people consider the choice of housing space.

As Wegener [9] states, the interaction between land use and transportation is as follows;

- The distribution of human activities in space produces spatial interaction and the demand for urban journey to complete the distance between these activities.

- The urban transport infrastructure provides interaction that can be measured in physical proximity between spaces,

- The distribution of the proximity in the physical space affects both the choice of place and the transportation interaction with land use.

The idea that the proximity to the transport system interacts with other properties of the residence and the location is not new [10; 15; 16; Mills, 1972). According to the preferences of housing density and location, neighborhood, housing, work and transportation factors based on the relationship between the observed [15] Besides the proximity to the transportation system, the socio- economic structure of the neighborhoods, housing density, the size and quality of the housing, and the price of the housing is also effective in choosing housing [17; 18; 19].

Studies by Mayo [20], Friedman [21], Lerman [22] and Pollakowski [23] show that;

- In the selection of housing, the income of the residents and the size of the house are more important than the proximity to the transportation system.

- The decision of the residents to own a vehicle is directly related to the choice of housing location.

In short, the characteristics of the household, the economic status of the individuals, the educational situation, etc. While housing may lead to changes in the tendency to choose, it also leads to the possibility of home-based and home-based travel distance increases with the support of the types of transportation and the opportunities offered by local governments.

When the literature on housing location selection as mentioned above is examined, it is seen that the relationship between the choice of housing location and accessibility in general is at three levels. These can be categorized as;

1 - Choosing housing according to the characteristics of households

2 - Choosing the place by paying attention to the properties around the household

3 - It can be categorized as households choosing the place by paying attention to the characteristics of the whole city.

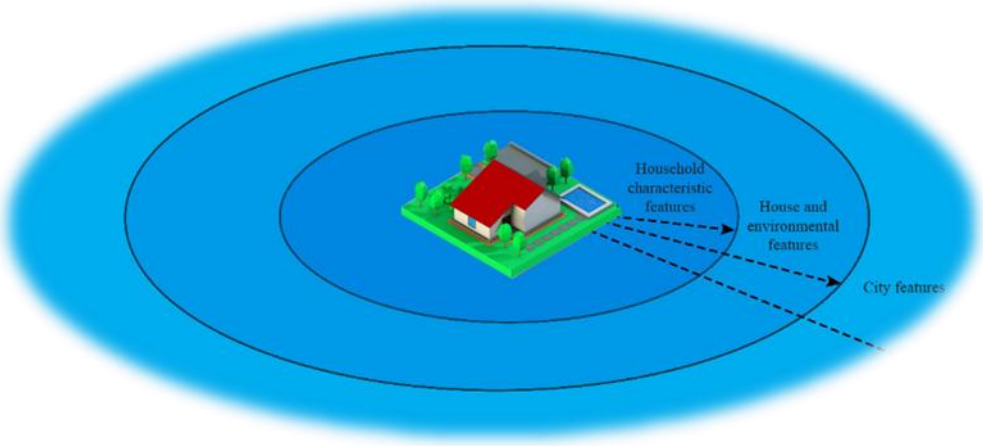

Figure 2. Relationship Levels in Housing Location Selection

2. MATERIALS AND METHODS

Within the scope of this study, it is revealed how Kayseri, a single center city, can be shaped in terms of the level of housing ownership, the tendency to buy housing and the tendency to buy housing in terms of income levels and accessibility opportunities. In the study, various statistical analyzes are made based on different criteria and accessibility context in house ownership and site selection tendency and the criteria affecting this tendency are specified. For this purpose, chi-square test was used for independence . Generally speaking, the row and column variables placed on a diagonal table and the effect of the line variable on the milk variable were tested. The results obtained from the analyzes and the hypothesis tested for each analysis are detailed in the findings section. All analyzes were carried out at a 5% level of significance.

3. FINDINGS

This study, Gazi University - Ministry of Environment and Urbanization Kayseri Kocasinan Erkilet Location Urban Planning Services 2018; Within the scope of the Survey on Housing Ownership

Tendency and Accessibility Behaviors , it is based on the analyzes conducted with 454 surveys applied to households throughout Kayseri city via face-to-face interview technique . Here, inquiries have been made about the perception of housing in the Kayseri general, the tendency to obtain housing and satisfaction with the housing ownership. 34% of the participants were female and 66% were male. Average household size was determined as 3.9 persons. 85% of the participants stated that they are satisfied with their residences and 15% stated that they are not satisfied. When the dissatisfaction status of the residence was examined, 69% of the respondents complained that they were not satisfied with the discomfort, 14% were not satisfied with the neighborhood, 7% were not satisfied for economical reasons , 5% had problems with residence and dwelling, and 5% were not satistifed with accesibility.

According to the research, as stated in Table 1, when the expectations of the participants about the neighborhood of the housing they are going to buy are examined, the first priority is to be in the atmosphere of calm, the second priority is given to the security issue, the third is the demand for residing in a environment of educated individuals, and the fourth is the city. The choice of being close to the center, being in an accessible and planned position includes three of its priorities. The priorities of the participants in the expectations and preferences for the residential neighborhood to be purchased are as follows;

Table 1. Priorities in the expectations and preferences of the participants for the housing to be purchased

Expectation	**Preferance Percentage (%)**	**Expectation**	**Preferance Percentage (%)**
Calm and peaceful	26	Neighbourhood Relationships	2
Safe	22	Proximity to school	2
İnhabitants should be educated	9	Proximity to the Shops	1
Proximity to the city center	8	Street and activities	1
Accessiblity	8	Proximity to the mosque	1
Planned	8	Children's play area nearby	1
Proximity to the work area	2	Having a grocery	1
Proximity to social facilities	2	Proximity to health care	1

In this case, within the scope of this study for Kayseri, the priorities of preference for housing and housing location are can be specified as;

1. Comfort / Calmness
2. Security
3. Being in an educated area
4. Distance to the city center / Accesibility
5. Distance to the his/her working area.

As such, under the conditions in which these priorities were met, 56% of the respondents were questioned about the possibility of getting a home in five years and 44% stated that they were likely to have a home. When the reasons for wanting to be a home owner were investigated, 66% of the participants stated that they would acquire housing for the purpose of residence, 23% of them planned to acquire housing for investment purposes and 8% of them thought of renting them. These percentages show that two-thirds of individuals in Kayseri expecting to have a home in the next five years are intended to reside in these houses. Approximately a quarter of them prefer to own housing for investment purposes.

In terms of the residence size currently occupied, 44% of the participants live in a residence of 101-150 m 2 and 31% of them reside in 151-200 m 2 , and 18% live in dwellings of 100 m2. However, a part of 5% is residing in a 201-250 m2 residence. When the housing of the surveyed people is examined, it is observed that there are 49% of 151-200 m2, 33% of 101-150 m2, 8% of 100 m2 below and 7% of the housing purchase tendencies of 201-250 m2. In this case, the participants show that they are hoping to buy a more comfortable and more spacious home as well as increase the size of the housing they currently have, as well as the housing satisfaction criteria. "The desire to move to a larger home", which is evaluated over the next five years, normally results in the fact that every household can claim it.

THE RELATIONSHIP BETWEEN INCOME LEVEL-TRANSPORT BEHAVIOR-ACCESSIBILITY

In the cities of the developing countries, it is known that the choice of housing depends primarily on income level. The increase in income level, as in many other areas, has a serious effect on changing the area of residence, and there is also a need for questioning the relationship between housing location choice preferences and transportation and accessibility.

According to the household surveys conducted according to the survey, 71% of the participants had at least one vehicle and 34% of them stated that they had parking and parking problems while parking their vehicles. In Kayseri, where one out of every three people owns a vehicle, the fact that the survey sample has a high vehicle ownership indicates a balanced random selection. When the car ownership ratios are examined according to the income level, it is not overlooked that there is an increase in the ownership of vehicles with the rise of income level . The increase in income level brings about an increase in vehicle ownership. In the range of income from 1600 TL to 3500 TL, household car ownership increases from 10% to 30%.

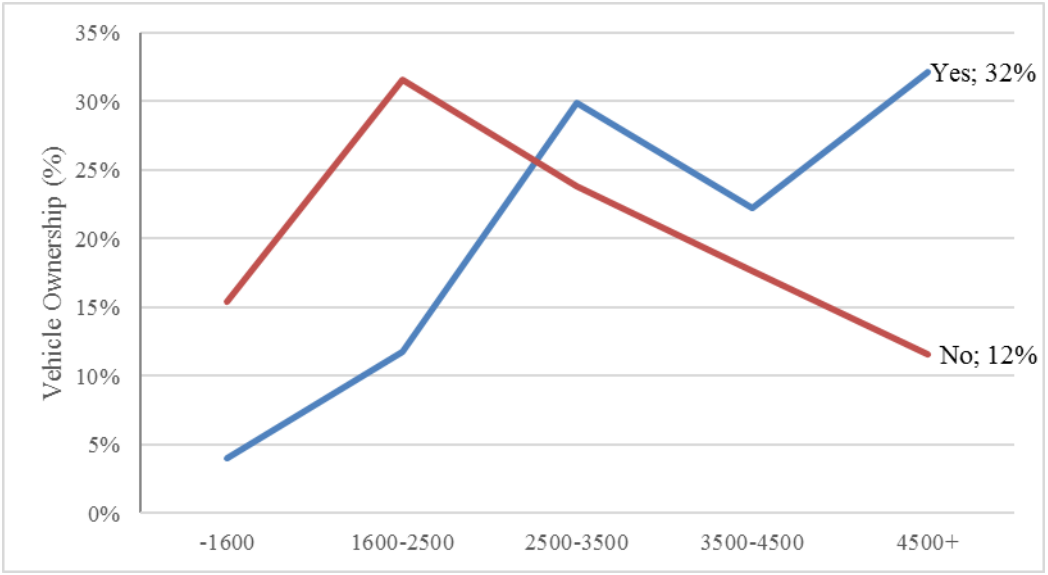

Figure 3. Change in vehicle ownership by income level

Figure 4 shows the type of transportation used to reach the city center according to the household income. Bicycle, motorcycle and taxi usage rates are too small to be observed in the graph. From Table 2 and Figure 4, the ratio of meeting the demand for transportation is increasing with the increase in revenue, while the ratio of meeting the transportation demand with the use of buses decreases. Tramway use increases to TL 2,500-3000 and income decreases with increasing revenue. While transportation to the

city center has been reduced with the increase in income, there is a slight increase in the band of 3500-4500 TL.

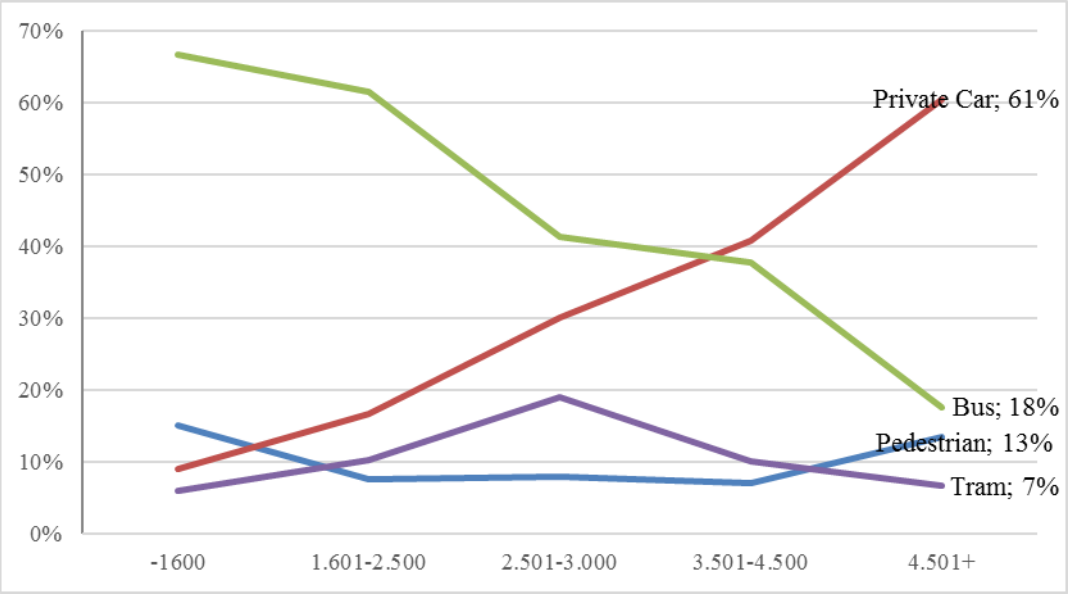

Table 2. Type of stone used to reach the center by level of income

Level of Income	Pedestrian	Bicycle	Motocycle	Private Car	Taxi	Bus	Tram	Total
-1.600	5	-	-	3	1	22	2	33
1.601-2.500	6	2	1	13	-	48	8	78
2.501-3.000	10	-	1	38	1	52	24	126
3.501-4.500	7	1	3	40	-	37	10	98
4.501+	16	-	-	72	2	21	8	119
Total	44	3	5	166	4	180	52	454

According to Table 3, 26% of the participants have household income of TL 4,500 and above, according to Table 3. Among all the participants, the percentage of those who want to buy housing to invest is 23%. When we examine the effect of household income on the desire to own a home, the absence hypothesis should be determined as ot There is no effect on the reasons for wanting to own a house H. As a result of the chi-square analysis, the test statistic was 20,06 (degrees of freedom = 12) and the p-value was calculated as 0,11. From these results, the hypothesis of absence cannot be refuted. In other words, income has no effect on the reasons for wanting to be a homeowner. Another finding is to want to be a homeowner; is independent from income level.

Table 3. Reason to Become a Home Owner by Income Level

Level of Income	Making İnvestment	Dwelling	For Rent	Other	Total
-1.600	2	27	2	2	33
1.601-2.500	17	54	5	3	79
2.501-3.500	39	78	9	2	128
3.501-4.500	14	67	8	6	95
4.501+	32	71	13	3	119
Total	104	297	37	16	454

By using the information obtained from the Kayseri Housing Ownership Tendency and Accessibility Behavior Survey study, the existence of a relationship between income level and housing m2 preferences in Kayseri was tested with x2 test. The cross-table created for this is given in Table 4. Here, as a line variable, the income from the four levels (-1.600, 1.601-2.500, 2.501-3.000, 3.001-3.500, 3.501+), m2 preferences is consisted of four levels (-100 m2, 100 m2-125 m2, 126 m2-150 m2 and 150m2 +) The p value of the test, which was at a level of 5% significance level, was found to be 0.00. Accordingly, income variable has an effect on housing m2 preference. As the household income increases in Kayseri, the demand for living in larger dwellings also gains importance.

Level of Income	100 m^2	100 m2-125 m^2	126 m^2-150 m^2	150m^2+	Total
-1.600	21%	12%	24%	42%	7%
1.601-2.500	11%	8%	33%	48%	17%
2.501-3.000	9%	7%	34%	51%	28%
3.501-4.500	6%	8%	25%	60%	21%
4.501+	4%	3%	15%	78%	26%
Total	8%	7%	26%	59%	100%

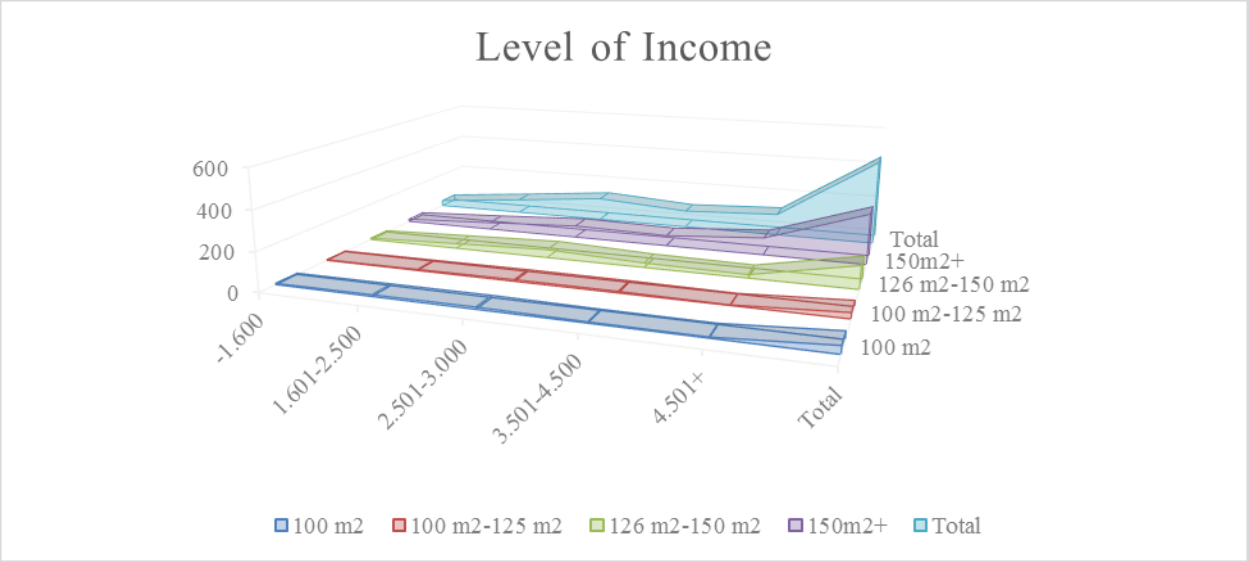

Figure 4. Types of transport used to reach the center according to household income

According to income groups, the cost of the housing they plan to buy is given in Table 5. According to this, the first and second income groups have a maximum price range of 150.000-200.000 TL and the highest income group has a maximum price of 250.000-300.000 TL. P is obtained here by the χ 2 test was found to be 0.000. According to this result, income level has an impact on the cost of housing. In other words, as the income level changes, the housing price varies.

Table 5. Housing cost planned to be purchased according to income level (thousand TL) -%

Level Of Income	**-150**	**150-200**	**200-250**	**250-300**	**300-350**	**350-400**	**400-450**	**450+**	**Total**
-1.600	52%	24%	15%	6%	0%	0%	0%	3%	7%
1.601-2.500	43%	32%	10%	9%	3%	3%	0%	1%	17%
2.501-3.000	23%	40%	14%	12%	3%	2%	0%	6%	28%
3.501-4.500	22%	27%	21%	16%	4%	6%	1%	2%	21%
4.501+	10%	15%	14%	26%	6%	13%	1%	15%	26%
Total	25%	28%	15%	15%	4%	6%	0%	7%	100%

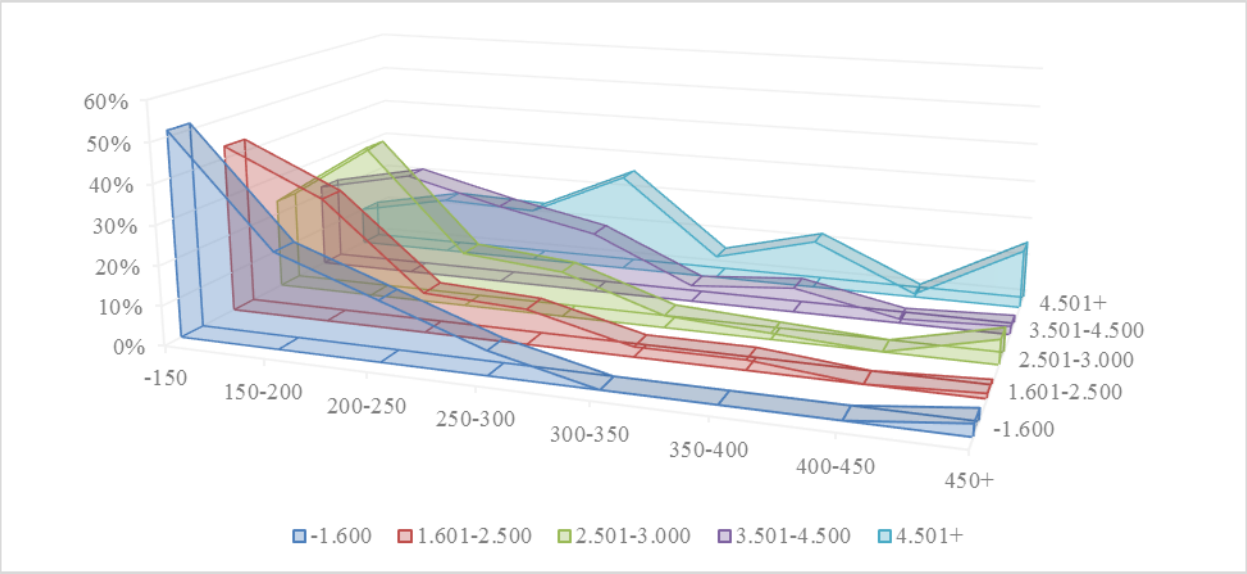

Figure 6. Housing cost (thousand TL) to be purchased by income level -% Distribution

In the housing trend survey conducted in Kayseri, the question of which district you would prefer if you buy a house, as shown in Figure 5, 20% -33% of the respondents are responding to Mevlana, Mimar Sinan, Alpaslan and Bahçelievler; It is seen that they prefer the districts of Yenidoğan , Esentepe, Hürriyet, Köşk, Fevzi Çakmak, Fatih and Erciyes Evler in 11% -19% . When an evaluation is made according to the housing preferences and priorities within the scope of the study, it is taken into consideration that these districts, which are preferred in Figure 5, are in a comfortable, quiet and peaceful environment, are safe and accessible.

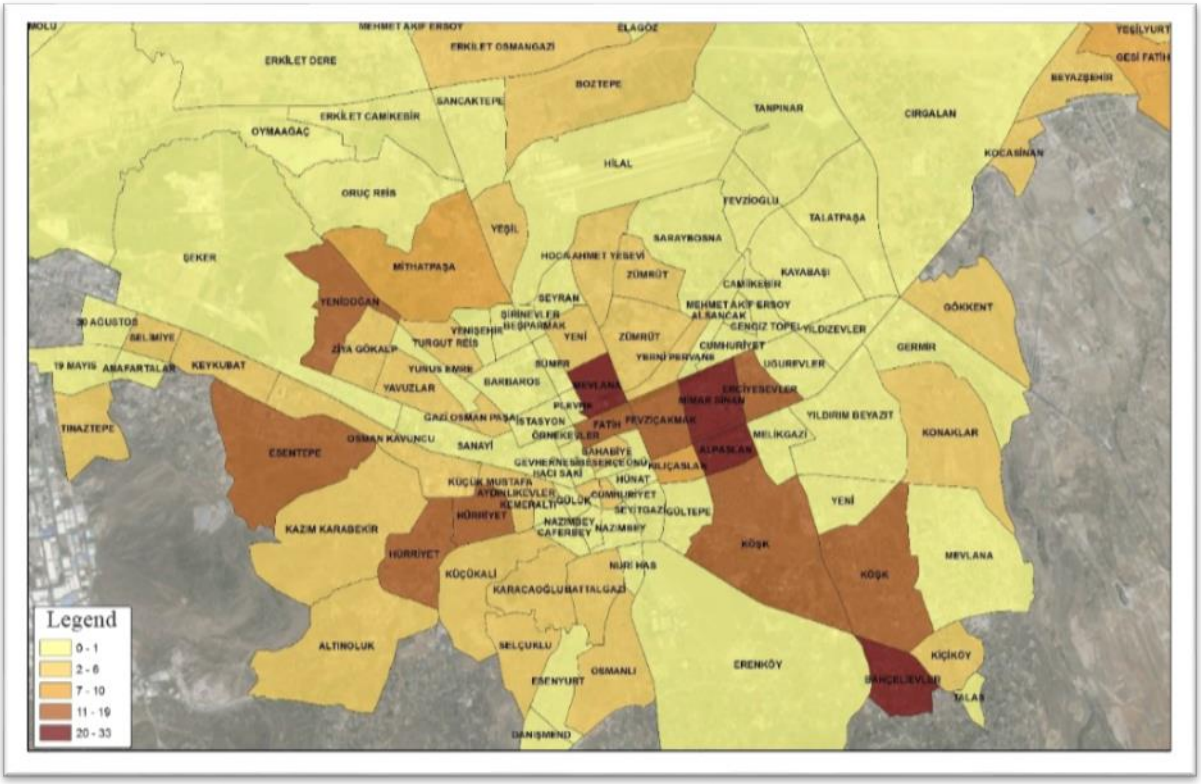

Figure 7. Neighborhood preferences to buy housing

Figure 6 shows the situation of the choice of housing location in Kayseri in different districts in triplicate comparison images. These visuals were obtained by questioning which district to reside before moving to the district where they are currently resident and questioning which district would be preferred if the residence was changed in the future. According to this,

Participants residing in the Yeni doğan district came from this neighborhood to many different districts. However, when they were asked to move to another district, they stated that they might have the possibility to move to the district of Yeni Doğan and Bahçelievler.

Participants residing in district of the Mimar Sinan came from districts close to this neighborhood. When the requests for moving to a different district are questioned, it is seen that their priorities will tend to move to the districts in the vicinity rather than in a particular neighborhood . However, a small number of people demand to move to district of the Alpaslan.

Participants residing in district of the Fatih are also able to move to the neighborhoods in their neighborhood as well as their requests to continue to reside in likely to move to different places in the future.

The neighborhood, where the participants are most satisfied, is the Mevlana and Köşk districts and they still maintain their tendency to stay within the borders of disctricts of the Mevlana and Köşk in the prospects of moving to a different district in their future plans.

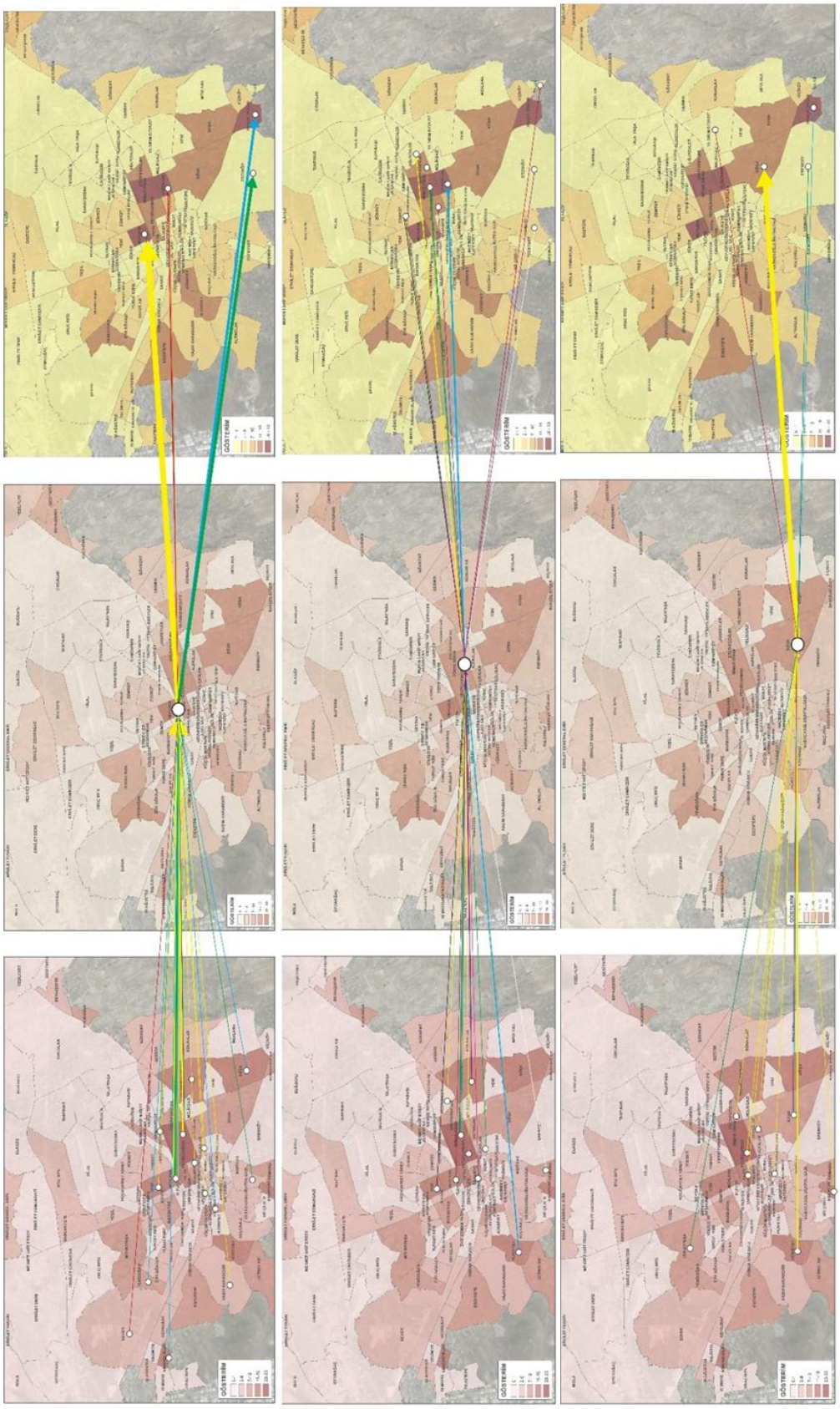

Figure 8 . Changes in residence status between different districts

4. CONCLUSION AND RECOMMENDATIONS

According to the survey, 85% of the participants are satisfied with the residence they are currently living in, but if these participants are in a more comfortable, more economical housing, then the satisfaction rate will increase. Especially, a more tranquil, safe, peaceful, educated and accessible residential space and demand for living in the environment are among the priorities of the participants. 65% of the respondents want to have a home in order to reside. Participants intend to acquire a larger and larger m- square housing that is directly proportional to their budget.

In the analyzes, it was determined that the income level had no effect on the demand for housing ownership. However, it was concluded that the level of income had an impact on the size of the house and the cost of housing. When the tendency of housing in Kayseri is evaluated, it is seen that although the size and cost of the house they plan to buy according to their budgets is changed, the reasons for having a home are not statistically different.

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REFERENCES

[1] Gülhan, G. , Ceylan, H., and Oral, Y., Using Accessibility and Land Use Models in Determining Transportation Demand , 10. Transportation Congress, İMO, İzmir, 26-29. (2013).

[2] Spiekermann, K. , and Wegener, M. Accessibility and spatial development in Europe. Scienza Regionali, 5 (2), 15-46. (2006).

[3] Eceral, T. , and Uğurlar, A. Factors Affecting Household Housing Mobility: Ankara Case. Planning Journal, 27 (3), 347-361. (2017).

[4] De Groot , C. , Mulder , CH, Das , M., & Manting , D. Life events and the GAP between the intention to move and actual mobility. Environment and planning A, 43 (1), 48-66. (2011).

[5] Kocaturk, F. , and Bölen, F., Location of residential area in Kayseri and household mobility. Quaternization / a, 4 (2). (2010).

[6] Özcan, F.K., A Theoretical Investigation on Housing Choice and Household Mobility. Erciyes University Journal of Social Sciences Institute, 1 (21), 73-95. (2006).

[7] Wetzel , J.N., Schools and Housing Values : Comment . Land Economics , 59 (1), 131-134. (1983).

[8] Salihoglu, T., Place Selection in Residential Areas, Urban Planning: Encyclopedic Dictionary, Compiled by: Melih Ersoy, Ninova Publications, Istanbul, (2012).

[9] Internet:Wegener , M ., : Land- Use Transport Interaction : State of the Art: What Can We Learn More from North America ? .09 , 2003, http: www.feweb.vu.nl/ re /STELLA / General / Genesis /MichaelWegener.doc (Accessed on 10.09.2018).

[10] Alonso , W. , Location and Land Use , Harvard University Press , Cambridge, USA, (1964).

[11] Sullivan , A. , Urban Economics , 3d ed., Irwin , Chicago, USA, (1996).

[12] Dicken , P. and Lloyd, PE Location in Sapce : Theoritical Perspectives in Economic Geography , 3rd edition , Harper Collins Publishers , New York, (1990).

[13] Waddell, Pa., "Exogenous Workplace Choice in Residential Location Models : Is the Assumption Valid ?-, Geographic Analysis, Vol. 25, 65-84, (1993).

[14] Meyer , JR and Gomez - Ibanez L. K. , Autos , Transit, and Cities,. Harvard University Press , Cambridge, USA , (1981).

[15] Internet: Glen , W. , Ben- Akiva , M. and Lerman , S.,- Trade-offs in Residential Location Decisions : Transportation versus Other Factors 18 , 1980,http:www.edrgroup.com/ pages / pdf /Trade¬offs.pdf (Accessed on 05.09.2018).

[16] Sinclair, R., "Von Thünen and Urban Sprawl l , Annals of the Association of American Geographers , Skin XLVII, 72-87, 1967. Mills , E. S. , Studies in the Structure of The Urban Economy , Resources for the Future , Washington DC, USA, (1972).

[17] Boyce , D. , Allen , B., Mudge , R., Stater , P. and Isserman , A., The Impact of Rapid Transit on Suburban Residential Property Values Analysis of the Development and Land Philadelphia High Speed Line , Regional science Department , University of Pennsylvania, NTIS no . PB 220 693, (1972).

[18] Dornbusch, D., "Induced BART- Changes in Property Values and Rents . Land Use and Urban Development Project, Phase 1 BART Urban , Working Papers WP 21-5-76, US Department of Transportation and US Housing and Urban Development, (1976).

[19] Lerman S, et al ., the Effect of the Washington Metro on Urban Property Values , CS Report no . 77-18, Center for Transportation Studies , Massachusetts Institute of Technology , Cambridge, (1977).

[20] Mayo, S. , Local Public Goods and Residential Location : An Empirical Test of the Tiebout Hypothesis , Resources for the Future , Washington DC, (1973).

[21] Friedman, J. , Housing Location and the Supply of Local Public Services, Ph.D. Dissertation, Department of Economics, University of California, Berkeley, (1975).

[22] Lerman, S., "A Disaggregat to Behavioral Model of Urban Mobility Decisions ", Center for Transportation Studies , Report No. 75-5, Massachusetts Institute of Technology , Cambridge, (1975).

[23] Pollakows that, M., "A Conditional Logit Model of Residential Choice ", Winter Meetings of the Econometric Society , (1975).