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# COMPARISON OF URBAN HOUSING SATISFACTION IN MODERN AND TRADITIONAL NEIGHBORHOODS IN EDIRNE, TURKEY

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ABSTRACT. Numerous cross-cultural studies have focused on certain aspects of urban housing conditions and their social consequences. However, most data on housing satisfaction is restricted to Western countries. Relatively little comparison has been made between these findings and those in developing areas where rapid urbanization is occurring and where concomitant problems in urban housing are emerging. Moreover, since primary cities of developing countries in the initial stage of economic development have received extensive attention in urban housing research, it would be interesting to examine a non-primary city where relatively good standards of living have been achieved. Thus, this study investigates people's housing satisfaction in modern and historical neighborhoods. This paper addresses some conceptual and measurement issues related to the study of housing satisfaction. We build a conceptual model, which links the multiple dimensions of housing satisfaction, measured by a modified version of Bardo and Dokmeci's (1992, Genetic, Social and General Psychology Monographs 118(3)) housing satisfaction scale, in a causal sense. An empirical examination of the model in traditional and modern neighborhoods reveals that social and environmental living conditions positively influence overall housing satisfaction. The results also indicate that the drivers of the social and environmental living conditions constructs differ between traditional and modern neighborhoods.

KEY WORDS: Edirne, housing, satisfaction, measurement invariance, multi-group analysis

## 1. INTRODUCTION

Edirne, located near the Greek-Turkish border of Turkey, is a historical capital of the Ottoman Empire and a university center. Throughout its history it has been a significant business and education center of Thrace. Recently, while some modern districts have gained comparative advantage, the traditional ones have started to decrease in population due to deterioration of urban environments. Thus, districts of Edirne and their neighborhoods are undergoing continuous social, economic and structural transformation as a result of local and global pressures. The purpose of this paper is to compare residential satisfaction between modern and old neighborhoods in Edirne, to determine the main drivers of residential satisfaction, and search for discrepancies between the two processes.

The present study contributes to the academic body of knowledge in several ways. We first explore the nature of housing satisfaction then by unifying the existing theories in the literature we develop a conceptual model of housing satisfaction. Finally we test the model empirically. From a practical point of view, we argue that the proposed multidimensional scale and the model in this study can be used by the local authorities as a diagnostic tool to identify areas where specific improvements are needed and to pinpoint aspects of housing satisfaction that require attention. Local authorities such as housing policy makers and urban planners may use this framework to develop relevant and effective strategies and to improve the conditions that cause dissatisfaction in the new and peripheral areas.

This article has sought to improve understanding of the determinants of housing satisfaction among the residents of modern (Murat I) and traditional (Kaleici) districts. Identifying the determinants and degree of housing satisfaction provides important insights. Policy makers, local authorities and the Municipality can use this information to coordinate housing goals and to develop relevant and effective strategies.

The paper is organized as follows. Next section briefly reviews the literature on housing satisfaction and introduces a conceptual model of housing satisfaction. Section Empirical analysis, outlines the measurement instrument, sampling procedure, measurement and structural models used in the analysis. Section Findings summarizes the findings and the last section concludes.

## 2. LITERATURE REVIEW OF HOUSING SATISFACTION

In recent years, one major aim of city planners has been to prevent the deterioration of urban environments and thus stimulate quality development of cities. Central to this development, research aimed at exploring the relationship between people and their everyday urban environments has increased. Understanding the individual–environment relationship and the congruence or dissonance between the city dweller and his urban surroundings is the quintessential planning problem towards understanding (Michaelson, 1977; Rapoport, 1985). Over recent decades, considerable effort has been directed toward assessing the quality of different residential environments (Pacione 1990; Bonaiuto and Aiello, 1999). Collectively this line of research has contributed valuable insights into such questions as the extent and distribution of substandard housing and of deprivation in the modern city (Pacione, 1986).

Residential satisfaction is a complex term as its precise meaning depends on the place, time, and purpose of the assessment and on the value system of the assessor, involving an extensive range of people: architects, planners, sociologists, psychologists and urban geographers (Bardo and Dokmeci, 1992).

Previous research took various personal, physical, demographic and social characteristics into consideration in studying residential satisfaction, such as length of residence (Kasarda and Janowitz, 1974; Goudy, 1977, 1982; Hunter, 1978, 1979; Newman and Duncan, 1979; St. John et al., 1986; Satsangi and Kearns, 1992), socio-economic status (Marans and Rodgers, 1975; St. John and Clark, 1984), and age (Marans and Rodgers, 1975; Goudy, 1982; Barrasi et al., 1984). Physical structure and the physical environment also appear to play a role in community satisfaction (Wirth, 1938; Guest and Lee, 1983; Bardo and Dokmeci, 1990, 1992).

Personal factors may also affect residential satisfaction, including previous housing experience (Fried and Gleicher, 1961), the degree of integration into society (Tauber and Levin, 1971), the reference group (Merton, 1968), and the socio-psychological attitude toward society in general (Gans, 1967), and people's social customs and traditions (Duncan, 1971).

Green areas and access to services and facilities and their quality are found to be related to residential satisfaction (Marans and Rogers, 1975). According to Duncan (1971), some families have no need for a garden while others enjoy tending a fair-sized green area. Some wish to live close to a town center for convenience; others do not mind a journey to work if they can live in more open surroundings (Pacione, 1990).

In addition to the characteristics of the house, neighborhood, and resident, the habitability of a residential setting can be affected by city management (Stamps, 1994); for instance, the standard of garbage collection and other local services (Onibokum, 1974).

The centrality of the residential environment for individual quality of life has been established (Altman and Werner, 1985; Altman and Wandersman, 1987; Francescate et al., 1987). The quality of the residential environment can be investigated in two ways. The first method uses such objective measures as the number and range of facilities available (Wesserman, 1982) and housing unit characteristics. The second method involves making subjective assessments of resident satisfaction with their housing situations (Weideman and Anderson, 1985).

Residential-location preferences with respect to different age groups, household sizes, and income groups reveal that younger individuals' preferences are concentrated in the periphery, while a large percentage of middle and older age groups prefer to move to the intermediate area between the core and the periphery, now the most easily accessible zone in the city (Dokmeci and Berköz, 2000).

Unifying the constructs reviewed in the preceding section, we propose the conceptual model shown in Figure 1. We argue that the overall housing satisfaction (OHS) is directly influenced by perceived living conditions (LC), while perceived LC are related to satisfaction with the physical surrounding (PS), satisfaction with the social relations (SR), satisfaction with the performance of the local authorities (LA), and perceived quality of the facilities (FQP). Moreover we allow satisfaction with the performance of the local authorities to have an indirect effect on the perceived living conditions through perceived quality of the facilities. Next we test the proposed model using survey data from two neighborhoods characterized by traditional and modern backgrounds.

## 3. EMPIRICAL ANALYSIS

### 3.1. *Sample*

Based on random starts, systematic samples are drawn from two districts of Edirne, namely Kaleici ($n$ = 114) and Murat I ($n$ = 120). Edirne's traditional district Kaleici has a historical past (accumulation of different culture) from Roman, Byzantine, and Ottoman period to the date. Kaleici has been redeveloped after being ruined as a result of a fire in the beginning of 20th century. Although very affluent people lived in the Kaleici area in the past, less well of people have predominated in the last 20 years. In contrast,

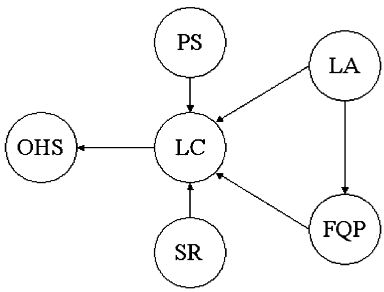


*Fig. 1.* Conceptual model. Note: OHS – overall housing satisfaction, LC – perceived living conditions, PS – satisfaction with the physical surrounding, SR – satisfaction with the social relations, LA – satisfaction with the performance of the local authorities, FQP – perceived quality of the facilities.

Murat I is a newly developing area with apartment blocks, and the people living in this district are higher in terms of education and social status compared to traditional districts such as Kaleici. Murat I is a planned, modern district on the periphery of the city, while Kaleici is located centrally and considered as a traditional district. Residents of Murat I tend to be more middle-class, while Kaleici is populated by traditional working class residents. Recently, Kaleici has begun to experience urban gentrification and the displacement of the traditional population (See photos of Kaleici and Murat I).

### 3.2. *Data Collection Instrument*

The urban housing satisfaction scale used in this article is initially developed by Bardo and Dokmeci (1992). We use a modified version of the scale, which appears to be multi-dimensional. A thorough investigation of the 47 items listed in the Appendix, reveals a theoretical multi-dimensional structure, compromised of dimensions (35 items) such as:

- overall housing satisfaction (OHS – 8 items),
- perceived living conditions (LC – 6 items),
- satisfaction with the physical surrounding (PS – 6 items),
- satisfaction with the social relations (SR – 10 items),
- satisfaction with the performance of the local authorities (LA – 5 items).

In addition, we include a construct measuring the perceived FQP available in the neighborhood. FQP is a composite measure, which is obtained by weighing the quality perceptions of the residents for the available facilities in the neighborhood with their visiting frequencies. Later, a FQP value, which is comparable between subjects, is calculated by standardizing it to per visit, per facility basis.

Prior to data collection, group discussions were conducted to ensure that the items are also valid for the selected province of Turkey. After making modifications, if necessary, in the wording and/or the content of the items, a survey including the modified urban housing satisfaction scale, the battery for facility quality perception, and a set of questions on demographics is administered in two distinct districts of Edirne, Turkey. Items measuring urban housing satisfaction are scored on a five-point scale, ranging from strongly disagree (= 1) to strongly agree (= 5).

### 3.3. *Measurement Model*

In this section, we describe the scale for the measurement of urban housing satisfaction and other related constructs, as well as the building blocks of the modified models that allow us to compare housing satisfaction in modern and traditional neighborhoods.

Initially, we test whether the items (1) represent their hypothesized components, as reflected in high loadings on the corresponding component, (2) do not confound the multiple components that are defined earlier, as reflected in low cross-loadings, and (3) cover the multiple components in as many different shades as possible. At this stage, we perform all analyses on the two samples separately. First, item-to-total correlations are computed for the given satisfaction items, and items that do not correlate significantly better with the hypothesized than the non-hypothesized component are eliminated (DeVellis, 1991). In general items belonging to LC, PS, and SR dimensions exhibit lower correlations with the hypothesized constructs than the items in the remaining dimensions. Analyses based on item-to-total correlations leave us with eight OHS items, six LC items, six PS items, ten SR items, and five LA items. Second, principal components analyses with oblique rotation are applied to the satisfaction dimensions to see whether the hypothesized dimensions were uni-dimensional, or a multi-facet structure is the cause of low item-to-total correlations in the previously mentioned dimensions.

In OHS and LA constructs, a single factor structure is obvious. On the other hand, for LC, PS, and SR constructs the ratios of the first and second, and the second and third eigenvalues are much higher than the ratio of any of two other adjacent eigenvalues, indicating a distinct scree at two factors. However, in two out of three cases the first two ratios are very close to each other. Therefore, choosing the number of factors to extract becomes a difficult task. Since we do not want the decision to be purely based on the scree criteria, which is known to be not very powerful and subjective (Zwick and Velicer, 1986), we decided to apply Horn's parallel procedure. Applying the parallel analysis method with the procedure developed by Keeling (2000) produced the parallel analysis criterion values shown in Table I, which also includes the observed eigenvalues. Horn's parallel analysis, which is the most accurate method for selecting the appropriate number of factors, suggests two underlying factors in both samples for all constructs except one. In the SR scale, in the Kaleici sample Horn's procedure proposes a single factor solution. However, when the two-factor solution in Murat I sample is investigated conceptually, we see that it separates the social

TABLE I

Observed and calculated eigenvalues for PLC, PS and SR constructs

| Three item scales (PLC and PS) | | | | | Ten item scale (SR) | | |
|---|---|---|---|---|---|---|---|
| HPP | Kaleici | Murat I | Kaleici | Murat I | HPP | Kaleici | Murat I |
| 1.270 | 1.749 | 1.553 | 1.696 | 1.806 | 1.477 | 3.409 | 3.484 |
| 1.145 | 1.417 | 1.211 | 1.243 | 1.375 | 1.354 | 1.236 | 1.433 |
| 1.031 | 0.991 | 0.971 | 1.109 | 0.997 | 1.239 | 0.927 | 0.884 |

*Note*: *HPP* – Horn's parallel procedure.

relationship satisfaction (SSR) from the perceived attitude toward the resident (PAR). Since such a facet is commonsensical, we choose to extract two factors from the SR dimension. Similarly LC and PS constructs are analyzed conceptually and the following results are found to hold in both samples. The two facets that emerge in the LC construct correspond to environmental (ELC) and social (SLC) living conditions, while PS breaks down into satisfaction with the house the subject lives in (SSH) and satisfaction from physical characteristics of the neighborhood (SPC). The items that make up these constructs are listed in the Appendix.

### 3.4. *Structural Model*

Given the factor structure outlined above, we proceed with the analyses of urban housing satisfaction in the two districts. First, the conceptual model shown in Figure 1 is modified to the model shown in Figure 2.

In this new version of the model, the causal structure is kept constant, i.e. the impact of all determinants of OHS flows through the perceived LC, except minor modifications. The model is constructed in such a way that the two facets of satisfaction with the PS influence perceived ELC, while the SR satisfaction influences perceived SLC. Here one may also argue that a causal link exists between perceived environmental living conditions and social living conditions, flowing from SLC to ELC, such that the perception of social living conditions can have an impact on the environmental living conditions because if a resident is not satisfied with the atmosphere the neighborhood offers, his/her perception of any environmental stimulus is likely to be negatively influenced, or he/she may start to attend selectively to the negative aspects of the surrounding environment. Or one may easily argue that the reverse causality holds. In the empirical analysis, we

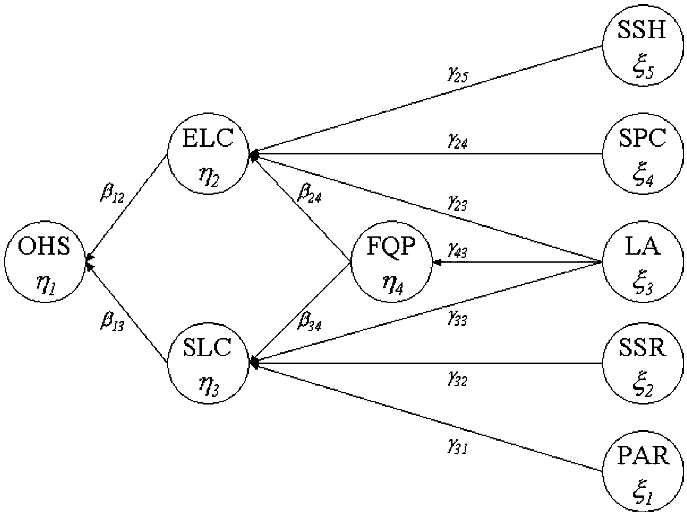


*Fig. 2.* Modified conceptual model. Note: OHS – overall housing satisfaction, ELC – environmental living conditions, SLC – social living conditions, FQP – perceived quality of the facilities, SSH – satisfaction with the house the subject lives in, SPC – satisfaction from physical characteristics of the neighborhood, LA – satisfaction with the performance of the local authorities, SSR – social relationship satisfaction, PAR – perceived attitude toward the resident.

estimated both models and found that such a causal link does not exist. Therefore, in the following analyses, we let the two latent constructs be correlated with each other but did not specify a causal link.

Since all factors in the conceptual model are latent variables, measured by multiple items, a covariance structure model can be estimated to compare the urban housing satisfaction in traditional and modern neighborhoods.[1] In doing that, we proceed in the following order. First, we estimated two separate models for the two neighborhoods and check whether the proposed relations hold. Secondly, we combined the two data sets and formally tested the invariance of the basic structure of the constructs across two groups. Last, we made quantitative comparisons of construct means across the two groups. Analyses regarding the first step can be carried out by standard covariance structure models, while the last two steps fall under the multigroup analysis (measurement invariance) topic in covariance structure models. Although there are a variety of techniques to assess measurement invariance, we use the multiple-group confirmatory factor analysis model proposed by Joreskog (1971) because it is accepted as the most powerful approach. The main reason of choosing such an analysis agenda is as follows. If evidence supporting the measures' invariance is lacking, the conclusions drawn from the first step are to be considered as ambiguous or erroneous, and comparisons of the latent construct means are meaningless, since the measurement scales are fundamentally different across groups.

### 3.5. *Model Estimation*

In this section we discuss the steps taken in the model estimation in detail. The reader may jump to the findings section, without loss of substantial information, if the steps followed in model building and the technical details of the estimation procedure are not in his/her interest.

Initially, we ran the model shown in Figure 2 for Kaleici sample. A thorough examination of the parameter estimates and modification indices suggested two minor changes. The modification indices and the expected parameter change statistics for two pairs of errors belonging to the OHS construct are outstanding, suggesting a correlated errors model. Given that, the decision for a correlated errors model should be supported by theoretical arguments. We checked the wording of the four items to see whether these item pairs had something more in common compared to the remaining items in the construct. Item 13 "I feel a part of the neighborhood" and item 21 "I feel at home here" have the concept of belongingness in common, while item 29 "I think this neighborhood is very beautiful" and item 30 "This is a wonderful place to live" share an underlying positive emotion. Note that belongingness and positive emotions are not clearly underlying in any other items of the OHS construct. Therefore, we allow these error terms to be correlated.

Moreover, the factor loading of item 55 turned out to be insignificant. Thus, we estimated a second model with the factor loading of item 55 set to 0. However, the model fit deteriorated dramatically. Although the factor loading is insignificant, the high modification index and expected parameter change for item 55 suggest that it should be estimated freely. Therefore, we let the factor loading be freely estimated in the final, which gives a satisfactory model fit. Although the $\chi^2$ is significant ($\chi^2(538) = 736.866$, $p < 0.001$), the RMSEA of 0.047 indicates an acceptable fit. The other most commonly used practical fit indices are not above their recommended level 0.9 (CFI = 0.84, TLI = 0.82), but models with similar complexity[2] tend to reveal such practical fit indices (Gerbing and Anderson, 1993). All factor loadings are significant, and 26 out of 35 standardized factor loadings are above 0.5.

The same correlated error structure emerges in the second sample as well. However, this time three different items (43, 47, and 48) turn out to have insignificant loadings. The fit statistics and the modification indices of the model that exclude these items also suggest that the factor loadings should be estimated freely although they are insignificant. The fit of the final model is also reasonably satisfactory. As usual, $\chi^2$ is significant ($\chi^2(473) = 693.145$, $p < 0.001$), but practical fit indices indicate a reasonable fit (RMSEA = 0.055, CFI = 0.82 and TLI = 0.80). All factor loadings in this model are significant, and 22 out of 33 standardized factor loadings are above 0.5.

Next, we move on to the analyses of measurement invariance. Since the purpose of the second step of the analyses is to make meaningful comparisons between the samples, we have to explore the basic meaning and structure of the previously mentioned constructs in different neighborhoods. We are specifically interested in whether the constructs can be conceptualized in the same way across neighborhoods or not. Therefore, the following multi-group measurement invariance tests were performed. First of all, the scales should satisfy configural invariance condition, which is supported if (1) the specified model with zero loadings on non-target factors fits data well in all neighborhoods, (2) all salient factor loadings are significantly and substantially different from zero, and (3) the correlations between the factors are significantly below unity, i.e. they are not redundant. In order to make quantitative comparisons of construct means across the two groups, the measures should exhibit metric and scalar invariance in addition to configural invariance. Metric invariance provides for a stronger test of invariance by introducing the concept of equal scale metrics across groups. If an item satisfies this property, then the scores on the items making up a construct can be meaningfully compared across the neighborhoods. On the other hand, scalar invariance implies that cross-group differences in the means of the observed items are due to the differences in the means of the underlying constructs, and allows the researcher to compare the means of the latent constructs across multiple groups.

Following the procedure explained above, we assess the measurement invariance of the scales. The assessment has a sequential nature, and higher-level models are nested in the lower-level models. We infer that the scales exhibit measurement invariance if the fit of these nested models are not deteriorated as we go up the ladder. For the comparison of these nested models, $\chi^2$ difference test is commonly applied. However, $\chi^2$ difference test suffers from the same problems as the $\chi^2$-test. In large samples, virtually in all cases, the null hypothesis is rejected. Therefore, some practical fit indices are used to compare nested models, such as Consistent Akaike Information

TABLE II

Model comparisons for measurement invariance

| | $\chi^2$ | df | RMSEA | CAIC | CFI | TLI |
|---|---|---|---|---|---|---|
| Configural inv. | 1642.753 | 1143 | 0.0547 | 3257.622 | 0.801 | 0.780 |
| Partial metric inv. | 1663.911 | 1166 | 0.0536 | 3122.357 | 0.801 | 0.785 |
| Initial partial scalar inv. | 1738.421 | 1189 | 0.0555 | 3034.029 | 0.781 | 0.768 |
| Final partial scalar inv. | 1712.476 | 1188 | 0.0540 | 3015.041 | 0.791 | 0.778 |

Criteria (CAIC), Root Mean Square Error Approximation (RMSEA), Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) (Table II).

We first estimate the configural invariance model.[3] It serves as the baseline model against which other models are compared. The fit of the configural invariance model is satisfactory. Although the $\chi^2$ is significant ($\chi^2(1143) = 1642.753$, $p < 0.001$), the RMSEA of 0.055 indicates an acceptable fit. As in the previous single model cases, the practical fit indices are not above their recommended level 0.9 (CFI = 0.801, TLI = 0.780), but this is due to model complexity. The CAIC for this model is 3257.622. All, except the previously mentioned factor loadings, are significant in the two neighborhoods. The 95% confidence intervals of correlation coefficients between the latent constructs do not include the value 1. Therefore, we may conclude that the urban housing satisfaction factors exhibited configural invariance. Next, we test the hypothesis of metric invariance by constraining the factor loadings of the common items to be invariant across neighborhoods. The increase in $\chi^2$ is insignificant ($\Delta\chi^2(24) = 21.158$, $p < 0.629$). The fit does not decrease at all in terms of alternative fit indices. The RMSEA of 0.054 indicated almost the same fit. CFI is 0.801, and TLI is 0.785. The CAIC for this model is 3122.357, indicating that the fit of the model has actually improved. Thus partial metric invariance is also supported.[4]

The final step is to impose scalar variance on the model. Given that only partial metric invariance is achieved, intercepts of the items that satisfy metric invariance condition are constrained to be equal across neighborhoods. The increase in $\chi^2$ is significant ($\Delta\chi^2(24) = 74.51$, $p < 0.001$). Although the other fit indices do not show a dramatic deterioration in model fit (RMSEA = 0.056, CFI = 0.781, TLI = 0.768, and CAIC = 3034.029), examination of the modification indices and the expected parameter change statistics suggest that the intercept for a single item (S28, MI = 31.359) is not invariant across neighborhoods. Relaxing these constraints yields a modest and significant ($\Delta\chi^2(1) = 25.954$, $p < 0.001$) improvement in fit (RMSEA = 0.54, CFI = 0.791, TLI = 0.778, and CAIC = 3015.041) compared to the initial partial scalar invariance. Therefore, we may also conclude that the model satisfies partial scalar invariance. The estimated factor loadings and item means with their associated standard errors can be seen in Tables III and IV, respectively.

## 4. FINDINGS

Having satisfied all necessary measurement invariance conditions, latent construct means can now be compared safely. For the comparison of means, we use Kaleici as the reference group and estimate the mean of the latent constructs in the Murat I sample compared to the reference group. The latent construct means and the corresponding standard errors are shown in Figure 3, Panel (b). Means of three out of five exogenous constructs appear to be significantly higher in Murat I. More specifically, PAR, satisfaction with social relations (SSR) and satisfaction with the LA is higher in Murat I, compared to Kaleici. Moreover, Murat I residents score significantly higher than Kaleici residents in their satisfaction with the SLC as well as ELC. However, in the modern neighborhood OHS is significantly lower than the traditional neighborhood, Kaleici.

TABLE III

Factor loadings and item intercepts ($\tau$) for endogenous latent constructs (Kaleici/Murat I)

| | SLC | ELC | OHS | FQP | $\tau$ |
|---|---|---|---|---|---|
| S2 | 1.000/– | | | | 3.137 (0.081) |
| S4 | 1.209 (0.223) | | | | 3.305 (0.085) |
| S44 | 0.812 (0.188) | | | | 3.682 (0.077) |
| S18 | | 1.000/– | | | 2.650 (0.087) |
| S43 | | 1.054/0.316/(0.225)/(0.188) | | | 2.613/3.167/(0.092)/(0.114) |
| S31 | | 0.709 (0.139) | | | 2.720 (0.079) |
| S13 | | | 1.000/– | | 3.730 (0.078) |
| S21 | | | 1.091 (0.091) | | 3.815 (0.080) |
| S22 | | | 1.040 (0.136) | | 3.127 (0.079) |
| S27 | | | 1.195 (0.142) | | 3.333 (0.083) |
| S28 | | | 1.160 (0.142) | | 3.425/3.976/(0.094)/(0.103) |
| S29 | | | 1.198 (0.142) | | 3.616 (0.082) |
| S30 | | | 1.217 (0.143) | | 3.517 (0.083) |
| S59 | | | 0.804 (0.128) | | 3.947 (0.074) |
| FQP | | | | 1.000/– | 0.917 (0.092) |

TABLE IV

Factor loadings and item intercepts (τ) for exogenous latent constructs (Kaleici/Murat I)

| | SSR | PAR | SSH | SPC | LA | τ |
|---|---|---|---|---|---|---|
| S1 | 1.000/– | | | | | 3.013 (0.080) |
| S8 | 0.834 (0.111) | | | | | 2.795 (0.076) |
| S14 | 0.903 (0.112) | | | | | 3.259 (0.077) |
| S32 | 0.879 (0.113) | | | | | 3.172 (0.079) |
| S58 | 1.156 (0.118) | | | | | 3.304 (0.084) |
| S5 | | 1.000/– | | | | 3.522 (0.078) |
| S7 | | 0.838 (0.147) | | | | 3.573 (0.075) |
| S10 | | 0.903 (0.150) | | | | 3.147 (0.075) |
| S17 | | 0.957 (0.153) | | | | 3.280 (0.079) |
| S57 | | 0.857 (0.148) | | | | 3.143 (0.075) |
| S23 | | | 1.000/– | | | 3.674 (0.068) |
| S24 | | | 1.968 (0.543) | | | 3.381 (0.077) |
| S25 | | | 2.729 (0.783) | | | 3.187 (0.089) |
| S51 | | | | 1.000/– | | 3.195 (0.069) |
| S52 | | | | 1.980 (0.460) | | 3.375 (0.090) |
| S55 | | | | 0.234/0.918/ (0.457)/ (0.294) | | 3.890/4.047/ (0.092)/ (0.094) |
| S12 | | | | | 1.000/– | 2.392 (0.080) |
| S20 | | | | | 1.294 (0.160) | 2.419 (0.087) |
| S42 | | | | | 1.244 (0.158) | 2.677 (0.086) |
| S47 | | | | | 0.938/0.231/ (0.175)/ (0.182) | 2.445/2.913/ (0.092)/ (0.103) |
| S48 | | | | | 1.199/0.393/ (0.181)/ (0.183) | 2.076/2.417/ (0.092)/ (0.104) |

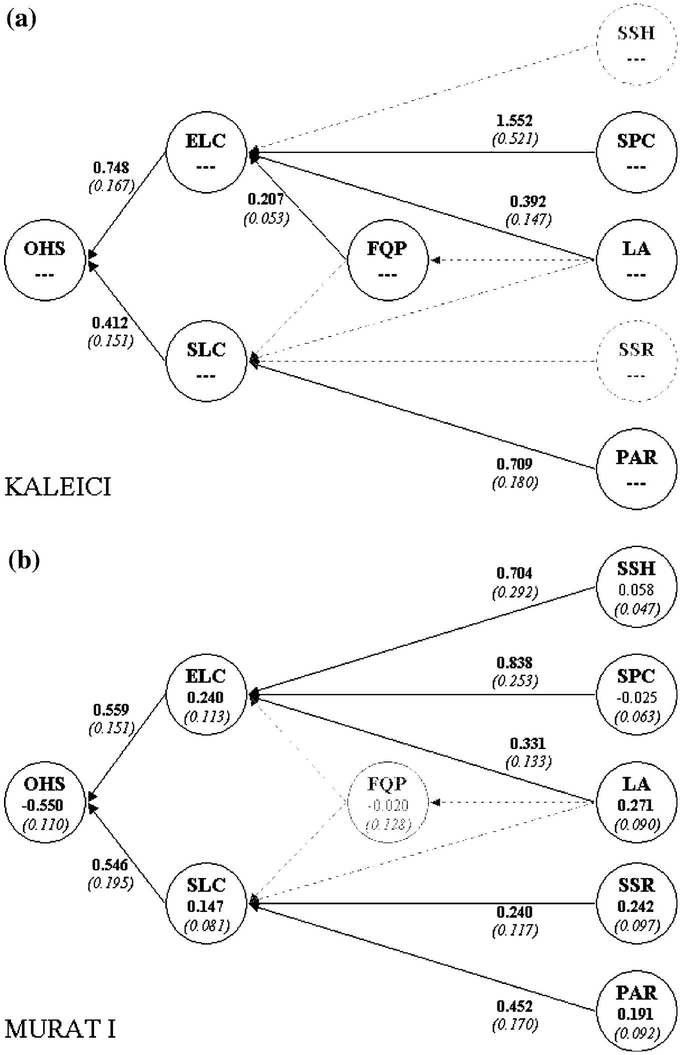


*Fig. 3.* Latent construct means and structural coefficients. Note: Estimated path coefficients (the numbers located on the lines), estimated latent construct means (the numbers located inside the circles), and the associated standard errors (the numbers in parentheses). Bold numbers indicate that the estimate is significantly different then zero.

These results could be related to the following reasons: Perceived attitude towards the residents (PAR) and satisfaction with social relations (SSR) are higher in Murat I since it has more homogenous socio-economic characteristics. Satisfaction with the LA is also higher in Murat I because residents of Murat I have better communication with local authorities due to their educational level. SLC and ELC are significantly higher than conditions in Kaleici due to its better conditions. However, the OHS is higher in Kaleici than Murat I since the expectations of residents of Murat I are higher than expectations of the people from Kaleici.

Next, we move on to discussion of the causal structure. For that, we first restrict a set of coefficients shown in Figure 2 to be zero since they turn out to be insignificant. The fit of the resulting model, shown in the two panels of Figure 3, is satisfactory since the deterioration in the fit statistics is negligible ($\chi^2(1199) = 1731.190$, $p < 0.001$, RMSEA = 0.0556, CFI = 0.788, TLI = 0.777, and CAIC = 2984.853). The following results emerge from the analyses. In both samples, OHS is positively influenced by satisfaction from social living conditions (SLC, 0.412, $t$-value = 2.736) and environmental living conditions (ELC, 0.748, $t$-value = 4.494), but the drivers of these latent constructs differ between traditional and modern neighborhoods. In the traditional neighborhood case satisfaction from SLC is only influenced by PAR, while satisfaction with the ELC is mainly driven by satisfaction with (i) the physical characteristics of the neighborhood (SPC, 1.552, $t$-value = 2.978), (ii) performance of the local authorities (LA, 0.392, $t$-value = 2.670), and (iii) perceived quality of the available facilities (FQP, 0.207, $t$-value = 3.928). In the modern neighborhood case, the former two (SPC and LA) also influence satisfaction with the environmental living conditions positively. Moreover, another latent construct, satisfaction with the house that the subject lives in (SSH), is added to the set of drivers of satisfaction with environmental living conditions (0.704, $t$-value = 2.409). Surprisingly, in the Murat I sample we see that perceived quality of available qualities (FQP) has no significant effect on satisfaction with environmental living conditions. In the modern neighborhood, we find that satisfaction with SLC construct is driven by both satisfaction with social relations (SSR, 0.240, $t$-value = 2.055) and perceived attitude toward the resident (PAR, 0.452, $t$-value = 2.356), as opposed to the traditional neighborhood, Kaleici.

## 5. SUMMARY AND CONCLUSION

This paper addresses some conceptual and measurement issues related to the study of housing satisfaction. A thorough review of the existing literature on housing satisfaction led us to a causal model of residential satisfaction shown in Figure 1. In order to test the model we collected data from two separate neighborhoods, which are characterized by historical and modern backgrounds. For the data collection we modified the housing satisfaction scale of Bardo and Dokmeci's (1992). Using different tests we show that housing satisfaction is indeed a multidimensional construct, consisting of five dimensions, which are causally linked. These dimensions include overall housing satisfaction, perceived living conditions, physical surroundings, social relations, and local authorities.

As a result of our analyses we found that perceived attitude toward the resident, satisfaction with social relations and satisfaction with the local authority is higher in a modern neighborhood, compared to a traditional neighborhood. We also found that residents of a modern neighborhood are more satisfied with the social living conditions as well as the environmental living conditions. Interestingly, in the traditional neighborhood, the overall housing satisfaction is significantly higher compared to the modern neighborhood.

An empirical examination of the model in traditional and modern neighborhoods reveals that social and environmental living conditions positively influence overall housing satisfaction. The results also indicate that the drivers of the social and environmental living conditions constructs differ between traditional and modern neighborhoods. We find that, in traditional neighborhoods, social living conditions are influenced by perceived attitude toward the resident, while environmental living conditions are mainly driven by satisfaction from physical characteristics of the neighborhood, satisfaction with the performance of the local authorities, and perceived quality of the facilities. On the other hand, in modern neighborhoods, perceived attitude toward the resident and social relationship satisfaction turn out to be the main drivers of social living conditions. As for the environmental living conditions, the influential constructs are satisfaction from physical characteristics of the neighborhood, satisfaction with the performance of the local authorities, and satisfaction with the house the subject lives in.

### 5.1. *Contribution to Current Literature*

Early empirical work on residential satisfaction used bivariate techniques to identify the correlates of satisfaction within particular demographic groups (e.g. African Americans, elderly) or in particular types of cities. More recently, researchers have used multivariate techniques to test models of satisfaction with three sets of variables: (1) individual demographic characteristics and objective characteristics of the residential environment, (2) intermediary variables consisting of assessments of different residential characteristics, (3) residential satisfaction (Varady and Preiser, 1998). The present study makes both academic and practical contributions. The academic contribution is to explore the nature of housing satisfaction, and then develop a conceptual model of housing satisfaction and then to test the model empirically. The practical contribution is to use the proposed multidimensional scale as a diagnostic tool to identify areas where specific improvements are needed and to pinpoint aspects of housing satisfaction that require work. Local authorities such as housing policy makers and urban planners may use this framework to develop relevant and effective strategies and to improve the dissatisfied conditions in the new and peripherial areas.

### 5.2. *Recommendations for Further Research*

Researches should concentrate on developing neighborhood revitalization strategies by improving home ownership, housing investment and economic development. Also, the model and the scale of this research can be used by other researchers for further research. This would also help to compare the results of different areas with different studies.

## APPENDIX: *Questionnaire*

OVERALL HOUSING SATISFACTION (OHS) 8 items – None Deleted Later

13 I feel a part of the neighborhood
21 I feel at home here
22 I find enough here to keep me busy
27 Life is not boring here
28 I wouldn't prefer living in a different neighborhood. This place is not suitable for me
29 I think this neighborhood is very beautiful
30 This is a wonderful place to live
59 In general, I am quite happy with my life

PERCEIVED LIVING CONDITIONS (PLC) 11 items – 5 Items Deleted Later (*)

2 This neighborhood is very quite and neat
4 Families here do not let their children to disturb anybody
11 (*) Very few people here earn an adequate income
18 Nobody around here cares what the place look like
26 (*) Job opportunities here are as same as the other places
31 The green areas here make this place that can be lived in
31 The green areas here make this place that can be lived in
33 (*) The life standard here is influenced by national conditions
34 (*) The quality of life here is affected by national economic problems
41 (*) The social services provided here are as good as those in Edirne
43 The opportunities around here means that life here will continue to develop faster than in other neighborhoods
44 Not much crime happens around here

PHYSICAL SURROUNDING (PS) 8 items – 2 Items Deleted Later (*)

23 My house meets my needs
24 This house is better than other houses I lived in before
25 Buildings here are beautiful as those in the place I lived before
36 (*) Houses here are just as good as those in Edirne
51 Most of the people in this neighborhood do not paint their houses on time
52 Most people in this neighborhood take care of their yards
55 The people who come from outside can find addresses easily
56 (*) Houses here are not too crowded together

SOCIAL RELATIONS (SR) 15 items – 5 Items Deleted Later (*)

1 It is very hard to find a real friend in this neighborhood
3 (*) Many people here believe that they act properly towards you
5 Everybody here is polite
7 Everybody here does not try to take advantage of you
8 When people live the mosque they forget the idea of brotherhood
10 If you are not the same as everyone else here you get mocked
14 People here are very stingy
15 (*) You have to spend a lot of money to be accepted around here
16 (*) Everyone here minds their own business
17 Everybody around here criticizes everybody else
32 I would like more neighbors nearby. Neighbors here live far away
49 (*) Owner of the houses in this neighborhood do not let their house to singles
50 (*) Old people are very well looked after in this neighborhood
57 Most people around here are interested in everybody's personal business
58 There are not decent neighbor to form friendships with around here

LOCAL AUTHORITIES (LA) 5 items – None Deleted Later

12 The municipality here does whatever they want
20 The city provides very limited services
42 The city does not care about this neighborhood
47 Local officials do not listen our ideas
48 Nobody asks the people for their ideas

DIRECTLY EXCLUDED ITEMS – 12 items

6 The schools here prepare students well for the university
9 There is nobody in this community that can be a leader
19 I do not care what children do as long as they keep away from me
35 Compared to other neighborhoods, our shopping centers are wonderful
37 The health facilities here are as good as those in the other neighborhoods
38 Hospitals here provide a full range of services
39 The quality of life is same in old and new neighborhoods
40 Public buildings here are very well-kept
45 When my children grow up they will not find a house in this neighborhood to live in
46 There are not going to be enough jobs around here in the future
53 I like it here because it is close to my family
54 I like it here because good families live here

Photos from Kaleici neighborhood

Photo from Murat I neighborhood


## NOTES

[1] We performed all the analyses in LISREL 8.50.

[2] Complexity refers both to sample size and model structure. Many of the relative fit indices are affected by sample size, so that larger samples are seen as better fitting. Even though a fit index may not include sample size in the formula it does not mean that the fit index is really independent of the sample size. Therefore, we use a combination of the fit indices while reporting model fit.

[3] One necessary condition for multi-group measurement invariance tests is the equivalence of number of items in different groups. Therefore during the measurement invariance tests items 43, 47, 48, and 55 are included in the set of items, and the associated parameters are estimated freely. An alternative approach is to set the factor loadings of insignificant items to zero and the associated error variances to infinitesimally small values in the relevant groups. When this approach is followed, the fit of the model deteriorated compared to the freely estimated version, and the outstanding modification indices suggested that the factor loadings should be freely estimated. Note that this leads to partial measurement invariance, and partial invariance is still a sufficient condition for meaningful comparisons.

[4] For a meaningful comparison of latent construct means full measurement invariance is not a necessary condition. Partial measurement invariance requires some of the estimated parameters to be equal in multiple groups, and it is a sufficient condition for substantive analysis to be meaningful. See Byrne et al. (1989) for further discussion.

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