

# SEGMENTACIJA IN VREDNOSTNI OKVIR PREFERENC POTENCIALNIH KUPCEV STANOVANJ

# SEGMENTATION AND THE VALUE FRAME OF BUYERS OF RESIDENTIAL APARTMENTS

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## IZVLEČEK

Članek se navezuje na segment tržne raziskave nepremičninskega trga kot najpomembnejšega vstopnega atributa v proces ocenjevanja vrednosti nepremičnin. Glavni cilj raziskave je oblikovanje tako imenovanega vrednostnega okvirja, ki je zasnovan kot tabela vrednostnih razponov vplivnih dejavnikov, vezanih na posamezen pridobljen segment stanovanjskih nepremičnin oziroma posamezen tip potencialnega kupca. Rezultati v splošnem kažejo, da udeleženci najvišje izražajo vrednostne preference glede fizičnih dejavnikov, vsaj polovica kupcev je pripravljena za njihovo korenito spremembo plačati več/manj kot 30 odstotkov od povprečne segmentne vrednosti nepremičnine, pri čemer velik ponder pripada dejavnikom kakovosti objekta (starosti, gradnji, vzdrževanju). Za proučevane dejavnike mikrolokacije je vsaj polovica kupcev stanovanj pripravljena plačati več/manj kot 22 %, za relativno pomembne pa se izkažejo tudi socio-ekonomski dejavniki s segmentnim vrednostnim razponom median v višini od 6,8 % do 8,9 % ter dejavniki funkcionalne in relativne velikosti stanovanja s segmentnim vrednostnim razponom median od 1,5 % do 3,2 %. Rezultati raziskave so pomembni predvsem za načrtovalce prostora (najgospodarnejša raba prostora), investitorje (analiza ciljne skupine kupcev) in ocenjevalce vrednosti nepremičnin (trg nepremičnin).

## KLJUČNE BESEDE

vrednostni okvir, preference kupcev, stanovanje, trg nepremičnin, segmentacija

## ABSTRACT

This article refers to a market research of the real estate market, as the most important input in the process of assessing the value of real estate. The main objective of the research is to create a so-called value frame, formed as a table of value ranges of influential factors related to the individual acquired residential real estate segment or to the particular type of a potential buyer. The results generally show that the participants expressed the highest preference values in terms of physical factors; at least a half of buyers are prepared, for a radical change of these, to pay more / less than 30% of the average segment real estate value. Within physical factors a large importance is attributed to the quality of the object factors (age, construction, maintenance). At least a half of potential buyers of apartments are prepared to pay more / less than 22% for the studied factors of micro location; however, also the socio-economic factors have been recognised as relatively important, with segmental median values ranging from 6.8% to 8.9%, and factors of functional and relative size of apartments, with segmental range of median values of 1.5% to 3.2%. The results of the survey are particularly important for urban planners (the most cost-effective use of space), investors (an analysis of target groups of customers), and real estate appraisers (real estate market).

## KEY WORDS

value frame, buyer's preferences, apartment, real estate market, market segmentation

## 1 INTRODUCTION

With regard to the expectations of potential purchase, buyers have formed more or less clear requirements, arising out of their system of values, needs, desires and goals. We define expectations as desires or needs of buyers, respectively the feelings of buyers about what should be offered by supplier (Brookes, 1995). If it comes to the purchase and the purchase meets the buyer's needs, we say that he/she has fulfilled the expectations and that satisfaction is the result of an individual's purchase decision, which becomes a part of his/her experience (Lipičnik and Možina, 1993). Therefore through purchases buyers strive for "the good life", which means they look for products with features that best meet their needs, and behind this stands the human value system that affects individual's preferences for certain products (O'Shaughnessy, 1995). The purchase decision for real estate as a subset of durable goods is complex and requires high involvement (K. M. Gibler and S. L. Nelson, 2003; cv: Kos Koklič and Vida, 2008). In most cases, the consumer is considering several alternatives, which he/she compares with one other and finally selects. A consumer rarely buys large goods, such as an apartment, and cannot use the principle of learning from mistakes. Berčan (2010), when studying the purchase decision-making process, obtained results, that before deciding and buying an apartment the majority of respondents (29.8%) in the sample decided between two apartments, 27.4% of respondents decided between three apartments, and a quarter of them had only one apartment in the final selection. The results show that in the process of purchasing an apartment the potential buyers have very well designed preferences and desires. We assume that potential buyers of real estate create their own value picture of the real estate in this process, while they assign different (usually higher) values to attributes that have a significant influence on their purchasing decisions. We start from the definition that the valuation of real estate rights in market comparison approach is based on the principle of substitution or replacement (Pšunder and Torkar, 2007; Grum, 2012). The guiding principle of the market comparisons approach is related to the fact that the market value of assessed real estate is directly linked to the prices of comparable properties, and the basic evaluation process is based on (MSOV, 2011): (1) market research; (2) verification of the information and confirmation of the reliability of the data for marketing consideration; (3) the choice of the appropriate unit of comparison and determination of the appropriate benchmarking; (4) comparison of comparable real estate with the existing evaluated real estate by implementation of value adaptations, and (5) coordination of the different indicators of value into the final value.

In this article we present a study that refers to a segment of the market research of real estate market (1) as the most important part of the input attribute in the evaluation process. The importance of this segment also highlights Galleshaw (1992), who suggests that subjective adjustments of assessors in the evaluation process are too often unsupported by empirical evidence from the real estate market. Galleshaw (1992) also argues that the lack of quantitative methods and bases in the process of adjustment in market comparison approach is a common criticism to the appraisal reports, and that the authors try to cover up their own subjective evaluation approach and poor market basis with various mathematical formulas and scientific equations, which they insert into the report as a substitute for their lack of marketing approach or opinion. A series of researchers criticizes the implementation of the adjustments in the valuation with market comparison approach only on the basis of years of experience of assessors, mainly due to the lack of econometric and quantitative research base (Cannaday et al., 1983; Isakson, 1986; Galleshaw, 1992; cv: Chang and You, 2009).

The real estate market is specific, localized and behaves quite differently than the market of pure competition (Cirman et al., 2000). The basis for the implementation of the adjustments in the evaluation with market comparison approach is therefore identifying, structuring, and defining the value of key factors that affect the assessable value of the real estate. We follow the assumption that these factors are identified by potential buyer and that he creates the value perception of them. The potential buyer behaves rationally on the real estate market. In order to analyse their expectations we follow guidelines of the International Valuation Standards (MSOV, 2013), which state the primary ingredients of comparisons (hereinafter called dimensions): (1) the right, for which we get the information about the price and the right, the value of which is estimated, (2) location, (3) the quality of the land, or the age and character of buildings, (4) the permitted use or purpose (in accordance with spatial regulations) (5) the circumstances, in which the price was fixed and the required base of values, (6) the date of entry into force of the obtained information about the price and the required date of valuation. Pšunder and Torkar (2007) list the most important ingredients of comparisons: the time of sale, location, financing, terms and conditions of sale, disorder of ambient factors and physical characteristics, such as size, surface area, height of ceilings, floors, age, state of maintenance, equipment. Munizzo and Musial (2009) segment the adjustment factors in the following order: (1) the transferred rights in real estate (2) financing conditions, (3) terms of sale, (4) market conditions, (5) location, (6) physical characteristics, and (7) economic attributes.

Based on the review of existing researches, the framework of influential components is extended also to the eighth dimension, namely functionality and relative size of the apartment; and the seventh dimension of economic attributes is extended to socio-economic factors. Our own research has meaningful input substantive basis, confirmed by a series of studies. Grum and Temeljotov (2010) note the importance of the financial, physical, residential and socio-economic factors. Trček (2005) notes, that the sense of security in the neighbourhood is the most important socio-economic factor. Similar results are indicated by Berčan (2010), who argues that apartment represents a status symbol, social status and identity, social status, privacy. Bonnafous and Kryvobokov (2011) in the case of the French city of Lyon, prove that socio-economic perception significantly affects the value of apartments; Munizzo and Musial (2009) also indicate a strong influence of social factors on the forces of demand for real estate in a particular market. The impact of floor and functional distribution of apartment on the preferences of apartment users are considered by Altas and Özsoy (1998), who demonstrate the process of perception of the real estate space as a set of several factors with an extremely significant impact on the preference value of the apartment. The importance of the factor “functionality of an apartment” is also directly or indirectly determined by Berčan (2010), Friškovec and Janeš (2010), Pšunder and Torkar (2007), Ebru and Eban (2009), Ilozor (2009), Šasel (2006), Dolenc (2011) Ratchatakulpat et al (2009).

In the article we present partial results of the quantitative part of the study, which follows the substantive division of the real estate market into segments, as they are represented by potential buyers with similar homogeneous value preferences or forces of demand. The research results are related to the studied real estate segment of apartments and cover a part of the Slovenian real estate market, Ljubljana and its surroundings. Doing so, we design the so called value frame, which represents value ranges in accordance with the expressed preferences of buyers for each analysed apartment factor, within a predefined segments and structurally designed levels, which are important for understanding the behaviour of potential buyers.

## 2 METHODOLOGY

The methodological approach basically takes the form in three phases. In the first phase a review of existing researches is carried out, and on this basis we prepare a set of attributes, which, according to many researchers, affect the value of residential real estate. In the second phase, a set of attributes are segmented into sets of factors through expert narrowing process. On this basis, in the third phase, we use an inspection method, which is based on a questionnaire (Walonick, 2007).

For the analysis of interval and ratio variables we use descriptive statistics of arithmetic mean, standard deviation, median, 33<sup>rd</sup> and 66<sup>th</sup> centile. Median and centiles are used mainly because some variables do not have a normal distribution, which is detected by means of the coefficients of asymmetry and kurtosis. In the interval and ratio variables by definition of Box-Whiskers extreme values are excluded. In addition to univariate and bivariate statistical methods the process of multivariate statistical data analysis is used through the CHAID decision tree (En. Chi-squared Automatic Interaction Detection), which represents a data mining method based on a statistical test “chi-square”. CHAID is an analytical tool to identify relationships between variables. The analysis divides the sample into a series of subgroups that (1) are internally homogeneous and contain variables with similar patterns and characteristics in relation to the dependent variable, and (2) maximize the ability to predict the contents of a group or subgroup. CHAID algorithm creates cross tables for each categorical predictive group until it achieves the best result for the implementation of splitting with statistical significance. CHAID technique thus recursively splits the population (sample) into segments (nodes), designed in such a way that the generated subgroups are internally homogeneous, but significantly heterogeneous with each other. The splitting process is repeated at each node, considered as a new “sub-sample”, until it satisfies the rule of suspension, that is, when the value of the class after splitting is the same (no variable with a statistically significant difference in the distribution) or there is only one item in the sample. In this study, we selected the dependent variable “the value of the apartment per unit (EUR/m<sup>2</sup>)”, and the first predictor variable is the location, because, as stated by Grum (2012), the location is usually the most influential factor in determining value.

Methods of data mining are used for greater robustness, since they have fewer assumptions than statistical methods, and not because of the large amount of data analysed. Hedonic analytical approach presupposes the choice of the curve form (exponential, logarithmic, double logarithmic, linear-logarithmic, etc.), which appropriately illustrates (functional) connection of the independent variables and dependent variable (Pavlin, 2006). Similar to the non-parametric statistics, also the used method of data mining has no assumption about the function of connection of the dependent variable with the independent ones. Furthermore, the method of data mining (C & RT decision tree; Classification And Regression Trees) is not just about the classification of one dimension, but the method takes into account several independent variables simultaneously (Derrig and Francis, 2008), because in each step, with a complex formula from all the variables, calculates how well the C & RT model fits the data (En. goodness-of-fit statistic). It is true that the algorithm at each level of classification selects one independent variable, which largely discriminates the dependent one (similar to e.g. Stepwise regression), but the C & RT algorithm then further optimizes a decision tree to (En. bagging, pruning, boosting), whereby it also takes into account multiple variables simultaneously (Derrig and Francis, 2008; Wilkinson, 1992).

The survey involved 1,042 participants. The questionnaire content is divided into two parts. In the first part, by answering the participant presents the content preferences to selected factors, related to resi-

dential real estate, and in the second part he identifies the value of each factor. For dimensions of factors 5 to 8 (location, physical factors, socio-economic factors, functional-relative size factors), we obtained an introductory set of more than 630 residential factors (Nahtigal, 2014). The process of narrowing creates a hierarchical structure of a value frame consisting of 4 dimensions of factors, 7 sub-dimensions of factors, 14 groups of factors and 23 factors divided into 26 studied value elements (Nahtigal, 2014).

Table 1: Socio-demographic structure of the sample.

		Frequency of answers	Valid percent (%)
Gender	Male	464	44.5
	Female	578	55.5
Age	up to 25 years	134	12.8
	from 26 to 35 years	610	58.6
	from 36 to 45 years	147	14.1
	from 46 to 55 years	106	10.2
	from 56 years and up	45	4.3
	Total	1,041	100
	Education	primary school or lower	4
high school or vocational school		213	20.6
college, higher education		253	24.4
university education or higher		567	54.7
Total		1,037	100
The size of the household	I live alone	124	12
	in 2-member household	316	30.4
	in 3-member household	276	26.6
	in 4-member household	255	24.6
	in over 4-member household	66	6.4
	Total	1,037	100
The income of the household	higher amount than the average	578	55.8
	lower amount than the average	207	20
	approximate Slovenian average	251	24.2
	Total	1,036	100
Total		1,042	

The surveyed sample is based on a combination of dedicated sample and the sample with the principle of “snowball”, and for the purpose of the survey also the lists of potential buyers of some real estate agencies in Ljubljana will be used. In the surveyed sample there is 44.5% of men and 55.5% of women aged over 25 years. 58.6% of respondents represent the age group of 26 to 35 years, which is actually the age profile of the most frequent potential buyer of an apartment (Mandič et al, 2006). With regard to education, participants with higher education prevail, which means that mostly educated participants chose to participate. Most participants live in a two-member household. Interesting is the distribution based on the parameter linked to household income, where 55.8% of the analysed sample achieves a

higher amount per household member than the Slovenian average, and only 24.2% of the sample has the approximate average of Slovenia. We explain this with high educational level of the participants and consequently with better position (also financially) in society. More than 47% of participants prefer buying an apartment within the Ljubljana ring, and the remaining 53% is distributed evenly between the desirable location near and around Ljubljana. Socio-demographic structure of participants is shown in Table 1.

### 3 RESULTS AND INTERPRETATION

#### 3.1 Segmentation of the real estate market of apartments

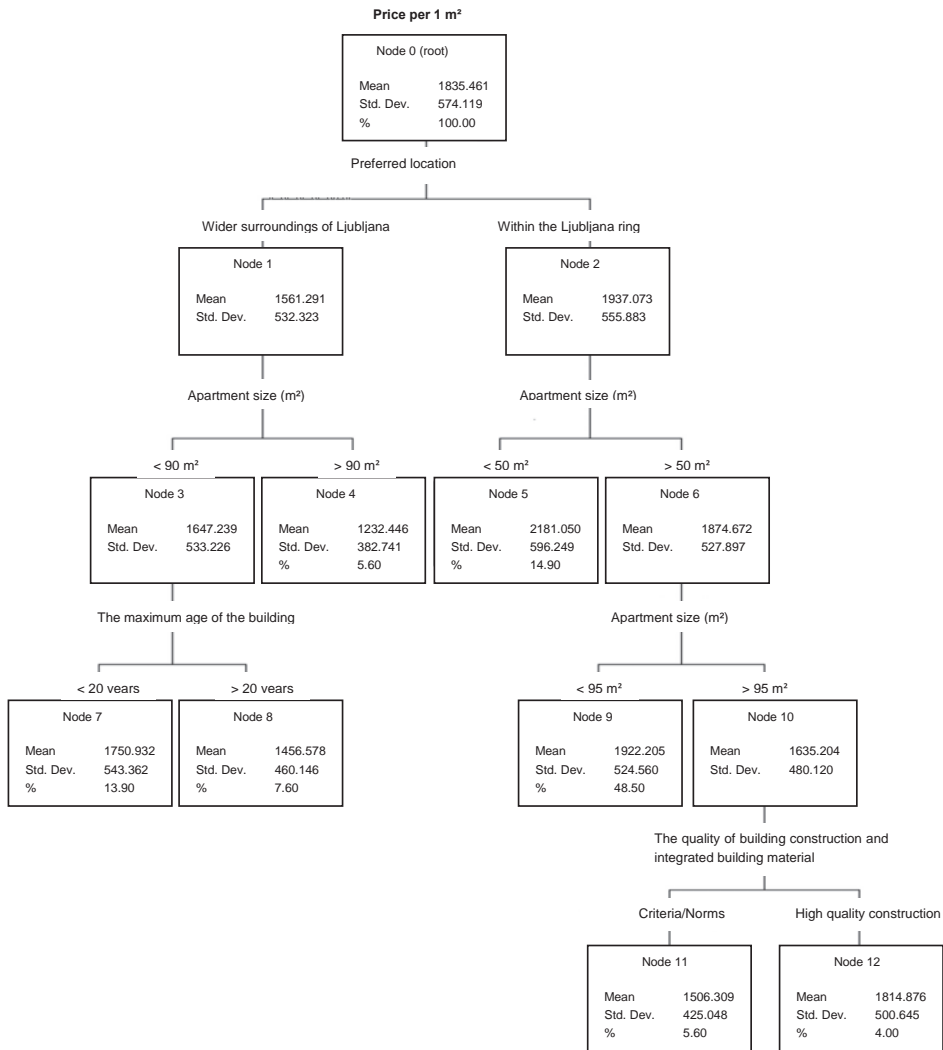


Figure 1: CHAID tree - the technique of splitting into segments (Nahtigal, 2014).

Segmentation of the real estate market of apartments is made with the CHAID model. The result of the CHAID model is shown in the hierarchical structure of an upside-down tree shape (Figure 1), in which the root represents the whole sample or population, and the branches are ultimately shaped content and value logical segments (Ramaswami and Bhaskaran, 2010). In the selection of criterion variables the principle was taken into account, that the model includes only variables related to the characteristics of the apartment and not those related to the characteristics of the respondents. Taking into account the demographic characteristics of potential buyers in the evaluation process with the market comparison approach is not reasonable because the assessor does not know, what type of the comparable real estate buyer it was, that was used as input data in the adaptation process (Grum, 2012).

The decision tree CHAID has several levels, wherein for each a variable is exposed, on the basis of which the differences between the segments are statistically significant. From the content analysis of the acquired segments can be seen that the segments are characterized by differences in the content of the studied apartment factors. Preferences of segment buyers are showing the forces of demand that would be expected for a given segment. The segments are internally homogeneous by content, but the correlation between them is significantly heterogeneous. The existence of segments justifies the uneven “falls” of criterion function AIC (Akaike information criterion), which was calculated on the basis of the same criterion variables as the CHAID segmentation. On the Y-axis the function has adjusted Euclidean distances of the individual units of the segment centroids, and on the X-axis the solutions with different number of segments are stated.

The top rectangle in the Figure 1 shows the roots of the tree (node 0) and indirectly all sample respondents who were, on average, calculated on the basis of their responses, willing to pay 1,835 EUR/m<sup>2</sup> for buying an apartment. The value is relatively well matched with the average value of apartment in Ljubljana and its surroundings in 2013, which according to the Surveying and Mapping Authority of the Republic of Slovenia (GURS, 2013) amounts to 1,830 EUR/m<sup>2</sup>.

The CHAID algorithm, in the first step, divides the sample on the basis of the studied properties of an apartment in such a way that in each subgroup (node 1 and 2) the difference in the price per m<sup>2</sup> is maximized. Of all the criterion variables included, the biggest difference emerges in the primary division of the sample depending on the location factor. In a similar manner the method divides other sub-groups. Sub-sample of wider surroundings of Ljubljana is firstly divided according to apartment size factor, namely into a group of apartments with a net floor area greater than 90 m<sup>2</sup> (final segment 1) and into apartments with a net floor area of less than 90 m<sup>2</sup>. The latter sub-group in the third splitting is divided according to age factor, namely in apartments in apartment buildings, which are over 20 years old and under 20 years (final segments 2 and 3). The second half of the tree, which is tied to the location of the city of Ljubljana with narrower surroundings, is in the second splitting also divided based on the factor of net floor area of the apartment, but in the surface norm of 50 m<sup>2</sup>. Apartments smaller than 50 m<sup>2</sup> form the final segment 4, and the apartments in Ljubljana, larger than 50 m<sup>2</sup>, are in the third splitting again divided based on the net floor area, in this step, in the size order of 95 m<sup>2</sup>. In the third step of the right half of the trees we have a final segment 5, namely the apartments in Ljubljana in size from 50 to 95 m<sup>2</sup>, which are the most represented segment with a share of almost half of the total sample. This information is only one indicator of the quality of the acquired segments, since the real estate market demand for

medium-sized functional apartments is actually the greatest (GURS, 2013). The final segments 6 and 7 are obtained from a division of the sub-sample of apartments of net floor area over 95 m<sup>2</sup>, namely on the basis of factors of the quality of construction and apartment building. Last splitting delivers segments of large luxury (high standard) apartments and large normal quality (standard) apartments in Ljubljana. To recap, we have therefore 4 segments of apartments or types of potential buyers within the city of Ljubljana with narrower surroundings and 3 segments in the wider surroundings of Ljubljana.

The results of obtained segments of the apartment market in Ljubljana and their structural size, determined on the basis of multivariate CHAID method are shown in Table 2.

Table 2: Acquired Segments of apartment market in Ljubljana and their structural size (Nahtigal, 2014)

Segment / apartment	Definition	Percent (%)	RSS* (%)
Ljubljana-surroundings, size over 90 m <sup>2</sup>	— ideal location is wider surroundings of Ljubljana — apartment should be over 90 m <sup>2</sup>	5.3	5.6
Ljubljana, size up to 50 m <sup>2</sup>	— ideal location is within the Ljubljana city ring — apartment should be less or up to 50 m <sup>2</sup>	14.1	14.9
Ljubljana-surroundings, size up to 90 m <sup>2</sup> , age up to 20 years	— ideal location is wider surroundings of Ljubljana — apartment less or up to 90 m <sup>2</sup> — age of the buildings should be less or up to 20 years	13.2	13.9
Ljubljana-surroundings, size up to 90 m <sup>2</sup> , age over 20 years	— ideal location is wider surroundings of Ljubljana — apartment should be less or up to 90 m <sup>2</sup> — age of the buildings should be over 20 years	7.2	7.6
Ljubljana, size from 50 m <sup>2</sup> to 95 m <sup>2</sup>	— ideal location is within the Ljubljana city ring — size more or at least 50 m <sup>2</sup> up to 95 m <sup>2</sup>	46	48.5
Ljubljana, size over 95 m <sup>2</sup> , quality-normal standard	— ideal location is within the Ljubljana city ring — size of the apartment should be over 95 m <sup>2</sup> — quality of the building can be lower	5.3	5.6
Ljubljana, size over 95 m <sup>2</sup> , quality-high standard	— ideal location is within the Ljubljana city ring — size of the apartment should be over 95 m <sup>2</sup> — quality of the building has to be of higher standard (quality construction)	3.8	4
TOTAL		94.9	100
Systemic failure		5.1	

\* RSS = the relative size of segment

### 3.2 Value assessments of the preferences of potential buyers of real estate

In the process of the range of factors we have created four layers, the narrowest level of elementary factors, intermediate level of groups of factors and the broadest levels of sub-dimensions and dimensions of factors (Nahtigal, 2014). The results of the research for each analysed level of factors provide a range of value preferences of potential buyers of each segment. The values of the factors are based on average, median and 33<sup>rd</sup> and 66<sup>th</sup> centile. The results are analysed in the form of absolute and relative values. The results shown in Table 3 are at the level of the median.



The results show that to the potential buyers the most important factor of value is the effective age of the building, which in the area of segmental medians occupies values of around 20%. The factor of the effective age is basically composed of three sub-factors, of which the largest contribution creates the value sub-factor of age (median of segments from about 7% to 12% in the change of age factor for 20 years), followed by sub-factor of quality of construction (median by segments from around 4% up to 6%), the lowest value weighting has the sub-factor of quality and state of maintenance of facilities (median from 2.5% to 4.5%). For each year of age of the building the value of the apartment, in the mind of at least half of potential buyers, expressed in absolute value is reduced by approximately 500 EUR. It is interesting to compare the results with the research results carried out by Friškovec (2009), who has via regression analysis demonstrated that the advertised price of second-hand apartment in the surroundings of Ljubljana is reduced in one year by an average of 722.39 EUR, if other conditions remain unchanged. If the results are compared with the value preferences of the third of the most demanding buyers (66<sup>th</sup> centile), they are almost completely harmonized with those findings. Pavlin (2006) in the calculation of apartment price index for the age factor assessed the regression coefficient of -0.00421 within the error of 1%, which represents a 0.4% drop in apartment value for 1 year old building in relation to the constant. Romih and Bojnec (2008) in the hedonic price analysis of second-hand apartments prove that an additional year of age of apartment, *ceteris paribus*, the value of real estate, on average, is reduced by about 7 EUR/m<sup>2</sup>. Considering the baseline average value of apartment as expressed by the participants (1,835 EUR / m<sup>2</sup>), the result represents the relative change in the value of real estate in the amount of 7.63% with a change in the age of 20 years.

The survey results show that to participants the least important factors are such as the headroom of the apartment, quality of apartment security system, the size of apartment building, the quality of the common areas in the facility and the factor of the quality and design of interior furniture. Factor of above-average headroom apartment is, except in the luxury segment of apartments, practically insignificant to buyers. In the elite segment, half of the buyers prefer value factor in 0.4% of the value of the total real estate, and the most demanding third of buyers even in 0.8%. This is explained with the fact that the minimum headroom in the apartment building is legally required, standard. The segment of potential buyers of expensive apartments also stands out in this regard that they reflect a high degree of consensus on the tidiness and quality of the common areas. For presence / absence of high-quality common areas of the building more than half of buyers are willing to pay more / less for an apartment in relative magnitudes from about 0.4% to 0.8% of the average segment value of the apartment. The range of value preferences of factor is from 33<sup>rd</sup> to 66<sup>th</sup> centile in the range in the relative values from 0% to 2%. The reason for the low expressed importance of the quality factor of security system can be seen in the fact that the majority of apartments in the market in Ljubljana, except burglar door, offer no security system. Buyers consequently do not think of the factor and probably treat it as a luxury physical element. At least half of the potential buyers expressed value preferences for the existence / non-existence of the discussed factor, *ceteris paribus*, in the amount of 0.3% to 0.5% of the average segment values of apartments. A review of existing researches cites the factor as important, but obviously only in cities with expressed higher crime rates. For interior design factor at least half of potential buyers, at its improvement / deterioration, are ready to change the preference value of apartment from

1% to 2% of the average segment value of the real estate. The argument for low values of factor, among others, is also the fact that the interior equipment does not represent the kitchen and bathroom, which are subject to separate treatment. Exceptions are buyers of luxury apartments with preferences twice higher. Mandič et al. (2006) and Naderi et al. (2012) state that the factor of the size of the building is important and it effects on the value of the apartment itself. In contrast, participants in our research, attribute a small value impact to this factor. In the third of the least demanding buyers in all segments the factor is not important at all. The highest preference is expressed by potential buyers of larger or elite apartments, where at least half of them are willing to pay 1.7% more or less, if the size of the apartment building is changed. In both of these segments there are potential buyers who are looking for apartments in smaller buildings and express negative value preference, if they had to buy an apartment in a large multi-apartment building.

Important and preferred factors are the presence of the ownership parking space and the factors of view and location of the apartment in the building. Parking space is at least relevant to buyers of the cheapest segment of apartments, where half of the buyers is ready to pay for ownership of the parking space only 1.3% of the segment value of the apartment. Other segments have a median value higher than 2%. At least half of the buyers of the elite class apartments are willing to pay 4% of the value of the apartment for parking, and the most demanding third of buyers even up to 5.7%. In accordance with the survey of Friškovec (2009), only 12% of apartments in Ljubljana and 20% of apartments in the vicinity of Ljubljana have a parking space as a part of the apartment, a regression function interestingly identifies statistically significant impact of the factor only for the surrounding area of Ljubljana, where the advertised price of second-hand apartment is on average for 25,517.42 EUR higher than the same apartment that does not have a garage. Given the average value of parking space in Ljubljana in 2013 (GURS, 2013), which amounted to 10,804.00 EUR, we can conclude that the results of our study, in which at least half of the participants attributed to the factor of parking space the values between 3,000 and 4,000 EUR, and buyers of luxury apartments to around 8,000 EUR, show significantly lower perceptions. In doing so, the results also show that the parking space is more important to buyers of apartments within the city of Ljubljana (medians of segments from 3% to 4%) than buyers of apartment segments in the surroundings of Ljubljana (medians from 1.3% to 2.1%). Even to the most market values are expressed the perceptions or preferences of the third of the most demanding segment buyers of apartments, who reflect this difference (with or without parking space) in the value of around 10,000 EUR. Factors relating to the view and position of the apartment create the expected exceptionally high degree of volatility of value preferences in relation to the relative motion of other factors; the preferences of the upper and lower third of the buyers are markedly different. For better / worse view and position of the apartment according to the direction of the sky, at least half of potential apartment buyers are ready to pay more / less between 2% and 2.5% of the segment value of the apartment. The value range of buyers' preferences of the 33<sup>rd</sup> and 66<sup>th</sup> centile is from 0% to about 4.5%. The exception is the segment of buyers of luxury apartments, to which the factor is very important (median 4%, range to 7.2% – 66<sup>th</sup> centile). We found that buyers of apartments prefer a combination of factors of view, position and balcony. To buyers of apartments larger than 90 m<sup>2</sup>, the factors relating to the view and position of apartment, in comparison with the distribution of the sample, present

over-proportional importance. Buyers of luxury apartments with almost 97% of the segment population prefer a nice view.

Similarly, the exponential growth rate of the importance of factors from less to more demanding buyers demonstrates a factor of social status of the neighbourhood. At least half of the buyers are ready, due to better / worse quality of residential neighbourhoods, to pay more / less, in the amount from about 2.4% to 6.8% of the average segment value of apartment. To the demanding thirds of segment buyers the social status of the building represents the value readiness for higher / lower payment of the purchase price of the apartment in between 6% and 8.7%, to least demanding third of buyers the factor means much less, only about 1% to 2% of the average segment value of apartment.

Table 3: The research results at the level of the median (Nahtigal, 2014).

	Median							
	LJ surroundings, over 90 m <sup>2</sup>	LJ surroundings, up to 90 m <sup>2</sup> , age up to 20 years	LJ surroundings, up to 90 m <sup>2</sup> , age over 20 years	LJ, up to 50 m <sup>2</sup>	LJ, from 50 to 95 m <sup>2</sup>	LJ, over 95 m <sup>2</sup> , normal quality	LJ, over 95 m <sup>2</sup> , higher standard quality	
Parking space in the immediate surroundings of the building	1.0%	1.3%	1.3%	2.5%	1.8%	1.8%	1.2%	
Tidiness of the immediate surroundings of apartment building	1.3%	1.1%	1.0%	2.0%	1.7%	1.7%	1.9%	
Proprietary basement garage parking space	2.1%	2.0%	1.3%	3.8%	3.3%	1.8%	4.0%	
Attractive apartment view; position relative to the direction of the sky	2.5%	1.1%	2.2%	2.5%	2.5%	2.0%	4.0%	
Presence of balcony	1.1%	1.3%	1.3%	2.3%	1.7%	1.0%	2.0%	
Presence of terrace / atrium	2.2%	2.4%	1.3%	1.5%	2.0%	2.6%	3.2%	
Size of the apartment building	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	
Floor of the apartment-basement	2.6%	2.2%	6.3%	6.3%	5.2%	3.8%	9.1%	
Floor of the apartment-loft	1.8%	2.0%	3.3%	4.2%	2.5%	0.6%	5.0%	
Elevator	0.4%	1.0%	0.5%	1.3%	1.0%	1.0%	1.2%	
Appearance (external architecture) of the apartment building	1.1%	0.0%	0.0%	1.8%	0.0%	0.7%	1.0%	
Effective age (according to years)	7.5%	12.3%	7.1%	8.3%	7.1%	10.0%	6.8%	
Effective age (according to the quality of construction)	5.0%	3.5%	3.9%	5.0%	4.7%	5.6%	8.0%	
Effective age (according to the quality of facade, roof)	3.2%	3.3%	3.2%	2.5%	2.3%	3.4%	4.5%	
Effective age (total: years, construction, facade)	20.8%	20.0%	13.7%	19.2%	15.0%	20.0%	20.0%	
Quality of common areas (presence of dryers, laundry, bicycle shed, etc.)	0.5%	0.0%	0.7%	0.7%	0.0%	0.4%	0.8%	
Quality of windows	1.5%	2.0%	2.3%	1.7%	1.4%	1.8%	2.2%	
Quality and accessories in the bathroom	1.1%	2.0%	2.0%	2.0%	1.7%	1.0%	1.6%	
Quality and equipment of the kitchen	0.9%	1.1%	1.4%	1.5%	1.0%	0.4%	0.8%	
Quality of floorings	1.0%	1.2%	1.0%	1.0%	0.8%	0.7%	1.2%	
Quality of installations (electricity / heating / air conditioning)	1.2%	1.9%	1.7%	1.3%	1.4%	1.3%	1.5%	
Quality of system security in the apartment	0.3%	0.3%	0.5%	0.5%	0.4%	0.3%	0.4%	
Quality and design of the furniture and interior equipment	0.6%	0.8%	0.7%	0.8%	0.0%	0.0%	1.2%	
Operating costs	3.0%	2.4%	3.3%	2.2%	1.8%	2.7%	1.4%	
General social status of the building	3.8%	3.3%	2.4%	5.4%	5.0%	5.3%	6.8%	
Functional layout of the rooms in apartment	0.0%	1.6%	1.7%	1.9%	1.5%	1.7%	2.3%	
Headroom	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	

		Median						
		Lj surroundings, over 90 m <sup>2</sup>	Lj surroundings, up to 90 m <sup>2</sup> , age up to 20 years	Lj surroundings, up to 90 m <sup>2</sup> , age over 20 years	Lj, up to 50 m <sup>2</sup>	Lj, from 50 to 95 m <sup>2</sup>	Lj, over 95 m <sup>2</sup> , normal quality	Lj, over 95 m <sup>2</sup> , higher standard quality
Level of factor groups	Quality of immediate surroundings of the building	3.1%	2.8%	2.6%	4.7%	4.1%	2.4%	4.5%
	Proprietary basement garage parking space	2.1%	2.0%	1.3%	3.8%	3.3%	1.8%	4.0%
	View and position of the apartment in the building	2.5%	1.1%	2.2%	2.5%	2.5%	2.0%	4.0%
	Presence of balcony	1.1%	1.3%	1.3%	2.3%	1.7%	1.0%	2.0%
	Presence of terrace / atrium	2.2%	2.4%	1.3%	1.5%	2.0%	2.6%	3.2%
	Size of the apartment building	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%
	Degradded location: half-basement apartment	2.6%	2.2%	6.3%	6.3%	5.2%	3.8%	9.1%
	Degradded location:loft apartment	1.8%	2.0%	3.3%	4.2%	2.5%	0.6%	5.0%
	Quality of building	24.3%	24.6%	18.7%	25.8%	19.6%	26.0%	24.4%
	Quality and condition of vital elements of the apartment	7.5%	9.5%	9.0%	8.6%	7.5%	6.9%	8.0%
	Quality of interior equipment	1.2%	1.2%	1.3%	1.3%	0.8%	0.5%	1.7%
	Operating costs	3.0%	2.4%	3.3%	2.2%	1.8%	2.7%	1.4%
	General social status of the building	3.8%	3.3%	2.4%	5.4%	5.0%	5.3%	6.8%
Functional and relative size of the apartment	1.6%	1.5%	2.5%	2.5%	2.0%	2.8%	3.2%	
Level of factor sub-dimensions	Location of the building	5.6%	4.9%	5.2%	10.0%	7.8%	5.7%	8.1%
	Location of the apartment in the building	15.0%	15.0%	17.7%	23.2%	20.0%	18.5%	25.2%
	Physical characteristics of the building	24.3%	24.6%	18.7%	25.8%	19.6%	26.0%	24.4%
	Physical characteristics of the apartment	9.4%	11.7%	10.9%	10.5%	9.2%	8.7%	9.8%
	Economic factors	3.0%	2.4%	3.3%	2.2%	1.8%	2.7%	1.4%
	Socio factors	3.8%	3.3%	2.4%	5.4%	5.0%	5.3%	6.8%
	Functional and relative size	1.6%	1.5%	2.5%	2.5%	2.0%	2.8%	3.2%
Level of factor dimensions	Location	22.1%	22.5%	24.9%	34.7%	29.2%	27.9%	37.8%
	Physical factors	31.3%	37.2%	31.4%	37.5%	30.3%	33.8%	35.7%
	Socio-economic factors	7.7%	6.8%	6.9%	8.9%	7.4%	7.7%	8.0%
	Functional and relative size	1.6%	1.5%	2.5%	2.5%	2.0%	2.8%	3.2%

As an important factor among the physical elements of apartment are shown the quality of windows, bathrooms, kitchens, floors and installations, namely for the level of the quality of these vital physical elements the cumulative relative amount of at least half of potential buyers is willing to pay more or less than 7% to 9.5% of segmental value of the apartment. The range of buyers value preferences, based on exhaustive modification of the physical factors, have the values for quality windows and bathrooms between 1% and 3%, for the quality of the kitchen between 0.5% and 2%, the quality of the floors between 0.4% and 1.7% and for the quality of the installation between 0.8% and 2.5%. It is interesting that the windows are over-proportionally important to buyers of the cheapest segment of medium-sized older apartments in the surroundings of Ljubljana, probably due to the desire to minimize energy loss and to achieve the lowest possible monthly heating costs. Subject buyer segment is expressing the highest level of value relevance of factor of operating costs (median is 3.3%).

Factor of the elevator presence in the building impacts the value of segment median on the value of apartments in the amount of about 1%, in the most demanding third of buyers ranging from 1.7% to

4.3%. Pavlin (2006) in hedonic analysis evaluates the superiority of the apartment, if the building has an elevator, to 4.5% (regression coefficient of +0.045; 1% of the forecast error). The lowest median value of 0.4% and 0.5% is achieved by the segments of bigger and older medium-sized apartments in the vicinity of Ljubljana, located in small multi-apartment buildings, where the presence of an elevator is functionally not very important. The elevator is more appreciated factor of segments in apartments within the city of Ljubljana, which is, according to the average floors of buildings compared with buildings in the vicinity of Ljubljana, an expected result. The presence of an elevator is the most important factor to the buyers of smaller apartments up to 50 m<sup>2</sup> and above-standard large apartments. Interesting are the values of perception of participants in terms of degraded floors such as half-basements and attic apartments (lofts). At least half of potential buyers wish a discount when purchasing a half-basement apartment in the amount of 6% to 9% of the average segment value of apartment, in the 66<sup>th</sup> centile the estimated inferiority of apartment is ranging from 8% to 12%. In the elite class the third of most demanding buyers wants a discount for basement apartment of at least 20%. At least half of the buyers change the value of the preferential real estate, if it becomes a part of the attic apartment in the building, ranging from 2% to 4.2%, the elite class to 5%. A third of the most demanding buyers estimate the inferiority of the apartment due to the attic floor, ranging from 5% to 8% of segment value of the real estate, the elite class even to 9.1%. Interestingly, the research results are relatively consistent with the findings of Rant (2003), which in regression for the variables of basement apartment ( $r. c. = -0.037$ ) and loft ( $r. c. = -0.048$ ) obtained the expected negative impact on the price, of course, relative to according to the ground floor and 1st floor apartments, and with the findings of Pavlin (2006), who with a similar methodology obtained results for basement apartment in 12.5% ( $r. c. = -0.125$ ), while the attic apartment had 8.4% of discount ( $r. c. = -0.084$ ).

For a more or less functional layout, ground plan and relative perception of apartment space, *ceteris paribus*, a half of the buyers is prepared to pay between 1.5% and 3.2% more or less of the segment value of the apartment. We estimate that the most commercially realistic and appropriate interpretation of preferences in the 66<sup>th</sup> centile is where the buyers in functional factors and the relative size of the apartment are willing to pay for an apartment less or more, in height between 4% and 5.2%, in the elite class 6.8%. Authoritative comparative studies to evaluate the factor of operating costs were not detected. Judging by the results of objective research, the amount of operating costs created by apartment is a very important variable for buyers in the purchase assessment. At least half of the segment of buyers is willing to change the assessed value of the desired apartment for purchase, due to lower / higher operating costs, in the amount of 1.8% and 3.3%. Similar values are also shown in segment of absolute average. The relative value range of factor "operating cost" ranges from about 1.0% -1.8% and 2.9% -4.0% of segment value of apartments. The buyers of elite apartments and buyers of small apartments up to 50m<sup>2</sup> are expectedly less sensitive to increasing and decreasing the operating costs. Segment of apartments, which best takes into account energy saving and management of housing, are the buyers of newer apartments up to 90 m<sup>2</sup> in the vicinity of Ljubljana.

The most striking results of the survey give the factors of the presence of balcony, terrace and atrium. Berčan (2010) states, that 21.8% of respondents are not ready to give up the factor of presence of a balcony or terrace when purchasing an apartment. The results of our study show a significantly lower preference for balcony or terrace. At least half of the buyers are willing to pay for balcony presence an

additional 1% to 2.3% of the value of the real estate, the upper third of demanding buyers from 2.1% to 4.6%. For the presence of terrace or atrium the median value is from 1.3% to 3.2%, the value of 66<sup>th</sup> centile is from 3.1% to 5%. We emphasize, however, that the factor does not represent the total value of the balcony or terrace in the eyes of the buyer, but only the willingness of participant to recognize the discount or premium of purchase price for the apartment in case of (in)existence of the latter. On the overall value of the factor in the eyes of the buyer the least impact has the surface, the quality and functionality of the additional part of the apartment. The presence of terrace or atrium is expectedly most important to the buyers of luxury apartments and family segments of apartments, and the balcony is over-proportionally important to the segment of buyers of small apartments of up to 50 m<sup>2</sup>, in Ljubljana.

The results generally show that the greatest impact on buyer's value preference takes a group of factors linked to the quality of the building. If there are two identical apartments, which vary widely in age and quality of construction, maintenance of the building, the quality of the common areas and the presence of elevators, at least half of the buyers are willing to pay more for better or less for worse apartment in the amount of about 25% of the segment value of the real estate. In the range from the third of the least demanding to the third of the most demanding segment buyers the value preferences are ranging from about 15% to 37%. The exceptions, with a little under-proportional requirements according to the sample, are the segment of buyers of older apartments up to 90 m<sup>2</sup> in the vicinity of Ljubljana (range from 12.2% to 27.6%) and the segment of apartment buyers from 50 to 95 m<sup>2</sup> in Ljubljana (range from 12.1% to 28.6%). Another most important group of factors by value is the quality and condition of the vital elements of the apartment (windows, floors, kitchen, bathroom, installations); valued factor is also the quality of the immediate surroundings of the building. At least half of the buyers are ready to pay more / less for the apartment, in the case of more / less decorated surroundings and the availability of shared parking lots, ranging from 2.4% to 4.7% of the average segment value of apartment, mainly in the segment of elite apartments and smaller flats up to 50 m<sup>2</sup> in Ljubljana.

For the studied factors of micro location at least half of the buyers are prepared to pay more or less, if the factors change, in the amount of 22% or more of the average segment value of apartments. Physical factors affect at least half of the buyers to change the preferential value of apartment from about 30% to 37%. Relatively important have proved the socio-economic factors with segmental value range of medians from 6.8% to 8.9%, and factors of functional and relative size of the apartment with segment value range of medians from 1.5 to 3.2%.

#### 4 CONCLUSION

In the article we research the value perception of potential buyers of residential apartments according to the factors which relate to the real estate. The main objective of the research is the creation of the so-called value frame for the real estate apartment segment. Values frame is designed as a table of value ranges of influential factors, related to individual residential real estate segment or a particular type of potential buyer. The research is based on statistical-mathematical analysis of real estate attributes. We use a questionnaire as the central device for the measurement of value frames, composed as part of a wider research, with the fundamental objective of determining the content and value factors, which are critical for potential acquirers of residential real estate rights in the purchase of real estate. The questi-

onnaire obtained credible information for statistical analysis. The analysis shows that the results have most authoritative market value in the range of median and 66<sup>th</sup> centile. The results show how potential buyers (relatively and absolutely) express the degree of differences between the real estate or what value perception is expressed for individual apartment factor. For efficient use of the value frame the consistent analytical observance of value and substantive results of objective research is important. Factors are segmented into eight groups, while we follow the adjustment process of International Valuation Standards (MSOV, 2013). An example of a value frame for the segment of apartments in Ljubljana in the size of 50 m<sup>2</sup> is shown in Table 4.

Table 4: Value frame - Segment of apartments in Ljubljana up to 50 m<sup>2</sup> (Nahtigal, 2014).

		Median		66 <sup>th</sup> percentile	
		€	%	€	%
5. Location	Location of the building	8,000.00 €	10.0 %	13,491.35 €	13.1 %
	Location of the apartment in the building	23,500.00 €	23.2 %	35,801.85 €	42.0 %
6. Physical characteristics	Physical characteristics of the building	23,000.00 €	25.8 %	31,245.68 €	37.7 %
	Physical characteristics of the apartment	8,000.00 €	10.5 %	14,040.89 €	14.6 %
7. Socio-economic attributes	Economic factors	2,100.00 €	2.2 %	3,024.53 €	3.1 %
	Socio factors	5,000.00 €	5.4 %	10,000.00 €	10.0 %
8. Functional and relative size	Functional and relative size	2,100.00 €	2.5 %	5,316.36 €	5.2 %
	Quality of immediate surroundings of the building	4,500.00 €	4.7 %	7,000.00 €	7.2 %
	Proprietary basement garage parking space	4,000.00 €	3.8 %	5,000.00 €	6.7 %
	View and position of the apartment in the building	2,000.00 €	2.5 %	5,000.00 €	4.6 %
	Presence of balcony	2,000.00 €	2.3 %	5,000.00 €	4.6 %
	Presence of terrace / atrium	2,000.00 €	1.5 %	4,129.97 €	4.3 %
	Size of the apartment building	- €	0.0 %	1,925.02 €	1.6 %
	Degraded location: half-basement apartment	5,000.00 €	6.3 %	10,000.00 €	11.3 %
	Degraded location: loft apartment	5,000.00 €	4.2 %	8,000.00 €	8.0 %
	Quality of the building	23,000.00 €	25.8 %	31,245.68 €	37.7 %
	Quality and condition of vital elements of the apartment	7,000.00 €	8.6 %	11,081.78 €	12.0 %
	Quality of interior equipment	1,500.00 €	1.3 %	2,249.14 €	2.6 %
	Operating costs	2,100.00 €	2.2 %	3,024.53 €	3.1 %
	General social status of the building	5,000.00 €	5.4 %	10,000.00 €	10.0 %
	Functional and relative size of the apartment	2,100.00 €	2.5 %	5,316.36 €	5.2 %

The scientific methodology used in the article allows the testing of the theory and is reproducible in any geographical area and segment of real estate. Shukla (2008) mentions the possibility of recurrence as one of the important preconditions of verifiability of results, which in turn contributes to the objectivity of the scientific method.

The survey results are particularly useful for investors of new construction of apartment buildings in Ljubljana and its surroundings, which have an insight into the structure and forces of demand in the market. When planning a specific apartment intervention in the space, it is, also in the light of the most economical use of space, important to know the expectations of potential acquirer of real estate rights, who represent the target group of potential buyers in this process for planners and investors. Analysis of expectations may be partially directly useful in the process of assessing the value of real estate, primarily

in the method of market comparisons, where the appraiser implements adjustments. If nothing else, the results of the analysis indicate the key factors that affect the assessable value. Delisle (1985) says that without a proper understanding and correct interpretation of the needs and desires of buyers, real estate appraisers are not able to and cannot have a systematic approach to reduce uncertainty zones around the most probable selling price of the real estate. Both researchers and actors of the real estate market could benefit from the inclusion or integration of consumer preferences in the study of the management of the economic approach to real estate (Naderi et al, 2012).

Whether the expectations of potential buyers are really taken into account in the contemporary, domestic, commercial production of apartments (e.g. the value for money) in the largest population agglomerations, is the subject of another study.

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# SEGMENTACIJA IN VREDNOSTNI OKVIR PREFERENC POTENCIALNIH KUPCEV STANOVANJ

OSNOVNE INFORMACIJE O ČLANKU:  
GLEJ STRAN 71

## 1 UVOD

Kupci imajo v zvezi s pričakovanji potencialnega nakupa izoblikovane bolj ali manj jasne zahteve, ki izvirajo iz njihovega sistema vrednot, potreb, želja in ciljev. Pri tem pričakovanja opredelimo kot želje ali potrebe kupcev oziroma občutenje kupcev, kaj naj bi dobavitelj ponudil (Brookes, 1995). Če je nakup uresničen in zadovolji kupčeve potrebe, rečemo, da je izpolnil pričakovanja in je zadovoljstvo rezultat posameznikove nakupne odločitve, ki postane del njegovih izkušenj (Lipičnik in Možina, 1993). Kupci zato z nakupi iščejo »dobro življenje«, kar pomeni, da iščejo izdelke z lastnostmi, ki najbolje zadovoljijo njihove potrebe, za tem pa stoji človekov sistem vrednot, ki vpliva na posameznikove preference glede posameznih izdelkov (O'Shaughnessy, 1995). Nakupna odločitev za nepremičnine kot podskupino trajnih dobrin je kompleksna in zahteva visoko osebno zavzetost (K. M. Gibler in S. L. Nelson, 2003; prim.: Kos Koklič in Vida, 2008). Porabnik večinoma razmišlja o več alternativah, ki jih med seboj primerja in dokončno izbere. Ker redko kupuje velike dobrine, kot je stanovanje, ne more uporabiti načela učenja na napakah. Berčan (2010) pri proučevanju procesa nakupnega odločanja pridobi rezultate, da se je pred končno izbiro in nakupom stanovanja večina anketirancev (29,8 %) v vzorcu odločala med dvema stanovanjema, 27,4 % anketirancev se je odločalo med tremi stanovanji, četrtnina pa je imela v končnem izboru samo eno stanovanje. Rezultati izkazujejo, da imajo potencialni kupci v procesu nakupa stanovanja zelo dobro oblikovane preference in želje.

Izhajamo iz predpostavke, da si potencialni kupci nepremičnin v tem procesu sami ustvarjajo vrednostno sliko o nepremičnini, pri tem pa atributom, ki ključno vplivajo na njihovo nakupno odločanje, pripisujejo različne (običajno višje) vrednosti. Izhajamo iz opredelitve, da ocenjevanje vrednosti nepremičninskih pravic po načinu tržnih primerjav temelji na načelu substitucije oziroma nadomestitve (Pšunder in Torkar, 2007; Grum, 2012). Glavno vodilo načina tržnih primerjav se navezuje na dejstvo, da je tržna vrednost ocenjevane nepremičnine neposredno povezana s cenami primerljivih nepremičnin, osnovni postopek ocenjevanja pa temelji na (MSOV 2011): (1) raziskavi trga; (2) preverjanju informacij in potrditvi zanesljivosti podatkov za tržno obravnavo; (3) izbiri ustrezne enote primerjanja in določitvi ustreznih primerjalnih analiz; (4) primerjavi primerljivih nepremičnin z obstoječo ocenjevano nepremičnino na podlagi vrednostnih prilagoditev ter (5) uskladitvi različnih kazalnikov vrednosti v končno vrednost.

V članku prikazujemo raziskavo, ki se navezuje na segment tržne raziskave nepremičninska trga (1) kot najpomembnejšega dela vstopnega atributa v proces ocenjevanja. Pomen tega segmenta poudarja tudi Galleshaw (1992), ki navaja, da subjektivne prilagoditve ocenjevalcev pri postopku vrednotenja

prevečkrat niso podprte z empiričnimi dokazi z nepremičninskega trga. Galleshaw (1992) tudi trdi, da je pomanjkanje kvantitativnih metod in podlag pri procesu prilagajanja, pri načinu tržnih primerjav, pogosta slabost cenitvenih poročil ter da poskušajo avtorji svoj subjektivni pristop vrednotenja in slabo tržno podlago prikriti z različnimi matematičnimi formulami in strokovnimi enačbami, ki jih vstavljajo v poročila, da se ne bi pokazale pomanjkljivosti njihovega tržnega pristopa ali mnenja. Vrsta raziskovalcev je kritična glede prilagoditev pri vrednotenju po načinu tržnih primerjav samo na podlagi večletnih izkušenj ocenjevalcev, predvsem zaradi pomanjkanja ekonometrične in kvantitativne raziskovalne podlage (Cannaday et al., 1983; Isakson, 1986; Galleshaw, 1992; prim.: Chang in You, 2009).

Nepremičninski trg je specifičen, lokaliziran in se vede povsem drugače od trga čiste konkurence (Cirman et al., 2000). Podlaga za prilagoditve pri vrednotenju po načinu tržnih primerjav je torej prepoznavna, strukturirana in vrednostna opredelitev ključnih dejavnikov, ki vplivajo na ocenjevano vrednost nepremičnine. Sledimo torej predpostavki, da te dejavnike prepoznavna in si o njih ustvarja vrednostno mnenje tudi potencialni kupec. Ta se na trgu nepremičnin vede racionalno. Za analizo njegovih pričakovanj v članku upoštevamo smernice mednarodnih standardov ocenjevanja vrednosti (MSOV, 2013), v katerih se kot osnovne sestavine primerjav (v nadaljevanju: dimenzije) navajajo: (1) pravica, za katero smo dobili podatke o ceni, in pravica, katere vrednost se ocenjuje; (2) lokacija; (3) kakovost zemljišč ali starost in značilnost objektov; (4) dovoljena raba ali namembnost (v skladu s prostorsko zakonodajo); (5) okoliščine, v katerih je bila cena določena, in zahtevana podlaga vrednosti; (6) datum začetka veljavnosti dobljenega podatka o ceni in zahtevani datum ocenjevanja vrednosti. Pšunder in Torkar (2007) kot najpomembnejše sestavine primerjanja navajata: čas prodaje, lokacijo, financiranje, pogoje prodaje, motnjo dejavnikov okolice in fizične značilnosti, kot so velikost, površina, višina stropov, etažnost, starost, stanje vzdrževanja, opremljenost. Munizzo in Musial (2009) dejavnike prilagoditev segmentirata v naslednjem vrstnem redu: (1) prenesene nepremičninske pravice, (2) pogoji financiranja, (3) prodajni pogoji, (4) tržni pogoji, (5) lokacija, (6) fizične značilnosti, (7) ekonomski atributi.

Na podlagi pregleda obstoječih raziskav okvir vplivnih sestavin razširimo na osmo dimenzijo, in sicer funkcionalnost ter relativno velikost stanovanja, sedmo dimenzijo ekonomskih atributov pa razširimo na socio-ekonomske dejavnike. Lasten raziskovalni vložek ima smiselno vsebinsko podlago, ki jo potrjuje vrsta raziskav. Grum in Temeljotov (2010) ugotavljata pomembnost finančnih, fizičnih, bivalnih in socio-ekonomskih dejavnikov. Trček (2005) ugotavlja, da je najpomembnejši socio-ekonomski dejavnik občutek varnosti v soseski. Podobne rezultate navaja Berčan (2010), ki trdi, da stanovanje pomeni statusni simbol, socialni položaj in identiteto, družbeni položaj, zasebnost. Bonnafofus in Kryvobokov (2011) na primeru francoskega mesta Lyon dokažeta, da socio-ekonomska percepcija značilno vpliva na vrednost stanovanj, močan vpliv socialnih dejavnikov na silnice povpraševanja po nepremičninah na posameznem trgu navajata tudi Munizzo in Musial (2009). Vpliv tlorisa in funkcionalne razporeditve stanovanja na preference uporabnikov stanovanj proučujeta Altas in Ozsoy (1998), ki dokažeta proces dojemanja nepremičninskega prostora kot skupek več dejavnikov z izredno pomembnim vplivom na preferenčno vrednost stanovanja. Pomembnost dejavnika funkcionalnost stanovanja neposredno ali posredno ugotavljajo tudi Berčan (2010), Friškovec in Janeš (2010), Pšunder in Torkar (2007), Ebru in Eban (2009), Ilozor (2009), Šasel (2006), Dolenc (2011), Ratchatakulpat et al. (2009).

V članku predstavljamo delne rezultate kvantitativnega dela raziskave, ki sledi vsebinski delitvi nepremičninskega trga na segmente, kot jih zastopajo potencialni kupci s podobnimi homogenimi vredno-

stnimi preferencami oziroma silnicami povpraševanja. Rezultati raziskave se navezujejo na proučevani nepremičninski segment stanovanj in zajemajo del slovenskega nepremičninskega trga, Ljubljano in njeno okolico. Pri tem oblikujemo tako imenovani vrednostni okvir, ki predstavlja vrednostne razpone, skladne z izraženimi preferencami kupcev, za vsak analizirani stanovanjski dejavnik, znotraj privzetih segmentov in strukturno oblikovanih ravni, pomembnih za razumevanje vedenja potencialnih kupcev.

## 2 METODOLOGIJA

Metodološki pristop je v osnovi tristopenjski. Na prvi stopnji izvedemo pregled obstoječih raziskav ter na tej podlagi pripravimo nabor atributov, ki po mnenju mnogih raziskovalcev vplivajo na vrednost stanovanjskih nepremičnin. Na drugi stopnji nabor atributov z ekspertnim procesom oženja segmentiramo v sklope dejavnikov. Na tej podlagi na tretji stopnji uporabimo metodo pregleda, ki temelji na vprašalniku (Walonick, 2007).

Za analizo intervalnih in razmernostnih spremenljivk uporabimo deskriptivne statistike aritmetične sredine, standardnega odklona, mediane, 33. in 66. centila. Mediana in centili so uporabljeni predvsem zato, ker nekatere spremenljivke nimajo normalne porazdelitve, kar ugotovljamo s koeficienti asimetričnosti in sploščenosti. Pri intervalnih in razmernostnih spremenljivkah so po definiciji Box-Whiskers izločene ekstremne vrednosti. Poleg univariatnih in bivariatnih statističnih metod je uporabljen postopek multivariatne statistične analize podatkov z odločitvenim drevesom CHAID (angl. *chi-squared automatic interaction detection*), ki je metoda podatkovnega rudarjenja, temelječa na statističnem testu »hi-kvadrat«. CHAID je analitično orodje za odkrivanje razmerja med spremenljivkami. Z analizo se vzorec razdeli v serije podskupin, ki (1) so notranje homogene in vsebujejo spremenljivke s podobnimi vzorci in značilnostmi v razmerju do odvisne spremenljivke ter (2) povečujejo sposobnost za napovedovanje vsebine delitvene skupine oziroma podskupine. Algoritem CHAID ustvarja navzkrižne tabele za vsako kategorično napovedovalno skupino, dokler ne doseže najboljšega rezultata za izvedbo cepitve s statistično značilnostjo. Tehnika CHAID torej rekurzivno razcepi populacijo (vzorec) v segmente (vozlišča), oblikovane tako, da so ustvarjene podskupine notranje homogene, a med seboj statistično značilno heterogene. Postopek cepljenja se ponovi na vsakem vozlišču, obravnavanem kot nov »podvzorec«, dokler ni izpolnjeno pravilo ustavitve, to je, ko je vrednost razreda po cepitvi enaka (ni spremenljivke s statistično značilno razliko pri delitvi) ali obstaja samo en predmet v vzorcu. V raziskavi smo izbrali odvisno spremenljivko vrednost stanovanja na enoto (eur/m<sup>2</sup>), prva napovedovalna spremenljivka pa je lokacija, saj, kot navaja Grum (2012), je prav ta običajno najvplivnejši dejavnik pri določanju vrednosti.

Metode podatkovnega rudarjenja uporabimo zaradi večje robustnosti, saj imajo manj predpostavk kot statistične metode, in ne zaradi velike količine analiziranih podatkov. Hedonski analitični pristop predpostavlja izbor oblike krivulje (eksponentna, logaritemska, dvojna logaritemska, linearno-logaritemska ipd.), ki ustrezno ponazarja (funkcijsko) povezanost neodvisnih spremenljivk in odvisne spremenljivke (Pavlin, 2006). Podobno kot neparametrična statistika tudi uporabljena metoda podatkovnega rudarjenja nima predpostavke o funkciji povezanosti odvisne spremenljivke z neodvisnimi. Poleg tega pri uporabljeni metodi podatkovnega rudarjenja (odločitvena drevesa C&RT; angl. *classification and regression trees*) ne gre le za razvrščanje po eni dimenziji, temveč je upoštevanih več neodvisnih spremenljivk hkrati (Derrig in Francis, 2008), saj se v vsakem koraku z zapleteno formulo iz vseh spremenljivk izračunava, kako

dobro se model C&RT prilega podatkom (angl. *goodness-of-fit statistic*). Res je, da algoritem na vsaki ravni razvrščanja izbere eno neodvisno spremenljivko, ki najbolj diskriminira odvisno (podobno kot na primer regresija Stepwise), a algoritem C&RT potem odločitveno drevo še dodatno optimizira (angl. *bagging, pruning, boosting*), pri čemer ravno tako upošteva več spremenljivk hkrati (Derrig in Francis, 2008; Wilkinson, 1992).

Preglednica 1: Socio-demografska struktura vzorca.

		Frekvenca odgovorov	Veljavni odstotek (%)
Spol	moški	464	44,5
	ženski	578	55,5
Starost	do 25 let	134	12,8
	od 26 do 35 let	610	58,6
	od 36 do 45 let	147	14,1
	od 46 do 55 let	106	10,2
	od 56 let in več	45	4,3
	skupaj	1.041	100,0
Izobrazba	osnovna šola ali manj	4	0,3
	srednja ali poklicna šola	213	20,6
	višja, visoka šola	253	24,4
	univerzitetna izobrazba ali več	567	54,7
	skupaj	1.037	100,0
Velikost gospodinjstva	živim sam	124	12,0
	v 2-članskem gospodinjstvu	316	30,4
	v 3-članskem gospodinjstvu	276	26,6
	v 4-članskem gospodinjstvu	255	24,6
	v več kot 4-članskem gospodinjstvu	66	6,4
skupaj	1.037	100,0	
Dohodek gospodinjstva	višji znesek od povprečja	578	55,8
	nižji znesek od povprečja	207	20,0
	približno slovensko povprečje	251	24,2
	skupaj	1.036	100,0
Skupaj		1.042	

V anketi je sodelovalo 1042 udeležencev. Vprašalnik je vsebinsko razdeljen na dva dela. V prvem udeleženec z odgovori predstavi vsebinske preference glede izbranih dejavnikov, vezanih na stanovanjsko nepremičnino, v drugem pa se vrednostno opredeli glede vsakega dejavnika. Za dimenzije dejavnikov od 5 do 8 (lokacija, fizični dejavniki, socio-ekonomski dejavniki, dejavniki funkcionalno-relativne velikosti) smo pridobili uvodni nabor več kot 630 stanovanjskih dejavnikov (Nahtigal, 2014). S postopkom ožjenja se oblikuje hierarhična struktura vrednostnega okvirja, sestavljena iz 4 dimenzij dejavnikov, 7 poddimenzij dejavnikov, 14 skupin dejavnikov in 23 dejavnikov, razdeljenih v 26 proučevanih vrednostnih elementov (Nahtigal, 2014).

Anketirani vzorec temelji na kombinaciji namenskega vzorca in vzorca po načelu »snežne kepe«, za namen anketiranja pa se uporabijo tudi sezname potencialnih kupcev nekaterih ljubljanskih nepremičninskih agencij. V anketiranem vzorcu je 44,5 % moških in 55,5 % žensk, starih več kot 25 let. 58,6 % anketirancev se uvršča v starostni razred od 26 do 35 let, kar je dejansko starostni profil najbolj pogostega potencialnega kupca stanovanj (Mandič et al., 2006). Prevladujejo udeleženci z visoko izobrazbo, kar pomeni, da so se samoizbrali predvsem izobraženi udeleženci. Največ udeležencev živi v dvočlanskem gospodinjstvu. Zanimiva je porazdelitev glede parametra, vezanega na dohodek gospodinjstva, kjer 55,8 % analiziranega vzorca na člana gospodinjstva dosega višji znesek od slovenskega povprečja, le 24,2 % vzorca je približno v slovenskem povprečju. Navedeno pojasnjujemo z visoko izobrazbeno strukturo udeležencev in posledično boljšim položajem (tudi finančnim) v družbi. Dobrih 47 % udeležencev preferira nakup stanovanja znotraj ljubljanskega obroča, preostalih 53 % pa je enakomerno porazdeljenih med zaželeno lokacije bližnje oziroma širše okolice Ljubljane. Socio-demografska struktura udeležencev je razvidna iz preglednice 1.

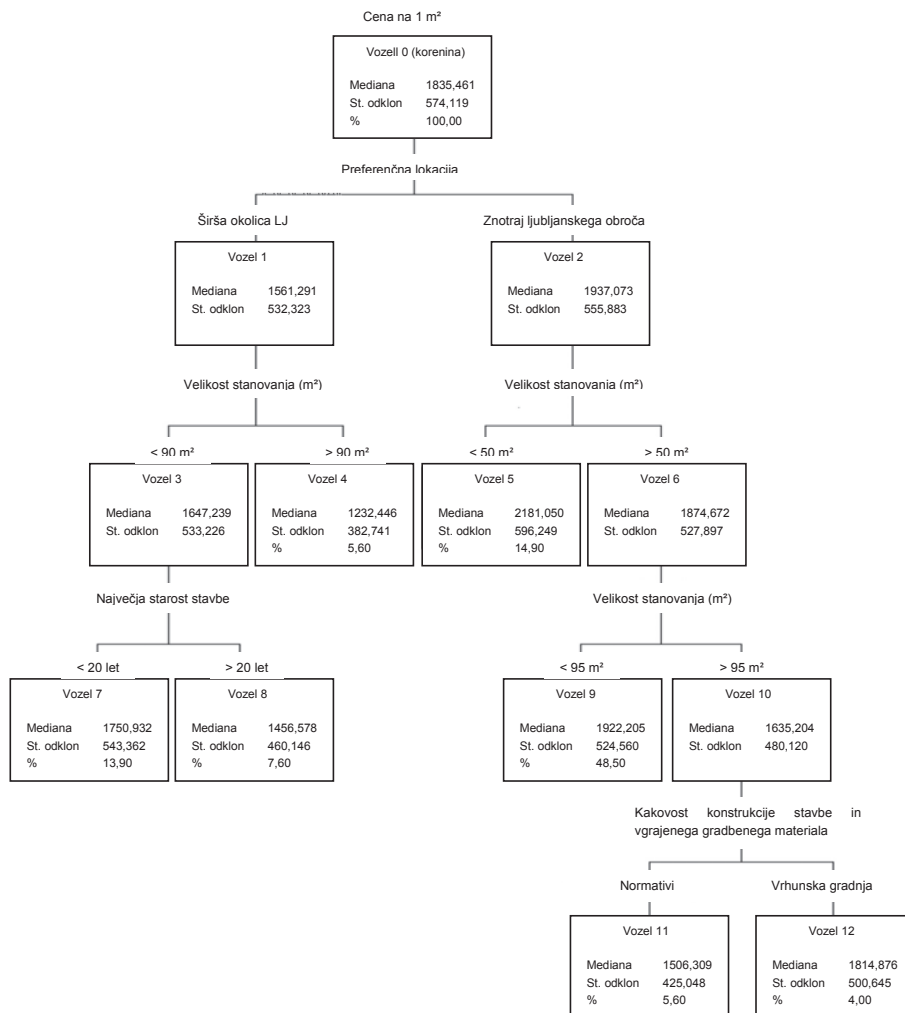
### 3 REZULTATI IN INTERPRETACIJA

#### 3.1 Segmentacija nepremičninskega trga stanovanj

Segmentacija nepremičninskega trga stanovanj je izvedena z modelom CHAID. Rezultat modela je prikazan v hierarhični strukturi na glavo obrnjene drevesne oblike (slika 1), pri čemer korenina predstavlja celoten vzorec oziroma populacijo, veje pa so končno oblikovani vsebinsko in vrednostno logični segmenti (Ramaswami in Bhaskaran, 2010). Pri izboru kriterijskih spremenljivk je upoštevano načelo, da se v model vključijo le spremenljivke, ki se nanašajo na lastnosti stanovanja, in ne tudi tiste, ki se nanašajo na lastnosti anketirancev. Upoštevanje demografskih značilnosti potencialnih kupcev v procesu vrednotenja po načinu tržnih primerjav ni smotno, saj ocenjevalec ne ve, kakšen je bil tip kupca primerljive nepremičnine, uporabljene kot vhodni podatek v prilagoditvenem procesu (Grum, 2012).

Drevo odločanja CHAID ima več nivojev, pri čemer je pri vsakem izpostavljena spremenljivka, na podlagi katere so razlike med segmenti statistično značilne. Iz vsebinske analize pridobljenih segmentov je razvidno, da so med segmenti značilne razlike v vsebini proučevanih stanovanjskih dejavnikov. Preference segmentnih kupcev izkazujejo silnice povpraševanja, ki bi jih za posamezen segment pričakovali. Segmenti so notranje vsebinsko homogeni, primerjalno med seboj pa značilno heterogeni. Njihov obstoj utemeljujejo neenakomerni »padci« kriterijske funkcije AIC (angl. *akaike information criterion*), izračunane na podlagi enakih kriterijskih spremenljivk kot segmentacija CHAID. Funkcija ima na osi Y prilagojene evklidske razdalje posameznih enot od centroidov segmentov, na osi X pa navedene rešitve z različnim številom segmentov.

Zgornji pravokotnik na sliki 1 prikazuje korenine drevesa (vozel 0) ter posredno vse vzorčne anketirance, ki so v povprečju, izračunano na podlagi njihovih odgovorov, za nakup stanovanja pripravljeni plačati 1.835 EUR/m<sup>2</sup>. Vrednost se relativno dobro ujema s povprečno vrednostjo stanovanja v Ljubljani in okolici v letu 2013, ki po podatkih Geodetske uprave RS (GURS, 2013) znaša 1.830 EUR/m<sup>2</sup>.



Slika 1: Drevo CHAID – tehnika cepitve na segmente (Nahtigal, 2014).

Algoritem CHAID v prvem koraku vzorec razdeli na podlagi proučevanih lastnosti stanovanja tako, da je v posamezni podskupini (vozeli 1 in 2) razlika v ceni/m<sup>2</sup> čim večja. Izmed vseh vključenih kriterijskih spremenljivk se največja razlika izkaže pri primarni delitvi vzorca glede na dejavnik lokacije. Podobno metoda deli ostale podskupine. Podvzorec širše okolice Ljubljane najprej deli iz naslova dejavnika površina stanovanja, in sicer na skupino stanovanj z neto tlorisno površino, večjo od 90 m<sup>2</sup> (končen segment 1), ter na stanovanja z neto tlorisno površino, manjšo od 90 m<sup>2</sup>. Slednja podskupina se v tretji cepitvi deli glede na dejavnik starost, in sicer na stanovanja v večstanovjskih objektih, starejših od 20 let in mlajših od 20 let (končna segmenta 2 in 3). Druga polovica drevesa, vezana na lokacijo mesta Ljubljana z ožjo okolico, se v drugi cepitvi prav tako deli na podlagi dejavnika neto tlorisne površine stanovanja, a v površinski normi 50 m<sup>2</sup>. Stanovanja, manjša od 50 m<sup>2</sup>, sestavljajo končen segment 4, stanovanja v Ljubljani, večja od 50 m<sup>2</sup>, pa se v tretji cepitvi še enkrat delijo na podlagi neto tlorisne površine, v tem

koraku pri velikostnem redu 95 m<sup>2</sup>. V tretjem koraku desne polovice drevesa dobimo končni segment 5, in sicer stanovanja v Ljubljani, velika od 50 do 95 m<sup>2</sup>, ki so najbolj zastopan segment z deležem skoraj polovice celotnega vzorca. Ta podatek je le eden od kazalnikov kakovosti pridobljenih segmentov, saj je na nepremičninskem trgu povpraševanje po srednje velikih funkcionalnih stanovanjih dejansko največje (GURS, 2013). Končna segmenta 6 in 7 pridobimo iz delitve podvzorca stanovanj neto tlorisne površine nad 95 m<sup>2</sup>, in sicer na podlagi dejavnika kakovost gradnje in večstanovanjskega objekta. Zadnja cepitev poda segmenta velikih nadstandardnih stanovanj ter velikih stanovanj običajne kakovosti v Ljubljani. V rekapitulaciji imamo torej štiri segmente stanovanj oziroma tipov potencialnih kupcev znotraj mesta Ljubljane z ožjo okolico ter tri segmente v širši okolici Ljubljane.

Rezultati pridobljenih segmentov trga stanovanj v Ljubljani in njihova strukturna velikost, določena na podlagi multivariatne metode CHAID, so prikazani v preglednici 2.

Preglednica 2: Pridobljeni segmenti trga stanovanj v Ljubljani in njihova strukturna velikost (Nahtigal, 2014).

Segment/stanovanje	Definicija	Odstotek (%)	RVS* (%)
Ljubljana okolica, velikost nad 90 m <sup>2</sup>	— idealna lokacija je širša okolica Ljubljane — stanovanje bi moralo imeti več kot 90 m <sup>2</sup>	5,3	5,6
Ljubljana, velikost do 50 m <sup>2</sup>	— idealna lokacija je znotraj mestnega obročja Ljubljane — stanovanje naj bi bilo manjše/enako kot 50 m <sup>2</sup>	14,1	14,9
Ljubljana okolica, velikost do 90 m <sup>2</sup> , starost do 20 let	— idealna lokacija je širša okolica Ljubljane — stanovanje manj ali enako 90 m <sup>2</sup> — starost stavbe bi morala biti manj/enako 20 let	13,2	13,9
Ljubljana okolica, velikost do 90 m <sup>2</sup> , starost nad 20 let	— idealna lokacija je širša okolica Ljubljane — stanovanje bi moralo imeti manj/enako 90m <sup>2</sup> — starost stavbe bi morala biti več kot 20 let	7,2	7,6
Ljubljana, velikost od 50 do 95 m <sup>2</sup>	— idealna lokacija znotraj mestnega obročja Ljubljane — kvadratura več/enako 50 m <sup>2</sup> do največ 95 m <sup>2</sup>	46	48,5
Ljubljana, velikost nad 95 m <sup>2</sup> , kakovost – standard	— idealna lokacija znotraj mestnega obročja Ljubljane — kvadratura stanovanja naj bi bila več kot 95 m <sup>2</sup> — kakovost stavbe je lahko nižja	5,3	5,6
Ljubljana, nad 95 m <sup>2</sup> , kakovost – nadstandard	— idealna lokacija znotraj mestnega obročja Ljubljane — kvadratura stanovanja naj bi bila več kot 95 m <sup>2</sup> — kakovost stavbe mora biti višja (kakovostna gradnja)	3,8	4
	SKUPAJ	94,9	100
	Sistemske izpad	5,1	

\*RVS = relativna velikost segmenta

### 3.2 Vrednostne ocene preferenc potencialnih kupcev nepremičnin

Pri procesu nabora dejavnikov smo oblikovali štiri sloje, najožji nivo elementarnih dejavnikov, vmesni nivo skupin dejavnikov ter najširša nivoja poddimenzij in dimenzij dejavnikov (Nahtigal, 2014). Rezultati raziskave za vsak analizirani nivo dejavnikov podajajo vrednostni razpon preferenc potencialnih kupcev posameznega segmenta. Vrednosti dejavnikov so določene na podlagi povprečja, mediane ter 33.



in 66. centila. Rezultati so analizirani v obliki absolutnih in relativnih vrednosti. Rezultati, prikazani v preglednici 3, so na nivoju mediane.

Rezultati kažejo, da je potencialnim kupcem vrednostno najpomembnejši dejavnik efektivna starost objekta, ki v območju segmentnih median zavzema vrednosti okrog 20 %. Dejavnik efektivne starosti je v osnovi sestavljen iz treh poddejavnikov, pri čemer je največji prispevek vrednostnega poddejavnika starost (mediana segmentov od približno 7 % do 12 % ob spremembi dejavnika starost za 20 let), sledi poddejavnik kakovost gradnje (mediana po segmentih od približno 4 % do 6 %), najmanjši vrednostni ponder pa ima poddejavnik kakovost in stanje glede na vzdrževanje objektov (mediana od približno 2,5 % do 4,5 %). Za vsako leto starosti objekta se vrednost stanovanja, po mnenju vsaj polovice potencialnih kupcev, izraženo v absolutni vrednosti, zniža za približno 500 evrov. Zanimiva je primerjava z rezultati raziskave, v kateri je Friškovec (2009) z regresijsko analizo dokazal, da se, pri drugih nespremenjenih pogojih, oglaševana cena rabljenega stanovanja v okolici Ljubljane v enem letu zmanjša v povprečju za 722,39 evra. Če rezultate primerjamo z vrednostnimi preferencami tretjine najbolj zahtevnih kupcev (66. centil), so skoraj povsem usklajeni z navedenimi izsledki. Pavlin (2006) pri izračunavanju indeksa cen stanovanj za dejavnik starost oceni regresijski koeficient  $-0,00421$  znotraj napake 1 %, kar pomeni 0,4-odstotni padec vrednosti stanovanja za eno leto starejšo gradnjo glede na konstanto. Romih in Bojnec (2008) v hedonski analizi cen rabljenih stanovanj dokažeta, da dodatno leto starosti stanovanja, *ceteris paribus*, vrednost nepremičnine v povprečju zniža za dobrih 7 evrov na 1 m<sup>2</sup>. Upoštevajoč izhodiščno povprečno vrednost stanovanja, kot jo izražajo udeleženci (1.835 eur/m<sup>2</sup>), rezultat pomeni relativno vrednostno spremembo nepremičnine v višini 7,63 % ob spremembi starosti za 20 let.

Rezultati raziskave kažejo, da so udeležencem najmanj pomembni dejavniki, kot so svetla višina stanovanja, kakovost sistema varnosti stanovanja, velikost večstanovanjskega objekta, kakovost skupnih prostorov v objektu ter dejavnik kakovosti in oblikovanja notranjega pohištva. Dejavnik nadpovprečne svetle višine stanovanja je, razen pri segmentu luksuznih nadstandardnih stanovanj, kupcem tako rekoč nepomemben. Pri elitnem segmentu pa polovica kupcev vrednostno preferira dejavnik v višini 0,4 % od vrednosti celotne nepremičnine, najbolj zahtevna tretjina kupcev celo 0,8 %. Navedeno pojasnujemo z dejstvom, da je minimalna svetla višina v večstanovanjskih objektih zakonsko predpisana, standardna. Segment potencialnih kupcev dragih stanovanj izstopa tudi glede tega, da izražajo visoko stopnjo strinjanja glede urejenosti in kakovosti skupnih prostorov. Za prisotnost/odsotnost kakovostnih skupnih prostorov objekta je več kot polovica kupcev pripravljena plačati več/manj za stanovanje v relativni višini od približno 0,4 % do 0,8 % povprečne segmentne vrednosti stanovanja. Razpon vrednostnih preferenc dejavnika se od 33. do 66. centila giblje v relativnih vrednostih od 0 % do 2 %. Razlog za izraženo nizko pomembnost dejavnika kakovosti sistema varnosti stanovanja iščemo v dejstvu, da večina stanovanj na ljubljanskem trgu, razen protivlomnih vrat, ne ponuja nobenega sistema varnosti. Kupci tako o dejavniku ne razmišljajo in ga verjetno obravnavajo kot luksuzen fizični element. Vsaj polovica potencialnih kupcev izrazi vrednostne preference za obstoj/neobstoj obravnavanega dejavnika, *ceteris paribus*, v višini od 0,3 % do 0,5 % povprečne segmentne vrednosti stanovanja. V obstoječih raziskavah se dejavnik navaja kot pomemben, a očitno v mestih z izraženo višjo stopnjo kriminala. Za dejavnik notranje opreme je vsaj polovica potencialnih kupcev, ob njenem izboljšanju/poslabšanju, pripravljena spremeniti preferenčno vrednost stanovanja od 1 % do 2 % povprečne segmentne vrednosti nepremičnine. Argument za nizke vrednosti dejavnika je med drugim tudi dejstvo, da notranja oprema ne vključuje opreme kuhinje in kopalnice, ki sta predmet samo-

stojne obravnave. Izjema so kupci nadstandardnih stanovanj z dvakrat višjimi preferencami. Mandič et al. (2006) in Naderi et al. (2012) navajajo, da je dejavnik velikosti objekta pomemben in vpliva na vrednost samih stanovanj. Nasprotno pa udeleženci naše raziskave temu dejavniku pripisujejo majhen vrednostni vpliv. Pri tretjini najmanj zahtevnih kupcev, v vseh segmentih, dejavnik sploh nima pomembnosti. Še najvišjo preferenco izražajo potencialni kupci večjih ali elitnih stanovanj, kjer se jih vsaj polovica izreka, da je pripravljena plačati 1,7 % več ali manj, če se velikost večstanovanjskega objekta spremeni. Pri obeh navedenih segmentih so to potencialni kupci, ki iščejo stanovanja v manjših objektih in izražajo negativne vrednostne preference, če bi morali kupiti stanovanje v velikem večstanovanjskem objektu.

Pomembna in preferirana dejavnika sta prisotnost lastniškega parkirnega mesta ter dejavnik razgleda in lege stanovanja v objektu. Parkirno mesto je najmanj pomembno za kupce najcenejšega segmenta stanovanj, kjer je polovica kupcev pripravljena za lastništvo parkirnega mesta plačati le 1,3 % segmentne vrednosti stanovanja. Pri preostalih segmentih so vrednosti mediane višje od 2 %. Vsaj polovica kupcev elitnega razreda stanovanj je za parkirišče pripravljena odšteti 4 % od vrednosti stanovanja, najbolj zahtevna tretjina kupcev pa celo 5,7 %. Skladno z raziskavo Friškovec (2009) ima le 12 % stanovanj v Ljubljani ter 20 % stanovanj v okolici Ljubljane pripadajoče lastniško parkirišče v okviru stanovanja, regresijska funkcija pa zanimivo prepozna statistično značilen vpliv dejavnika le za območje okolice Ljubljane, kjer je oglaševana cena rabljenega stanovanja v povprečju za 25.517,42 evrov višja od enakega stanovanja, ki garaže nima. Glede na povprečno vrednost parkirnega mesta v Ljubljani v letu 2013 (GURS, 2013), ki je znašala 10.804,00 evrov, lahko ugotovimo, da rezultati naše raziskave, v kateri je vsaj polovica udeležencev dejavniku lastniškega parkirnega mesta pripisala vrednosti med 3.000 do 4.000 evrov, kupci nadstandardnih stanovanj pa približno 8.000 evrov, izkazujejo bistveno nižje percepcije. Pri tem rezultati tudi kažejo, da je parkirno mesto pomembnejše kupcem stanovanj znotraj mesta Ljubljana (mediane segmentov od 3 % do 4 %) kot pa kupcem segmentov stanovanj v okolici Ljubljane (mediane od 1,3 % do 2,1 %). Še najbližje tržnim vrednostim so izražene percepcije oziroma preference tretjine najbolj zahtevnih segmentnih kupcev stanovanj, ki razliko (brez parkirnega mesta ali z njim) izražajo v vrednosti približno 10.000 evrov. Dejavnik razgleda in lege stanovanja pričakovano ustvarja nadpovprečno visoko stopnjo volatilitnosti vrednostnih preferenc glede na relativna gibanja preostalih dejavnikov, preference zgornje in spodnje tretjine kupcev se izrazito razlikujejo. Vsaj polovica potencialnih kupcev stanovanj je pripravljena za boljši/slabši razgled in lego stanovanja glede na smer neba plačati več/manj med 2 % in 2,5 % segmentne vrednosti stanovanja. Vrednostni razpon preferenc kupcev 33. in 66. centila je od 0 % do približno 4,5 %. Izjema je segment kupcev nadstandardnih stanovanj, ki jim je dejavnik zelo pomemben (mediana 4 %, razpon do 7,2 % – 66. centil). Ugotovili smo, da kupci stanovanj preferirajo kombinacijo dejavnikov razgleda, lege in balkona. Kupcem večjih stanovanj od 90 m<sup>2</sup> je dejavnik razgleda in lege stanovanja, primerjalno z porazdelitvijo vzorca, nadproporcionalno pomemben. Kupci nadstandardnih stanovanj s skoraj 97 % segmentne populacije preferirajo lep razgled.

Podobno eksponentno rast stopnje pomembnosti dejavnika od manj do bolj zahtevnih kupcev izkazuje dejavnik družbeno-socialnega statusa soseske. Vsaj polovica kupcev je pripravljena zaradi boljše/slabše kakovosti stanovanjske soseske plačati več/manj v višini od približno 2,4 % do 6,8 % povprečne segmentne vrednosti stanovanja. Zahtevni tretjini segmentnih kupcev družbeno-socialni status objekta pomeni vrednostno pripravljenost za višje/nižje plačilo kupnine stanovanja med 6 % in 8,7 %, najmanj zahtevni tretjini kupcem pa dejavnik pomeni mnogo manj, le približno 1 % do 2 % od povprečne segmentne vrednosti stanovanja.

Od fizičnih elementov stanovanja se kot pomembni izkažejo dejavniki kakovosti oken, kopalnice, kuhinje, tlakov in instalacij, in sicer je v kumulativnem relativnem znesku vsaj polovica potencialnih kupcev pripravljena za stopnjo kakovosti tako imenovanih vitalnih fizičnih elementov plačati več oziroma manj od 7 % do 9,5 % segmentne vrednosti stanovanja. Razpon vrednostnih preferenc kupcev, ob temeljiti spremembi posameznega fizičnega dejavnika, zavzema vrednosti za kakovost oken in kopalnice med 1 % in 3 %, za kakovost kuhinje med 0,5 % in 2 %, kakovost tlakov med 0,4 % in 1,7 % ter za kakovost instalacij med 0,8 % in 2,5 %. Zanimivo je, da so okna nadproporcionalno pomembna kupcem najcenejšega segmenta srednje velikih starejših stanovanj v okolici Ljubljane, verjetno zaradi želje po čim manjši energetski izgubi in doseganju čim nižjih mesečnih stroškov ogrevanja. Predmetni segment kupcev namreč izraža najvišjo stopnjo vrednostne relevance dejavnika obratovalni stroški (mediana je 3,3 %).

Preglednica 3: Rezultati raziskave na nivoju mediane (Nahtigal, 2014).

		Mediana						
		Lj okolica, nad 90 m <sup>2</sup>	Lj okolica, do 90 m <sup>2</sup> , starost do 20 let	Lj okolica, do 90 m <sup>2</sup> , starost nad 20 let	Lj, do 50 m <sup>2</sup>	Lj, od 50 do 95 m <sup>2</sup>	Lj, nad 95 m <sup>2</sup> , normalna kakovost	Lj, nad 95 m <sup>2</sup> , nadstandardna kakovost
Nivo elementarnih dejavnikov	Parkirišče v neposredni okolici stavbe	1,0 %	1,3 %	1,3 %	2,5 %	1,8 %	1,8 %	1,2 %
	Urejenost neposredne okolici večstanovanjskega objekta	1,3 %	1,1 %	1,0 %	2,0 %	1,7 %	1,7 %	1,9 %
	Lastniško parkirno mesto v kletni garaži	2,1 %	2,0 %	1,3 %	3,8 %	3,3 %	1,8 %	4,0 %
	Atraktiven razgled iz stanovanja, lega stanovanja glede na smer neba	2,5 %	1,1 %	2,2 %	2,5 %	2,5 %	2,0 %	4,0 %
	Prisotnost balkona	1,1 %	1,3 %	1,3 %	2,3 %	1,7 %	1,0 %	2,0 %
	Prisotnost terase / atrija	2,2 %	2,4 %	1,3 %	1,5 %	2,0 %	2,6 %	3,2 %
	Velikost večstanovanjskega objekta	1,7 %	0,0 %	0,0 %	0,0 %	0,0 %	0,0 %	0,8 %
	Etaža stanovanja - kletno	2,6 %	2,2 %	6,3 %	6,3 %	5,2 %	3,8 %	9,1 %
	Etaža stanovanja - mansardno	1,8 %	2,0 %	3,3 %	4,2 %	2,5 %	0,6 %	5,0 %
	Dvigalo	0,4 %	1,0 %	0,5 %	1,3 %	1,0 %	1,0 %	1,2 %
	Izgled (zunanja arhitektura) večstanovanjskega objekta	1,1 %	0,0 %	0,0 %	1,8 %	0,0 %	0,7 %	1,0 %
	Efektivna starost (glede na leta)	7,5 %	12,3 %	7,1 %	8,3 %	7,1 %	10,0 %	6,8 %
	Efektivna starost (glede na kakovost gradnje)	5,0 %	3,5 %	3,9 %	5,0 %	4,7 %	5,6 %	8,0 %
	Efektivna starost (glede na kakovost fasade, strehe)	3,2 %	3,3 %	3,2 %	2,5 %	2,3 %	3,4 %	4,5 %
	Efektivna starost (skupaj: leta, gradnja, fasada)	20,8 %	20,0 %	13,7 %	19,2 %	15,0 %	20,0 %	20,0 %
	Kakovost skupnih prostorov (prisotnost sušilnice, pralnice, kolesarnice, ipd.)	0,5 %	0,0 %	0,7 %	0,7 %	0,0 %	0,4 %	0,8 %
	Kakovost oken	1,5 %	2,0 %	2,3 %	1,7 %	1,4 %	1,8 %	2,2 %
	Kakovost in oprema kopalnice	1,1 %	2,0 %	2,0 %	2,0 %	1,7 %	1,0 %	1,6 %
	Kakovost in oprema kuhinje	0,9 %	1,1 %	1,4 %	1,5 %	1,0 %	0,4 %	0,8 %
	Kakovost tlakov	1,0 %	1,2 %	1,0 %	1,0 %	0,8 %	0,7 %	1,2 %
	Kakovost instalacij (elektrika / ogrevanje / klima)	1,2 %	1,9 %	1,7 %	1,3 %	1,4 %	1,3 %	1,5 %
	Kakovost sistema varnosti stanovanja	0,3 %	0,3 %	0,5 %	0,5 %	0,4 %	0,3 %	0,4 %
	Kakovost in dizajn pohištva ter notranje opreme	0,6 %	0,8 %	0,7 %	0,8 %	0,0 %	0,0 %	1,2 %
	Obratovalni stroški	3,0 %	2,4 %	3,3 %	2,2 %	1,8 %	2,7 %	1,4 %
Splošen družbeno-socialni status objekta	3,8 %	3,3 %	2,4 %	5,4 %	5,0 %	5,3 %	6,8 %	
Funkcionalna razporeditev prostorov stanovanja	0,0 %	1,6 %	1,7 %	1,9 %	1,5 %	1,7 %	2,3 %	
Svetla višina	0,0 %	0,0 %	0,0 %	0,0 %	0,0 %	0,0 %	0,4 %	

		Mediana						
		Lj okolica, nad 90 m <sup>2</sup>	Lj okolica, do 90 m <sup>2</sup> , starost do 20 let	Lj okolica, do 90 m <sup>2</sup> , starost nad 20 let	Lj, do 50 m <sup>2</sup>	Lj, od 50 do 95 m <sup>2</sup>	Lj, nad 95 m <sup>2</sup> , normalna kakovost	Lj, nad 95 m <sup>2</sup> , nadstandardna kakovost
Nivo skupin dejavnikov	Kakovost neposredne okolice objekta	3,1 %	2,8 %	2,6 %	4,7 %	4,1 %	2,4 %	4,5 %
	Lastniško parkirno mesto v kletni garaži	2,1 %	2,0 %	1,3 %	3,8 %	3,3 %	1,8 %	4,0 %
	Razgled in lega stanovanja v objektu	2,5 %	1,1 %	2,2 %	2,5 %	2,5 %	2,0 %	4,0 %
	Prisotnost balkona	1,1 %	1,3 %	1,3 %	2,3 %	1,7 %	1,0 %	2,0 %
	Prisotnost terase / atrija	2,2 %	2,4 %	1,3 %	1,5 %	2,0 %	2,6 %	3,2 %
	Velikost večstanovanjskega objekta	1,7 %	0,0 %	0,0 %	0,0 %	0,0 %	0,0 %	0,8 %
	Degradirana lokacija: (pol)kletno stanovanje	2,6 %	2,2 %	6,3 %	6,3 %	5,2 %	3,8 %	9,1 %
	Degradirana lokacija: mansardno stanovanje	1,8 %	2,0 %	3,3 %	4,2 %	2,5 %	0,6 %	5,0 %
	Kakovost objekta	24,3 %	24,6 %	18,7 %	25,8 %	19,6 %	26,0 %	24,4 %
	Kakovost in stanje vitalnih elementov stanovanja	7,5 %	9,5 %	9,0 %	8,6 %	7,5 %	6,9 %	8,0 %
	Kakovost notranje opreme	1,2 %	1,2 %	1,3 %	1,3 %	0,8 %	0,5 %	1,7 %
	Obratovalni stroški	3,0 %	2,4 %	3,3 %	2,2 %	1,8 %	2,7 %	1,4 %
	Splošen družbeno-socialni status objekta	3,8 %	3,3 %	2,4 %	5,4 %	5,0 %	5,3 %	6,8 %
	Funkcionalna in relativna velikost stanovanja	1,6 %	1,5 %	2,5 %	2,5 %	2,0 %	2,8 %	3,2 %
	Nivo poddimenzij dejavnikov	Lokacija objekta	5,6 %	4,9 %	5,2 %	10,0 %	7,8 %	5,7 %
Lokacija stanovanja v objektu		15,0 %	15,0 %	17,7 %	23,2 %	20,0 %	18,5 %	25,2 %
Fizične lastnosti objekta		24,3 %	24,6 %	18,7 %	25,8 %	19,6 %	26,0 %	24,4 %
Fizične lastnosti stanovanja		9,4 %	11,7 %	10,9 %	10,5 %	9,2 %	8,7 %	9,8 %
Ekonomski dejavniki		3,0 %	2,4 %	3,3 %	2,2 %	1,8 %	2,7 %	1,4 %
Socio dejavniki		3,8 %	3,3 %	2,4 %	5,4 %	5,0 %	5,3 %	6,8 %
Funkcionalna in relativna velikost		1,6 %	1,5 %	2,5 %	2,5 %	2,0 %	2,8 %	3,2 %
Nivo dimenzij dejavnikov	Lokacija	22,1 %	22,5 %	24,9 %	34,7 %	29,2 %	27,9 %	37,8 %
	Fizični dejavniki	31,3 %	37,2 %	31,4 %	37,5 %	30,3 %	33,8 %	35,7 %
	Socio-ekonomski dejavniki	7,7 %	6,8 %	6,9 %	8,9 %	7,4 %	7,7 %	8,0 %
	Funkcionalna in relativna velikost	1,6 %	1,5 %	2,5 %	2,5 %	2,0 %	2,8 %	3,2 %

Dejavnik prisotnosti dvigala v objektu v vrednosti segmentne mediane vpliva na vrednost stanovanj v višini približno 1 %, na najbolj zahtevno tretjino kupcev v višini od 1,7 % do 4,3 %. Pavlin (2006) v hedonski analizi ovrednoti večvrednost stanovanja, če ima objekt dvigalo, na 4,5 % (regresijski koeficient + 0,045; 1 % napake napovedi). Najnižje vrednosti median 0,4 % in 0,5 % dosega segmenta večjih in starejših srednje velikih stanovanj v okolici Ljubljane, v manjših večstanovanjskih objektih, kjer prisotnost dvigala funkcionalno ni pretirano pomembna. Dvigalo je bolj cenjen dejavnik segmentov stanovanj znotraj mesta Ljubljana, kar je glede na povprečno etažnost objektov v primerjavi z objekti v okolici Ljubljane pričakovan rezultat. Najbolj pomemben je dejavnik prisotnosti dvigala kupcem manjših stanovanj do 50 m<sup>2</sup> in nadstandardnih večjih stanovanj. Zanimive so vrednostne percepcije udeležencev glede degradiranih etaž, kot so polkleti in mansarde. Vsaj polovica potencialnih kupcev želi za nakup polkletnega stanovanja diskont v vrednosti od 6 % do 9 % povprečne segmentne vrednosti stanovanja, pri 66. centilu pa je ocenjena manjvrednost stanovanja v višini od 8 % do 12 %. V elitnem razredu tretjina najzahtevnejših kupcev za kletno stanovanje želi diskont vsaj v višini 20 %. Vsaj polovica kupcev spremeni vrednost preferenčne nepremičnine, če postane del mansarde večstano-

vanskega objekta, v višini od 2 % do 4,2 %, elitni razred 5 %. Tretjina najbolj zahtevnih kupcev manjvrednost stanovanja zaradi mansardne etaže ocenjuje v razponu od 5 % do 8 % segmentne vrednosti nepremičnine, elitni razred pa celo z 9,1 %. Zanimivo je, da so rezultati raziskave sorazmerno usklajeni z ugotovitvami Rant (2003), ki pri regresiji dobi za spremenljivki kletno stanovanje ( $r. k. = -0,037$ ) in podstrešno stanovanje ( $r. k. = -0,048$ ) pričakovan negativen vpliv na ceno, seveda relativno glede na pritlična in enonadstropna stanovanja, ter z ugotovitvami Pavlin (2006), ki po podobni metodologiji pridobi rezultate glede diskonta za kletno stanovanje v višini 12,5 % ( $r. k. = -0,125$ ) in za podstrešno stanovanje v višini 8,4 % ( $r. k. = -0,084$ ).

Za bolj oziroma manj funkcionalno razporeditev, tloris in relativno dojetanje prostora stanovanja je, *ceteris paribus*, polovica kupcev pripravljena plačati od 1,5 % do 3,2 % segmentne vrednosti stanovanja več oziroma manj. Ocenjujemo, da je najbolj tržno realna in primerna razlaga vrednostnih preferenc pri 66. centilu, kjer so kupci iz naslova dejavnika funkcionalne in relativne velikosti stanovanja pripravljene plačati za stanovanje manj oziroma več v višini med 4 % in 5,2 %, v elitnem razredu pa 6,8 %. Merodajnih primerjalnih raziskav, ki bi ovrednotile dejavnik obratovalnih stroškov, ne zasledimo. Sodeč po rezultatih predmetne raziskave, je višina operativnih stroškov, ki jih stanovanje ustvarja, za kupce zelo pomembna spremenljivka pri nakupni presoji. Vsaj polovica segmentnih kupcev je pripravljena vrednostno oceno zelenega stanovanja za nakup zaradi nižjih/višjih operativnih stroškov spremeniti v višini od 1,8 % in 3,3 %. Podobne vrednosti izkazujejo segmentna absolutna povprečja. Relativni vrednostni razpon dejavnika obratovalni stroški se giblje med približno 1,0 % in 1,8 % ter 2,9 % in 4,0 % segmentne vrednosti stanovanj. Za višanje in nižanje obratovalnih stroškov so pričakovano najmanj občutljivi kupci elitnih stanovanj ter kupci majhnih stanovanj do 50 m<sup>2</sup>. Segment stanovanj, pri katerem se najbolj upošteva energetska in upravljalvska varčnost, pa so kupci mlajših stanovanj do 90 m<sup>2</sup> v okolici Ljubljane.

Najbolj presenetljive rezultate raziskava poda za dejavnike prisotnost balkona, terase in atrija. Berčan (2010) navaja, da se kar 21,8 % anketiranih pri nakupu stanovanja dejavniku prisotnosti balkona ali terase ni pripravljeno odpovedati. Rezultati naše raziskave kažejo bistveno nižjo preferenco glede balkona ali terase. Vsaj polovica kupcev je pripravljena za prisotnost balkona plačati dodatno od 1 % do 2,3 % vrednosti nepremičnine, zgornja tretjina zahtevnih kupcev od 2,1 % do 4,6 %. Za prisotnost terase oziroma atrija je vrednost median od 1,3 % do 3,2 %, vrednosti 66. centila pa od 3,1 % do 5 %. Poudarjamo, da dejavnik ne pomeni celotne vrednosti balkona ali terase v očeh kupca, temveč le pripravljenost udeleženca priznati diskont ali premijo kupnine za stanovanje, če to ima balkon oziroma teraso ali ne. Na celovito vrednost dejavnika v očeh kupca vpliva vsaj še površina, kakovost in funkcionalnost obravnavanega dodatnega dela stanovanja. Prisotnost terase ali atrija je pričakovano najbolj pomembna kupcem nadstandardnih stanovanj ter družinskim segmentom stanovanj, balkon pa je nadproporcionalno pomemben segmentu kupcev manjših stanovanj do 50 m<sup>2</sup> v Ljubljani.

Rezultati v splošnem kažejo, da najbolj vpliva na kupčeve vrednostne preference skupina dejavnikov, vezana na kakovost objekta. Pri dveh enakih stanovanjih, ki se močno razlikujeta po starosti in kakovosti gradnje, vzdrževanju objekta, kakovosti skupnih prostorov ter prisotnosti dvigala, je vsaj polovica kupcev pripravljena plačati več za boljše oziroma manj za slabše stanovanje v višini približno 25 % segmentne vrednosti nepremičnine. V razponu od tretjine najmanj zahtevnih do tretjine najbolj zahtevnih segmentih kupcev se vrednostne preference gibljejo od približno 15 % do 37 %. Izjemi, z malce podproporcionalnimi zahtevami glede na vzorec, sta segment kupcev starejših stanovanj do 90 m<sup>2</sup> v okolici Ljubljane (razpon od 12,2 % do 27,6 %) ter segment kupcev stanovanj do 50 do 95 m<sup>2</sup> v Ljubljani (razpon od 12,1 % do

28,6 %). Druga vrednostno najpomembnejša skupina dejavnikov je kakovost in stanje vitalnih elementov stanovanja (okna, tlaki, kuhinja, kopalnica, instalacije), cenjen dejavnik pa je tudi kakovost neposredne okolice objekta. Vsaj polovica kupcev je za stanovanje pripravljena plačati več/manj, v primeru bolj/manj urejene okolice in dostopnosti skupnih parkirišč, v višini od 2,4 % do 4,7 % povprečne segmentne vrednosti stanovanja, največ v segmentu elitnih stanovanj in manjših stanovanj do 50 m<sup>2</sup> v Ljubljani.

Za proučevane dejavnike mikrolokacije je vsaj polovica kupcev pripravljena plačati več oziroma manj, če se ti spremenijo, v višini 22 % in več od povprečne segmentne vrednosti stanovanj. Fizični dejavniki vplivajo pri vsaj polovici kupcev na spremembo preferenčne vrednosti stanovanja od približno 30 % do 37 %. Za relativno pomembne se izkažejo tudi socio-ekonomski dejavniki s segmentnim vrednostnim razponom median v višini od 6,8 % do 8,9 % ter dejavniki funkcionalne in relativne velikosti stanovanja s segmentnim vrednostnim razponom median od 1,5 % do 3,2 %.

#### 4 SKLEP

V članku raziskujemo vrednostno percepcijo potencialnih kupcev stanovanjskih nepremičnin glede dejavnikov, ki se navezujejo na samo nepremičnino. Glavni cilj raziskave je oblikovanje tako imenovanega vrednostnega okvirja za nepremičninski segment stanovanj. Vrednosti okvir oblikujemo kot tabelo vrednostnih razponov vplivnih dejavnikov, vezanih na posamezen segment stanovanjskih nepremičnin oziroma posamezen tip potencialnega kupca. Raziskava temelji na statistično-matematični analizi nepremičninskih atributov. Kot osrednji pripomoček za merjenje vrednostnih okvirjev uporabimo vprašalnik, sestavljen v sklopu širše raziskave, s temeljnim ciljem vsebinske in vrednostne določitve dejavnikov, ki so odločilni za potencialne pridobitelje stanovanjskih nepremičninskih pravic pri nakupu nepremičnine. Z vprašalnikom pridobimo verodostojne podatke, ki jih statistično analiziramo.

Analiza kaže, da so rezultati najbolj tržno merodajni na razponu vrednosti mediane in 66. centila. Rezultati kažejo, kako potencialni kupci vrednostno (relativno in absolutno) izražajo stopnje razlik med nepremičninama oziroma kakšno vrednostno percepcijo izražajo za posamezen stanovanjski dejavnik. Za učinkovito uporabo vrednostnega okvirja je pomembno skladno analitično upoštevanje vrednostnih in vsebinskih rezultatov predmetne raziskave. Dejavnike segmentiramo v osem skupin, pri tem pa sledimo prilagoditvenemu procesu mednarodnih standardov ocenjevanja vrednosti (MSOV, 2013). Primer vrednostnega okvirja za segment stanovanj v Ljubljani v velikosti 50 m<sup>2</sup> je prikazan v preglednici 4.

V članku uporabljena znanstvena metodologija omogoča testiranje teorije in je ponovljiva na kateremkoli geografskem območju in segmentu nepremičnin. Shukla (2008) omenja možnost ponovitve kot enega od pomembnih pogojev preverljivosti rezultatov, ki prispeva k objektivnosti znanstvene metode.

Rezultati raziskave so predvsem uporabni za investitorje novogradenj večstanovanjskih objektov v Ljubljani in okolici, ki dobijo vpogled v strukturo in silnice povpraševanja na trgu. Pri načrtovanju stanovanjskega posega v prostor je, že z vidika najgospodarnejše rabe prostora, pomembno poznati pričakovanja potencialnih pridobiteljev nepremičninskih pravic, ki so v tem procesu za načrtovalce in investitorje ciljna skupina potencialnih kupcev. Analiza pričakovanj je lahko delno neposredno uporabna v samem procesu ocenjevanja vrednosti nepremičnin, predvsem pri metodi tržnih primerjav, kjer ocenjevalec izvaja prilagoditve. Če drugega ne, rezultati analize nakazujejo, kateri so ključni dejavniki, ki vplivajo na

ocenjevano vrednost. Delisle (1985) pravi, da ocenjevalci nepremičnin brez pravilnega razumevanja in pravilnega tolmačenja potreb in želja kupcev niso sposobni in ne morejo imeti sistematičnega pristopa za zmanjšanje negotovostne cone okoli najbolj verjetne prodajne cene nepremičnine. Tako raziskovalci kot akterji nepremičninskega trga bi lahko imeli koristi od vključevanja oziroma integracije potrošnikovih preferenc v študijo ravnanja z ekonomskim pristopom do nepremičnin (Naderi et al., 2012).

Preglednica 4: Vrednostni okvir – segment stanovanj v Ljubljani 50 m<sup>2</sup> (Nahtigal, 2014).

		Mediana		66-ti percentil	
		€	%	€	%
5. Lokacija	Lokacija objekta	8.000,00 €	10,0 %	13.491,35 €	13,1 %
	Lokacija stanovanja v objektu	23.500,00 €	23,2 %	35.801,85 €	42,0 %
6. Fizične značilnosti	Fizične lastnosti objekta	23.000,00 €	25,8 %	31.245,68 €	37,7 %
	Fizične lastnosti stanovanja	8.000,00 €	10,5 %	14.040,89 €	14,6 %
7. Socio-ekonomski dejavniki	Ekonomski dejavniki	2.100,00 €	2,2 %	3.024,53 €	3,1 %
	Socio dejavniki	5.000,00 €	5,4 %	10.000,00 €	10,0 %
8. Funkcionalna in relativna velikost	Funkcionalna in relativna velikost	2.100,00 €	2,5 %	5.316,36 €	5,2 %
	Kakovost neposredne okolice objekta	4.500,00 €	4,7 %	7.000,00 €	7,2 %
	Lastniško parkirno mesto v kletni garaži	4.000,00 €	3,8 %	5.000,00 €	6,7 %
	Razgled in lega stanovanja v objektu	2.000,00 €	2,5 %	5.000,00 €	4,6 %
	Prisotnost balkona	2.000,00 €	2,3 %	5.000,00 €	4,6 %
	Prisotnost terase / atrija	2.000,00 €	1,5 %	4.129,97 €	4,3 %
	Velikost večstanovskega objekta	- €	0,0 %	1.925,02 €	1,6 %
	Degradirana lokacija: (pol)kletno stanovanje	5.000,00 €	6,3 %	10.000,00 €	11,3 %
	Degradirana lokacija: mansardno stanovanje	5.000,00 €	4,2 %	8.000,00 €	8,0 %
	Kakovost objekta	23.000,00 €	25,8 %	31.245,68 €	37,7 %
	Kakovost in stanje vitalnih elementov stanovanja	7.000,00 €	8,6 %	11.081,78 €	12,0 %
	Kakovost notranje opreme	1.500,00 €	1,3 %	2.249,14 €	2,6 %
	Obratovalni stroški	2.100,00 €	2,2 %	3.024,53 €	3,1 %
	Splošen družbeno-socialni status objekta	5.000,00 €	5,4 %	10.000,00 €	10,0 %
	Funkcionalna in relativna velikost stanovanja	2.100,00 €	2,5 %	5.316,36 €	5,2 %

Vprašanje, ali so pričakovanja potencialnih kupcev zares upoštevana tudi v sodobni domači komercialni produkciji stanovanj (na primer vrednost za denar) v največjih prebivalstvenih aglomeracijah, pa je predmet druge raziskave.

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