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MEASURING URBAN QUALITY OF LIFE: CASE STUDY OF LJUBLJANA

MERJENJE KAKOVOSTI ŽIVLJENJA V MESTU: PRIMER LJUBLJANE

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Ljubljana is the economic, traffic, cultural, and educational centre of Slovenia and it boasts a high level of residential quality of its inhabitants.
Ljubljana je gospodarsko, prometno, kulturno in izobraževalno središče Slovenije in se ponaša z visoko kakovostjo bivanja tamkajšnjega prebivalstva.

Measuring urban quality of life: case study of Ljubljana

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ABSTRACT: Quality of urban life is a useful concept for studying the quality of residential environment and its effect on quality of life. The article is based on the data analysis of the survey research Quality of Life in Ljubljana (2010). Using structural equation modelling and hierarchical multiple linear regression analysis, the effect of residential quality on quality of life was determined and compared to the effects of selected domains of life. The results depend heavily on the operationalization of quality of life and on the selected independent variables in the model. Structural equation modelling confirmed the hypothesis about the effect of residential quality on quality of life, wherein satisfaction with the dwelling has a significantly greater effect on it than satisfaction with the neighbourhood and with living in the city. The hierarchical regression analysis results show that the quality of life for Ljubljana residents is most affected by their own estimation of social-economic factors, especially economic well-being, family life, and social life.

KEY WORDS: geography, quality of life, urban quality of life, residential quality, multivariate statistics, city, Ljubljana

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1 Introduction

Quality of life is a multidimensional construct that cannot be unambiguously defined (Diener and Suh 1997); it overlaps with other welfare concepts such as human development, social quality, level of living, and others (Mandič 2005). In the broadest sense of the term, it includes »objective« as well as »subjective« elements and is defined by some authors as »*the extent to which the objective human needs are fulfilled in relation to personal or group perceptions of subjective well-being*« (Costanza et al. 2007, 269). Numerous researches on quality of life have been done in the fields of geography, urbanism, and other spatial sciences, which usually differ from other sciences by their use of a referential spatial frame and study the effect that geographical environment has on quality of life (for example, Cutter 1985; Krevs 2002; Pacione 2003).

Consequently to the increasingly larger number of spatially oriented researches on quality of life in urban areas, the term »quality of urban life« has been established, defined by Marans and Stimson (2011, 1) as »*the satisfaction that a person receives from surrounding human and physical conditions, conditions that are scale-dependent and can affect the behaviour of individual people, groups such as households and economic units such as firms*«. The term's meaning is very close to quality of residential environment, or to elements in the vicinity of the dwelling that are significant for satisfying people's needs and enable them to perform their activities (Drozg 1994); it is perhaps even closer to that than to some (older) perceptions of quality of life that refer predominantly to individuals and their estimations of life as a whole (for example, Diener and Suh 1997). Quality of urban life can thus be understood as a research scope that encompasses studying residential environment, quality of life as a whole, and their reciprocal effects.

Ljubljana is the political, cultural, economic, employment, and educational centre of Slovenia; at the national level, it boasts a very high level of living for its inhabitants, especially with the high income, good accessibility to education, services, and supplies, its numerous options for spending free time (Krevs 2002; Uršič, Dekker and Filipovič Hrast 2014), and its housing conditions (Filipović and Mandič 2007). The same is true of the Ljubljana Urban Region: it has the highest level of well-being in Slovenia (Šprah, Novak and Fridl 2014). On the other hand, Ljubljana is more prone to vulnerability and environmental pollution due to a bigger concentration of different activities (for example, Špes, Cigale and Lampič 2002; Breg, Kladnik and Smrekar 2007; Plut 2007; Ogrin 2008). Many studies indicate that Ljubljana's central position and its dominance over other cities in Slovenia are increasing (for example, Ravbar, Bole and Nared 2005; Kozina 2010; Bole 2011; Pečar 2011). It is interesting to note here that a number of studies (for example, Hočevar et al. 2004; Kos 2013) show that a large share of Ljubljana's residents have been expressing a relatively strong aversion towards living in more densely inhabited areas and their negative perception of characteristics that are completely commonplace in urban environments (a higher noise level, heterogeneous population structure, interaction with different social groups, etc.). Some research indicates that this can lead to an increased social-geographical differentiation and the continuation of migration flows to surrounding areas (Rebernik 2002; Uršič 2010).

This research attempts to verify the hypothesis that Ljubljana residents' satisfaction with their residential environment has an important effect on their estimation of quality of life as a whole. This assumption is not uncommon in scientific literature, but it has seldom been empirically tested (for example, Davis and Fine-Davis 1991; McCrea, Stimson and Western 2005; Marans and Kweon 2011). The second objective is to determine what kind of effect residential quality has on quality of life compared to other domains of life. The municipal spatial plan of the Municipality of Ljubljana (MOL) states that one of the goals of spatial development is to raise the quality of life and residential quality (Odlok o občinskem … 2010). The research therefore indirectly tries to answer the question of how much and in what way the city authorities and the urban planners can improve the residential conditions, thus contributing to a greater quality of life of the inhabitants.

2 Methodology

The presented results are based on the data analysis of the survey research Quality of life in Ljubljana (Kos et al. 2010), which was carried out in June 2010 to take a multidimensional measurement of the MOL inhabitants' subjective perception of quality of life. The sample of surveyed adult inhabitants was chosen at random, spatially stratified, and subsequently socially-demographically weighted. Its size (N = 1124) and

representativeness makes it suitable for different analyses and enables the results to be generalized onto the entire population of Ljubljana.

When defining quality of urban life, the distinction was made between residential quality and quality of life (as a whole), which, in addition to residential environment, also encompasses other domains of life, such as work, social relations, health, and others (McCrea et al. 2011).

The decision on the variables was tied largely to the questions of the survey research. Similarly to other authors (for example, Marans and Rodgers 1975; Campbell, Converse and Rodgers 1976; Pacione 2003; McCrea, Stimson and Western 2005), this research defined **residential quality** as **a general satisfaction with the residential environment at different spatial levels**:

- the dwelling,
- the near-by surroundings (neighbourhood), and
- the wider residential environment (city).

The first two levels related to the survey questions on satisfaction with the dwelling and the neighbourhood, which were measured on a 5-point ordinal scale (with 1 – very unsatisfied to 5 – very satisfied); the level of satisfaction with living in the city was measured with the approximation, or the question »Has the quality of life in Ljubljana generally increased or decreased in the past three years?« (1 – extremely decreased to 5 – extremely increased).

The quality of life was determined in two ways, depending on the implemented statistical method:

- **as a latent variable, represented by a satisfaction with different domains of life**: social life, family life, employment, health, and economic well-being, measured with a 5-point ordinal scale (1 – very unsatisfied to 5 – very satisfied). Rahman, Mittelhammer, and Wandschneider (2004) and Marans and Kweon (2011) defined quality of life in a similar way, but with a larger number of measured variables;
- **as a general life satisfaction**, which has been widely established in different international and longitudinal research due to its reliability and validity (Larsen, Diener and Emmons 1985). The problems that arise in using a variable of an ordinal nature as the dependent variable (for example, Lu 1999) and the findings of some researches that warn about the relatively weak reliability of life satisfaction results when measured with a single question (Krueger and Schkade 2008) prompted this research to determine general life satisfaction with two variables, measured with questions on happiness (»How happy are you in general?«; 1 – very unhappy to 5 – very happy) and on satisfaction with life (»How satisfied have you been with life lately?«; 1 – very unsatisfied to 5 – very satisfied) on a 5-point ordinal scale.

Table 1: Mean satisfaction scores of the analysed variables.

Variable	Average
Family life	3.81
Happiness in general *	3.81
Near-by environment (neighbourhood)	3.75
Health	3.68
Dwelling	3.65
Social life	3.61
Life in general	3.60
Employment	3.43
Economic well-being	3.32
Quality of life in Ljubljana in the past three years *	3.25

* Due to the differing nature of the posed question, the mean score is not directly comparable to the others.

The survey data was then analysed using the selected linear multivariate statistical methods: structural equation modelling and multiple regression analysis, which have been implemented in similar research several times before (for example, Ha and Weber 1994; McCrea, Stimson, and Western 2005; McCrea, Shyy and Stimson 2006; Marans and Kweon 2011; Türkoğlu et al. 2011).

2.1 Structural equation modelling

Structural equation modelling (SEM) is a statistical method that combines factor analysis elements and path analysis. SEM is used to determine whether hypothetical relations that have been based on previous

scientific findings or logical conclusions are correct or not. SEM consists of two parts: measurement models that illustrate the relations between the latent variables and their indicators and of the structural model that shows the causal relations between the exogenous (explanatory) and endogenous (dependent) factors (Hair 1998; Diamantopoulos and Siguaw 2000; Milfelner, Mumel and Snoj 2006). As the relations between the phenomena and the processes in the landscape and society are complex, using SEM can be more efficient than other multivariate methods.

SEM was used to confirm or reject the created multiple indicators and multiple causes model (MIMIC), which is based on our research hypothesis. The exogenous variables included all three residential quality variables, while the endogenous variable was the latent variable of quality of life, which was expressed by satisfaction with different domains of life (Figure 1). The global adequacy of the model was assessed with the selected fit indices with the maximum likelihood estimation. SEM was carried out using the SPSS 22.0 programme pack and its AMOS 22.0 programme.

2.2 Multiple regression analysis

In order to estimate the effect of residential quality on the quality of life and to compare its effect with other domains of life, the hierarchical regression analysis was executed. In the first step, all three independent variables representing satisfaction with residential environment were included in the regression model; the second step involved adding all the independent variables that represent satisfaction with selected domains of life. All these variables should, in accordance with the bottom-up spillover effect (Campbell, Converse and Rodgers 1976; Cummins 1996), affect general life satisfaction, whose factor score was used as the dependent variable in the regression. The analysis was carried out using the SPSS 22.0 programme pack.

3 Results

3.1 Structural equation modelling

The results visible in Figure 1 show the correlation coefficients between the independent variables, the share of the latent variable's explained variance, the standardized regression coefficients, and the variance shares of individual measured variables, explained with a common factor. The Chi-squared is statistically

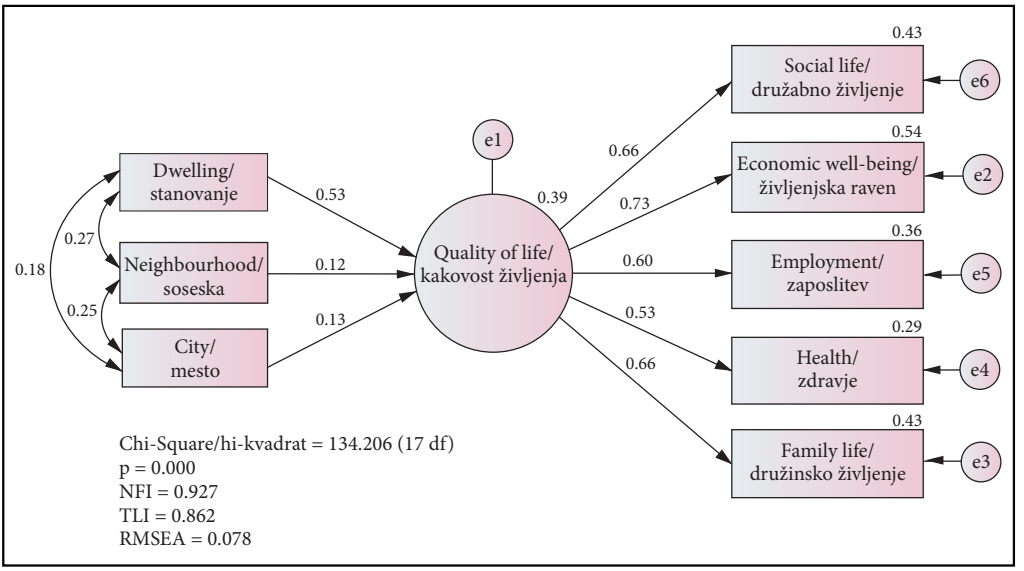

Figure 1: Structural modelling results of the relation between the residential quality and quality of life.

significant, but its sensitivity to the sample size required that the entire model fit had to be assessed using some other measurements, such as the Tucker-Lewis Index (TLI) and the Normed Fit Index (NFI), using a scale between zero and one, while their value of 0.9 was the limit for the model fit. The TLI and NFI indices provided differing results, so the fit of the entire model was verified again with the RMSEA index, claimed to be the most informative fit index. Its value was within the 0.05–0.08 interval, which points to an acceptable model fit, therefore adequately fitting to the empirical data.

The high values of the standardized regression coefficients in the measurement model (over 0.5) indicate that satisfaction with selected domains of life is actually illustrated by a general dimension (quality of life). The model shows that satisfaction with the dwelling, satisfaction with the neighbourhood, and the estimation of quality of urban life, which correlate slightly with each other, have a statistically significant, but differing influence on the quality of life of Ljubljana's population. Satisfaction with the dwelling influences it the most, which is expressed by the highest value of the standardized regression coefficient ($\beta = 0.53$). All three levels of residential quality combined account for as much as 39% of the quality of life variance; thus, the SEM results support the hypothesis stated in the introduction.

3.2 (Hierarchical) multiple regression analysis

The results of the first of both regression analyses (Table 2) reflect a positive and statistically significant effect of residential quality on quality of life, wherein the prevailing effect of satisfaction with the dwelling is again greater ($\beta = 0.23$) compared to satisfaction with the neighbourhood ($\beta = 0.13$), and with living in Ljubljana ($\beta = 0.13$).

The results of the second, hierarchical regression analysis (Table 3), which included all three levels of residential quality in the first step and the other domains of life in the second step, however, significantly relativize the meaning of residential quality for quality of life as a whole. After the second step, the value

Table 2: Regression model results of the effect of residential quality on quality of life.

	B	SE B	β
Constant	−1.82	0.16	
Dwelling	0.24	0.03	0.23**
Neighbourhood	0.15	0.03	0.13**
City	0.12	0.03	0.13**
Adjusted $R^2 = 0.12$**			
N = 1035			
*p ≤ 0.05, **p ≤ 0.01			

B = multiple regression coefficient, SE B = standard error of the multiple regression coefficient, β = standardised multiple regression coefficient

Table 3: Hierarchical regression model results on the effect of residential quality and other domains of life on quality of life.

	B	SE B	β
Constant	−3.278	0.16	
Dwelling	−0.10	0.03	−0.10**
Neighbourhood	0.05	0.03	0.05
City	0.04	0.03	0.04
Economic well-being	0.30	0.04	0.29**
Family life	0.25	0.03	0.25**
Health	0.11	0.03	0.10**
Social life	0.22	0.04	0.20**
Employment	0.06	0.03	0.07*
Adjusted $R^2 = 0.44$**			
Δ adjusted $R^2 = 0.32$**			
N = 849			
*p ≤ 0.05, **p ≤ 0.01			

of the R^2 determination coefficient, which represents the share of the dependent variable's explained variance, increased significantly (from 0.12 to 0.44). The values of the standardized regression coefficients of the residential quality variables were not statistically significant, with the exception of satisfaction with the dwelling, which, surprisingly, expresses a negative value ($\beta = -0.10$). General life satisfaction is most affected by socio-economic variables, especially economic well-being ($\beta = 0.29$), family life ($\beta = 0.25$), and social life ($\beta = 0.20$).

4 Discussion

Judging by the structural equation modelling results, satisfaction with residential environment has a very big influence on the Ljubljana population's quality of life, because the share of the quality of life variance, which can be explained with residential quality, is quite high and much larger compared to data from other research that is based on a similar methodology. Marans and Kweon (2011) used a very similar research model, but could account for only 21% of the quality of life variance for the population of Detroit; McCrea, Stimson and Western (2005) could account for 23% of the quality of life variance for the population of Brisbane.

The results of SEM and the first of both regression analyses also draw attention to the greater meaning of satisfaction with the dwelling as one of the dimensions of quality of life compared to satisfaction with the neighbourhood and with living in the city, which corresponds to the findings of other similar studies (Sirgy and Cornwell 2002; McCrea, Stimson and Western 2005; Filipović 2008; Marans and Kweon 2011; Türkoğlu et al. 2011). As Mandič (1999) states, the dwelling fulfils many needs in the life of an individual: in addition to its fundamental function as a shelter, it covers needs regarding privacy, location, assets, social contact, partner relationships, and others. Similarly, Schmeidler (2008, 35) states that the dwelling is one of the most important factors for quality of life: it affects every side of mental and social health and has a beneficial effect on inner peace, family life, and achievements in career and education.

The hierarchical regression analysis results lead to the conclusion that different »subjective« social and economic factors have a significantly greater effect on general life satisfaction of Ljubljana residents compared to residential quality. Similar results were confirmed in the case of other urban areas by Craik and Zube (1976), van Praag, Frijters and Ferrer-i-Carbonell (2003), McCrea, Stimson and Western (2005), and Marans and Kweon (2011). These results inadvertently reveal that »materialistic« values are prevalent among the inhabitants of Ljubljana, which is a characteristic of post-socialist countries (Inglehart and Welzel 2005). The relatively small significance of residential quality as one of the dimensions of quality of life can be interpreted as a consequence of the present axiomatic truth about the residential environment of the survey respondents (Volker 2011). It can be assumed that the relatively good quality of residential environment in Ljubljana, which is expressed by its large share of green areas, low crime rate, and good access to supplies, education, and employment, is regarded among the inhabitants as a form of axiomatic truth that is not discussed, but is rather considered a basic living standard. The discussion on the quality of life in Ljubljana apparently only becomes relevant when it comes to analysing the accessibility to material goods.

According to this analysis, satisfaction with the dwelling even has a negative effect on the quality of life as a whole, which is undoubtedly a surprizing and unexpected finding. This is the consequence of the partial correlation with the other variables in the regression model: despite their positive and statistically significant relation, satisfaction with the dwelling has only an indirect effect on the quality of life, through the satisfaction with other domains of life. One of the possible interpretations of the regression coefficient's negative value is that some people with a greater quality of life have higher expectations about their apartment, so they are less pleased with it, while people with a lower quality of life seek consolation precisely in their apartment (Jansen 2014). According to Saunders (1990; cf. Mandič 1999, 189), this gives them a sense of fulfilment and life purpose, which helps them overcome the feeling of alienation they may experience in the external world.

5 Conclusion

Based on the data from the survey research Quality of life in Ljubljana (2010), the selected multivariate statistical methods could only partly confirm the central research hypothesis that the inhabitants' satisfaction with residential environment attributes to their estimation of quality of life as a whole. The final

results are quite reliant on the definition of quality of life and on incorporating independent variables into the model. Structural equation modelling and the first of the two regression analyses have confirmed the effect of residential quality on quality of life, wherein satisfaction with the dwelling has a significantly higher explanation power than satisfaction with the neighbourhood and with living in the city. The significance of satisfaction with the residential environment for the quality of life of Ljubljana's inhabitants is considerably relativized by the results of the hierarchical regression analysis, which show that the estimation of individual social-economic domains of life (especially the material position of the survey respondents) has an expressly greater influence on general life satisfaction compared to the estimation of residential quality.

The research also has some limitations. As it was bound to the questions in the survey, the key term definitions had to be simplified, which reduced the complexity of the studied problem to a degree. Despite this, the study results instil a doubt that the city authorities and urban planners' efforts to manage spatial development and improve the living conditions has had a significant effect on the Ljubljana inhabitants' quality of life. Saying this, we do not believe this lessens their potential responsibility in spatial interventions. Most social-economic factors of quality of life are namely indirectly linked to the quality of residential environment, which in turn has an important effect on the inhabitants' wish to move to another, better quality location. In light of this, the most effort should be placed in renewing the existing building fund and constructing new, quality apartments; this will attribute to stopping the processes of social-geographical differentiation and migration flows from Ljubljana into its surroundings and consequently to a greater quality of family and social life of the city's inhabitants.

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Merjenje kakovosti življenja v mestu: primer Ljubljane

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IZVLEČEK: Kakovost življenja v mestu je uporaben koncept za preučevanje kakovosti bivalnega okolja in njenega vpliva na kakovost življenja. Prispevek temelji na analizi podatkov anketne raziskave Kakovost življenja v Ljubljani (2010). Z modeliranjem strukturnih enačb in hierarhično multiplo linearno regresijsko analizo smo ugotavljali vpliv kakovosti bivanja na kakovost življenja in ga primerjali z vplivom izbranih življenjskih področij. Rezultati so precej odvisni od operacionalizacije kakovosti življenja in od izbora neodvisnih spremenljivk v model. Z modeliranjem strukturnih enačb smo potrdili domnevo o vplivu kakovosti bivanja na kakovost življenja, pri čemer ima zadovoljstvo s stanovanjem nanj bistveno večji vpliv v primerjavi z zadovoljstvom s sosesko in z bivanjem v mestu. Rezultati hierarhične regresijske analize kažejo, da na kakovost življenja prebivalcev Ljubljane v največji meri vpliva njihovo vrednotenje družbeno-ekonomskih dejavnikov, zlasti življenjske ravni, družinskega in družabnega življenja.

KLJUČNE BESEDE: geografija, kakovost življenja, kakovost življenja v mestu, kakovost bivanja, mesto, Ljubljana, multivariatna statistika

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1 Uvod

Kakovost življenja je večrazsežnostni konstrukt, ki ga ni mogoče enoznačno opredeliti (Diener in Suh 1997) in se prekriva z ostalimi blaginjskimi koncepti, kot so človekov razvoj, družbena kakovost, življenjska raven in podobno (Mandič 2005). V najširšem pomenu besede vključuje tako »objektivne« kot »subjektivne« elemente in jo nekateri avtorji opredeljujejo kot »*raven, do katere so zadovoljene objektivne človekove potrebe v razmerju do osebnega ali skupinskega dojemanja subjektivnega blagostanja*« (Costanza s sod. 2007, 269). Številne raziskave na temo kakovosti življenja zasledimo v geografiji, urbanizmu in drugih prostorskih vedah, ki se od ostalih običajno razlikujejo po uporabi referenčnega prostorskega okvira in po preučevanju vpliva geografskega okolja na kakovost življenja (na primer Cutter 1985; Krevs 2002; Pacione 2003).

Kot posledica vedno večjega števila prostorsko naravnanih raziskav kakovosti življenja v urbanih območjih se je v literaturi sčasoma uveljavil pojem »kakovost življenja v mestu«, ki ga Marans in Stimson (2011, 1) opredeljujeta kot »*zadovoljstvo, ki ga človek prejme od fizičnega in družbenega okolja oziroma od razmer v njiju, ki lahko vplivajo na vedenje posameznikov in skupin, kot so gospodinjstva in podjetja*«. Pojem je vsebinsko zelo blizu kakovosti bivalnega okolja oziroma elementov v okolici stanovanja, ki so pomembni za zadovoljevanje človekovih potreb in opravljanje njegovih dejavnosti (Drozg 1994), morda celo bližje kot nekaterim (starejšim) pojmovanjem kakovosti življenja, ki se pretežno nanašajo na posameznike in na njihovo oceno življenja kot celote (na primer Diener in Suh 1997). Kakovost življenja v mestu tako lahko razumemo kot raziskovalni okvir, ki obsega preučevanje bivalnega okolja, kakovosti življenja kot celote in njunih medsebojnih vplivov.

Ljubljana se kot politično, kulturno, gospodarsko, zaposlitveno in izobraževalno središče Slovenije v slovenskem merilu ponaša z zelo visoko življenjsko ravnjo tamkajšnjega prebivalstva, še posebej z visokimi dohodki, dobro dostopnostjo do izobraževanja, storitev in oskrbe, možnostmi za preživljanje prostega časa (Krevs 2002; Uršič, Dekker in Filipovič Hrast 2014) in stanovanjskimi razmerami (Filipović in Mandič 2007). Podobno velja tudi za Ljubljansko urbano regijo, za katero je v Sloveniji značilna najvišja raven blaginje (Šprah, Novak in Fridl 2014). Za Ljubljano sta po drugi strani kot posledica zgostitve različnih dejavnosti značilni večja ranljivost in onesnaženost okolja (na primer Špes, Cigale in Lampič 2002; Breg, Kladnik in Smrekar 2007; Plut 2007; Ogrin 2008). Številne raziskave kažejo, da se središčni položaj Ljubljane in prevlada nad ostalimi slovenskimi mesti krepita (na primer Ravbar, Bole in Nared 2005; Kozina 2010; Bole 2011; Pečar 2011). Ob tem je zanimivo, da vrsta raziskav (na primer Hočevar s sod. 2004; Kos 2013), kaže, da je za Ljubljano že dalj časa značilen razmeroma močan odpor velikega deleža prebivalcev do življenja v bolj gosto naseljenih območjih in negativno vrednotenje značilnosti, ki so v urbanih okoljih sicer nekaj povsem običajnega (višja stopnja hrupa, raznovrstna sestava prebivalstva, interakcije z različnimi družbenimi skupinami in podobno). Nekatere raziskave nakazujejo, da to lahko vodi v povečano socialnogeografsko diferenciacijo in nadaljevanje selitvenih gibanj v okolico (Rebernik 2002; Uršič 2010).

V raziskavi smo želeli preveriti domnevo, da zadovoljstvo prebivalcev Ljubljane s svojim bivalnim okoljem pomembno vpliva na njihovo oceno kakovosti življenja kot celote. Gre za domnevo, ki jo v literaturi zasledimo dokaj pogosto, a je bila redko empirično preverjena (na primer Davis in Fine-Davis 1991; McCrea, Stimson in Western 2005; Marans in Kweon 2011). Obenem nas je zanimalo, kolikšen je vpliv kakovosti bivanja na kakovost življenja v primerjavi z drugimi življenjskimi področji. V občinskem prostorskem načrtu Mestne občine Ljubljana (MOL) je namreč zapisano, da je eden od ciljev prostorskega razvoja tudi dvig kakovosti življenja in bivanja v mestu (Odlok o občinskem … 2010). Tako smo v raziskavi posredno skušali odgovoriti tudi na vprašanje, koliko in na kakšen način mestne oblasti in urbanistični načrtovalci z izboljšanjem bivalnih razmer lahko pripomorejo k večji kakovosti življenja prebivalcev.

2 Metodologija

Rezultati prispevka temeljijo na analizi podatkov anketne raziskave Kakovost življenja v Ljubljani (Kos s sod. 2010), s katero so junija 2010 večdimenzionalno izmerili subjektivno dojemanje kakovosti življenja prebivalk in prebivalcev MOL. Vzorec anketiranih polnoletnih prebivalk in prebivalcev je bil naključno izbran, prostorsko stratificiran in naknadno socialno-demografsko usklajen. Zaradi svoje velikosti (N = 1124) ter reprezentativnosti je primeren za različne analize in omogoča posploševanje rezultatov na celotno populacijo prebivalcev Ljubljane.

Pri opredelitvi kakovost življenja v mestu smo smiselno razlikovali med kakovostjo bivanja in kakovostjo življenja (kot celoto), ki poleg bivalnega okolja zajema tudi druga življenjska področja, kot so delo, družbeni odnosi, zdravje in podobno (McCrea s sod. 2011).

Pri določitvi spremenljivk smo bili precej vezani na vprašanja anketne raziskave. **Kakovost bivanja** smo, podobno kot drugi avtorji (na primer Marans in Rodgers 1975; Campbell, Converse in Rodgers 1976; Pacione 2003; McCrea, Stimson in Western 2005), opredelili kot **splošno zadovoljstvo z bivalnim okoljem na različnih prostorskih ravneh**:

- s stanovanjem,
- z ožjo okolico stanovanja (sosesko) in
- s širšim bivalnim okoljem (mestom).

Za prvi dve smo povzeli anketni vprašanji o zadovoljstvu s stanovanjem in stanovanjskim okoljem (sosesko), merjenima na 5-stopenjski ordinalni lestvici (od 1 – zelo nezadovoljen do 5 – zelo zadovoljen), medtem ko smo za zadovoljstvo z bivanjem v mestu uporabili približek oziroma vprašanje »Ali se je v zadnjih treh letih kakovost življenja v Ljubljani na splošno izboljšala ali poslabšala?« (od 1 – zelo poslabšala do 5 – zelo izboljšala).

Kakovost življenja smo opredelili na dva načina, odvisno od uporabljene statistične metode:

- **kot latentno spremenljivko, ki jo ponazarja zadovoljstvo z različnimi življenjskimi področji**: družabnim življenjem, družinskim življenjem, zaposlitvijo, zdravjem in življenjsko ravnjo, merjeno na 5-stopenjski ordinalni lestvici (od 1 – zelo nezadovoljen do 5 – zelo zadovoljen). Podobno, le z večjim številom merjenih spremenljivk, so kakovost življenja opredelili Rahman, Mittelhammer in Wandschneider (2004) ter Marans in Kweon (2011);
- **kot splošno zadovoljstvo z življenjem**, ki se je zaradi svoje solidne zanesljivosti in veljavnosti (Larsen, Diener in Emmons 1985) na široko uveljavilo v različnih mednarodnih in longitudinalnih raziskavah. Zaradi problematičnosti uporabe spremenljivke ordinalnega značaja kot odvisne spremenljivke (na primer Lu 1999) in spoznanj nekaterih raziskav, ki opozarjajo na dokaj šibko zanesljivost meritev zadovoljstva z življenjem z enim samim vprašanjem (Krueger in Schkade 2008) smo splošno zadovoljstvo z življenjem opredelili z dvema spremenljivkama, merjenima s vprašanjema o sreči (»Kako srečni ste na splošno?«; od 1 – zelo nesrečen do 5 – zelo srečen) in zadovoljstvom z življenjem (»Kako ste zadovoljni z življenjem zadnje čase?«; od 1 – zelo nezadovoljen do 5 – zelo zadovoljen) na 5-stopenjski ordinalni lestvici.

Preglednica 1: Povprečne vrednosti zadovoljstva analiziranih spremenljivk.

spremenljivka	povprečje
družinsko življenje	3,81
sreča na splošno*	3,81
stanovanjsko okolje (soseska)	3,75
zdravje	3,68
stanovanje	3,65
družabno življenje	3,61
življenje na splošno	3,60
zaposlitev	3,43
življenjska raven	3,32
kakovost življenja v Ljubljani v zadnjih treh letih*	3,25

* zaradi drugače zastavljenega vprašanja povprečje ni neposredno primerljivo z ostalimi.

Podatke anketne raziskave smo nato analizirali z izbranima linearnima multivariatnima statističnima metodama: modeliranjem strukturnih enačb in multiplo regresijsko analizo, ki sta bili že večkrat uporabljeni v tovrstnih raziskavah (na primer Ha in Weber 1994; McCrea, Stimson in Western 2005; McCrea, Shyy in Stimson 2006; Marans in Kweon 2011; Türkoğlu s sod. 2011).

2.1 Modeliranje strukturnih enačb

Modeliranje strukturnih enačb (ang. *structural equation modelling* – SEM) je statistična metoda, ki združuje elemente faktorske analize in analize poti. S SEM ugotavljamo, ali hipotetične povezave, ki so bile postavljene

na podlagi preteklih znanstvenih dognanj ali logičnega sklepanja, držijo ali ne. SEM sestoji iz dveh delov: merskih modelov, ki prikazujejo povezave med latentnimi spremenljivkami in njihovimi indikatorji, in strukturnega modela, ki ponazarja vzročne povezave med eksogenimi (pojasnjevalnimi) in endogenimi (odvisnimi) dejavniki (Hair 1998; Diamantopoulos in Siguaw 2000; Milfelner, Mumel in Snoj 2006). Ker so povezave med pojavi in procesi v pokrajini in družbi kompleksne, je uporaba SEM učinkovitejša od ostalih multivariatnih metod.

S SEM smo želeli potrditi oziroma zavreči postavljeni MIMIC model (ang. *multiple indicators and multiple causes*), ki temelji na naši raziskovalni domnevi. Vanj smo kot eksogene spremenljivke vključili vse tri spremenljivke kakovosti bivanja, kot endogeno spremenljivko pa latentno spremenljivko kakovosti življenja, ki naj bi jo ponazarjalo zadovoljstvo z različnimi življenjskimi področji (slika 1). Globalno ustreznost modela smo na podlagi metode največjega verjetja ocenili z izbranimi indeksi ustreznosti. SEM smo izvedli s programskim paketom SPSS 22.0 oziroma njegovim dodatkom AMOS 22.0.

2.2 Multipla regresijska analiza

Da bi ocenili vpliv kakovosti bivanja na kakovost življenja in njegov vpliv primerjali z ostalimi življenjskimi področji, smo izvedli še hierarhično regresijsko analizo. V prvem koraku smo v regresijski model vključili vse tri neodvisne spremenljivke, ki ponazarjajo zadovoljstvo z bivalnim okoljem, v drugem pa smo mu dodali neodvisne spremenljivke, ki ponazarjajo zadovoljstvo z izbranimi življenjskimi področji. Vse te spremenljivke naj bi v skladu z učinkom prelitja od spodaj navzgor (Campbell, Converse in Rodgers 1976; Cummins 1996) vplivale na splošno zadovoljstvo z življenjem, katerega faktorsko vrednost smo v regresiji uporabili kot odvisno spremenljivko. Analizo smo izvedli s programskim paketom SPSS 22.0.

3 Rezultati

3.1 Modeliranje strukturnih enačb

Iz slike 1, ki prikazuje rezultate, lahko razberemo korelacijske koeficiente med neodvisnimi spremenljivkami, delež pojasnjene variance latentne spremenljivke, standardizirane regresijske koeficiente in deleže varianc posameznih merjenih spremenljivk, pojasnjenih s skupnim faktorjem. Hi-kvadrat je sicer statistično značilen, a smo zaradi njegove občutljivosti na velikost vzorca celotno ustreznost modela preverili še z nekaterimi drugimi merili, kot sta Tucker-Lewisov indeks (TLI) in indeks NFI (ang. *normed fit index*), s skalo med nič in ena, medtem ko je njuna vrednost 0,9 meja ustreznosti modela. Ker sta indeksa TLI in NFI dala različne rezultate, smo ustreznost celotnega modela preverili še z indeksom RMSEA, ki velja za najbolj informativni indeks ustreznosti. Njegova vrednost je znotraj intervala 0,05–0,08, kar kaže na še sprejemljivo ustreznost modela, ki se torej zadovoljivo prilega empiričnim podatkom.

Visoke vrednosti standardiziranih regresijskih koeficientov v merskem delu modela (nad 0,5) kažejo, da zadovoljstvo z izbranimi življenjskimi področji dejansko ponazarja skupna razsežnost (kakovost življenja). Model kaže, da imajo zadovoljstvo s stanovanjem, zadovoljstvo s sosesko in ocena kakovosti bivanja v mestu, ki med sabo sicer rahlo korelirajo, statistično značilen, a različno velik vpliv na kakovost življenja prebivalcev Ljubljane. Največji vpliv nanjo ima zadovoljstvo s stanovanjem, kar ponazarja največja vrednost standardiziranega regresijskega koeficienta ($\beta = 0{,}53$). Vse tri ravni kakovosti bivanja skupaj pojasnijo visokih 39 % variance kakovosti življenja, s čimer rezultati SEM potrjujejo v uvodu postavljeno domnevo.

Slika 1: Rezultati strukturnega modeliranja odnosa med vrednotenjem kakovosti bivanja in kakovosti življenja.
Glej angleški del prispevka.

3.2 (Hierarhična) multipla regresijska analiza

Rezultati prve od obeh regresijskih analiz (preglednica 2) odsevajo pozitiven in statistično značilen vpliv kakovosti bivanja na kakovost življenja, pri čemer se ponovno nakazuje večji vpliv zadovoljstva s stanovanjem ($\beta = 0{,}23$) v primerjavi z zadovoljstvom s sosesko ($\beta = 0{,}13$) in bivanjem v mestu ($\beta = 0{,}13$).

Rezultati druge, hierarhične regresijske analize (preglednica 3), v katero smo v prvem koraku vključili vse tri ravni kakovosti bivanja, v drugem koraku pa ostala izbrana življenjska področja, pa precej relativizirajo pomen kakovosti bivanja za kakovost življenja kot celoto. Po drugem koraku se je vrednost determinacijskega koeficienta R^2, ki ponazarja delež pojasnjene variance odvisne spremenljivke, namreč občutno povečala (iz 0,12 na 0,44). Vrednosti standardiziranih regresijskih koeficientov spremenljivk kakovosti bivanja razen zadovoljstva s stanovanjem, ki ima, presenetljivo, celo negativno vrednost ($\beta = -0{,}10$), niso statistično značilne. Na splošno zadovoljstvo z življenjem v največji meri vplivajo spremenljivke, ki sodijo v sklop družbeno-ekonomskih dejavnikov, kar še posebej velja za življenjsko raven ($\beta = 0{,}29$), družinsko življenje ($\beta = 0{,}25$) in družabno življenje ($\beta = 0{,}20$).

Preglednica 2: Rezultati regresijskega modela vpliva kakovosti bivanja na kakovost življenja.

	B	SE B	β
konstanta	−1,82	0,16	
stanovanje	0,24	0,03	0,23**
soseska	0,15	0,03	0,13**
mesto	0,12	0,03	0,13**
prilagojen $R^2 = 0{,}12$**			
N = 1035			
*p ≤ 0,05, **p ≤ 0,01			

B = multipli regresijski koeficient, SE B = standardna napaka multiplega regresijskega koeficienta, β = standardizirani multipli regresijski koeficient

Preglednica 3: Rezultati hierarhičnega regresijskega modela vpliva kakovosti bivanja in ostalih življenjskih področij na kakovost življenja.

	B	SE B	β
konstanta	−3,278	0,16	
stanovanje	−0,10	0,03	−0,10**
soseska	0,05	0,03	0,05
mesto	0,04	0,03	0,04
življenjska raven	0,30	0,04	0,29**
družinsko življenje	0,25	0,03	0,25**
zdravje	0,11	0,03	0,10**
družabno življenje	0,22	0,04	0,20**
zaposlitev	0,06	0,03	0,07*
prilagojen $R^2 = 0{,}44$**			
Δ prilagojen $R^2 = 0{,}32$**			
N = 849			
*p ≤ 0,05, **p ≤ 0,01			

4 Razprava

Sodeč po rezultatih modeliranja strukturnih enačb ima zadovoljstvo z bivalnim okoljem zelo velik vpliv na kakovost življenja prebivalcev Ljubljane, saj je delež variance kakovosti življenja, ki jo lahko pojasnimo s kakovostjo bivanja, precej visok in mnogo večji v primerjavi s podatki iz drugih znanih raziskav, ki temeljijo na podobni metodologiji. Marans in Kweon (2011) sta z zelo podobnim raziskovalnim modelom uspela pojasniti le 21 % variance kakovosti življenja prebivalcev Detroita, McCrea, Stimson in Western (2005) pa 23 % variance kakovosti življenja prebivalcev Brisbana.

Rezultati SEM in prve od obeh regresijskih analiz opozarjajo tudi na večji pomen zadovoljstva s stanovanjem kot ene od razsežnosti kakovosti življenja v primerjavi z zadovoljstvom s sosesko in bivanjem v mestu, kar se ujema z ugotovitvami drugih podobnih raziskav (Sirgy in Cornwell 2002; McCrea, Stimson in Western 2005; Filipović 2008; Marans in Kweon 2011; Türkoğlu s sod. 2011). Po Mandičevi (1999) stanovanje zadovoljuje številne potrebe v posameznikovem življenju; poleg temeljne, zavetiščne funkcije tudi potrebe v zvezi z zasebnostjo, lokacijo, premoženjem, družabnimi stiki, partnerskimi odnosi in podobno.

Podobno tudi Schmeidler (2008, 35) navaja, da je stanovanje ena od najpomembnejših dejavnikov kakovosti življenja; vpliva namreč na vse plati duševnega in socialnega zdravja in spodbudno vpliva na duševni mir, družinsko življenje in na dosežke v poklicni poti ter izobraževanju.

Rezultati hierarhične regresijske analize pa nas napeljujejo k spoznanju, da imajo različni »subjektivni« družbeni in ekonomski dejavniki v primerjavi s kakovostjo bivanja bistveno večji vpliv na splošno zadovoljstvo z življenjem prebivalcev Ljubljane. Podobno so na primeru drugih mest in območij ugotovili tudi Craik in Zube (1976), van Praag, Frijters in Ferrer-i-Carbonell (2003), McCrea, Stimson in Western (2005) ter Marans in Kweon (2011). Ti rezultati nehote razkrivajo, da med prebivalci Ljubljane prevladujejo »materialistične« vrednotne usmeritve, kar je značilnost postsocialističnih držav (Inglehart in Welzel 2005). Relativno majhen pomen kakovosti bivanja kot ene od razsežnosti kakovosti življenja si lahko razlagamo tudi kot posledico prisotnosti aksiomatske resnice glede bivalnega okolja pri anketirancih (Volker 2011). Tako lahko domnevamo, da je relativno dobra kakovost bivalnega okolja v Ljubljani, ki se med drugim kaže v veliki količini zelenih površin, nizki stopnji kriminalitete ter dobri dostopnosti do oskrbe, izobraževanja in delovnih mest, pri prebivalcih dojeta kot oblika aksiomatske resnice, o kateri se ne razpravlja, temveč je privzeta kot osnovni bivalni standard. Razprava o kakovosti življenja v Ljubljani se očitno prične šele pri analizi dostopa do materialnih dobrin.

Zadovoljstvo s stanovanjem ima po tej analizi celo negativno smer vpliva na kakovost življenja kot celoto, kar je nedvomno presenetljiva in nepričakovana ugotovitev. To je posledica parcialne korelacije z ostalimi spremenljivkami v regresijskem modelu; zadovoljstvo s stanovanjem na kakovost življenja kljub pozitivni in statistično značilni povezanosti med njima vpliva zgolj posredno, preko zadovoljstva z ostalimi življenjskimi področji. Ena od možnih interpretacij negativne smeri regresijskega koeficienta je, da imajo nekateri ljudje z višjo kakovostjo življenja večja pričakovanja glede svojega stanovanja, zato so z njim manj zadovoljni, ljudje z manjšo kakovostjo življenja pa svojo uteho iščejo ravno v stanovanju (Jansen 2014). To jim po Saundersu (1990; v: Mandič 1999, 189) daje občutek izpolnitve in življenjskega smisla, kar jim pomaga premagovati občutek odtujenosti, ki ga lahko doživljajo v zunanjem svetu.

5 Sklep

Na podlagi podatkov anketne raziskave Kakovost življenja v Ljubljani (2010) smo z izbranima multivariatnima statističnima metodama le delno potrdili osrednjo raziskovalno domnevo, da zadovoljstvo prebivalcev z bivalnim okoljem pripomore k njihovi oceni kakovosti življenja kot celote. Izkazalo se je, da so dobljeni rezultati precej odvisni od opredelitve kakovosti življenja in vključitve neodvisnih spremenljivk v model. Modeliranje strukturnih enačb in prva od obeh regresijskih analiz sta potrdili vpliv kakovosti bivanja na kakovost življenja, pri čemer ima zadovoljstvo s stanovanjem precej večjo pojasnjevalno moč od zadovoljstva s sosesko in mestom. Pomen zadovoljstva z bivalnim okoljem za kakovost življenja prebivalcev Ljubljane pa v precejšnji meri relativizirajo rezultati hierarhične regresijske analize, ki kažejo, da ima ocena posameznih družbeno-ekonomskih življenjskih področij (zlasti materialni položaj anketirancev) v primerjavi z oceno kakovosti bivanja izrazito močnejši vpliv na splošno zadovoljstvo z življenjem.

Pričujoča raziskava ima tudi nekatere pomanjkljivosti. Ker smo bili vezani na vprašanja anketne raziskave, smo morali poenostaviti opredelitev ključnih pojmov ter s tem nekoliko oklestiti kompleksnost obravnavanega problema. Kljub temu se nam na podlagi dobljenih rezultatov poraja dvom, da mestne oblasti in urbanistični načrtovalci z usmerjanjem prostorskega razvoja in s skrbjo za izboljševanje bivalnih razmer bistveno vplivajo na kakovost življenja prebivalcev Ljubljane. Hkrati menimo, da to ne zmanjšuje njihove potencialne odgovornosti pri posegih v prostor. Večina družbeno-ekonomskih dejavnikov kakovosti življenja je namreč posredno vezana tudi na kakovost bivalnega okolja, ta pa navsezadnje pomembno vpliva na željo prebivalcev po selitvi na drugo, bolj kakovostno lokacijo. V tej luči velja največ truda vložiti v prenovo obstoječega stavbnega fonda in gradnjo novih, kakovostnih stanovanj, ki bosta pripomogli k zaustavitvi procesov socialnogeografske diferenciacije in selitvenih gibanj iz Ljubljane v okolico, posledično pa tudi k večji kakovosti družinskega in družabnega življenja njenih prebivalcev.

6 Literatura

Glej angleški del prispevka.