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# NEIGHBOURHOOD ATTACHMENT IN CENTRAL AND PERIPHERAL AREAS OF BELGRADE: EVIDENCE FROM STARI GRAD AND KALUĐERICA

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## *ABSTRACT*

*The focus of this article is on two typical inner urban and peripheral neighbourhoods in the city of Belgrade, e.g. Stari grad and Kaluđerica, which are comparatively analysed in terms of their residents' appreciation of the neighbourhood's social and physical environment, and development of bond and sentiment towards these neighbourhoods. By employment of a questionnaire survey analyses, the aim of the paper is to investigate individual (or group) of factors which mostly influence the components of neighbourhood attachment in the presented case study areas of a city undergoing a post-socialist transition.*

**Keywords**: attachment, survey, neighbourhood, urban, suburban

# L'ATTACCAMENTO AL QUARTIERE NELLE ZONE CENTRALI E PERIFERICI DI BELGRADO: EVIDENZE DA STARI GRAD E KALUĐERICA

*SINTESI*

*Il focus di questo articolo è su due quartieri, un interno urbano e un periferico, tipici nella città di Belgrado, ad esempio, Stari grad e Kaluđerica, che sono analizzati e comparati in termini dell'apprezzamento dell'ambiente sociale e fisico dei quartieri dai loro residenti, e dello sviluppo di legame e il loro affetto verso questi quartieri. Applicando un'analisi dell'indagine via questionari, lo scopo del lavoro è quello di esaminare i singoli (o multipli) fattori che influenzano di piu' dei componenti di attaccamento verso il quartiere nelle aree presentate come i casi di studio di una città nella fase di transizione post-socialista.*

**Parole chiavi**: attaccamento, indagine, quartiere, urbano, suburbano

## INTRODUCTION

From a sustainable urban development perspective, it has been argued that living in inner urban areas demonstrates numerous advantages over living in the urban periphery. In contrast to compact urban living, suburban forms are often characterised by discontinuity, leapfrogging and low densities. Typical examples of such sprawl may be found in North American-type of urban settings, being characterised by zoned areas with a single dominant use and low land-use intensity, relative uniformity of housing, weaker connections and lower accessibility as well as by reduced walkability (Petrić & Bajić, 2015, 135–136). However, in contrast to North American middle-classes who live mostly in suburbs, European middle-classes are mainly located in the inner city or better-off suburban areas. Conversely, those who cannot exercise their residential choice are increasingly concentrated in suburban areas of the European cities, whereas in North America, they predominantly inhabit the inner city areas (Szirmai, 2011, 15).

For countries which were under socialism/communism in the period between 1950s and 1990s, the state took the role of primary urban developer, and that was possible since most urban land and large production means were put in public ownership. The demand for labour in the growing urban/industrial centres attracted in-migration from rural areas and smaller towns to bigger urban centres, but public housing within socialist cities was limited both in quantity and in allocation rules. Therefore, not all of the housing demand could have been accommodated in cities; hence this opened a way to peri-urban concentration of the incoming population. In Serbia, almost 90% of agricultural resources had been privately owned (Hirt, 2009, 296). With the administrative control being less stringent at the urban periphery where people could acquire land from agricultural owners in order to develop a house, such self-help housing option became the mode to overcome the income-price problems (Kovács & Tosics, 2014).

The role of the neighbourhood in post-socialist countries undergoes transformation. In former Yugoslavia and Socialist Republic of Serbia "working people in a settlement, part of a settlement or several interconnected settlements had a right and duty to organise themselves into a local community with a view to realising specific common interests and needs in the fields of: physical improvement of their settlement, housing, communal activities, child care and social security, education, culture, physical culture, consumer protection, the conservation and improvement of the human environment, national defence, social self-protection, and in other spheres of life and work" (Triska & Barbic, 1980, 87). Yet this has changed with privatisation and marketization of the housing system and increased residential mobility. The transition from a centrally planned to market-driven economy is often argued to affect neighbourhoods decline in importance for intensive social interaction, cohesion and equality, having that traditional ties succumb to the influence of privatism and individualism (Fischer et al., 1977; Guest & Wierzbicki, 1999; Ma, 2002). Generally, in the Serbian urban context, people who can exercise their residential choice would opt for the inner city living, where land is scarce but urban facilities and amenities are concentrated. Socio-economic status or the lack of financial sources would still drive people to find cheaper housing at the urban periphery. In addition, some have to choose suburban neighbourhoods due to unemployment issues in the inner city and unaffordability of its life commodities (Krisjane & Berzins, 2012). These factors are in contrast to the Western countries suburbanisation drivers, i.e. aspiration of the affluent population to attain a dream-house in suburbs (Petrić & Bajić, 2015). Various studies have hypothesised that neighbourhood attachment is linked to social networks (social cohesion) and physical environments, namely because both social and physical environments contribute to community identification and community sentiment (Zhu et al., 2012, 2440; Logan, 1978; Newman & Duncan, 1979; Lee & Guest, 1983). With that in view, the focus of this research is on factor(s) which influence neighbourhood attachment in two opposite types of neighbourhoods in a post-socialist city.

## CONTEXT OF THE STUDY: NEIGHBOURHOOD ATTACHMENT

Among all dimensions of residential preference, neighbourhood attachment is regarded as the most personal one. Like Fischer et al. (1977, 156) argue, attachment to place is multidimensional and different types of people are attached to places for different reasons. As people not only choose to live in places that match their preferences (if they can afford it), but they also tend to adjust their view to favour current circumstances, attachment is seen as one of the resident's adapting mechanisms to the neighbourhood (Talen, 2001; Brower, 1988).

This dimension of residential preference concerns residents' emotional attachment to the neighbourhood in which they reside, and their satisfaction with the neighbourhood in meeting individual needs. In this respect, authors like Adams (1992a) and Hunter (1974; 1978) distinguish two aspects of attachment: community sentiment (related to overall emotional attachment to the neighbourhood) and community evaluation (related to rational assessment of the relative advantages and disadvantages of living in a particular neighbourhood).

As Adams (1992a, 219) points out: "on the surface, community sentiments and community evaluation may appear to be quite similar (as) for instance, both are seen as outcomes of participation and integration within the local community". However, what makes a clear distinction between the two is the way in which residents

assess the local community: either by emotions only (community sentiment) or by involving rational judgment (community evaluation).

In sociological research, from the Chicago school of urban sociology to the present days, the majority of studies has focused on the neighbourhood as a social unit and the assessments of residential preference have pivoted on the role of neighbourhood attachment, mainly regarded through the aspect of community sentiment (Wekerle, 1985; Talen, 2001). In comparison to other city subareas, neighbourhoods, which are something less than a municipality but more than a few city blocks, are viewed as physical and social environments that affect the lives of their inhabitants (Olson, 1982). There are researchers who believe that in context of globalisation and urbanisation processes, the neighbourhood becomes even more important as a place of refuge (Zhu et al., 2012, 2443). The proponents of New Urbanism think that certain built environment may create a "sense of community", but even though there may be appreciation of the neighbourhood's physical and social environment, some other researchers believe that bonds and sentiments with a neighbourhood develop only with actual involvement in local social relationships (Zhu et al., 2012; Mesch & Manor, 1998; Stedman, 2003). In addition, some researchers find that social contacts and local social networks play much more important role in neighbourhood attachment within less affluent areas whereas attachment to "leafy" neighbourhoods is more conditioned by the physical component (Plas & Lewis, 1996; Forrest & Kearns, 2001).

Regarding factors which have the influence on community sentiment, Hunter (1974; 1978), Kasarda & Janowitz (1974) and Wellman (1979) argue that "local statuses" (e.g. age, length of residence, children living in the home, marital status and religion) affect the kinds of people we meet, the friends we make, and our sentimental feelings toward the neighbourhood itself. Fischer (1982) states that people's gender also relates to community sentiment as 'women traditionally are more responsible for childcare, shopping and other household tasks performed in the local community, … (therefore), they are more likely to have locally-based social network ties and strong community sentiments when compared to men'. Also, in addition to age and length of residence, it is also the homeownership that affects feelings of sentimental attachment to the residential neighbourhood (Lee et al., 1991). Other studies emphasize the importance, but not a distinctive priority, of interpersonal ties (social interaction with one's neighbours) as determinants of emotional attachment to the neighbourhood (Campbell et al., 1976; Zehner, 1972; Adams, 1992a). Despite the diversity of these findings, they all reflect the position that the local residential environment remains a meaningful unit for participation, investment, and commitment in modern societies (Fried, 1982).

In studies on community evaluation, it is argued that individual social statues, different cultural values and desired goals, influence this aspect of neighbourhood attachment. According to Hunter (1974; 1978) cultural values, which are best captured by examining race and social class have a strong effect on community evaluation. Several studies also suggest that the length of residence as a measure of neighbourhood stability influences community evaluation (Litwak, 1961; Fischer, 1982; Lee et al., 1991; Adams, 1992a). There are, however, studies, which underlie that in general, 'the effects of background variables such as race, income and tenure on community evaluation are small relative to the effects of perceived neighbourhood attributes such as friendliness of neighbours, noise, safety or quality of shops and schools' (see: Campbell et al., 1976; Fried, 1982; Lee & Guest, 1983; Spain, 1988). Similar conclusions are drawn in the research done by Parkes et al. (2002, 23), where results showed that 'perceived neighbourhood attributes are a much better guide than personal and housing background variables to understanding neighbourhood satisfaction'.

As Adams (1992a) suggests, community life affects community evaluation in ways which are both similar to and different from community sentiments. Objective characteristics of the local community, perceptions of those conditions, social statues, and the interactions community members have with each other may affect both community sentiment and community evaluation. Community evaluation, however, is more sensitive to the local conditions such as crime and environmental problems than to participation in local communities via social network (Guest & Lee, 1983).

In sum, the ordering and strength of factors affecting neighbourhood attachment differ depending on whether one focuses on community sentiment or community evaluation. In the research on the relationship between the type of physical environment and neighbourhood attachment, there are two models that are most influential. The first model is called *linear* or *density-dependent* model and it follows the approach of Louis Wirth (1938), arguing that high-density living, coupled with relative anonymity of the individual and increased social disorder, puts greater tensions on daily life than smaller, longer-established and more homogeneous rural communities. This model predicted that neighbourhood satisfaction was inversely related to size of the neighbourhood and to the density and heterogeneity of the population (see: Adams, 1992b; Parkes et al., 2002).

In contrast to the linear model, the *systematic* model is based on the length of residence rather than on population size and density. The systematic model, as proposed by Kasarda and Janowitz (1974), suggests that satisfaction with the residential neighbourhood depends more on social factors linked to an individual respondent's length of residence, system of friendship and kinship networks, and formal and informal associational ties.

***Figure 1: Stari grad – urban (central) area of Belgrade***

Therefore, it is possible to have increased attachment towards relatively crowded urban neighbourhoods in which residents have established good social networks over time (Parkes et al., 2002).

Even though traditional urbanism advocates and other sustainable city supporters suggest that 'suburbanities are unattached', research mainly shows the lack of a relationship between attachment and acceptance of traditional urban principles. Moreover, it is suggested that residents who are less attached or even unattached to suburbia are not necessarily more likely or willing to be attached to a different residential environment (Talen, 2001).

## RESEARCH DESIGN FOR TESTING INFERENCES ON NEIGHBOURHOOD ATTACHMENT IN STARI GRAD AND KALUĐERICA

The case-studies for designing a survey on neighbourhood attachment of urban and suburban residents in the city of Belgrade have been chosen in order to represent a high contrast in terms of the physical settings.

Urban municipality of Stari grad (Figure 1) is the old core of Belgrade, which presents cultural, historical, architectural and economic hub of the city. Even its name Stari grad (Engl. "Old town") depicts its role and position in the long period of development. The present administrative boundaries of Stari grad were outlined back in 1961 so that it encompasses 650 ha, or 435 ha of the mainland area and 215 ha of aquatic area (UB ŠF, IAUS, 2012). Its present population is approximately 48,000 people, which is 14% less than what was registered in previous census. In demographic terms, Stari grad is one of the oldest parts of Belgrade since more than 1/4 of its population is older than 60 years of age.

Kaluđerica, as a suburban (peripheral) area of the city is infamous example for comprehensive illegal construction which had a kick-off in late 1960s due to lack of available flats in Belgrade. This formerly rural settlement became attractive for migrants coming from all over the country because of its proximity (12 km from the centre of Belgrade), favourable position – road connections, and most of all because the Master Plan of Belgrade that was endorsed in the early 1970s, drew the line right in front of Kaluđerica allowing individual housing development there and not in the urban part of Belgrade (Saveljić, 1989; Žerjav, 2014; Petrić and Bajić, 2015). Its present population is approximately 27,000 living at the territory of 932 ha.

The type of research design which was performed in the two case-study areas was a survey, which included the following operations: 1) composition of the questionnaire; 2) composition of the codebook; 3) determination of the sample; 4) collection of the data; 5) data entry, data organisation and presentation, and data analysis and 6) interpretation of results.

Questionnaire survey in Kaluđerica was conducted in the period February-March 2014, followed by the survey in Stari grad in the period April-July 2014. The

***Figure 2: Kaluđerica – suburban (peripheral) area of Belgrade***

sample in Kaluđerica was 91 respondents and in Stari grad 81 respondents. Each participating household was represented by one respondent only who was expressing his or her personal perception on the attachment to the residential neighbourhood, social and environmental context, physical planning issues, etc.

Once the data were collected and transferred to codes amenable to quantitative analyses, the statistical procedures of the SPSS Version 21.0 were applied.

## FINDINGS ON FACTORS WHICH INFLUENCE NEIGHBOURHOOD ATTACHMENT IN BELGRADE'S (SUB)URBAN NEIGHBOURHOODS

In reference to previous research on the underlying components of neighbourhood attachment (community sentiment and community evaluation), this empirical study considered these variables as the dependent ones and number of factors of socio-economic characteristics, ecological conditions and perception on those conditions in the neighbourhood as independent variables. Tests were conducted for two case-study areas of Belgrade: Stari grad (urban) and Kaluđerica (suburban).

First hypothesis to be tested is that two neighbourhoods of central (urban) and peripheral (suburban) type statistically differ in terms of their residents' community sentiment.

Since the assumption on equal variances has been violated (Sig. value .004 in Levine's Test is less than .05) we are looking under the second line for the *Sig. (2-tailed)* value (Table 1). This value (.004) is less than required cut off of .05, and we conclude that there is a statistically significant difference in the mean community sentiment to the residential neighbourhood between residents of Stari grad (mean score: 3.88) and Kaluđerica (mean score: 3.41). According to Cohen (1988) the magnitude of differences between the two neighbourhoods in terms of community sentiment can be calculated using the following formula for eta squared: Eta squared = $t^2 : (t^2 + (N1+N2-2))$. Replacing with the appropriate values from the T-test (Table 1), the obtained result is 0.05, which explains that there is a small effect size for difference in community sentiments between residents of Stari grad and Kaluđerica.

From a number of statistical analyses on relationships between independent variables: household type; gender; age; highest achieved level of education; home ownership; duration of living in a present neighbourhood; childhood type of neighbourhood; happiness with the contacts with neighbours; feeling of safety in the neighbourhood; perceived pollution problems; and satisfaction with the overall facilities provided by the neighbourhood, and community sentiment in Stari grad, there was only one statistically significant relationship documented, and that was a **medium positive correlation** between lack of perceived pollution problems in Stari grad and community sentiment (emotional attachment) to this neighbourhood (r=.30) (Table 2).

***Table 1: Independent samples T-test for difference in mean scores of community sentiment to the residential neighbourhood between Stari grad and Kaluđerica***

**Group Statistics**

| Neighbourhood | | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Community sentiment | Urban neighbourhood - Stari grad | 81 | 3.88 | .927 | .103 |
| | Suburban neighbourhood - Kaluđerica | 91 | 3.41 | 1.192 | .125 |

**Independent Samples Test**

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Community sentiment | Equal variances assumed | 8.672 | .004 | 2.860 | 170 | .005 | .470 | .164 | .146 | .794 |
| | Equal variances not assumed | | | 2.901 | 167.070 | .004 | .470 | .162 | .150 | .790 |

Following are the results of Pearson Correlation between variable of community sentiment to Kaluđerica and variables which have previously shown statistically significant influence on this variable while performing the individual tests.

When observing the results from Table 3, it can be noticed that there is **medium negative correlation** between lack of happiness with the overall facilities provided by Kaluđerica and community sentiment in this neighbourhood (r=-.42); **small negative correlation** between level of education of the respondents in Kaluđerica and community sentiment in it (r=-.29); and **small positive correlation** between community sentiment in Kaluđerica and happiness with contacts with neighbours (r=.28); feeling of safety in Kaluđerica (r=.27); respondent's age group (r=.22); and household type (r=.11), respectively.

The empirical research involving community evaluation was based on development of Neighbourhood Satisfaction Scale (NSS) for each of the two neighbourhoods as a measure of their residents' community evaluation (total neighbourhood satisfaction). NSS consists of 7 items, each one of them ranked from 1 to 7 (1=strongly disagree; 2=disagree; 3=mildly disagree; 4=neutral/undecided; 5=mildly agree; 6=agree; 7=strongly agree). The 7 items of scale are: 1) like of convenient location;

***Table 2: Pearson Correlation between variable of environmental context and community sentiment in Stari grad***

**Correlations**

| Neighbourhood | | | Lack of perceived pollution problems in the neighbourhood |
|---|---|---|---|
| Urban neighbourhood - Stari grad | Emotional attachment to the residential neighbourhood | Pearson Correlation | .302** |
| | | Sig. (2-tailed) | .006 |
| | | N | 81 |

** Correlation is significant at the 0.01 level (2-tailed)

***Table 3: Pearson Correlation between variables of environmental context and community sentiment in Kaluđerica***

**Correlations**

| Neighbourhood | | | Emotional attachment to the residential neighbourhood | Household type | Respondent's age group | Highest level of education | Happiness with neighbourhood contacts | Feeling of safety in the neighbourhood | Lack of happiness with the overall facilities provided by the neighbourhood |
|---|---|---|---|---|---|---|---|---|---|
| Suburban neighbourhood - Kaluđerica | Emotional attachment to the residential neighbourhood | Pearson Correlation | 1 | .109 | .224* | -.291** | .283** | .273** | -.424** |
| | | Sig. (2-tailed) | | .303 | .033 | .005 | .007 | .009 | .000 |
| | | N | 91 | 91 | 91 | 91 | 91 | 91 | 91 |
| | Household type | Pearson Correlation | .109 | 1 | .453** | -.024 | .080 | .129 | -.144 |
| | | Sig. (2-tailed) | .303 | | .000 | .824 | .449 | .223 | .172 |
| | | N | 91 | 91 | 91 | 91 | 91 | 91 | 91 |
| | Respondent's age group | Pearson Correlation | .224* | .453** | 1* | -.128 | .034 | .198 | -.100 |
| | | Sig. (2-tailed) | .033 | .000 | | .226 | .751 | .060 | .346 |
| | | N | 91 | 91 | 91 | 91 | 91 | 91 | 91 |
| | Highest level of education | Pearson Correlation | -.291** | -.024 | -.128 | 1 | -.189 | -.142 | .217* |
| | | Sig. (2-tailed) | .005 | .824 | .226 | | .072 | .179 | .039 |
| | | N | 91 | 91 | 91 | 91 | 91 | 91 | 91 |
| | Happiness with neighbourhood contacts | Pearson Correlation | .283** | .080 | .034 | -.189 | 1 | .218* | -.399** |
| | | Sig. (2-tailed) | .007 | .449 | .751 | .072 | | .038 | .000 |
| | | N | 91 | 91 | 91 | 91 | 91 | 91 | 91 |
| | Feeling of safety in the neighbourhood | Pearson Correlation | .273** | .129 | .198 | -.142 | .218* | 1 | -.274** |
| | | Sig. (2-tailed) | .009 | .223 | .060 | .179 | .038 | | .009 |
| | | N | 91 | 91 | 91 | 91 | 91 | 91 | 91 |
| | Lack of happiness with the overall facilites provided by the neighbourhood | Pearson Correlation | -.424** | -.144 | -.100 | .217* | -.399** | -.274** | 1 |
| | | Sig. (2-tailed) | .000 | .172 | .346 | .039 | .000 | .009 | |
| | | N | 91 | 91 | 91 | 91 | 91 | 91 | 91 |

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

***Table 4: Independent samples T-test for difference in mean scores of community evaluation to the residential neighbourhood between Stari grad and Kaluđerica***

**Group Statistics**

| | Neighbourhood | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Total neighbourhood satisfaction | Urban neighbourhood - Stari grad | 81 | 34.20 | 7.153 | .795 |
| | Suburban neighbourhood - Kaluđerica | 91 | 29.19 | 6.868 | .720 |

**Independent Samples Test**

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Total neighbourhood satisfaction | Equal variances assumed | .815 | .368 | 4.684 | 170 | .000 | 5.011 | 1.070 | 2.899 | 7.123 |
| | Equal variances not assumed | | | 4.672 | 165.884 | .000 | 5.011 | 1.072 | 2.893 | 7.128 |

2) like of 'village feel' (friendly people); 3) like of presence of facilities, amenities and house values; 4) like of quietness and safety; 5) like of good neighbours; 6) like of public transport system; and 7) like of environmental quality and level of cleanliness.

When forming a scale like NSS, the most important fact is its reliability, i.e. scale's internal consistency, or the degree to which the items that make up the scale 'hang together' (Pallant, 2001). All the items have to measure the same underlying construct or otherwise the scale we developed is not reliable. The most common measure of internal consistency of scale is Cronbach alpha coefficient. This coefficient should be above .7 for considering a scale to be reliable with our sample.

In the case of NSS, for each one of the two case-study neighbourhoods (urban and suburban), Cronbach's alpha was above this critical value: for Stari grad (.796), and for Kaluđerica (.708).

Following the formation of NSS, the hypothesis to be tested is on difference between the two types of neighbourhoods in terms of their resident's community evaluation.

Since Sig. value (.368) in Levine's Test is above .05 (Table 4), the assumption on equality of variances has not been violated and we look under the first line for the Sig. (2-tailed) value. As this value (.000) is less than .05 that means there is a statistically significant difference between Stari grad and Kaluđerica in the mean scores of community evaluation (total neighbourhood satisfaction). According to the mean values from the Group Statistics Table, respondents from Stari grad had a higher mean total neighbourhood satisfaction (34.2) than respondents in Kaluđerica (29.19). The magnitude of differences between the two neighbourhoods in terms of community evaluation of the residential neighbourhood shows **moderate effect** according to Cohen's (1988) Eta squared, which in this case equals 0.11.

The next step of analyses regarding community evaluation concerns testing the hypotheses on relationship among certain independent variables and community evaluation. Those independent variables are identified from the literature review, and they can be summarised to what Adams (1992a) addresses as 'ecological conditions' and 'perception on those conditions'. Here, the ecological conditions include 2 variables: duration of living in a present home, which is a measure of stability of the local area, and home ownership. Perception of ecological conditions is captured by the following variables: happiness with contacts with neighbours; perception on neighbourhood safety; satisfaction with public transport in the neighbourhood; satisfaction with the overall facilities, and perception on lack of certain facilities in the residential neighbourhood.

According to statistical T-tests (Tables 5 and 6) which were conducted in Stari grad and Kaluđerica regarding the relationship between duration of living in a present home or home ownership on the one hand, and community evaluation (total neighbourhood satisfaction) on the

***Table 5: Independent samples T-test for difference in mean scores of community evaluation in Stari grad and Kaluđerica between residents living in their present home for less and equal 5 years and residents living in their present home for 6 years and longer***

**Group Statistics**

| Neighbourhood | | Duration of living in the present home | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|---|
| Urban neighbourhood - Stari grad | Total neighbourhood satisfcation | Less and equal 5 years | 20 | 35.60 | 7.330 | 1.639 |
| | | 6 years and more | 61 | 33.74 | 7.094 | .908 |
| Suburban neighbourhood - Kaluđerica | Total neighbourhood satisfcation | Less and equal 5 years | 16 | 29.00 | 6.314 | 1.579 |
| | | 6 years and more | 75 | 29.23 | 7.020 | .811 |

**Independent Samples Test**

| Neighbourhood | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Total neighbourhood satisfaction in Stari grad | Equal variances assumed | .016 | .898 | 1.011 | 79 | .315 | 1.862 | 1.843 | -1.806 | 5.530 |
| | Equal variances not assumed | | | .994 | 31.522 | .328 | 1.862 | 1.874 | -1.957 | 5.682 |
| Total neighbourhood satisfaction in Kaluđerica | Equal variances assumed | .170 | .681 | -.119 | 89 | .905 | -.227 | 1.902 | -4.006 | 3.552 |
| | Equal variances not assumed | | | -.128 | 23.622 | .899 | -.227 | 1.774 | -3.892 | 3.439 |

other, there was not a statistically significant difference in the mean scores of community evaluation between residents who have been living in their present home for less or equal 5 years and those who have been living in their present home for 6 years and longer, nor there was a difference between owner-occupiers and non-owner occupiers.

Following are the results of Pearson Correlation (Table 7) between variable of community evaluation (total neighbourhood satisfaction) in Stari grad and variables of perception of ecological conditions, which have previously shown statistically significant influence on this variable while performing the individual tests.

When observing the results from Table 7, it can be noticed that in Stari grad there is **large positive correlation** between satisfaction with public transport system and community evaluation (r=.70), between satisfaction with the overall facilities provided by this neighbourhood and community evaluation in it (r=.568), and between feeling of safety and community evaluation in Stari grad (r=.529); **medium positive correlation** between happiness with contacts with neighbours and community evaluation in Stari grad (r=.48); and **small negative correlation** between perception on the lack of facilities in Stari grad and community evaluation in it (r=-.195).

***Table 6: Independent samples T-test for difference in mean scores of community evaluation in Stari grad and Kaluđerica between owner- occupiers and non owner-occupiers***

**Group Statistics**

| Neighbourhood | | Ownership over the house or flat | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|---|
| Urban neighbourhood - Stari grad | Total neighbourhood satisfcation | Owner occupied | 76 | 34.24 | 7.056 | .809 |
| | | Not owner occupied | 5 | 33.60 | 9.450 | 4.226 |
| Suburban neighbourhood - Kaluđerica | Total neighbourhood satisfcation | Owner occupied | 83 | 29.33 | 6.949 | .763 |
| | | Not owner occupied | 8 | 27.75 | 6.182 | 2.186 |

**Independent Samples Test**

| Neighbourhood | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Total neighbourhood satisfaction in Stari grad | Equal variances assumed | .601 | .441 | .192 | 79 | .848 | .637 | 3.322 | -5.976 | 7.250 |
| | Equal variances not assumed | | | .148 | 4.298 | .889 | .637 | 4.303 | -10.990 | 12.263 |
| Total neighbourhood satisfaction in Kaluđerica | Equal variances assumed | .553 | .459 | .617 | 89 | .539 | 1.575 | 2.551 | -3.494 | 6.645 |
| | Equal variances not assumed | | | .681 | 8.798 | .514 | 1.575 | 2.315 | -3.680 | 6.830 |

The results presented in Table 8, show that in Kaluđerica there is **medium positive correlation** between satisfaction with the overall facilities provided by this neighbourhood and community evaluation in it (r=.467), between satisfaction with public transport system and community evaluation in Kaluđerica (r=.464), and between happiness with contacts with neighbours and community evaluation in this neighbourhood (r=.429); **small positive correlation** between feeling of safety and community evaluation in Kaluđerica (.296), and **small negative correlation** between perception on the lack of facilities in Kaluđerica and community evaluation in it (r=-.258).

## CONCLUSION

The main inferences of the study regarding neighbourhood attachment components (community sentiment and community evaluation) in central and peripheral parts of Belgrade showed both similarities and some particularities in comparison to what has been identified in the literature review on this subject.

First of all, the deductions of this study support the systematic model rather than the linear or density-dependent one since there is a statistically significant difference between the urban (Stari grad) and suburban (Kaluđerica) neighbourhoods both in terms of community sentiment and community evaluation with higher mean scores in the urban neighbourhood.

Then, the presented research has proven a hypothesis that perceived neighbourhood attributes (overall facilities provision, and especially public transport system organisation; feeling of safety; and happiness with contacts with neighbours) are better predictors of community evaluation (total neighbourhood satisfaction)

***Table 7: Pearson Correlation between variables of perception of ecological conditions and community evaluation in Stari grad***

**Correlations**

| Neighbourhood | | | Total neighbourhood satisfaction | Happiness with neighbourhood contacts | Feeling of safety | Satisfaction with public transport system | Satisfaction with the overall facilities provided by the neighbourhood | Perception on lack of facilities |
|---|---|---|---|---|---|---|---|---|
| Urban neighbourhood – Stari grad | Total neighbourhood satisfaction | Pearson Correlation | 1 | .477** | .529** | .700** | .568** | -.195 |
| | | Sig. (2-tailed) | | .000 | .000 | .000 | .000 | .080 |
| | | N | 81 | 81 | 81 | 81 | 81 | 81 |
| | Happiness with neighbourhood contacts | Pearson Correlation | .477** | 1 | .326** | .306** | .308** | -.113 |
| | | Sig. (2-tailed) | .000 | | .003 | .005 | .005 | .315 |
| | | N | 81 | 81 | 81 | 81 | 81 | 81 |
| | Feeling of safety | Pearson Correlation | .529** | .326** | 1 | .207 | .312** | -.051 |
| | | Sig. (2-tailed) | .000 | .003 | | .064 | .005 | .650 |
| | | N | 81 | 81 | 81 | 81 | 81 | 81 |
| | Satisfaction with public transport system | Pearson Correlation | .700** | .306** | .207 | 1 | .486** | -.151 |
| | | Sig. (2-tailed) | .000 | .005 | .064 | | .000 | .178 |
| | | N | 81 | 81 | 81 | 81 | 81 | 81 |
| | Satisfaction with the overall facilities provided by the neighbourhood | Pearson Correlation | .568** | .308** | .312** | .486** | 1 | -.363** |
| | | Sig. (2-tailed) | .000 | .005 | .005 | .000 | | .001 |
| | | N | 81 | 81 | 81 | 81 | 81 | 81 |
| | Perception on lack of facilities | Pearson Correlation | -.195 | -.113 | -.051 | -.151 | -.363** | 1 |
| | | Sig. (2-tailed) | .080 | .315 | .650 | .178 | .001 | |
| | | N | 81 | 81 | 81 | 81 | 81 | 81 |

** Correlation is significant at the 0.01 level (2-tailed)

than personal or housing background variables. Community sentiment, however, is much more difficult to predict, especially for the urban neighbourhood, where in the case of Stari grad there was just one independent variable (lack of perceived pollution problems in the neighbourhood) which showed a statistically significant relationship with community sentiment.

The observed relationships between independent variables and community sentiment and community evaluation as the dependent ones showed that in Belgrade's neighbourhoods, the physical environment and perception on that environment play a much more significant role for neighbourhood attachment than neighbourhood interactions. Particularity of the studied cases is that people put large importance on the public transport system organisation when they rationally assess relative (dis)advantages of their neighbourhood and develop the attachment to it. This could be an important guide for upgrading the residential environments, both central and the peripheral ones.

***Table 8: Pearson Correlation between variables of perception of ecological conditions and community evaluation in Kaluđerica***

**Correlations**

| Neighbourhood | | | Total neighbourhood satisfcation | Happiness with neighbourhood contacts | Feeling of safety | Satisfaction with public transport system | Satisfaction with the overall facilities provided by the neighbourhood | Perception on lack of facilities |
|---|---|---|---|---|---|---|---|---|
| Suburban neighbourhood – Kaluđerica | Total neighbourhood satisfcation | Pearson Correlation | 1 | .429** | .296** | .464** | .467** | -.258* |
| | | Sig. (2-tailed) | | .000 | .004 | .000 | .000 | .013 |
| | | N | 91 | 91 | 91 | 91 | 91 | 91 |
| | Happiness with neighbourhood contacts | Pearson Correlation | .429** | 1 | .161 | .466** | .339** | -.134 |
| | | Sig. (2-tailed) | .000 | | .127 | .000 | .001 | .205 |
| | | N | 91 | 91 | 91 | 91 | 91 | 91 |
| | Feeling of safety | Pearson Correlation | .296** | .161 | 1 | -.015 | .251* | -.243* |
| | | Sig. (2-tailed) | .004 | .127 | | .889 | .016 | .020 |
| | | N | 91 | 91 | 91 | 91 | 91 | 91 |
| | Satisfaction with public transport system | Pearson Correlation | .464** | .466** | -.015 | 1 | .390** | -.084 |
| | | Sig. (2-tailed) | .000 | .000 | .889 | | .000 | .430 |
| | | N | 91 | 91 | 91 | 91 | 91 | 91 |
| | Satisfaction with the overall facilities provided by the neighbourhood | Pearson Correlation | .467** | .339** | .251* | .390** | 1 | -.453** |
| | | Sig. (2-tailed) | .000 | .001 | .016 | .000 | | .000 |
| | | N | 91 | 91 | 91 | 91 | 91 | 91 |
| | Perception on lack of facilities | Pearson Correlation | -.258* | -.134 | -.243* | -.084 | -.453** | 1 |
| | | Sig. (2-tailed) | .013 | .205 | .020 | .430 | .000 | |
| | | N | 91 | 91 | 91 | 91 | 91 | 91 |

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

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# NAVEZANOST NA NASELJE V CENTRALNIH IN PERIFERNIH PODROČJIH BEOGRADA: DOKAZI IZ NASELIJ STARI GRAD IN KALUĐERICE

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*POVZETEK*

*Članek izhaja iz vprašanja kako se občutek skupnosti in evaluacija skupnosti, kot dve komponenti navezanosti na naselje, spreminjata odvisno od socio-ekonomskih značilnosti prebivalstva, kakor tudi od različnih vrst fizičnih okolij. Raziskava temelji na dveh študijah primera mestnega in primestnega tipa v mestu Beograd. Metodologija, ki je bila uporabljena pri raziskovanju, je metodologija družbenih raziskovanj, pri čemer so bili podatki zbrani z metodo vprašalnika. Statistične analize (T-test in Pirsonova korelacija) so opravljene s pomočjo programa SPSS. Rezultati so pokazali, da prebivalci mestnih naselij kažejo višjo stopnjo skupne navezanosti na naselje v katerem živijo glede na prebivalce primestnih naselij. Pokazalo se je, da osebne spremenljivke ali one v zvezi s stanovanjem v manjšem obsegu vplivajo na občutek skupnosti in evaluacijo skupnosti kot fizično okolje in percepcija tega okolja. Poseben rezultat te raziskave predstavlja značilna zmerna do visoka pozitivna korelacija med zadovoljstvom s sistemom javnega prevoza in evaluacijo skupnosti v naseljih v katerih je bila izvedena anketa. Ta rezultat bi lahko vplival na prihodnjo politiko k bolj ambicioznim in bolj trajnostnim (pri)mestnim okoljem.*

**Ključne besede:** navezanost, anketa, naselje, mestno, primestno

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