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Residents' perception of some aspects of quality of life in the cities of Bosnia and Herzegovina

Abstract

In five focus groups, organized in five major cities in Bosnia and Herzegovina residents gave answers on how they perceive some aspects of quality of life that would have to be improved by their municipal authorities. On this basis, we constructed a scale for measuring the quality of life in those areas which are under the local jurisdiction and in which local authorities can affect the quality of life of residents. Factor analysis extracted 7 factors of quality of life with which we can explain 71% variance, while individual factors explain 5-26% of common variance. The scale for measuring the quality of life was administered to 1503 respondents in 14 cities in B&H. It is found that there are significant differences in quality of life among certain municipalities, while the quality of life in the Republic of Srpska and Federation B&H is uniform.

Key words: *quality of life, Bosnia and Herzegovina, the local authorities.*

Introduction

There are only a few concepts that have from the beginning of 20th century experienced such an intense change in content and meaning as it has the meaning of quality of life. That concept is interpreted differently depending on the area of the social life to which it refers, on the theoretical and methodological advance in scientific disciplines dealing with this problem, but also on the proclaimed goals of social life and progress, which are by the rules, always ideologically colored. For example, in economy the quality of life usually refers to specific material indicators, such as life standard, material position and other

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measures derived from them. In medicine that concept usually refers to the level of preservation of bodily functions of sick people and convalescents, the possibility of conducting the professional and life jobs in those with frail health, the general level of the population of some country or the region and similar. In humanistic intelligence, thic term is usually viewed as a level of achieving more humane and better society through the realization of the basic human values such as justice, happiness, peace, freedom, etc.

In the first half of 20th century, usually the different material indicators were taken as representative of the achieved quality of life in one country. In the 60s, the concept evolved and the different approach in this phenomenon in the 'social indicators movements' was developed, that was taking in consideration the different, nonmaterial indicators of quality of life. In basic, social indicators can be subjective and objective. The subjective indicators are based on subjective impressions of their own lives and possibilities to achieve their own life goals through the level of life satisfaction, job satisfaction which an individual performs, the level of accomplished happiness, the perception of social justice, etc.[2] Among the objective indicators are: unemployment rate, infant mortality rate, number of hours during the week, the proportion of population below the poverty line, proportion of population without health insurance, life expectancy and so on. From these two approaches have been developed two different concepts of quality of life: the U.S., which emphasizes the importance of subjective indicators, and Scandinavian which highlights the priority objective indicators. Basically, the American concept is based on the individual and its skill and ability to achieve in the given social environment, in competition with other individuals, achieve satisfaction of their own bacis needs and/or to affirm in society. Scandinavian concept is based on the different premises, it starts from the 'good society' as an indicator of quality of life. In other word, the quality of life operationalizes as the possibility to access resources (money, property, knowledge, psychological and physical energy, social relations and security) whith what people can control their own 'level of life' and manage it.[3]

In addition to conceptual differences in these two approaches, we will mention some examples of theoretical and methodological difficulties in investigating the quality of life.[4] The quality of life is a very broad and elastic concept, so between the theoretical and operational definition can may appear different mediating variables that complicate the combination of deter-

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[2] Some of these indicators register the World research of value. Available on the site: www.worldvaluessurvey.org

3 See: Drenowski, Erikson i Uisitalo, y: *Rapley Mark Quality of Life – A Critical Introduction, Sage Publications,* London, 2003.

[4] Similar problems arise with cross-cultural study of values (Pantić, 2005).

ministic, and whose effect is not easily detected and measured. For example, between the subjective quality of life and its operational parameters may appear different psychological and physiological characteristics of individuals that determine how a person will experience the objective conditions in which he lives (personality traits, values systems, perceptions of reality, the level of aspiration, a characteristic 'life philosophy', etc.) In other words people who are modest in nature and have lower expectations of life will easier reach their 'own standards' of quality life and will be relatively more satisfied with their own lives than others who have multiple criteria and (unrealistic) expectations. In addition even some economic indicators of quality of life (such as living standards, financial status, purchasing power, etc.), which are belived to be objective are not always good representatives of the quality of life. Higher standard of living does not always means better quality of life. The example of the United States after World War II was shown, where the improvement of living standards has failed to lead to a better quality of life, but at the same time there was an increase in crime, violence in the streets, suicides, mental disorders and various forms of addictions.[5] On the other hand, it is possible to specify different examples, it is considered that in poor countries increasing the standard of the living is the basic prerequisite for happier and more satisfied life of the great part of the population.[6]

The aim and the problem of the research

The aim of the research was to make a transparent and objective assessment of some aspects of quality of life in fourteen cities of B&H, in those segments which are the responsibility of local (municipial) authorities and which may affect the quality of life. Since the 'mixing the jurisdiction' of the entity and local government, it is difficult to determine which areas are exclusively the responsibility of local authorities, we have tried to include those in which the local authorities are 'recognized' as responsiblem by citizens for the functioning of social life on local level. By monitoring selected indicators of quality of life, it is possible to continuously monitor the quality of life in the municipalities of BiH, and to see whether and to what extent local authorities improved the quality of life of citizens. Also, comparative analysis of the municipalities in BiH can

[5] Campbell, A., Converse Philip E. *The Human Meaning of Social Change,* Russel Sage Foundation, New York, 1972.

[6] Lima, M. L., Novo, R., "So far so good?" Subjective and social well-being in Portugal and Europe", *Portuguese Journal of Social Science,* Vol. 5, No. 1, 2006. Page 5-33.

show which cities are 'better' and which are 'worse' in terms of living conditions they offer to their residents.

The research 'Resident' perception of quality of life issues'7 has been previously conducted, through a series of focus groups with residents in five major cities in B&H (some of which are included in our study). On that occasion, the citizens have given the answer on what they think of the aspects of quality of life that should be improved by their local authorities. On this basis, as indicators of quality of life, we considered the following areas: 'public health care', 'the arrangement of city', 'water supply', 'public heating', 'road infrastructure', 'public transport' and tourism-sport-culture-administration'. Each of these areas we presented with 2-4 variables (total 23) Respondents gave the answer to what extent they are satisfied with certain aspects of quality of life, and they are presented on a five-Likert scale (from 'completely satisfied' – 5, to 'completely unsatisfied' – 1). The verification of the theoretical model we have made with the help of the factor analysis, whose results we will present below.

First, we checked whether the reliability of the scale in our sample is satisfactory (Cronbach alpha 0.88), and then we realized that the scale is representative with Kaiser-Meyer-Olkin indicators (we got value 0.797) and Bartlett's test of sphericity (sig 0.000). We aplied Varimax and oblimin rotation, but after we realized that some factors are correlated with each other above 0.3 (F1 and F6; F6 and F7), we decided to adopt the results of the oblimin rotation, although both are giving the similar solutions.

Table 1: Factor analysis of quality of life by applying the oblimin rotation

Factors and variables	Communalities	Totally and mostly satisfied(%)
F1: Structure of the city (% of the variance 26,17)		
V4. Transportation of garbage	,619	68,9
V5. Maintaining the purity of streets and public places	,736	50,2
V6. The appearance and maintaince of parks and other green areas	,714	61,5
V7. The presence and functioning of public lighting	,594	54,4
F2: Public heating (% of the variance: 13,11)		
V11. The quality of heating	,767	69,4
V12. Maintaining the heating facilities by certified companies	,891	60,4
V13. The speed of repairing the heating installations	,863	53,9
F3: Public Health Care (% of the variance: 8,22)		
V1. Scheduling the examinations at the family doctor	,766	57,7

[7] See: „Local government for quality of life of citizens, Municipality of Bijeljina-A preliminary report on indicators of quality of life of citizens" Center for Civil Initiative, Bijeljina 2009, page 4

Factors and variables	Communalities	Totally and mostly satisfied(%)
V2. Waiting for the review and obtaining evidence	,833	44,9
V3. The courtesy of the Medical Staff	,746	52,7
F4: Water supply (% of the variance: 7,30)		
V8. Regular water supply	,717	88,1
V9. The speed of removing defects	,756	72,5
V10. The quality of drinking water	,648	69,1
F5: Public transportation (% of the variance: 6,37)		
V18. The number of departures from the city to your place of residence	,873	52,9
V19. The coverage of remote and rarely populated areas	,879	39,7
F6: The road infrastructure (% of the varaince: 5,55)		
V14. Road maintenance (potholes, snow clearing, drainage, etc.)	,693	25,2
V15. Building the new roades	,800	21,9
V16. The coverage of remote places by rode	,700	27,7
V17. Representation of public parking	,443	30,0
F7: Tourism-sport-culture-administration (% of the variance: 5,19)		
V20. Tourist attractions	,683	31,6
V21. Representation of sports facilities and halls	,670	36,4
V22. Representation of culture events	,663	40,1
V23. The work of municipal administration (counter, permits, decisions, etc.)	,486	36,8

Seven factors of quality of life were extracted and they can explain 71,2% of the variance. The factors in Table 1 are presented according to the size of participation in the common variance. The largest percentage of the common variance is explained by the factor 'the structure of the city' and the lowest by the factor 'tourism-sport-culture-administration. Both criterian (Kaiser and Katelov) confirmed that it is justified to keep all seven factors. The Table shows that all of the variables have the appropriate saturation (above 0.3)

Table 2: The correlation coefficients of variables and factors of quality of life (factor structure matrix)

Variables	Factors						
	F1	F2	F3	F4	F5	F6	F7
V1	,151	,192	,869	,150	,186	-,217	,097
V2	,097	,266	,907	,118	,148	-,224	,093
V3	,077	,256	,856	,093	,041	-,135	,121
V4	,768	,153	,046	,267	,174	-,229	,120
V5	,851	,130	,155	,211	,214	-,372	,249
V6	,838	,107	,138	,179	,173	-,341	,306
V7	,711	-,061	,166	,161	,209	-,457	,343

Variables	Factors						
	F1	F2	F3	F4	F5	F6	F7
V8	,328	,232	,049	,807	,150	-,197	,101
V9	,446	,328	,175	,777	,139	-,301	,201
V10	,046	-,258	,212	,693	,253	-,239	-,007
V11	,103	,870	,221	,094	-,001	-,136	,107
V12	,176	,916	,376	,179	,083	-,200	,135
V13	,214	,897	,393	,148	,100	-,107	,106
V14	,373	,110	,253	,060	,297	-,804	,263
V15	,397	,194	,216	,113	,243	-,871	,373
V16	,229	,097	,179	,233	,233	-,829	,249
V17	,255	-,107	,072	,291	,135	-,621	,240
V18	,190	,061	,126	,149	,932	-,238	,171
V19	,199	-,043	,120	,148	,935	-,275	,134
V20	,220	,236	,026	-,043	,203	-,311	,778
V21	,301	-,315	,177	,021	,078	-,314	,697
V22	,293	,004	,038	,115	,158	-,282	,802
V23	,070	,288	,404	,299	,144	-,315	,511

From the matrix structure can be clearly seen that the correlation between the variables and factors is quite high and that each variable significantly saturationalize only one factor suggesting that we have a typical example of Terston's 'simple structure'.[8] In other words, it is confirmation that our theoretical model is quite suitable for the analysis of quality of life and that it should not be corrected.

The assumptions

Since we focused on those aspects of quality of life related to the local authorities we expect the greatest differences in the quality of life of citizens to arise between the local communities in which the survey was conducted. It is expected that the quality of life will differ in urban and rural population, but also due to the perceived difference in living conditions in their own town than in most other cities in B&H. Based on the findings from the previous research we expect exhibit the influence of living standards in the perception of quality of life. Given the area of quality of life that we have examined, we do not expect the impact of gender, age, educational differences between the respondents, their work status, or entities in which they live.

[8] Pallant, J. SPSS: *Handbook for Survival,* Micro Book, Novi Sad, 2009:185
Fulgosi, A, *Factor analysis*, School Book, Zagreb, 1988:189

The sample

The survey was conducted in August and September in 2010. The sample was appropriate, and respondents were interviewed in waiting areas outside municipal counters, health cares, central city streets, squares, parks and the like. The percentage of respondents who refused to participate in the study was very different, in municipality of Doboj, that percentage was negligible, in some municipalities was 10-20% (Travnik, Bihać, Široki Brijeg, Mostar, Zenica, Banja Luka and Bijeljina), in one municipality was about 30% (Foča), and in the two municipalities was 50% (Tuzla, Mostar). We believe that the unexpectedly high percentage of rejection in the three municipalities was a result of widespread dissatisfaction with the quality of life of citizens in their towns and that it is the main reason for such a large percentage of rejection. Confirmation of our hypotheses is the fact that the measured quality of life was below average in all three municipalities where we had the highest percentage of rejection.

The survey was conducted on total of 1503 citizens in 14 cities of B&H (6 in Republic of Srpska, 8 in Federation of Bosnia and Herzegovina. We planned to interview 120 respondents in larger municipalities and 100 in smaller. Representation of respondents in the municipalities has slightly deviated from the plan, so the smallest number of respondents we have in Doboj (90), and the largest number in Banja Luka (123). The sample was balanced by gender and age, but somewhat different from reality when it comes when it comes to the residential structure (overrepresented respondents from the cities), employment status (unemployed are under-represented), and in particular educational attainment (more educated respondents are overrepresented and less educated are under-represented). The sample has 51,1% od females and 47,6% of males. More than a third of respondents were young people under 30 years old (35,1%). Somewhat more frequent are the middle-age people from 30 to 50 years old (38,3%), while the smallest percentage are the people over 50 years old (26,2%). According to the type of neighborhood, 64,8% of respondents were from urban settlements, and 35% of respondents from suburban or rural areas. By employment status, nearly half of respondents are employed people (46%), followed by student population (16%), unemployed (15%), pensioners (13%), housewives (7%), and disability (2%). Sample structure by educational attainment is the most problematic it deviates the most from reality. More than ¼ of respondents (26,7%) have completed college or university, completed either three or four-year schools we have almost 2/3 of respondents (62,4%), while only every tenth respondent has finished primary school (10,4%).[9]

[9] Educational structure of population in Bosnia is even worse. For directions of deviatio see: 'Demography. Thematic Bulletin.' Number 2, Agency for statistics of Bosnia and Herzegovina, Sarajevo, 2009: 19.

THE RESULTS

The predictors of the quality of life

In order to determine to what extent the basis of some socio-demographic and socio-economic variables can predict the quality of life in towns in B&H, in those segments which are the responsibility of local authorities, we conducted a regression analysis procedure. We applied the metod of deleting backward ('backward deletion') that assumes all the variables listed in the model, and then gradually excludes the variables with the smallest significance of independent contributions to the prediction, as long as the model does not remain with only variables whose exclusion would significantly impair the efficiency of the forecast based on regression equations.[10]

Independent variables included in the model are mainly socio-demographic variables: gender (1=male, 0=female) age (6=60 and more years, 5=51-60 years, 4=41-50 years, 3 = 31-40years, 2 = 21-30years, 1 = 20 years and less), place of residence (4= center of the city, 3= wide area of the city, 2= suburban area, 1=rural area), education (6=University degree, 5= completed College, 4= completed Secondary four-year School, 3= completed Secondary three-year School, 2= completed Elementary School, 1= independent Elementary School), living conditions in their own town than in the most towns in B&H (3= better in my city, 2= it is all pretty much the same, 1= better in other cities), municipal (ranked so that the higher ranking municipality corresponds to better quality of life) and entity (1= Republic of Srpska, 0= Federation of B&H). Socio-economic variables are: employment status (3= people with own income: employees and retirees, 2= dependents: housewives, students, schoolchildren and disabled, 1= people without income that is, unemployed) and life standard compared to a year ago (5= much higher, 4= slightly higher, 3= about the same, 2= slightly lower, 1= much lower).

Before using the Model, we checked whether there is a (multi) collinearity between the variables and whether there is a correlation between independent variables and quality of life. It turned out that the rank correlations (Spearman's rho) between the variables is relatively weak, and the most prominent are: between the age and employment status r=0,357 (sig. 0,01), between the living standards and living conditions in other cities r=0,186 (sig. 0,01), between the living standards and municipality in which they live r=0,133 (sig. 0,01), etc. In other words, older people have better employment status, which can be at-

[10] Pallant, J. SPSS: *Handbook for Survival,* Micro Book, Novi Sad, 2009.

tributed to the fact that the unemployment in B&H is the most widespread among the youth.[11] Respondents who have managed to maintain or improve living standards in the past year assess the conditions for life in their own town favorable then in the most other cities in B&H, and they also assess the overall quality of life in their town better. On the other hand, the overall quality of life correlates the most: with the municipality of residence of respondents r=0,351 (sig. 0,01), with the standard of living r=0,251 (sig. 0,01), with living conditions in their own town compared to other cities r=0,220 (sig. 0,01), with place of residence r=0,122 (sig. 0,01), while other correlations are very low: with the employment status r=0,080 and a degree r=0,069 (at the same level of significance).

Table 3: Standardized β coefficients of variables that are statistically significant predictors of quality of life in the regression analysis (significance level 0,05) and the proportion of variance explained by independent variables

Areas of the quality of life*	Independent variables									R	R^2 correction
	Gender	Age	Place of residence	Employment status	Education	Conditions of life in other places	Standard of living	Municipality	B&H Entity		
1						,116	,113	,326	,109	,420	,174
2						,213				,213	,041
3			,090		,086		,099			,160	,022
4							,126	,234	-,104	,303	,088
5			-,092						-,132	,159	,021
6							,136	,269		,318	,099
7					-,092	,165	,157	,262		,405	,161
8						,099	,186	,320		,435	,186

* Areas of quality of life: 1 – Arrangement of the city, 2 – Public heating, 3 – Public Health Care, 4 – Water supply, 5 –Public transportation, 6 – The road infrastructure, 7 – Tourism-sport-culture-administration, 8 – All areas (total quality of life).

Very similar conclusions can be obtained from the results of regression analysis (Table 3). In the regression model, we looked whether there is and what intensity is the effect of selected independent variables on the overall quality of life, but also to every single aspect of quality of life. We found out that six variables makes statistically significant impact on certain aspects of quality of life, with a minor or major casual effect. The variables, gender, age and employment status do not have a causal effect on any aspect of quality of life, or the overall quality of life, which is inconsistent with previous research indicating

[11] Janković, A. 2010. *Entrepreneurial orientation of zoung people in Doboj,* Faculty of Philosophy, Belgrade, MA Thesis, 2010. Page 6, 45-46.

that women were more satisfied with ceratin aspects of life than men, younger people than older, employed people than unemployed.[12]

The strongest causal effect have predictors the standard of living of the respondents and municipalities. In previous studies it was also shown that the living standard had the strongest influence on life satisfaction.13 Although, in our case, the variable living standard appears as significant in the six municipalities and the variable municipality in five areas of quality of life, we would say (based on the value of beta coefficient), that the other one has the stronger causal effect. In other words, quality of life is the most differentiated depending on the municipality to which it relates. Which coincides with our initial assumption. Although the absolute majority of respondents consideres that the conditions of life in their own town than in most other cities in Bosnia and Herzegovina are tied ('it is all pretty much the same') it is showe that this variable makes a significant impact on four areas of quality of life (the arrangement of the city, district heating, tourism-sport-culture-administration and overall quality of life) . the better they assess quality of life in their own town, so much the worse is assessed the quality of life in other cities of Bosnia and Herzegovina, and vice versa. The bariable entity, as represented in the regression model, assumes that the quality of life is higher in Republic of Srpska than in Federation of B&H, which proved to be accurate only when it comes to the arrangements of cities, while the quality of life is higher in Federation of B&H when it comes to the functioning of urban water supply and public transportation (as seen by the negative signs of beta coefficients). However the overall quality of life is equal in Republic of Srpska and Federation of B&H, what we assumed. Variables residence and educational background figure in two areas of quality of life as statistically significant (first in health care and public transportation and other also in health care and tourism-sport-culture-administration), but they do not significantly affect the overall quality of life. Respondents who live closer to the central parts of cities better assess primary health care in their health homes, and worse public transportation services than respondents who live away from central parts of the cities. Also, better educated respondents better assess health services and worse tourism-sport-cuture-administration than the poorly educated. This is probably due to the fact that the better educated people have higher needs, so their grades are relatively lower. Other researchers have also the link between higher levels of

[12] Lučev, I. Tadinac, M., *Quality of life in Croatia-correlation of subjective and objective indicators, and temperaments and demographic variables with regard to minority status.,* Migration and Ethnic Themes, Zagreb, Vol. 24, number1-2, 2006. page 77-78.

[13] Ibid, page 79.

education and lower levels of life satisfaction explained by higher criteriums and expectations that the better educated people have.[14]

If we look at the last column of Table 3, we will see that with these variables we can explain 18,6% of variability in the overall quality of life, which are very similar to the results from the previous studies, in which researches were able to explain about 15% of the variance of life satisfaction by demographic variables.[15]

Comparative analysis of individual aspects of quality of life in municipalities

Based on the data from the previous chapters is not difficult to conclude that the quality of life, so in some aspects, as well as a whole, is the most differentiated based to the municipality to which it is concerned. Differences in the quality of life between the municipalities are statistically significant (significance level 0.01) in all individual aspects and the overall quality of life. Therefore, further analysis will be directed to the explanation of these differences, using analysis of variance and Tuki's test of homogeneity of variance which reveals us what the differences in quality of life are statistically significant.

First of all, we will look at the evaluation of certain aspects and overall quality of life in the municipalities. The average grade of the overall quality of life in these 14 municipalities in B&H is 3,26, which is expressed by the school success of 'strong three'. Only one area of quality of life was assessed with 'strong four', and two areas were rated with 'poor four', 'strong three' and 'poor three', respectively. Basically, there is a statistically significant difference in the estimation of certain areas of quality of life in the municipalities. Namely, the difference between the best and the worst rated area is 1.07 value points on a scale of four units of value, which is more than ¼ of the scale.

Of all the analysed areas of quality of life, the citizens are the most satisfied by the city's water supply (3,99). However, we should not forget that in this area we have taken the indicators (regular water supply of the citizens, drinking water quality and the speed of the fault repair in the water network) thar represent the basic prerequisites of a modern and civilized life at the present level of social development. Twelve cities in this area are rated with 'four', two with 'three', which means that this area is still not adequately regulated in all municipalities. The best city water, in the opinion of the citizens are: Trebinje (4,47), Siroki

[14] Ibid, page 71.
[15] Ibid, page 79.

Brijeg (4,46) i Zenica (4,33), while the lowest rated are: Bijeljina (3,81), Tuzla (3,35) i Foča (3,09).

Table 4: Perception of quality of life in municipalities

Municipality	Number of respond-ents	Areas of quality of life *							Overal quality of life	Rank of the municipali-ties by the quality of life
		1	2	3	4	5	6	7		
Siroki Brijeg	100	4,18	/	4,25	4,46	2,00	3,31	3,18	3,79	1
Trebinje	100	4,14	/	3,66	4,47	3,85	3,32	3,06	3,72	2
Novo Sarajevo	101	3,70	4,23	3,45	4,06	3,40	2,68	3,35	3,50	3
Bihac	105	3,72	/	2,87	4,30	3,05	3,01	3,06	3,37	4
Pale	100	3,56	3,25	3,42	4,08	3,26	2,91	3,00	3,35	5
Doboj	90	3,34	4,36	3,87	4,20	2,53	2,36	3,16	3,26	6
Zenica	120	3,37	2,72	3,07	4,33	3,42	2,62	3,32	3,23	7
Mostar	120	3,62	/	3,20	3,97	3,60	2,67	2,81	3,22	8
Banja Luka	123	3,96	3,27	3,07	4,05	3,07	2,42	2,72	3,21	9
Foca	100	3,35	3,03	3,60	3,09	3,15	2,78	3,11	3,16	10
Tuzla	118	3,67	4,09	2,88	3,35	3,14	2,56	3,00	3,15	11
Bijeljina	121	3,38	3,60	3,02	3,81	2,95	2,43	2,70	3,02	12
Livno	100	2,53	/	3,78	4,24	2,65	2,49	2,27	2,89	13
Travnik	102	2,44	3,77	3,55	3,85	3,71	2,09	2,14	2,84	14
Total	1502	3,51	3,63	3,39	3,99	3,24	2,68	2,92	3,26	

* Areas of quality of life: 1 – Arrangement of the city, 2 – Pulic heating, 3 – Public Health Care, 4 – Water supply, 5 – Public transportation, 6 – The road infrastructure, 7 – Tourism-sport-culture-administration, 8 – All areas (overall quality of life).

On the second place, by the assessment of citizens is the area of the district heating (3,63). However, it should be noted that the assessment in this area are referred to only half of the cities, to those in which destrict heating is functioning and where the network covers most of the city. Given that, the quality of life in this area is really 'overrated', because citizens in the towns where district heating is not working are forced to 'manage' in the winter months by themselves. In addition, in some cities that can boast to have a district heating system, the quality of services can be raised to a higher level (Zenica, Foca, Pale and Banja Luka). On the other hand, there are municipalities, where the population has no major objections to the functioning of the district heating, such as municipalities: Doboj (4,36), N. Sarajevo (4,23) and Tuzla (4,09).

The arrangement of the city is the last area that is rated with 'four' (3,51). Ratings for individual cities are the most differentiated precisely in this area. The differene between the best and the worst rated municipality varies by 1,74 validity points, accounting 43% of the scale. Eight cities were rated with 'four',

five cities with 'three', and oe city with 'two'. In this are the best rated cities are: Široki Brijeg (4,18), Trebinje (4,14) and Banja Luka (3,96) and the worse rated are: Livno (2,53) and Travnik (2,44).

Of the areas that are rated with 'three', the best rated was the area of the primary health care (3,39). However, the ratings are divided: six municipalities are rated with 'four' and eight with 'three'. Among the best rated municipalities with Šitoki Brijeg (4,25) and Doboj (3,87), this time there are Travnik (3,55) and Livno (3,78), municipalities that are at the bottom of the scale of overall quality of life. It is indicative that the lowest rated municipalities are bigger municipalities: Banja Luka (3,07), Zenica (3,07), Bijeljina (3,02) and Tuzla (2,88), suggesting that the population covered bz primarz health care is one of the key factors that influences the satisfaction of the citizens with these services.

The area of public transportation comes fifth, according to the assessment of the citizens (3,24). At the level of the sample, 55% of the respondents uses public transportation, of which 10,8% of respondents use it 'daily', 10,7% 'at least once a week', 17,4% 'rarely, if needed', and 16% of respondents 'very rarely, almost never'. The scores are very different by the municipalities, but you can not see any connection between the size of the municipality and the evaluation of the public transport. Among the best rated municipalities with Trebinje (3,85) and Mostar (3,60) is unexpectedly Travnik (3,71), while similar to that, among the worst rated apart from Doboj (2,53) and Livno (2,65), there is also Široki Brijeg (2,00).

On the prelast point, according to the assessment of the citizens is the area tourism-sport-culture-administration which was rated with 'poor three' (2,92). This is very important, as well as heterogeneus area because it includes various indicators of quality of life. Generally, municipalities have failed in this area, twelve municipalities were rated with 'three' and two municipalities with 'two'. In addition, there is no municipality in which the majority of people is partially or totally satisfied with the situation in this area (most people are satisfied in Zenica: 47,5%). The best rated municipalities are: N. Sarajevo (3,35), Zenica (3,32) and Široki Brijeg (3,18), and the worst rated are: Banja Luka (2,72), Bijeljina (2,70), Livno (2,27) and Travnik (2,14).

On the last place, according to the assessment of the citizens is the area road infrastructure (2,68). It is obvious that the poor road maintenance is the problem that affects citizens across the country. Nine municipalities is rated with 'three', and five municipalities with 'two'. Although, this area of the quality of life is the lowest rared, there are municipalities where about half of the citizens are satisfied with the situation in this area such as, Trebinje (52,5%) and Siroki Brijeg (49,5%). These are also the municipalities that have achieved the highest score in this area: Trebinje (3,32), Široki Brijeg (3,32), Bihać (3,01), while

the worst score achieved municipalities of: Bijeljina (2,43), Banja Luka (2,42), Doboj (2,36) and Travnik (2,09).

Comparative analysis of the overall quality of life in the municipalities

In the previous section, we noted that statistically significant differences occur in certain areas of quality of life. In addition, there are significant differences when it comes to overall quality of life in the municipalities. The average score of the overall quality of life in these 14 municipalities in Bosnia and Herzegovina is 3,26, which is expressed by the school achievement a 'strong three'. In addition, the difference between the best and the worst rated municipality in the overall quality of life is 0,95 validaty points, which is very similar to the difference thas was observed when it comes to the differences between the individual aspects of the quality of life.[16] Unlike in the municipalities, the overall quality of life in the entities is unified (Republic of Srpska 3,28; Federation of B&H 3,24), which is consistent with our initial assumption.

According to the quality of life, the best rated municipality is Široki Brijeg with the average score of 3,79. Municipality Široki Brijeg is assessed better that the rest of eleven municipalities (at the level of significance 0,01), while the differences are statistically insignificant compared to the two municipalities (Trebinje and N. Sarajevo). Based on the particular aspects of quality of life, Široki Brijeg has three 'strong fours', which is not recorded in any other municipality, but also one 'two', which generally spoils the overall impression of this municipality. In second place is the municipality of Trebinje, with a total score slightly lower than in the previous case (3,72). Also, this municipality is better rated than the rest of eleven municipalities, while the differences are negligible compared to the two municipalities (Široki Brijeg and N. Sarajevo). What characterizes Trebinje is the uniformity of quality of life in all areas, which is encountered only in the municipalities of Pale and Foča. Slighlty worse ('three'), were evaluated two areas.

Third place belongs to the municipality N. Sarajevo, which is far behind in quality of life compared to the previous two municipalities (3,50). It is evident from the fact that this municipality is statistically (level 0,01) better rated than only five municipalities, those at the bottom of the quality of life scale. In this municipality, in addition to three 'fours', we meet three 'strong' and one 'weak three', which is an indication of dis-

[16] See the previous chapter

turbed balance in certain segments of quality of life in this municipality. In the fourth place is the municipality of Bihać (3,37). This is the first municipality in which in addition to statistically significant higher grades compared to other three municipalities, we have and lower grades compared to the two municipalities. With the exception of one area in which this municipality is not rated, four grade are about 'strong three', while these areas are rated with 'weak' and 'strong four'.

The municipality of Pale comes fifth (3,35), whose quality of life is not particulary high, but it is very balanced in all areas. In fact, all areas of quality of life are rated with 'threes' and 'fours', although the 'threes' are dominated. As in the case of Bihać, Pale were rated better than three, and worse from two municipalities.

From sixth to ninth place are positioned the municipalites that have a verz balanced overall quality of life, but it is uneven structure observed in individual areas. All municipalities in this group are characteristic in that they are better, or worse rated than the two municipalities from the top and the bottom of the quality of life scale. In the sixth place was the municipality of Doboj (3,26), which is considerably behind the municipality of Bihac and Pale. Otherwise, the quality of life in Doboj at the average level in all 14 municipalities, so all the municipalities that will be further discussed have below-average quality of life. However, the quality of life in Doboj is very uneven in its structure. No rating is dominant. In the area of district heating, Doboj achieves very good results, which are only slighlty weaker in the field of urban water supply, while in other areas, this municipality records modest results. In the seventh place is Zenica (3,23), that is very similar to Doboj in the overall assessment of quality of life. The difference from Doboj is that there is only one area in which this municipality manages to achieve very good results, while in Doboj there were three areas like that.

The eight place belongs to the municipality of Mostar (3,22), which is rated with three 'fours' and three 'threes', but unlike the previous two municipalities, it does not manage to achieve 'strong four' in any area.

In the ninth place is the municipality of Banja Luka (3,21), which is very close to the rate of previous three municipalities, but it differes from them because in one area it was rated with 'two'.

On the tenth and elevent place are municipalities of Foča (3,16) and Tuzla (3,15) that are equal in quality of life, but one step lower than the previous four municipalities. Both municipalities were matched for scores in certain areas of quality of life, Foča was assessed with one 'four' and six 'threes' and Tuzla with two 'fours' and five 'threes'. Also both municipalities are with statistically significant difference better rated than one, and worse than three municipalities.

In the twelfth place is the municipality of Bijeljina, which is rated with 'clean three' (3,02). In Bijeljina, the two areas are rated with 'poor four', four areas with 'three' and one area with 'two'. This municipality is rated worse than the five municipalities from the top of the qulity of life scale, while it is better rated than any municipality (at the level of significance 0,01).

In the end are the municipalities of Livno (2,89) and Travnik (2,84), that are rated with 'poor three' in the overall quality of life. Livno is rated worse than nine, and Travnik than eleven municipalities. In these municipalities occur 2-3 areas in which quality of life is severely compromised.

Concluding remarks

The research confirmed a huge part of our assumptions. The quality of life is primarily determined by the municipality of residence, standard of living of respondents and the evaluation of respondents on the living conditions in other parts of the country, while the variables gender, age, educational level, employment status, place of residence and living entity in which respondents have no impact on the quality of life.

The general impression is that the quality of life in the cities of B&H is neither too high, nor too low. Expressed in academic achievement, the quality of life in these municipalities could be evaluated with 'strong three'. Generally speaking, the best rated are the areas of communality services: city water supply, distict heating and the arrangement of the city. All three areas are rated with 'four'. Somewhat worse ('three) are rated the areas of: primary health care, urban and suburban public transport, tourism-sport-culture-administration and the road infrastructure. Based on the analysis, we believe that the quality of life in all cities can be improved at least in certain segments. Rare are the cities where the quality of life is equal in all areas (Trebinje, Pale and Foča). In appears that in the most of the cities, some of which are located at the very top of the quality of life scale (Široki Brijeg, N. Sarajevo), the basic problem is the unevenness of the quality of life in individual areas. Almost all cities are distinguished by its own peculiarities and certain areas in which they 'failed'. For example, in Široki Brijeg that is the public transport. Citizens of N. Sarajevo complain about the lack of sports fields, the citizens of Bihać on the kindness of medical personnel in primary health care, the citizens of Tuzla on the quality of drinking water, and the citizen of Zenica on the elimination of defects in heating installations. In major cities, problems usually occur due to the lack of public parking, poor maintenance of the roads, as well as the complaints on the work of municipal administration, which is again associated with an increased population in these

cities. An interesting finding is that the most people are generally satisfied with all aspects related to the renovation of the city in these six municipalities: Trebinje, Široki Brijeg, Novo Sarajevo, Bihać, Mostar and Banja Luka.

There are cities, in which the quality of life is on the leve of 'poor three' (Travnik and Livno). These cities are burdened with numerous problems that citizens recognize with which they are not satisfied. In these two cities the citizens are dissatisfied with even those parts of quality of life which citizens of the most of the other cities do not consider problematic (arrangement of the city, touris offers, the promotion of sport and culture).

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