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## **Satisfaction with the quality of life on Croatian small islands: Zlarin, Kaprije and Žirje**

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**ABSTRACT:** The purpose of this study is to determine the levels of satisfaction with various life domains that constitute objective conditions of the quality of island life, and which influence the perception of islanders' personal well-being among the inhabitants of three small islands (Zlarin, Kaprije and Žirje) in Croatia. The obtained results are based on a resident survey (N=141). A quality of life assessment was carried out by recognizing the specificity of an island's surface area and its population (small communities, mostly elderly people), as well as by evaluating choices that respondents perceive to be important for their well-being. Based on applied multivariate analyses, the research suggests that life satisfaction, besides a significant correlation with material status (income), is also greatly affected by the extent of preserved social values, common to the rural communities to which the observed islands belong, such as the closeness of personal relationships (level of acceptance in the local community, solidarity) and the social order maintained through informal control (which provides a sense of security). Both islanders who have never lived off their island, as well as returnees and in-migrants, positively value the way of life in island communities.

*Keywords:* assessment of life satisfaction, Croatia, Kaprije, quality of life, Šibenik archipelago, small island communities, Zlarin, Žirje

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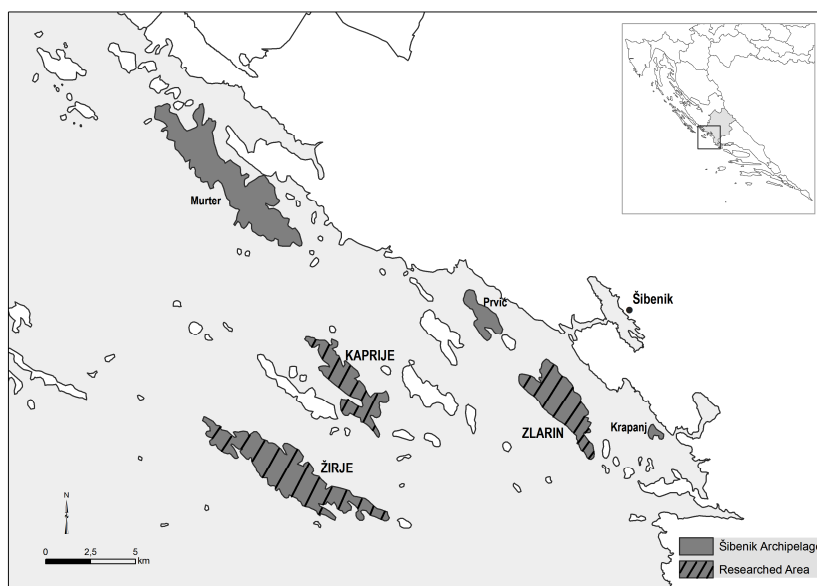
### **Introduction**

A quality of life assessment of small island inhabitants has often been approached by analysing levels of their social, economic and cultural isolation, determined primarily by their geographical position: a sea-bounded landscape (Barrowclough, 2010, p. 28). However, construction of modern infrastructure (communal utilities, transport, telecommunications) and development of new technologies in recent decades have reduced the effects of the limiting

dimensions of islandness<sup>1</sup>, improving connections between island and mainland at multiple levels (in terms of increased accessibility of goods, services, and institutional services from the mainland, as well as education and work opportunities), and a variety of shared services (such as health care). The experience of long-term and circular migration of island populations (Byron, 1999; King, 2009; Baldacchino, 2011, p. 7) and the rapid development of tourism (Baldacchino, 2013, p. 15) have also contributed to the decrease of differences between the lifestyle of islanders (whether indigenous or in-migrants) and mainland populations (Apostolopoulous & Gayle, 2002). Still, island life, especially for residents on small islands, retains some characteristics that affect the overall quality of their lives. What is it that still shapes the specificity of the lifestyle of island populations, their customs and basic social values, asks Françoise Péron (2004, pp. 328-30),

How does one explain the fact that this enduring distinctiveness of small islands is still so powerful and obvious that it easily confers an original identity to those who live there, emanate from there, or even just go there frequently?

**Figure 1. Map of inhabited islands in the Šibenik archipelago, Croatia.**



Source: Original drawing done in ArcView. © 2015: the authors.

### **This study**

The extent to which inhabitants of small Croatian islands are satisfied with the quality of their lives, especially with some of their dimensions, is the theme of this study. This study analyses quality of life satisfaction on three of the islands in the Šibenik archipelago: Zlarin, Kaprije

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<sup>1</sup> Islandness is a complex construct determined by physical characteristics of an island area, island's position in relation to mainland, economic development, level of the peripherality experience, intensity of ties with local customs and culture, i.e., existence of *island identity* (Marshall, 1999, p. 96; Baldacchino, 2004a, pp. 272-4).

and Žirje (Figure 1)<sup>2</sup>. The three selected islands are examples of coastal, channel and offshore islands respectively. Zlarin, a coastal island, is closest to the mainland, at 6.5 km. Kaprije is 15 km away from the mainland and, by its location relative to the other two islands, is an example of a channel island; Žirje, at 20.4 km away from the city of Šibenik, is an example of an offshore island. All analysed islands have only one settlement.

Attention will focus both on each island as a single research unit as well as on what is common or specific to the archipelago as an entity<sup>3</sup>. Besides the standard observation of the impact of sea, which presents to an island's population both a physical and a psychological barrier that determines their daily living, and the analysis of the level of inter-island interaction and/or isolation of islands in relation to the mainland in various areas of life (King, 2009, pp. 56-9), scientists have lately also argued in favour of the so-called archipelago concept (Stratford, Baldacchino, McMahon, Farbotko & Harwood, 2011, pp. 114-7). This approach seeks to broaden the analysis of the mentioned binary relationships (island – sea and island – mainland) through exploration of interconnectedness *among* islands within an archipelago, with which they share common natural capital (climate, soil, vegetation), as well as history, tradition, culture, and economic constraints.

Two basic concepts will be used in this study: the size of an island and quality of life. From the global perspective, all Croatian islands are small and sparsely populated: they count fewer residents and cover a smaller land area with respect to the “artificial distinctions” attributed to small islands (King, 1993)<sup>4</sup>. Croatian islands are categorized according to different parameters, so the notion of island size is uneven. Lajić and Mišetić (2006, pp. 21-4) classify the islands in four categories in regard to the number of the inhabitants: very small islands (below 50 inhabitants), small islands (51–250 inhabitants), medium (251–3,000 inhabitants) and big islands (3,000 and more inhabitants). Thus, Kaprije (189 inhabitants) and Žirje (103 inhabitants), which are the subjects of the present study, according to these criteria, are small islands; while Zlarin (284 inhabitants) is a medium sized one. On the other hand, Žirje is a medium sized island according to its surface area (Zimmermann, 1997, p. 78); whereas Zlarin and Kaprije are small islands. Lastly, in relation to the indentation of their coasts, all three cases included in this study are small islands (Rubić, 1952, pp. 13-5). In this paper, we relate the size of an island to the smallness of its community.

Looking at the specific geographic, demographic, economic and/or social reality of each island individually, and also at the group of islands to which they belong, suggests that the analysis of differences/similarities in the way of life of their communities cannot be based

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<sup>2</sup> Šibenik archipelago consists of six inhabited islands (see Figure 1), of which the island of Murter was not even considered for the research because it is connected to the mainland by a bridge. The original research also included the two remaining islands of Prvić and Krapanj; these were excluded from this analysis. Krapanj is only 300 meters away from the mainland settlement of Brodarica and is connected to it by 15 ferry crossings daily. Prvić is one nautical mile away from the mainland resort of Vodice. The inhabitants of both islands often use private boats to get to and from the mainland. In addition, Prvić is the only island in the Šibenik archipelago that has two settlements.

<sup>3</sup> In the Croatian part of the Adriatic Sea, there are 1,246 islands, islets and rocks, covering a total surface area of 3,256 km<sup>2</sup> (Duplančić Leder, Ujević & Čala, 2004). The 2011 census registered 124,955 residents on 47 inhabited islands. The largest in population is Krk (19,383 residents); the smallest is Male Srakane (2 residents).

<sup>4</sup> For Beller (1986), a small island has a land area of less than 10,000 km<sup>2</sup> and a resident population of up to 500,000.

on a single criterion. This is particularly important because, in terms of the whole Croatian archipelago, island divisions are based on the differences of small numbers: from a few dozen to a few hundred inhabitants, or from a few kilometres to tens of kilometres of surface area.

Thus, when considering the quality of life of an island's population, other indicators need to be taken into account apart from size<sup>5</sup>. These include the remoteness of an island from the mainland and from other islands as well as the quality of their interconnections, the level of economic development, the (non)availability of educational facilities for pre-school and school-age children, the level of health and social welfare services, and the quality of social interactions (interactions among islanders, and between islanders and newcomers). These elements significantly outweigh differences in lifestyle determined solely by an island's size, by greatly influencing the daily dynamics of communities, be it of very small, small, and/or medium-sized Croatian islands (Podgorelec & Klempić Bogadi, 2013, p. 14). Zlarin, Kaprije and Žirje belong to the same archipelago, share the city of Šibenik as their economic, educational, cultural and administrative focus, and do not differ significantly in their size or number of inhabitants. They also share common historical experiences, a similar economic and social status, and they can all be defined as rural. Their populations will therefore be considered as comparable small island communities.

Quality of life, as the second basic concept in this study, is analysed as a multi-dimensional concept that researchers interpret as depending upon objective conditions (such as health, material status, productivity, security) and subjective dimensions, specifically, levels of satisfaction with various life domains and a sense of personal integrity (Hughes, 1990; Cummins, 2001), i.e., either of single individuals or specific groups within a society whose quality of life is being measured (Georg & Bearon, 1980; Leidy & Hasse, 1999; Rapley, 2003). Individuals attach various degrees of importance to specific areas of their life, so that Bowling and Windsor (2001, p. 55) claim that the quality of life "could arguably be defined in terms of what one has lost, or lacks, rather than what one has". After all, the population of Croatian islands, similar to the islands off the Irish coast (Royle, 2007), has for the last century witnessed extensive (and especially youth) out-migration<sup>6</sup> (Lajić & Mišetić, 2013), economic

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<sup>5</sup> E.g. A physical quality of life index has been used to evaluate the social and physical attributes of Indian Ocean small island societies (Davis, 1986); "[i]n terms of advantages of living on Bruny, the top responses were the environment, relaxed lifestyle, supportive community, and isolation (these are commonly identified as appealing features of islands)" (Jackson, 2006, pp. 215-6); "... the most important factors for the overall performance of the [Canary islands] archipelago are ... : living conditions, commuting time, average educational level and unemployment" (Martin & Mendoza, 2013, p. 351). While some of these studies focus on specific approaches to QOL (e.g. Davis, 1986, on physical quality of life index; Martin & Mendoza, 2013, on data envelopment analysis; Jackson, 2006, on relative livability of the islands), their results can be used to compare perceptions of the quality of island life (QOIL).

<sup>6</sup> A significant factor is the negative natural change that occurred in the 1960s with the intensive and long-term exodus of people of fertility age (Lajić, 1992). Such emigration is mostly driven by the economic underdevelopment of the islands, the collapse of specific agricultural cultures (like the vine and wine industry) which were once the foundation of agricultural production, the demise of the shipping industry, maritime affairs, fishing and some other specific activities such as coral harvesting on Zlarin. Moreover, in the socialist period after the 2nd World War (1945-1990), state policies which encouraged industrial development on the mainland affected the employment and settlement of many islanders who were forced to move to cities and by doing so "emptied" most of the smallest islands. As one Zlarin respondent concluded: "Cities have sunk the islands". Besides economic factors, different socio-cultural elements of islandness (such as tranquillity and traditional culture) affect decisions to move; they act as push factors to young islanders. On the other hand, these same factors become pull factors amongst older age groups and affect the decision of non-islanders or emigrated

backwardness (Lajić, 1997), and population ageing (Nejašmić, 2013).<sup>7</sup> In recent decades, retirement in-migration to Croatian islands also significantly contributes to the overall ageing of their populations (Podgorelec & Klempić Bogadi, 2013; Bara, 2014). Therefore, a substantial part of the objective conditions of an island's community life today should be evaluated through the prism of specific (population) losses and/or (infrastructure) deficiencies. For example, on (especially small) islands, there are fewer children, less young and labour-active people, a lack of job opportunities, an inadequate infrastructure for a modern family life in many ways (a diminishing number of schools, and other children's facilities, and low health care quality), a shortage of artisans, and fewer shops, stores and entertainment options.

While statistics indicate some demographic growth<sup>8</sup> of Croatian island populations in the last three censuses (1991, 2001, and 2011), the population is ageing. This is particularly pronounced on small islands where, in 2011, the average age was 55.4 years (Lajić & Mišetić, 2013). On Šibenik's islands, most of the population is over 60 years of age (51.5%), of which 9.9% is aged 80 or more. Such an age structure considerably affects all areas of island life.

In view of the prevailing elderly population in small island communities, measurement of their quality of life should be based on definitions that, to a degree, take into account the specific needs of elderly people.

Therefore, quality of life assessments of residents on selected small islands have been made using definitions of quality of life, taking into consideration both the specificity of an area and its population (Podgorelec, 2008) as well as by evaluating choices that respondents perceive to be important to their well-being (Klempić Bogadi & Podgorelec, 2013)<sup>9</sup>. According to Bowling (2005, p. 232), quality of life is,

a multi-level and amorphous concept, broadly defined as encompassing an individual's perceptions and his/her satisfaction with physical health, psychological well-being, independence, social relationships, social and material circumstances, and natural and built environments; ultimately dependent on perceptions of an individual.

It is thus a question of mutually interconnected, objectively accepted standards in various areas of life and the subjective perceptions of an individual's satisfaction with life. Goode (1994, p. 148) suggests that,

QOL [quality of life] is experienced when a person's basic needs are met and when he or she has the opportunity to pursue and achieve goals in major life settings... The QOL of an individual is intrinsically related to the QOL of other persons in his or her

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islanders to move (back) to the islands. The return of many emigrated islanders after retirement is however also defined by the economic necessity to leave the house/apartment on the mainland to their grown-up children and the possibility of supplementing any income via island agriculture (Connell & King, 1999; Podgorelec, 2008).

<sup>7</sup> The least favourable is the situation of population ageing on small islands (like the ones in Šibenik's archipelago) which are spaces of demographic extinction, sometimes resulting in total depopulation.

<sup>8</sup> The fictitious demographic growth is a consequence of including inhabitants who live only a part of the year on the islands in the census data: mainly emigrated islanders and owners of vacation homes. Research on Šibenik's islands has shown that some 30% of their registered inhabitants are effectively part-time residents (Podgorelec & Klempić Bogadi, 2013).

<sup>9</sup> The residents of Šibenik islands almost identically rank the positive factors of island life (Podgorelec & Klempić Bogadi, 2013, pp.111-2) as do the residents of small Atlantic islands (Royle, 1992, pp. 35-6): 1. peace, 2. community closeness, 3. quality of environment, 4. freedom and security, and 5. ways of life in general.

environment [...] and [...] the QOL of a person reflects the cultural heritage of the person and those who surround him or her.

An individual's basic needs form the basis of his/her life, and the quality of his/her life depends upon the extent to which these needs are fulfilled. Given that the focus of this study is island communities, the analysis of research results needs to focus on the specific elements that determine daily island life at all levels. These include transport and communication connections of an island to the mainland and other islands, as well as the migration experience (Podgorelec, 2008, p. 57).

## **Methods**

The purpose of this study is to determine the levels of subjective satisfaction with various life domains (selected objective conditions) and to analyse their connection to the perception of island's quality of life and personal well-being among the inhabitants of three small islands: Zlarin, Kaprije and Žirje. Analyses are based on the data collected from the surveyed island residents, selected on account of their similarities (such as demographic structure and economic development) but also of their differences (such as an island's distance from the mainland, its transport services, and health care quality).

### *Participants*

The survey was conducted between February and April 2011. A personal interview survey method was applied: the researchers administered a questionnaire face-to-face in the participants' households. The participants were selected by combining the methods of intentional and non-proportional quota sampling. Namely, the sample consists of three sub-samples of respondents from the three selected islands. The number of participants included in each sub-sample, depended upon the number of inhabitants of each island, with intention to encompass, in an approximate ratio, all adult age groups represented in the population. Such a method of sampling resulted in a total of 141 respondents (68 respondents from Zlarin, 39 from Kaprije, and 34 from Žirje<sup>10</sup>), of which almost 70% consider themselves to be islanders<sup>11</sup>. The sample evenly represents male (51.1%) and female respondents (48.9%). The respondents' age ranges from 19 to 91; the mean age being 56 years and median age being 60. The average age of the respondents in the sample is slightly higher than the population average age of all Croatian small islands, obtained by the 2011 Census (55.4 years).

A significant proportion of participants falls within the 60-69 and 70-79 age range (22.7% and 20.6% respectively). Almost two thirds of the participants (61.7%) are married or living with a partner, although there were a significant number of widowers/widows (15.6%). Half of the surveyed participants (50.4%) were pensioners.

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<sup>10</sup> An exception was made in defining the sample in the case of a tiny population of Žirje, where the deviation of the sample size from proportions according to the data established by the 2001 census is related to the time when the research was conducted (Podgorelec & Klempić Bogadi, 2013).

<sup>11</sup> This category refers to the respondents born on the island, who never left the island on which they live, or who returned to it after some time living elsewhere.

### *Measures*

The survey contained some one hundred questions, divided into thematic groups, such as satisfaction with life in general, health, sense of safety, environment, public transport, lifestyle, migration history, and other aspects of small island life (Podgorelec & Klempić Bogadi, 2013). The following briefly describes the variables used in the analysis of the research.

Satisfaction with life as a subjective dimension of the quality of life of the surveyed population was analysed by measuring three main domains, using three instruments. The first instrument, consisting of six items (applying an ordinal five-point scale, whereby a higher value implied a higher degree of satisfaction), measured how satisfied each respondent was with the environment in which he/she lives, by answering questions assessing the degree of satisfaction with personal safety, transport infrastructure, use of leisure time, and with life in general. The second instrument, also consisting of six items, examined each respondent's satisfaction with the quality of his/her social (interpersonal) relations (Lučev & Tadinac, 2010). Using the same scale of responses, respondents assessed the satisfaction of their relationships with partners, parents, children, friends, neighbours, and people in general. The third instrument, made up of five items, measured a respondent's level of health satisfaction (health in general, physical status, level of energy, resilience to diseases, moods). Responses to these items were measured by the same five-point scale of responses as in the previous instruments (Lučev & Tadinac, 2010).

The overall assessment of the quality of life was examined using a five-point scale, from very poor (score 1) to excellent (score 5). Respondents were requested to compare the quality of island life with the quality of mainland life (answer scale: 1 – on island, people live much better than on mainland; 5 – on island, people live much worse than on mainland).

As independent and contextual variables, the study employed some assigned demographic characteristics, such as the island on which respondents live as well as respondents' migrant status, defined by the three categories of residing on an island: 1) islander (a person who has not left the island for any significant period of time) – 15% of respondents; 2) returnee (54% of respondents), and 3) in-migrant, mostly from other parts of Croatia (31%). Other variables taken into account may influence feelings of satisfaction and the quality of life, such as the state of one's health, feeling of safety, trust in neighbours, acceptance in the place of one's residence, importance attached to an islander's identity, and some inklings of socio-economic status (average monthly household income and the assessment of its sufficiency).

Table 1 shows that, in general, respondents claim to have no health problems (59%). A very high percentage of them feel safe on their island (92%), have a high degree of trust in their neighbours (93%), and feel accepted in their island community (85.5%)<sup>12</sup>. Almost 60% of respondents perceive island identity as important. On the other hand, a distinct characteristic of the surveyed population is that their monthly income falls into the lower-income bracket: the monthly income of 39% of respondents was less than US\$600. A higher proportion of respondents (47%) consider their monthly budget insufficient to cover their basic monthly expenses.

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<sup>12</sup> Regardless of the migration experience, there is no statistically significant difference in the degree of acceptance between the responses of islanders and responses of in-migrants.



**Table 1: Description of independent and contextual variables.**

	N	%
<b>1. PREVALENCE OF HEALTH PROBLEMS</b>		
I have no complaints	83	58.9
I have occasional problems	14	9.9
I have moderate discomforts	22	15.6
I have considerable problems	17	12.1
I have very big problems	5	3.5
<b>2. SENSE OF SECURITY</b>		
I mostly feel safe	130	92.2
I sometime feel unsafe	10	7.1
I often feel unsafe	1	0.7
<b>3. LEVEL OF TRUST IN NEIGHBOURS</b>		
I fully trust	83	58.9
I mainly trust	48	34
I rarely trust	9	6.4
I have no trust	1	0.7
<b>4. IMPORTANCE OF ISLAND'S IDENTITY</b>		
Extremely important to feel part of the community	46	32.6
Very important	39	27.7
Slightly important	18	12.8
Not important at all to feel part of the community	21	14.9
<b>5. ACCEPTANCE IN THE PLACE OF RESIDENCE</b>		
I feel fully accepted	91	64.5
I feel mostly accepted	31	22
I feel somewhat accepted	12	8.5
I mostly don't feel accepted	6	4.3
I don't feel accepted at all	1	0.7
<b>6. AVERAGE MONTHLY HOUSEHOLD INCOME*</b>		
Up to 300 \$	21	14.9
301 \$ to 600 \$	34	24.1
601 \$ to 900 \$	42	29.8
901 \$ to 1200 \$	15	10.6
1201 \$ to 1500 \$	15	10.6
More than 1500 \$	13	9.2
<b>7. SUFFICIENCY ASSESSMENT OF MONTHLY INCOME</b>		
More than enough	9	6.4
Sufficient	66	46.8
Not always sufficient	43	30.5
Absolutely insufficient	23	16.3

\* National currency (HRK) was used in the applied questionnaire.

Statistical methods, used to analyse the data, varied from multivariate analyses, such as factor analysis in determining the dimensionality of life satisfaction, to regression analysis, used to verify the effects of contextual variables in respect to satisfaction and quality of life. Bivariate analyses, such as analyses of variance and  $\chi^2$  tests, were also employed.

## Results and Discussion

### *Dimensions of life satisfaction and assessment of quality of life*

In order to verify the structure and dimensionality of various aspects of life satisfaction, a factor analysis under the component model with GK criterion extraction factor, and varimax rotation was applied on the data from the three instruments. Three factor analyses were

conducted (for each instrument separately) after the conditions for conducting factor analysis were checked and proved to be satisfactory<sup>13</sup>.

Table 2 shows the results of the factor analysis. For better comparability, all derived dimensions are named in accordance with published research on the quality of life in island communities (Levangie, Novaczek, Enman, MacKay & Clough, 2009).<sup>14</sup> The items from the first instrument, related to the satisfaction with the environment in which a respondent lives, form two dimensions and explain 58% of the instrument's variance.

The first dimension gathers data related to satisfaction with transport facilities and with one's own safety, and is defined as satisfaction with infrastructure and services within a community (*Community services and infrastructure*, cf. Levangie et al., 2009). It is expected that people's satisfaction with transport facilities is linked to the distance of their island from the mainland and/or from the centre towards which the island gravitates, as well as with the quality of transport connections, i.e., with the type of marine public transport (ferry, ship, catamaran), with the frequency of daily connections between the islands within an archipelago, and between an island and mainland throughout the year, but especially out of the tourist season. The three selected islands differ in terms of distance from the mainland hub of the archipelago (the city of Šibenik), and in terms of the quality of transport connections<sup>15</sup>.

Results show that variations in the frequency of connections of each island with its urban hub (and between islands), have no bearing on the degree of respondent satisfaction<sup>16</sup>. However, younger respondents tend to complain about the lack of an evening connection<sup>17</sup> between Zlarin (the island closest to the mainland) and Šibenik. Most respondents, regardless of age, gender or island home, express a need for a Sunday evening transport to Šibenik, where many islanders, who today live on the mainland, return after spending their weekend on an island<sup>18</sup>.

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<sup>13</sup> Factor analysis 1: KMO=0.545; Bartlett's test of sphericity=213.7; p=0.000. Factor analysis 2: KMO=0.561; Bartlett's test of sphericity=49.7; p=0.000. Factor analysis 3: KMO=0.864; Bartlett's test of sphericity=410.5; p=0.000.

<sup>14</sup> Levangie et al. (2009) developed these dimensions to describe the quality of life mostly in rural island communities. The Croatian islands share similar features: small places with lower human density, agriculture as dominant economic activity, geographic and social peripherality and the specific perception of community (Brown & Schaft, 2011, pp. 4-7).

<sup>15</sup> In the period beyond the tourist season, which is a more precise indicator of peoples' quality of life than during the short summer months (when connections are more frequent), all three islands are connected to the city of Šibenik with only one ferry a day, except on Mondays, Saturdays and Sundays (twice a day). Zlarin is also connected to Šibenik, and with nearby Prvić and Vodice, four times a day by a ship-liner; while Kaprije and Žirje are linked with Šibenik (and with each other) five days a week by two vessels (but one only on Wednesdays and Saturdays).

<sup>16</sup> Analysis of variance showed that there are no differences between respondents from different islands, as measured by the organization of transport to the mainland during the tourist season (F=3.066; p=0.050), and by the organization of transport out of the tourist season (F=3.020; p=0.052).

<sup>17</sup> An evening connection would allow islanders to visit cultural and sporting events in the city, and provide Šibenik's citizens with an evening outing on Zlarin. Travel between Zlarin and Šibenik takes 20 minutes by ship.

<sup>18</sup> Studies on quality of life satisfaction among island emigrants (Podgorelec, 2008; Podgorelec & Klempić Bogadi, 2013) confirm their satisfaction with those aspects of island life which mark the lifestyle of island populations as special (ecological values: Mediterranean climate and vegetation, attractive coastal zone; authenticity; preservation of traditional architecture and culture; peaceful and relaxed way of life; "togetherness" of community). Many who have emigrated to other Croatian mainland cities and settlements gladly and regularly visit the islands during weekends or holidays.

**Table 2: Results of the factor analysis**

		<b>Factor</b>	
<b>INSTRUMENT I - Environment</b>		<b>1</b>	<b>2</b>
<b>Dimension 1</b> Satisfaction with infrastructure and services in the community	Satisfaction with the organisation of transport to the mainland outside the tourist season	0.931	0.154
	Satisfaction with the organisation of transport to the mainland during the tourist season	0.927	0.140
	Satisfaction with personal safety	-0.442	0.280
<b>Dimension 2</b> Satisfaction with the community	Satisfaction with life in general		0.721
	Satisfaction with the community in which one lives	0.102	0.674
	Satisfaction with the ways of spending leisure time		0.653
57.7% explained variance			
<b>INSTRUMENT II – Interpersonal relationships</b>		<b>3</b>	<b>4</b>
<b>Dimension 1</b> Satisfaction with interpersonal relations	Satisfaction with relationship with friends	0.914	
	Satisfaction with other people in general	0.793	0.244
	Satisfaction with relationship with children	0.784	-0.218
<b>Dimension 2</b> Satisfaction with mostly non-existent interpersonal relations	Satisfaction with relationship with co-workers		0.840
	Satisfaction with relationship with partner		0.782
	Satisfaction with relationship with parents	0.299	0.729
69% explained variance			
<b>INSTRUMENT III – Health</b>		<b>5</b>	
<b>Dimension 1</b> Satisfaction with one's well-being and health	Satisfaction with energy level	0.879	
	Satisfaction with resilience to illnesses	0.869	
	Satisfaction with health condition in general	0.862	
	Satisfaction with body's (physical) mobility	0.845	
	Satisfaction with moods	0.772	
71.6% explained variance			

The negative sign of the factor loading for safety satisfaction (Table 2) suggests that a better connection to the mainland is associated with a greater sense of insecurity. Even though quite unexpected, this result suggests that a better connectivity to the mainland introduces new challenges to islanders (meaning that more people could come to the island and possibly threaten them). However, respondents in general explain their satisfaction with personal safety as follows: there is no crime on the island, they are small communities where everyone knows each other, there is strong bonding among people and strong social control: whoever is on the island is known at any time, there is a high level of social support, but also an absence of privacy. Thus, when it comes to the feeling of *safety*, respondents equally positively evaluate physical security (“there is no theft or any other form of crime”, “we don’t lock at night”) and

emotional security (mutual closeness ensures any needed help<sup>19</sup>, and care). The high levels of physical and emotional security were also confirmed by some previous field studies conducted on Šibenik's islands (Lajić, Podgorelec & Babić, 2001), on Zadar's (Babić, Lajić & Podgorelec, 2004), and on Kvarner's islands (Podgorelec, 2008).

The second dimension, which is composed of life satisfaction in general, satisfaction with the community and with the way of spending leisure time, is called community social well-being (*Community social wellbeing*, cf. Levangie et al., 2009), and is an important dimension of the quality of life, especially in small communities with a high average population age (Bowling & Gabriel, 2007, pp. 836-7).

Respondents often estimate satisfaction with their community as the most important aspect<sup>20</sup> of satisfaction with life on small islands, equally so with young and old, men and women, islanders and in-migrants (Podgorelec, 2008; Levangie et al., 2009). In some research on the quality of island life (Randall et al. 2014), social aspects (such as sense of belonging, mutual support and sense of place) are especially valued, with no differences between island-born residents and in-migrants<sup>21</sup>.

Positively evaluated aspects of the neighbourhood (Jackson, 2006, p. 209; Yamauchi, Midorikawa, Hagihara & Sasaki, 2007, p. 31) significantly contribute to perceived quality of life and life satisfaction as well as does the relevance of so-called third places<sup>22</sup> (Gardner, 2011, pp. 263-5), informal public spaces that play a considerable role in the structure and preservation of social networks. Almost 30% of answers to the questions: *what do respondents mostly value in the way of life of an island community*, and *what contributes most to the personal quality of life*, included various forms of companionship and social support.

The second instrument intended to measure the degree of satisfaction with interpersonal relationships consists of two independent dimensions that explain 69% of the variance of the instrument. The first dimension relates to the satisfaction with one's relationship with friends, children and people in general, while the other dimension assesses satisfaction with co-workers, partners and parents. Though it was expected that all questions employed by this instrument would measure a single dimension of positive interpersonal relations (*Positive social relations*, cf. Levangie et al., 2009), they were found to measure two different dimensions for the following reasons: 1) it is very likely that relations with parents, colleagues and partners no longer exist, given that only 34% of respondents were employed, and assuming that others have no work associates or broke off their relations after retirement

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<sup>19</sup> Respondents explain: "our lives revolve around each other", and "we all take care of each other".

<sup>20</sup> A representative sample of the Croatian population also confirmed that respondents, regardless of their age, were most satisfied with their relationships with family and friends, and with the level of acceptance in their community (Kaliterna & Burusic, 2014, pp. 252-3).

<sup>21</sup> Baldacchino "argues that small island societies may be wonderful place to live in, *but only as long as one conforms to the dominant culture*" (2012, p. 109). That argument has been confirmed in some previous quality of life studies on different Croatian archipelagos (Podgorelec, 2008; Podgorelec & Klempić Bogadi, 2013) without differences according to the island status or particularly to the size of an island.

<sup>22</sup> These are public sites (outside home and workplace) where residents meet and talk in a relaxed atmosphere, ranging from informal gatherings to formal participation in different societies or activities with an aim to improve the quality of life of a local community. On the Šibenik islands, these places are mainly shops, churches, retirement clubs, folklore societies, local inn(s), port-sites. Given the average age of respondents (as well as of the total population of the surveyed islands) and among them a small number of employees (approximately only one third), the degree of involvement in events in these public areas significantly affects an individual's level of satisfaction as it confirms a feeling of being accepted in the community.

and relocation/return on the island, and 2) considering that the surveyed population is an elderly one (60 years of median age), it is presumed that their parents in most cases are no longer alive and, therefore, contact with them is not possible<sup>23</sup>, and about 40% of respondents stated that they have no partners (not married, divorced, widowers/widows). For the above reasons, it was decided that in further analyses only the first dimension of satisfaction with interpersonal relations was to be taken into account<sup>24</sup>. The dimension of satisfaction with interpersonal relations<sup>25</sup>, which includes relationships with family members and friends, is highly ranked in QOL studies on small islands in Croatia (Babić et al., 2004; Kaliterna & Burusic, 2014; Podgorelec & Klempić Bogadi, 2013), and elsewhere (Jackson, 2006; Levangie et al., 2009; King, 2009; Randall et. al., 2014), especially among the elderly (Wilhelmson, Andersson, Waern & Allebeck, 2005; Yamauchi, Midorikawa, Hagihara Sasaki, 2007; Podgorelec, 2008). In most studies, social relations with partners, children and friends were more important than health, functional abilities or material concerns.

The last dimension, derived from the third instrument, is satisfaction with one's well-being and health (*Personal wellbeing*, cf. Levangie et al., 2009) includes all the items of the last instrument and explains 72% of its variance. The questions measure health satisfaction in general, energy level, resilience to diseases, physical mobility and mood.

According to the obtained dimensions, four composite variables were constructed: 1) satisfaction with the infrastructure and services in the community; 2) satisfaction with the community; 3) satisfaction with interpersonal relations, and 4) satisfaction with one's own well-being and health. In further analyses, the above variables are treated as potential predictors of the overall quality of life, and also as dependent variables, predicted by the selected environmental factors.

Results suggest that the majority of respondents (76%) evaluate their quality of life as good or excellent. Only 3.5% of the respondents consider their life quality as very poor or poor. To determine the relationship of life satisfaction with quality of life, a multiple regression analysis was employed, using the life satisfaction measures as independent variables, and the assessment of life quality as the dependent variable. Although the model explains 22% of the variance ( $R^2=21.9$ ;  $F=9.402$ ;  $p=0.000$ ), the only statistically significant predictor was the dimension of satisfaction with the community in which respondents live ( $\beta=0.409$ ,  $p=0.000$ ), where a higher level of satisfaction with the community is reflected in the perception of a better quality of life as well.

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<sup>23</sup> In answering the question about the importance of relationship to their parents, 53% of respondents indicated that this type of relationship is not applicable to them.

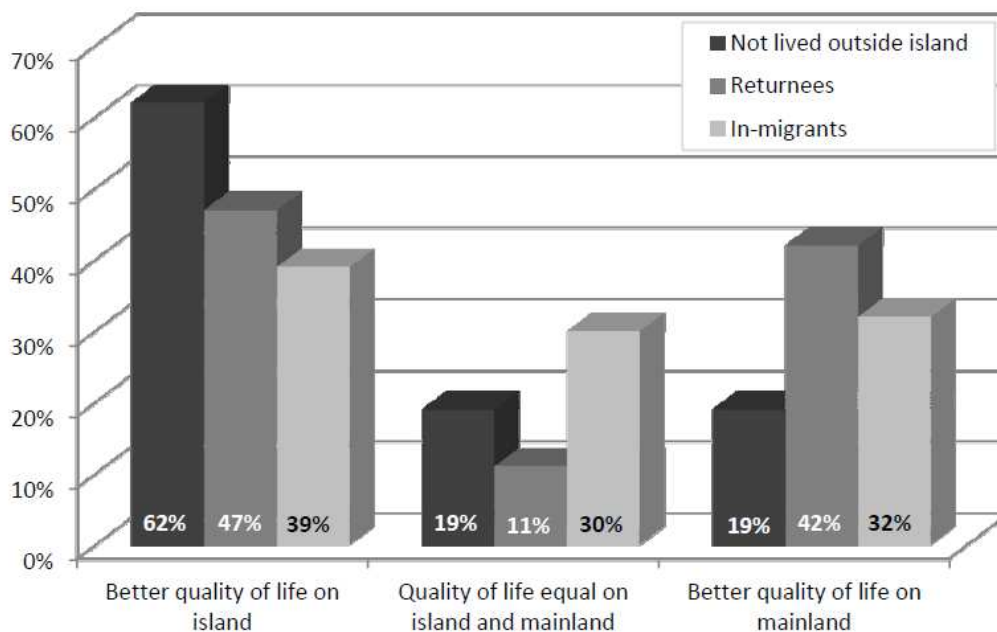
<sup>24</sup> Correlations of this indicator are tested using questions that examine the importance of relationships with categories of people like partners, siblings, neighbours, and children. Statistically significant, moderate to medium-high positive correlations (ranging from 0.223 to 0.390) suggest that the respondents whose relationships with their siblings, children, grandchildren, friends, neighbours and relatives are important are, in general, more satisfied with their social and interpersonal relations.

<sup>25</sup> Studies on quality of life of small island populations suggest that “[s]mall scale social structures [as small communities on Sibenik’s archipelago] are personalistic and informal; the overall pattern of social interaction is more cooperative”... (Ott, 2000, in: Baldacchino, 2012, p. 107), and “small size may be associated with greater solidarity and equality...” (Clark, 2009, p. 607).

Comparison of the quality of life on islands versus the mainland

To determine the quality of life on an island, perceptions of its quality of life were compared to those on the mainland. Slightly less than half the respondents (46.8%)<sup>26</sup> considered that island people live much better, or to some degree better, than those on the mainland. About 18% of respondents made no difference, while the remaining (35.5%) felt that people on an island live worse or much worse than those on the mainland. Responses from “true” islanders, those who had never lived off the island, were separated from responses from returnees and in-migrants (Figure 2).

**Figure 2: Comparison of the quality of life on an island and the mainland according to respondents’ island status.**



The  $\chi^2$  test was applied to analyse the differences between groups of respondents. Statistically significant  $\chi^2$  suggest differences in the assessment of the quality of island life and that on the mainland, among various categories of respondents.<sup>27</sup> Thus, returnees considered life on an island (47%) and life on the mainland (42%) as fairly equally attractive. Sixty-two percent of the islanders who have never lived off their island, consider life on an island as better. Fewer in-migrants regarded life on an island as preferable (38%).

<sup>26</sup> In a study conducted on Zadar’s islands in 2001, on a sample of the population aged 60 years and over, the obtained results in assessing the quality of life of islanders and their peers on the mainland were very similar. Almost identical percentage of respondents – 46.7%, answered that older islanders live better than older people in other parts of the country, slightly over a quarter (27.3%) estimated that both categories live equally well, and roughly a quarter (26%) were of the opinion that elsewhere people live better (Podgorelec, 2008, p. 236).

<sup>27</sup>  $\chi^2= 10.071$ ,  $df=4$ , ( $p=0.039$ );  $\Phi=0.267$ ( $p=0.039$ ); Cramer’s  $V=0.189$  ( $p=0.039$ ).

Respondents mostly consider life on the mainland as urban. The research on subjective quality of life in rural and urban areas (Best, Cummins & Lo, 2000) does not determine the overall difference in absolute levels of satisfaction between groups of respondents. However, the results of cited studies indicate that urban residents maintain more frequent contact with family and close friends, while rural residents express stronger involvement in their community (sense of belonging and closeness) and more productive behaviours.

Differences in dimensions of life satisfaction, according to the comparison of the quality of life on an island and the mainland, were identified on the basis of the analysis of variance. Categories of respondents, in respect to their evaluation of the quality of life on an island and the mainland, differ significantly only in the dimension of satisfaction with interpersonal relationships: with friends, children and residents in general ( $F=4.482$ ;  $p=0.013$ ), where respondents, who prefer the quality of life on an island are also more satisfied with their relationships from those who do not think that there is any difference in the quality of life between island and mainland. Differences were also obtained in the evaluation of the overall quality of life ( $F=5.316$ ;  $p=0.006$ ), where respondents, who estimated the quality of life on an island better than on the mainland, are, on average, also more satisfied with their overall quality of life.

*Respondent characteristics that significantly affect their life satisfaction and their perception of the quality of life*

The last series of analyses identifies the particular characteristics of respondents that may influence their level of satisfaction with various aspects of life and its quality. First, using analysis of variance, respondents' differences in their average levels of satisfaction and quality of life were analysed with respect to their island status and to the island on which they reside. Results showed that island status and the island on which they lived were not significantly related to any dimension of life satisfaction, nor to the overall assessment of QOL. A statistically significant difference was obtained only in the dimension of satisfaction with interpersonal relationships, with regard to the location of residence ( $F=3.335$ ;  $p=0.039$ ): namely, respondents from Kaprije were, on average, more satisfied with their social relations than those from Žirje.

In assessing other possible factors that may influence the level of satisfaction and the perception of the quality of life, a multiple linear regression<sup>28</sup> was used (Table 3). The factors that were directly related to the observed dependent variables, and were considered indicators in some other studies of island societies, were included as independent variables (Bowling & Windsor, 2001; Stratford, 2005; Levangie et al., 2009; Beech & Murray, 2013; Kaliterna & Burusic, 2014; Randall et al., 2014). Composite variables, measuring dimensions of life satisfaction and evaluating the overall quality of life, were introduced in the models as dependent/criterion variables.

The regression model using the seven predictor variables shown in Table 3, explains best the dimension of satisfaction with one's well-being and health (46%), but is not statistically significant in predicting the dimension of satisfaction with the community. Satisfaction with one's well-being and health is highly correlated to the absence of health

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<sup>28</sup> In conducting regression analyses, the *enter* method was used.

problems<sup>29</sup>. The beta weight of this predictor in model 4 is generally the largest among all observed models, yet significant only in the case of the health satisfaction dimension<sup>30</sup>. Unexpectedly, the other two statistically significant predictors show that respondents who have a higher degree of trust in neighbours, but feel less accepted in the place where they live, are more satisfied with their well-being and health.

**Table 3: Results of the regression analysis.**

Predictor Variables	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>	<i>Model 5</i>
	Satisfaction with infrastructure and services in the community	Satisfaction with the community	Satisfaction with interpersonal relations	Satisfaction with one's well-being and health	Overall quality of life
Prevalence of health problems	-0.051	-0.172	0.091	- <b>0.659***</b>	-0.128
Sense of security	0.148	0.069	<b>-0.258**</b>	0.067	0.097
Level of trust in neighbours	<b>-0.280**</b>	-0.180	-0.059	<b>-0.262**</b>	0.011
Acceptance in the place of residence	-0.018	0.006	<b>-0.309**</b>	<b>0.174*</b>	-0.042
Importance of island's identity	<b>0.221*</b>	-0.113	-0.049	-0.093	0.001
Average monthly household income	<b>0.209*</b>	0.033	0.096	0.058	0.150
Sufficiency assessment of monthly income	0.131	-0.040	0.027	-0.003	<b>-0.282**</b>
	F=3.2 p=0.004 R <sup>2</sup> =0.16	F=1.2 p=0.329 R <sup>2</sup> =0.07	F=4.2 p=0.000 R <sup>2</sup> =0.2	F=13.9 p=0.000 R <sup>2</sup> =0.46	F=3.2 p=0.004 R <sup>2</sup> =0.16

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

The presented set of predictors also explains a significant proportion of the variance of satisfaction dimension with interpersonal relationships (20.3%), where two predictors are statistically relevant: a sense of safety, and acceptance in the place of residence. Respondents who feel generally safe and feel quite accepted in their community are also more satisfied with their social/interpersonal relations.

The independent variables also predict 16% of the variance of each of the last two models (1 and 5). The level of trust in neighbours, the (un)importance of an island's identity,

<sup>29</sup> All three islands have equally modest medical equipment; a full day nursing service and a family physician at the medical centre in Šibenik. However, the doctor visits Zlarin four times a week, Kaprije once a week, and Žirje only four to five times a year, and that only during the tourist season. Such large differences in access to health care are partly a function of inadequate transport connections of Kaprije and Žirje with Šibenik; and as also suggested by results of other studies (Baldacchino, 2014b).

<sup>30</sup> Research on a sample of the total Croatian population (Kaliterna & Burusic, 2014, p. 253), which is particularly interesting when compared to the findings of this study, noting the advanced average age of the small Croatian islands populations, showed that, with age, the biggest decline in the domains of personal satisfactions was, as expected, the decline in health satisfaction.



and the average monthly household income were all significant predictors of satisfaction with infrastructure and community services. The obtained results show that respondents with a higher degree of trust in their neighbours, who consider island identity as less important, and those with higher monthly household incomes, are more satisfied with the infrastructure and the general level of safety on their island. On the other hand, having a monthly income sufficient to cover the basic costs of living was the only variable significantly related to the overall quality of life. Nearly half the respondents consider their incomes to be insufficient to meet all their needs, and many receive neither salary (56%) nor pension (37%). As confirmed by other QOL studies of the Croatian population (Kaliterna Lipovčan, Babarović, Brajša-Žganec, Bejaković & Japac, 2014; Kaliterna & Burusic, 2014), respondents who cannot meet their basic living expenses estimate their quality of life as being worse than those materially better-off.

## **Conclusion**

The results obtained through this research study on three of the islands in the Šibenik archipelago of Croatia suggest that satisfaction with island life and the assessment of its quality are not directly related to the size of an island (community), but to limitations of its natural and economic resources, the extent of transport connections to the mainland and to other islands, the migration experience, the history of their communities, and the proportion of elderly citizens in their populations.

Although the analysis of QOL satisfaction was also individually investigated for each island, the present research has not confirmed any significant differences in the assessments of inhabitants with regard to a particular island. Thus, it is justified to observe satisfaction with the quality of life at the level of the archipelago to which the studied islands belong.

The research confirmed that life satisfaction is significantly related to material status (income), and is also greatly affected by the extent of preserved social values, common to the rural communities of Zlarin, Kaprije and Žirje. These include the closeness of personal relationships (level of acceptance in the local community, solidarity, co-operation) and the social order maintained through informal control (which provides a sense of security). Significant associations were found between life satisfaction and the social network structure, as well as between life satisfaction, personal health and material security in these Croatian island communities with a high average population age. These results are confirmed by earlier studies (Babić et al., 2004; Podgorelec, 2008; Klempić Bogadi & Podgorelec, 2014).

A high level of satisfaction with life on islands compared to life on the mainland, regardless of the migration experience of respondents, confirms that islanders, who have never lived off their island, as well as returnees and in-migrants, positively value the island way of life, and which can be explained by their personal choices to stay, return, or migrate to an island (Randall, 2014, p. 344; Royle, 1992, pp. 35-6). Quite possibly, retired returnees, throughout their working lives, were preparing themselves to return to an island: by making regular visits, fixing their old parents' houses, maintaining close relations with their family members and friends living on the island; while in-migrants, usually through earlier tourist experiences, gradually came to decide to settle permanently on an island.

Finally, it is important that field studies of the objective conditions and subjective assessments of the quality of life of the population on Croatian islands continue, regardless of the size of an island and/or their communities, in order to preserve these highly sensitive demographic and unique social spaces.

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