Chapter 13
Geography and Quality of Life in Argentina. Analysis According to Census Radius (2010)

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Abstract The level of disaggregation of territorial analysis is vital for the evaluation of the quality of life of the population from a geographical perspective. Consequently, the use of counties, districts or communes (525 units) has amply demonstrated its usefulness in overcoming the generalization implied by studies at the provincial level (24 units). On the other hand, the adaptation of the county QLI at census radius (52,408 units) scale shows that the counties, although they are useful, have various degrees of fragmentation within them. This must be taken into account in academic research and in the formulation of public policies. Thus, the radius scale allows observing enclaves of high quality of life in the traditionally neglected regions of

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the country, while in areas with high quality of life, radius with low values are also present. This information would be missing at the county level.

Keywords Quality of life · County and census radius scale · Argentina

13.1 Introduction

Interest in quality of life (QoL) is not new (Lucero et al. 2007). From Aristoteles and Marx to contemporary philosophers, there has been reflection and debate on issues related to happiness, pleasure and health. However, its use and scientific-methodological systematization is recent.

Henao Espinosa (2000) affirmed that, in an embryonic way, the classical economy of the nineteenth century had dedicated some lines to the ambivalent issue of happiness as an expression of the possibility of consuming and having somewhat sumptuous comforts. This came to permeate, broadly speaking, the essence of welfare economics. However, the sketch and the incipient elements of what is understood today by quality of life originate from bourgeois modernity at its peak, liberal in nature, and are limited to typically urban environments.

The notion of QoL began to be included in the language with the ideals of the welfare state, after the Second World War, in a context where reorganization and the restoration of international order prevailed. This state model promoted the increase in the consumption of goods and services with an intense application of Keynesian policies oriented to this end. The justification for its implementation was that, with the increase in the demand for goods, job sources would be expanded or new ones would be generated, guaranteeing full employment and greater consumption to reach a higher standard of living.

But, in the mid-sixties of the twentieth century, the scheme began to manifest its unfeasibility. Indeed, it had been alienating to humans and, in turn, had led to serious environmental damage (Vigil 1994). This is how, faced with the consequences of industrialization, the need to measure this reality through objective data arose. Thus, the detailed study of the construction of social indicators and their dissemination both in the public and academic environments began. The inclusion of the term in the first monographic journal in the USA, Social Indicators Research, in 1974 and in Social Abstracts, in 1979, contributed to its theoretical and methodological diffusion.

According to Chacón (1998), between the end of the seventies and the middle of the eighties of the twentieth century, the studies on QoL went through a stage of disillusionment and disappointment. Along these lines, Leva (2005) warned that the development and improvement of objective indicators provoked the process of differentiation between these and the quality of life. The expression begins to be defined, therefore, as an integrative (multidimensional) concept, which refers to both objective conditions and subjective components.

Now, the most important problem at present, Chacón (1998) said, is the need to deepen the studies around a theoretical-methodological approach capable of

combining conditions and lifestyles, and value systems in an objective and perceptual way. In it, the processes of self-evaluation or, better, self-definition of well-being should be considered.

In this sense, the 1990s were one of consolidation and international recognition for the study of the QoL. Its objective of identifying structural changes and social trends was facilitated by the process of increasing democratization of statistical information and interest in institutional transparency, which became an instrument for the evaluation and control of political decisions. At present, however, the approaches focus their concern on balancing the resource of the statistical indicator and the establishment of various numerical indices as subjective measures of perceptions of quality of life (Leva 2005, p. 30).

The term QoL is widely used both in everyday language and in different scientific disciplines. However, it is important to note that there are multiple conceptualizations proposed to detail it, which, furthermore, increase in parallel with its use and complexity. The variety of components that it concentrates and the impossibility of attending to all of them necessarily leads to the selection of certain aspects. Thus, this expression has come to be used in an almost massive and naive way, ignoring the complexity that characterizes it.

With its use, some notions usually appear that, sometimes, are assimilated to the concept of quality of life. This must be taken into consideration, since due to their conceptual, theoretical and methodological nature, they are substantially different (Velázquez 2008). Therefore, a first step to understand is to distinguish it from similar concepts, such as living condition, standard of living, well-being or poverty.

In general, it can be said that QoL comprises, first of all, the material base on which life develops; second, the natural and built environment in which the human being develops; and, ultimately, to all the relationships that result from the activities carried out, be it work or other types of socio-political and cultural relationships. Consequently, it is an evaluative concept.

The term life condition is, on the other hand, descriptive in nature, and refers to economic aspects, in as much as it contemplates consumption aimed at satisfying needs. From this perspective, Alarcón (2001) indicated that living conditions depend on a large number of factors. Indeed, there is a set of basic needs that must be covered to guarantee subsistence; but there are others that arise with the development process and are essential to function socially.

Now, the standard of living of individuals, knowledge from the economy, refers to aspects of a monetary nature. In it, the idea of consumption of goods and services is contemplated, and purchasing power becomes a mechanism that allows personal development to be achieved.

The third concept is that of well-being, which, as Camargo Mora (1999) pointed out, presents two different characterizations throughout the twentieth century. At first, it is approached from a mainly quantitative perspective, associated with the set of economic policies and processes after the Second World War. In this "welfare state" or welfare state, well-being is linked to the implementation of economic and social policies, which give greater relevance to the sustained consumption of goods

and services as the engine of the economy. In that sense, it resembles the idea of condition and standard of living.

More recently, its meaning reaches another explanation, more humanistic (in the sense of well-being). Thus, based on the postulates of Sen (2000) on human development and quality of life, it is given a broader meaning. Well-being is, from this perspective, linked to the capabilities, opportunities and advantages of individuals.

Another concept, often associated with the idea of QoL as its opposite, is that of poverty. This refers to a measure of deprivation that includes those who do not reach an established minimum threshold, which may reflect conjunctural or structural situations. While poverty is measured with respect to a "floor", the QoL does it in relation to a "ceiling". This floor is relatively fixed, since it aims to satisfy basic needs. On the contrary, the ceiling of the quality of life is more variable (and ascending), since the scale of values and, above all, expectations, change (Velázquez 2001). Consequently, quality of life can be defined as a measure of achievement with respect to a level established as optimal. For this, the socioeconomic and environmental dimensions depending on the prevailing scale of values in society must be taken into account and, in turn, consider that they vary depending on the expectations of historical progress (Velázquez 2001).

The empirical works that address the study of QoL seek to make their contributions to the study of the living conditions of the population so that agents with decision-making capacity adopt the necessary measures for its improvement (Celemín et al. 2015). One of the ways is through the development of indices, which synthesize a large amount of information and whose purpose is to inform both the general public and those who design these strategies (Tanguay et al. 2010).

The main limitation for its realization is the accessibility, availability and reliability of statistical data; in particular, those that describe characteristics on an urban or municipal scale. In addition, the aggregation and simplification of information with the objective of scientific dissemination reduces the analytical power of the results, but, in turn, makes a large amount of summarized data visible to all strata of society.

13.1.1 Approach to the Study of Quality of Life from Different Disciplines

As detailed by Lucero et al. (2007), the first sketches on the QoL were carried out by economists critical of the capitalist system in its industrial phase under the Fordist technological paradigm. From these approaches, the QoL was considered a category based on indefinite progress and economic rationality. Towards the sixties and seventies of the twentieth century, the concept is taken up by disciplines that address the environmental perspective. In those years, both in Europe and in the USA and in Latin America, numerous movements emerged that proclaimed the return to a "clean, safe and wise" nature, due to the growing urban environmental problems.

Likewise, under the scientific view of health, the term QoL is frequently used to define the objective of medical and psychological treatments and diagnoses in which it is not only sought to eliminate a disease, but to improve the daily experience of patients (especially in terminally ill, with degenerative, chronic conditions or with motor or mental disabilities). Tonon (2005), from the field of political science, clarified that, to refer to QoL, one must start from the theory of well-being. This relates QoL with the social structure and considers the participation of each subject as a member of a community essential.

Finally, the literature reviewed leads us to affirm that a univocal understanding of QoL cannot be reached through interdisciplinary research, but, adopting the expression of Harvey (1979) regarding urbanism, it is possible to arrive at an understanding of the contributions of each discipline through a QoL study.

Architects include this concept in their research, especially associating it with habitat, housing, equipment and urban planning. In this framework, Abalerón (1987) states that the QoL is constituted from the degrees of excellence in the provision of goods and services, and the contentment or discontent (according to the value scales) of each individual or group, in relation to the influence of the outside.

For its part, the geographical approach starts from a spatial and territorial basis, which allows it to establish differences with respect to other perspectives involved in the study of this dimension. Through its ability to perform an analysis on the spatial configuration of different variables, it achieves a mostly empirical approach. Thus, one of the characteristics for which geographic science stands out is the elaboration of cartography. With it, the analysis is taken to the territory, resorting to different scales that allow from the study at the national level (Velázquez et al. 2013).

In this context, the present work aims to know the quality of life from an index, the QLI. This was prepared previously (Velázquez 2016; Velázquez and Celemín 2013) at the county and census-radio scale (the highest possible level of territorial disaggregation, 52,408 units for 2010), highlighting the most extreme situations. This index is not exempt from certain methodological restrictions. In effect, while different national, provincial and municipal organizations periodically elaborate indicators to know the socioeconomic context of their corresponding jurisdictions, environmental variables have other scales of analysis and differential characteristics, which pose challenges when making environmental information compatible with socioeconomic information.

13.2 Methodology

In a first analysis, 525 units of the entire national territory are considered: each of the 510 parties or counties and the 15 communes of the Autonomous City of Buenos Aires (CABA). The weighting of each variable of the Quality of Life Index (QLI) is explained in detail in Velázquez (2016) and is summarized below in Table 13.1.

The integration of these data was carried out by transforming them into partial index numbers. In them, the extreme values oscillate between 1 and 10 to reflect the

Table 13.1 Dimensions, variables and relative weights of the quality of life index (QLI) (Argentina 2010)

		Socioeconomic and environmental variables	Partial weight (%)	Total weight (%)
Socioeconomic dimension: socioeconomic quality index (SQI)	Households	Pop. without toilet (SE_1)	10	20
		Pop. overcrowding (SE_2)	10	
	Health	IMR (SE_3)	10	20
		Pop. without health insurance (SE_4)	10	
	Education	Educational degree below primary (SE_5)	10	20
		University degree (SE_6)	10	
		Total		60
Environmental dimension: environmental quality index (EQI)	Recreational resources natural-based (RRNB)	Average score of seven variables (A_1)	10	20
	Socially constructed recreational resources (SCRR)	Average score of four variables (A_2)	10	
	Environmental problems (EP)	Average score of twelve variables (A_3)	20	20
		Total		40
QLI	Total			100

worst and the best relative situation, respectively. This was done, depending on the type of variable, with the following procedure, where b is the cost variable:

$$I = \frac{\text{Max} - b}{\text{Max} - \text{Min}} * 10$$

In the case of profit variables, the same formula subtracted from 1 was applied.

On the other hand, the cartography was carried out through a geographic information system, and the intervals were defined according to quartiles.

13.2.1 Socioeconomic Dimension of Quality of Life

The variables of the socioeconomic dimension show fundamental aspects related to the living conditions of the population, such as housing, health and education. The ones selected for this study are detailed below.

Households:

- Percentage of population in overcrowded households, considering as such those that exceed two people per room (SE1), and
- Percentage of the population that resides in households that do not have a toilet for exclusive use or that have a flush, named as no toilet (SE2).

In both cases, the data were available at the census radius scale and were obtained from the last census carried out by INDEC (2013). On the other hand, it should be clarified that, as there are no reliable data that allow distinguishing homes with a high degree of comfort, only variables that reflect minimum satisfaction requirements were included.

Health:

- Percentage of population without coverage by social, private or mutual health plan (SE3), available at the radio sampling scale. This variable discriminates better than the consideration of the sole presence of hospitals, health units or human resources destined for health and, additionally, it allows to show the existence or not of job insecurity, and
- Infant mortality rate (IMR), that is, the number of live births and deaths before the first birthday, for every thousand inhabitants of this age group, according to the mother's place of residence (SE4). This variable is available at the county level. The data were obtained from the Directorate of Health Statistics and Information (DEIS in Spanish), depending from the Ministry of Health. To reduce the random oscillations inherent to this rate, the arithmetic mean of the three pericensal years (2009–2011) was considered as a value.

As it can be seen, here too it is not possible to accurately measure the maximum conditions. However, the worst can be inferred from the deficiency variables of the minimums selected for the index. In both cases, the action or inaction of public bodies could partially solve the deficiencies shown in relation to health.

Education:

- Percentage of the population aged fifteen or over that has already dropped out of school and whose highest level of education attained is less than complete primary (SE5), and
- Percentage of the population aged fifteen or over that has already reached a full university or postgraduate level of education, as maximum variable (SE6).

In both cases, the data were available at the census radius scale and were obtained from the last census carried out by INDEC (2013).

13.2.2 Environmental Dimension of Quality of Life

As with QoL, environmental problems are increasingly present in society. Fernández (2000) defined them as the manifestation of a deficiency (reduction or lack) of rationality between expressions of the natural system and the social system. These problems affect people's quality of life, both on a global scale (climate change) and on a local scale (presence of garbage dumps). That is why there is a growing demand on the part of society to face and solve them.

However, as Carballo (2005) argued, environmental information sources do not exist or are scattered or are not comparable or accessible, which poses an additional challenge when preparing a QLI. The present work proposes, consequently, the incorporation of an environmental dimension with different variables to make up for this information deficiency. The index considers positive environmental aspects, such is the case of scenic and recreational resources. These, in turn, can be naturally based or socially constructed, since, as amenity resources, they are part of the daily routine and affect the well-being of the population (Celemín and Velázquez 2011).

To complete this dimension, an observation matrix and an exhaustive survey on the presence, relative magnitude and distance with respect to the resident population were created for each of the territorial units analyzed.

It is important to clarify that, during a five-year period, each scoring assignment was consulted with local researchers and with on-site visits by our own researchers. The result was the elaboration of a matrix similar to that used in an environmental impact assessment, based on the knowledge of the specialist when assigning weights and weights to each of the variables. The details can be consulted in a work referring to environmental quality in Argentina (Velázquez and Celemín 2013).

The availability of the municipal Web pages for all the units worked as a statistical approximation and was enriched with other sources, which are mentioned, for each variable, in Table 13.2.

Given that information at the county level is easier to obtain than that of the census tract, in some cases, it is necessary to adapt both. In the QLI components, it was carried out as follows (see Table 13.3).

13.3 Results

Figure 13.1 shows the QLI result for Argentina on a county scale and Fig. 13.2, at census radius level.

To carry out a first analysis of both maps, the most extreme cases in the QLI values will be taken. Considering those radius with QLI < 1, eleven rays are observed. In them, 6855 people resided in 2010 with remarkably low values of quality of life, as can be seen in Table 13.4.

Table 13.2   Environmental variables and their sources of information

Recreational resources	Socially constructed
Natural-based	Recreational resources
(RRNB) (A_1)	(SCRR) (A_2)
(Municipal information, field or satellite images)	(Municipal or land information)
Presence, quality and accessibility to:	Presence, quality and accessibility to:
1. Beaches	1. Aesthetics and urban heritage
2. Spas on the banks of rivers, lakes, lagoons or dams	2. Cultural centers
3. Thermal centers	3. Shopping and entertainment centers
4. Snow or ice (possibility of recreational activities)	4. Sports centers
5. Relief (landscape)	
6. Lagoons and water courses (landscape)	
7. Parks and green spaces (recreation)	
Environmental problems (EP) (A_3)	
1. Use of pesticides in agriculture (Defensoría del Pueblo 2009)	7. Precarious settlements. Percentage of population residing in slums (INDEC 2004a, b)
2. Participation of industry and mining in the GGP (INDEC 2003)	8. Garbage dumps. Percentage of population residing within three hundred meters of an open-air dump (INDEC 2004a, b)
3. Pollution, noise or congestion (municipal, field or urban information)	9. Seismicity and volcanism (Chiozza y Figueira 1987)
4. Dangerous locations (municipal information, field or satellite images)	10. Tornadoes (Geosistemas 1997)
5. Locations with negative externalities (municipal information, land or satellite images)	11. Flooding (INDEC 2004a, b)
6. Insecurity. Crime rate per ten thousand inhabitants (Dirección Nacional de Política Criminal 2008)	12. Climate discomfort (IRAM 1996)

Source Personal elaboration

For the most part, the radius with QLI values < 1 corresponds to counties with a low QLI (Q_4) and a very small population. In general, they belong to provinces and counties of northern Argentina.

In contrast, Table 13.5 gives those radios that stand out for the exceptional situation in their living conditions. Considering those units with QLI > 9, 884 radii with 1,791,329 inhabitants resided in 2010.

In this case, the vast majority of the units are included in counties Q_1 (25) or Q_2 (4) of the six regions of Argentina: Northeast, Northwest, Cuyo, Pampas, Metropolitan and Patagonia, many of which are, in turn, provincial capitals. In this sense—and to

Table 13.3 Adaptation of the QLI components by county to the census radius

County scale (525 units)			Census radius (52,408 units)	
		Socioeconomic and environmental variables	Available (yes or no)	Alternative proposal
Socioeconomic dimension socioeconomic index	Households	Population without toilet (SE_1)	Yes (total)	
		Population overcrowding (SE_2)	Yes (total)	
	Health	IMR (SE_3)	No	Application of county rates to radius
		Population without health insurance (SE_4)	Yes (sampling)	
	Educación	Educational degree below primary (SE_5)	Yes (total)	
		University degree (SE_6)	Yes (total)	
Environmental dimension environmental quality index (EQI)	Recreational resources natural-based (RRNB)	Average score of seven variables (A_1)	No	Application of county rates to radius
	Socially constructed recreational resources (SCRR)	Average score of four variables (A_2)	No	Application of county rates to radius
	Environmental problems (EP)	Average score of twelve variables (A_3)	Three available by fractions (flooding, precarious settlements and garbage dumps)	Application of fraction scores to radius Use of the three variables as proxy

highlight the relevance of the analysis by radius—although the Northeast does not have any county among the first QLI units, it does have smaller units with extremely high values and such is the case of a privileged radius of the capital city of Corrientes province.

Although there are radius with very high values in all regions, their highest concentration is observed in the Authonmous City of Buenos Aires, the northern axis of the metropolitan region and the capitals of some of the provinces, regardless of
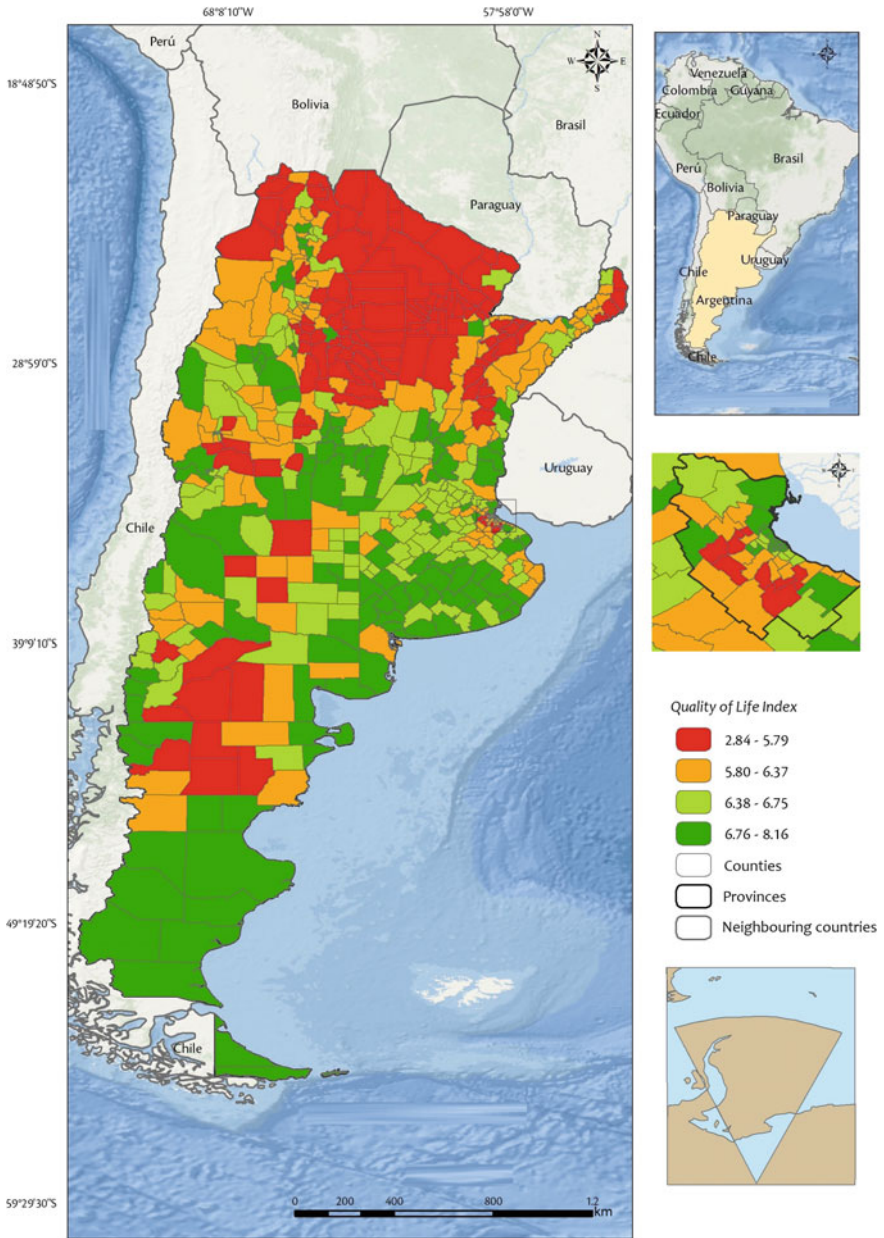
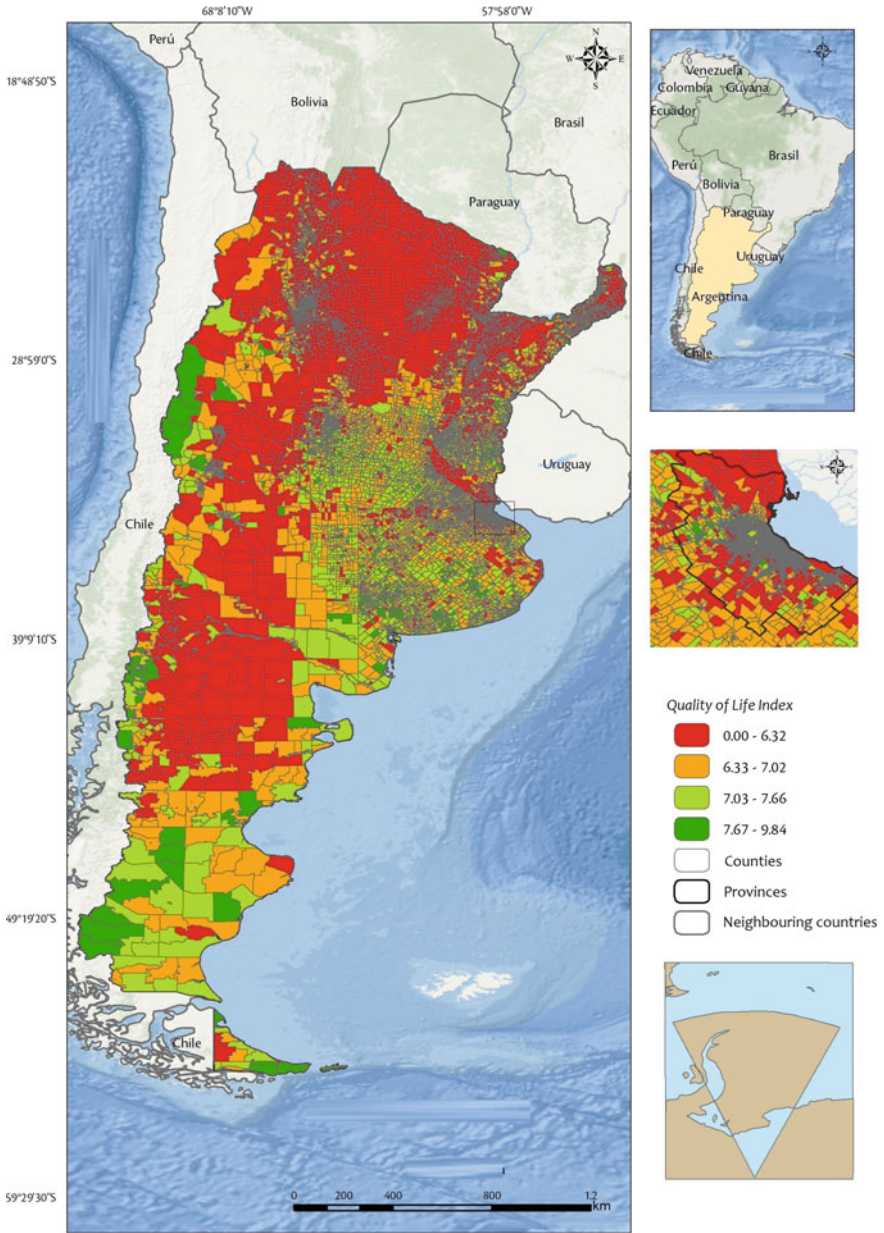**Fig. 13.1**   QLI at the county level (Argentina 2010). *Source* Personal elaboration

Fig. 13.2 QLI at the census radius scale (Argentina 2010). *Source* Personal elaboration

Table 13.4 Distribution of census radius with very low quality of life by quartiles

Province	County	Quartile value	Radii QLI < 1	Observations
Formosa	Bermejo	Q_4	1	Periphery, border with Paraguay
Corrientes	San Miguel	Q_4	1	On the Paraná River area. Subsistence fishing
	Berón de Astrada	Q_4	2	Idem
	San Cosme	Q_3	1	Idem
	Lavalle	Q_4	1	Idem
	Goya	Q_4	1	Idem
Santiago del Estero	Choya	Q_4	3	In the Ambargasta and Grandes salt flats, bordering Catamarca and Córdoba Provinces
Tierra del Fuego	Río Grande	Q_1	1	Border with Chile

their general situation. Indeed, it may happen that their capital cities constitute an exception and, some radius, an exception within the exception.

To carry out a second analysis of map n ° 2 (by radius) and its degree of correspondence with map n ° 1 (by counties), the worst and best counties will be considered in relation to the QLI. Thus, based on the behavior of their respective census radius, internal differences can be analyzed, as shown in Tables 13.6 and 13.7.

All the radios included in the ten counties with the lowest quality of life, all located in the Northeast of Argentina (NEA) and in the Northwest of Argentina (NOA), are classified as Q_4. Although the differences between the ranges of values of the radius can reach slightly more than four points, all of them are included in the lowest quartile. This indicates a certain degree of homogeneity and territorial contiguity in the most adverse contexts.

In Table 13.7, it can be seen what happens in the reverse case, that is, in the ten counties that lead the quality of life positions nationwide.

The ten counties with the highest QLI are more fragmented and heterogeneous and are found in all regions of Argentina, except the NEA. The unit that heads the list (Mendoza capital city) has 23.3% of its radios included in Q_4. Other cases with relatively high socio-territorial fragmentation are Yerba Buena in the province of Tucumán and General Pueyrredón in Buenos Aires province. In both cases, despite having the highest QLI in their region (NOA or Pampas), they, respectively, have 12.3% and 9.2% of their radius in Q_4.

However, the three parties that are in the MRBA exhibit, paradoxically, a lower degree of fragmentation. This is due to the fact that the weight of the radios with Q_4 in its territory is 2.3 in Vicente López, 6.0 in San Isidro and 4.4 in the Authonomous City of Buenos Aires. Finally, it is in the Patagonian units where greater equity is observed. Indeed, although Ushuaia in Tierra del Fuego has 6.9% of its radios in Q_4,

Table 13.5 Distribution of census radius with a very high quality of life

Province	County	Quartile value	Radii QLI > 9	Observations
Salta	Capital	Q_1	8	Six to the north and two to the west of the capital. Private neighborhood area
Tucumán	Yerba Buena	N	2	Both to the east. They are part of the urban area of the city of San Miguel de Tucumán
	Capital	Q_2	2	Both to the northeast, in prominent sectors of the urban plant
Corrientes	Capital	Q_2	1	Featured sector north of the urban plant
Santa Fe	Capital	Q_1	41	Radius relatively central and fairly clustered together
	Rosario	Q_1	33	Two sectors: central radius to the north and close to the Paraná River area (recreational resource)
Entre Ríos	Paraná	Q_1	2	Urban. North of the city of Paraná, near the Paraná River
Córdoba	Capital	Q_1	76	Three sectors: central, northeast and south
	Punilla	Q_1	3	Close to the towns of La Cuesta and Carlos Paz
	Santa María	Q_1	1	To the north of the town of Altagracia
San Juan	Capital	Q_1	16	Thirteen in the center and three to the west
	Rivadavia	Q_1	1	Contiguous to the previous three
Mendoza	Capital	Q_1	22	In the center, north and west

(continued)

Table 13.5 (continued)

Province	County	Quartile value	Radii QLI > 9	Observations
	Las Heras	Q_1	1	Adjacent to the north of the provincial capital
	Luján de Cuyo	Q_1	8	To the north, near the county of Capital
San Luis	Capital	Q_1	5	Two to the north and three to the west, close to the center
Buenos Aires (inside)	Colón	Q_2	1	East of the city (prominent neighborhood)
	Pergamino	Q_2	1	South of the city (prominent neighborhood)
	Adolfo Alsina	Q_1	1	To the north, near the town of La Pala
	General Pueyrredón	Q_1	25	Eighteen in the center and south of the city of Mar del Plata. Seven isolated to the north
	Pinamar	Q_1	6	Two north and four south, all in town
	La Plata	Q_1	3	Close to the center of the city
Buenos Aires (axis north of metropolitan region)	Tigre	Q_1	16	Private neighborhoods
	San Fernando	Q_1	1	In the town of Beccar
	San Isidro	Q_1	47	Most in the center and north, close to the river. Some in the west (gated communities)
	Vicente López	Q_1	21	Axis of Avenida del Libertador (Libertador Avenue), town of Olivos and some residential units to the west

Table 13.5 (continued)

Province	County	Quartile value	Radii QLI > 9	Observations
Buenos Aires city	Authonomous city of Buenos Aires	Q_1	512	Outstanding grouping in commune two, which extends toward fourteen and one. Another minor grouping in thirteen, and two isolated cases in commune six
Río Negro	Adolfo Alsina	Q_1	6	Residential area on the coast of the Río Negro
	San Carlos de Bariloche	Q_1	22	Predominance to the west, an area of particular natural-based recreational resources

Table 13.6 Composition according to quartiles of the 10 counties with the lowest QLI

Province	County	QLI	% radius Q_1	% radius Q_2	% radius Q_3	% radius Q_4	QLI per radius (maximum)	QLI per radius (minimum)
Formosa	Ramón Lista	2.84	0	0	0	100	3.81	1.44
Formosa	Bermejo	2.95	0	0	0	100	4.84	0.10
Salta	Rivadavia	3.18	0	0	0	100	4.83	0.91
Santiago del Estero	Figueroa	4.02	0	0	0	100	4.88	2.51
Formosa	Matacos	4.19	0	0	0	100	5.23	0.97
Santiago del Estero	Mitre	4.19	0	0	0	100	4.51	1.94
Santiago del Estero	Avellaneda	4.20	0	0	0	100	5.08	2.31
Chaco	Independencia	4.23	0	0	0	100	4.84	3.10
Santiago del Estero	Atamisqui	4.28	0	0	0	100	5.64	2.32
Chaco	General Güemes	4.37	0	0	0	100	6.51	1.87

Table 13.7 Composition according to quartiles of the ten counties with the highest QLI

Province	County	QLI	% radius Q_1	% radius Q_2	% radius Q_3	% radius Q_4	QLI per radius (maximum)	QLI per radius (minimum)
Mendoza	Capital	8.16	64.4 (47)	4.1 (3)	8.2 (6)	23.3 (17)	9.76	4.89
Buenos Aires	Vicente López	8.06	88.0 (302)	6.1 (21)	3.5 (12)	2.3 (8)	9.36	5.32
Tierra del Fuego	Ushuaia	7.95	84.7 (61)	5.5 (4)	2.8 (2)	6.9 (5)	9.32	4.34
Buenos Aires	San Isidro	7.94	75.7 (240)	13.6 (43)	4.7 (15)	6.0 (19)	9.57	4.24
Santa Cruz	Lago Argentino	7.91	70.4 (19)	22.2 (6)	7.4 (2)	0 (0)	9.16	6.70
San Juan	Capital	7.82	63.1 (89)	22.0 (31)	12.1 (17)	2.8 (4)	9.19	4.83
Tucumán	Yerba Buena	7.79	49.3 (36)	21.9 (16)	16.4 (12)	12.3 (9)	9.21	4.71
Ciudad de Buenos Aires	Authonomous city of Buenos Aires	7.74	82.3 (2926)	11.6 (411)	1.7 (62)	4.4 (156)	9.72	4.39
Neuquén	Los Lagos	7.71	52.8 (9)	41.2 (7)	5.9 (1)	0	8.87	6.84
Buenos Aires	General Pueyrredónn	7.60	63.0 (563)	16.3 (146)	11.5 (103)	9.2 (82)	9.69	3.30

both Lago Argentino in Santa Cruz and Los Lagos in Neuquén lack radios in that position.

13.4   Concluding Remarks

The scale of territorial analysis is crucial for the evaluation of the quality of life of the population from a geographical point of view. In this sense, the use of counties, districts or communes (525 units) has amply demonstrated its usefulness in overcoming the generalization implied by studies at the provincial level (24 units). On the other hand, the adaptation of the county level QLI by census radius (52,408 units) reveals that the counties, although they are useful, may have varying degrees of fragmentation within them. This must be taken into account in academic research and in the formulation of public policies.

The publication of this information on the CONICET (National Research Council of Argentina) Web site (QLI.conicet.gov.ar) has been consulted by around 800,000 users during the first week (October 7–14, 2019). This fact shows the interest and

the need to carry out studies related to the quality of life of the population with this disaggregation scale. In this sense, although the results presented here are preliminary, given that the most extreme situations were examined, it is herein considered that they reveal a series of findings, which are summarized below:

(1) Radius with a very low index is generally found on the periphery of counties with low QLI (subsistence economies, extreme isolation and particularly adverse physical environments). There are also some units included in counties with other situations, but their confirmation should be examined based on the possible statistical randomness derived from the use of such small units.

(2) On the other hand, radios with very high QLI are included in counties Q_1 or Q_2 of the six regions of Argentina, many of which are, in turn, provincial capitals.

(3) Although there are radius with very high values in all regions, the highest concentration is observed in the Authonomous City of Buenos Aires, the northern axis of the metropolitan region and the capital cities of some provinces. This, regardless of their general situation, in which their capital cities constitute an exception and, some radius, "an exception within the exception".

(4) All the radios included in the ten counties with the lowest QLI (the northern regions) are classified as Q_4 and show a certain degree of homogeneity and territorial contiguity.

(5) On the contrary, the ten counties with the highest QLI are more fragmented and heterogeneous and are found in all regions of Argentina (except the Northeastern region).

(6) Of them, the most privileged and with the greatest fragmentation (abrupt gradients of quality of life in a few kilometers) are found in Cuyo, the Northwest and the Pampas regions (in that order). Then, while the metropolitan region exhibits an intermediate situation, in the Patagonian region, these counties are less segmented.

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