

Quality of Life across the European Union: a Regional Approach

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Abstract: It is very interesting to find the country which is able to offer the best quality of life to its inhabitants. The paper is focused on quantifying and analyzing the quality of life in the EU in the context of the latest global changes. Two scientific approaches are used in the paper: the classical one, which is based on the better index of life and a step by step analysis of the different statistical indicators able to quantify the quality of life. A distinct part of the paper covers the analysis of the quality of life by degree of urbanization at regional level. The analysis in the paper covers comparative analysis and cluster analysis, in order to point out the disparities between EU28 and Euro area on one hand and between Member States, on the other hand. The paper proposes a more scientifically approach by using a set of connected statistical variables able to express the quality of life. The differences between the Member States lead to building separate clusters for each indicator. The main conclusion of the paper is that EU28 faces to high disparities related to the quality of life which can be analysed and solved only under a three clusters approach. The whole analysis and the conclusions of the papers are supported by the latest official statistical data and pertinent diagrams.

Keywords: Life index; safety index; degree of urbanization; risk of poverty; pollution index

JEL Classification: R10; R13; R19

1. Introduction

The latest social and political events put into a new light the need of high quality of life. The goals of the EU are closed linked to the quality of life for the European citizens. Unfortunately, it is very difficult to quantify the quality of life. Some scientific approaches are based on different statistical indicators and can lead to different results.

On the other hand, it is very difficult to obtain those indicators able to quantify the quality of life. This is why the latest official statistical data cover only 2014.

Despite these situations, the analysis of the quality of life is necessary and very important. The paper is focused on the analysis of the quality of life across the EU28

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and Euro area. A distinct part of the paper deals with the regional approach of the quality of life.

The comparative analysis between the Member States and between cities, suburban and rural areas are important as well.

A two-step cluster analysis is used in order to point out the disparities related to the quality of life in the Member States. The continuous variables are the urbanizations degrees from each country, the distance between the entities is log-likelihood and the number of clusters is three.

2. Literature – Critical Overview

The quality of life became a sensible target for all local, regional and macro socio-economic policies. Finally, the result of all public policies has to be the improvement of the quality of life.

This is why OECD defined its policies as “better policies for better lives”. Moreover, OECD built its own system of indicators able to quantify Your Better Life Index. Moreover, OECD members as UK, France, USA, Italy, Netherlands, Japan and Korea built national indexes for the quality of life using the support of their national statistical organisations or specialised research institutes. Finally, three concepts of well-being were defined: life evaluation, affect and psychological “flourishing”. The life evaluation was supported by Personal Wellbeing Index, which consists of 8 questions related to different aspects of the life, which have equal weights in the final result. Affect is quantified using a balance between the positive and negative human feelings, while psychological “flourishing” is connected to personal experiences (OECD, 2013, pp. 30-32).

A very interesting research considers the quality of life a concept “larger” than economic production and living standards. The authors focused their analysis on: health, education, personal activities, political voice and governance, social connections, environment conditions, personal insecurity and economic insecurity. They concluded that all inequalities between peoples, ethnic groups, regions and countries lead to decreasing quality of life (Stiglitz, Sen & Fitoussi, 2009).

A distinct approach quantifies the quality of life index using eight other representative indexes, as the following: purchasing power index, safety index, health care index, consumer price index, property price to income ratio, traffic commute time index, pollution index and climate index. The result of the analysis is a top of quality of life for 56 countries in the world (NUMBEO, 2016).

From the Economist Intelligence Unit’s point of view, the quality of life index (QLI) can be quantified using an empirical formula:

$$\text{QLI} = 65 + \text{purchasing power and rent index} - (\text{price to income ratio} \times 2) - (\text{CPI index} \div 5) + (\text{safety index} \times 0.75) + (\text{public health index} \div 2) - (\text{traffic time index} \div 2) - \text{pollution index} \quad (1)$$

where: 65 - a range modifier (Nixon, 2015).

According to the latest world political and military developments, personal safety becomes a key factor in quantifying the quality of life. This is why a distinct approach puts into account the quality of life in different cities of the world. The main conclusion of this analysis is that some European cities, especially from Western Europe, are able to offer high quality of life and personal safety. As a result, Vienna, Zurich and Munich are ranked in world top 4 according to their quality of life conditions (Andersen & Reilly, 2016).

3. Quality of Life Disparities between EU Member States

22 EU Member States cover the first 40 ranks in the latest world quality of life top. Moreover, 6 Member States are ranked in the first 10 in the world. Denmark achieved the best rank (2nd), while Lithuania faced to 40th rank in the same top which covers 56 countries.

The situation of the quality of life in EU Member States compared to the best and the worst ranks is presented in Figure 1.

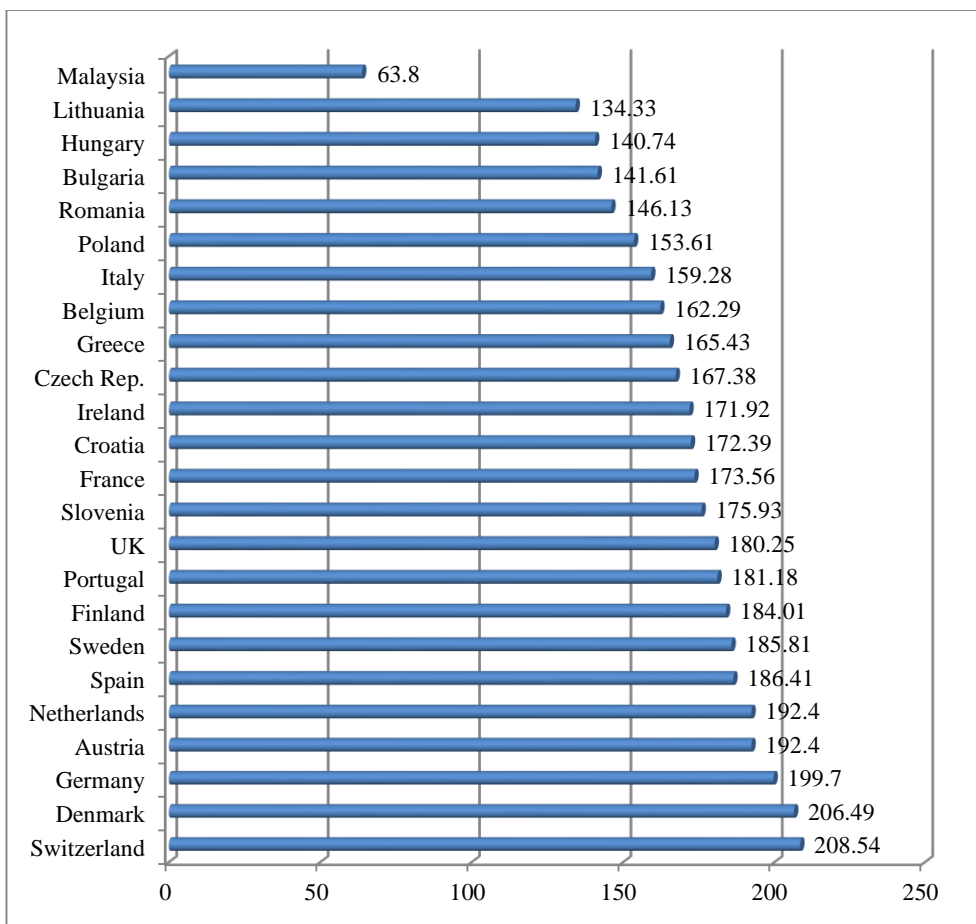


Figure 1. Quality of life index on countries

Source: Personal contribution

According to Figure 1, Romania faced to 70.07 % from the quality of life index in Switzerland and ranks 32nd position in the world top.

A different top can be built using the safety index, which became essential nowadays (see Figure 2).

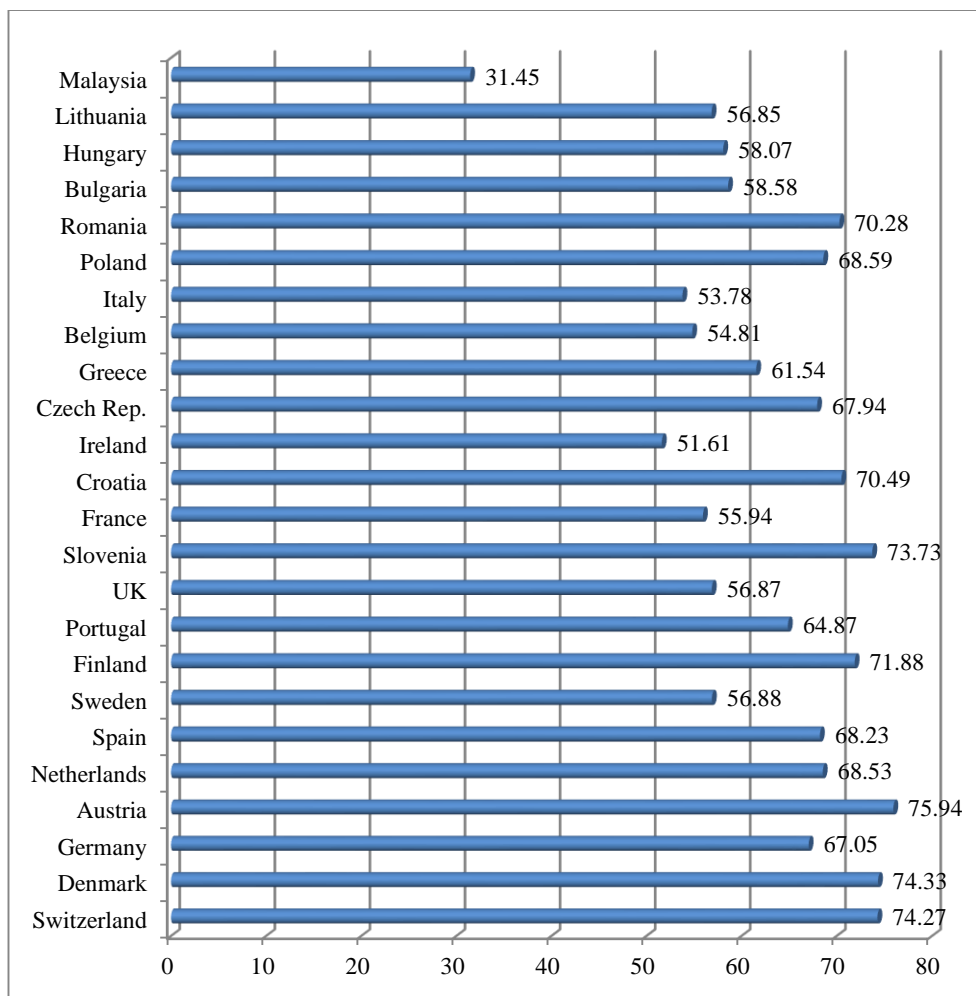


Figure 2. Safety index on countries

Source: Personal contribution

Austria, Denmark and Slovenia are the safest Member States, while Ireland, Italy and France face to the lowest safety indexes.

In order to obtain better image on the quality of life across the EU, the pollution index becomes usefully. Moreover, the quality of life index and the safety index can support a cluster approach in order to point out the disparities between the Member States (see Figure 3).

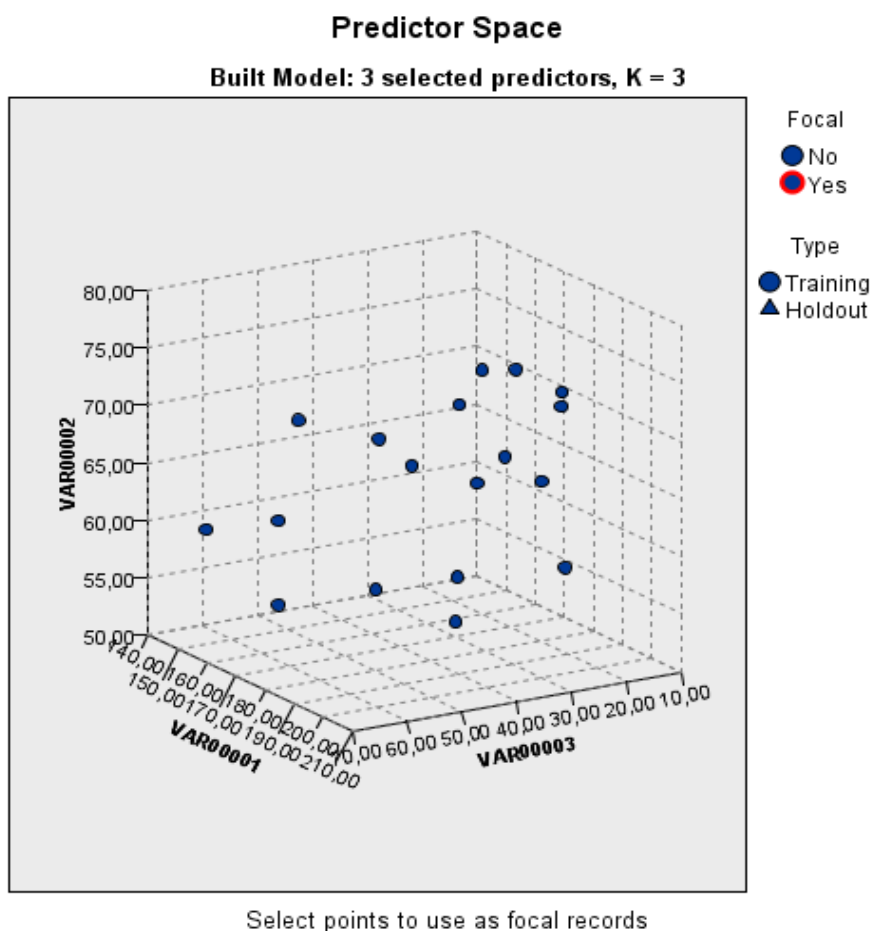


Figure 3. Quality of life’s disparities (selected Member States)

Source: personal contribution using IBM-SPSS software

According to Figure 3, the quality of life supports the increase of the disparities between the Member States. As a result, EU is far away of socio-economic homogeneity and this goal isn’t viable on short and medium terms.

4. EU Regional Approach on Quality of Life

Nowadays, the European Commission is more focused on the researches related to the quality of life across the Member States. In order to realize it, some dedicated indicators become usefully. One of these is distribution of population by degree of urbanization (Eurostat 1, 2016). During the latest five years, the trend of this indicator is decreasing both for EU28 and Euro area, as well (see Figure 4).

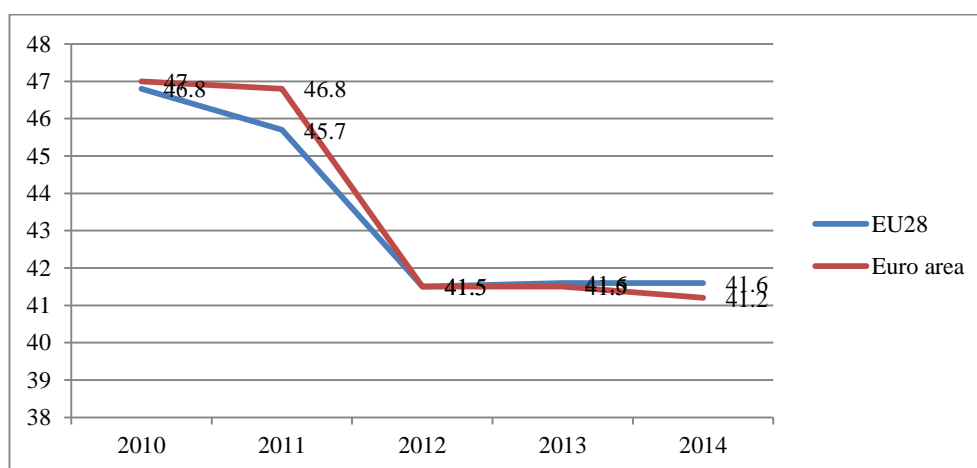


Figure 4. Distribution of population by degree of urbanization (%)

Source: Personal contribution

The European average urbanization degree of about 41.0% varies a lot in different Member States. Malta (98.5%) and UK (57.2%) achieved the highest urbanization degrees, while Luxembourg (14.5%) and Slovenia (18.8%) faced to the lowest ones. This indicator supports the building of three clusters. First covers those countries with a degree of urbanization less than 35% (Belgium, Czech Republic, Denmark, Croatia, Luxembourg, Hungary, Austria, Poland, Romania, Slovenia, Finland and Slovakia). The second cluster is built by the countries which achieve urbanization degrees between 35.0% and 42.0% (Bulgaria, Germany, Ireland, Greece and Sweden). Finally, the third cluster covers countries which achieved urbanization degrees greater than 42.0% (Estonia, Spain, France, Italy, Cyprus, Latvia, Lithuania, Malta, Netherlands, Portugal and UK). The cluster approach is supported by the cluster analysis' results (see Figure 5).

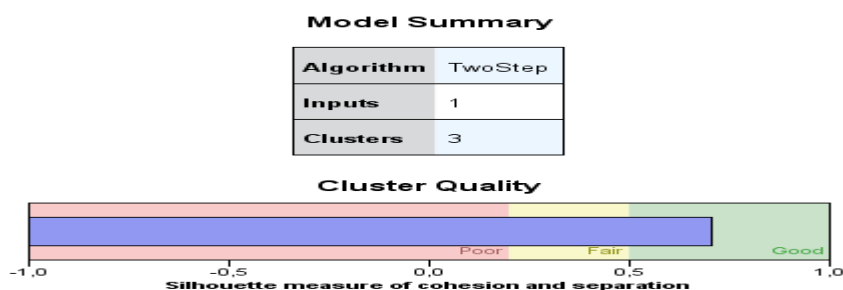


Figure 5. Cluster approach by degree of urbanization (%)

Source: Personal contribution using IBM-SPSS software

In Figure 5, the average silhouette is 0.7. It is good enough to support the above three built clusters.

The quality of life is powerfully affected by the risk of poverty and social exclusion (Eurostat 2, 2016). This risk varies enough on urban, suburban and rural areas (see Figure 6).

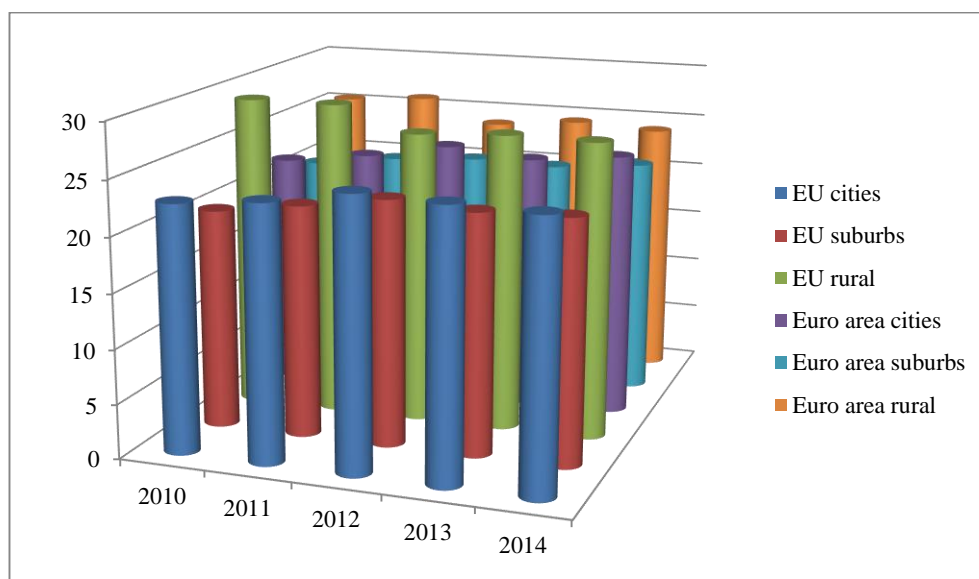


Figure 6. People at risk of poverty or social exclusion by degree of urbanization (% of total population)

Source: Personal contribution

According to Figure 6, the risk of poverty or social exclusion is higher in the rural

areas than in the cities and lower in the Euro area than in the EU28. The latest official statistical data point out that Greece and Bulgaria faced to the greatest risk of poverty or social exclusion rates in the cities, while Czech Republic and Luxembourg achieved the lowest ones. Other three clusters can be built using this indicator. The first cluster covers countries with risk of poverty or social exclusion rates less that 20.0% (Czech Republic, France, Luxembourg, Netherlands, Poland, Slovakia, Finland and Sweden). The second cluster is built with those countries with achieved rates between 20.0% and 24.0% (Croatia, Lithuania, Hungary, Malta and Slovenia). The third cluster covers: Belgium, Bulgaria, Denmark, Germany, Estonia, Ireland, Greece, Spain, Italy, Cyprus, Latvia, Austria, Portugal, Romania and UK.

The Two step cluster analysis leads to the same average silhouette of 0.7 and more equilibrated cluster divisions (see Figure 7).

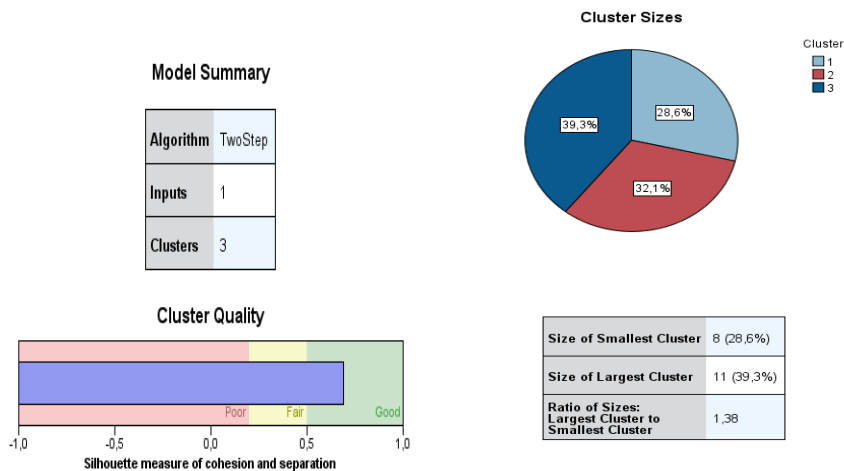


Figure 7. Cluster approach by people at risk of poverty or social exclusion by degree of urbanization

Source: Personal contribution using IBM-SPSS software

The employment rate represents other interesting indicator able to quantify the regional disparities across the EU28 (Eurostat 3, 2016). There are just little differences between the employment rates in EU 28 and Euro area, even that this indicator had a fluctuant trend (see Figure 8). The fluctuations of this indicator by degree of urbanization are not significant.

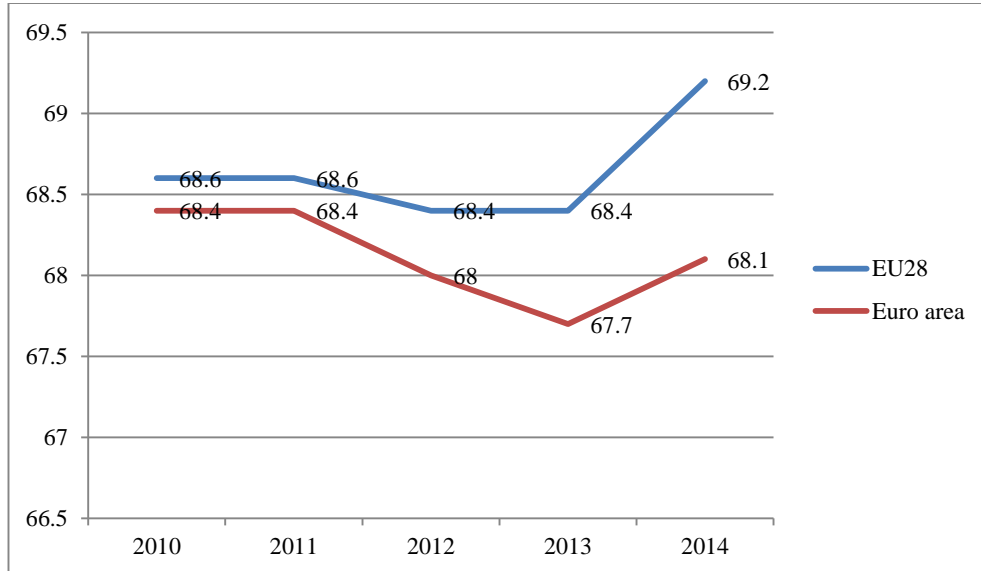


Figure 8. Employment rate by degree of urbanization (%)

Source: Personal contribution

On the other hand, the latest statistical data for the above indicator lead to the following cluster division: countries with employment rates less than 67.0% (Bulgaria, Greece, Spain, Croatia, Italy, Hungary, Malta, Poland, Romania and Slovakia), countries with employment rates between 67.0% and 69.0% (Belgium, Ireland, Cyprus, Portugal and Slovenia) and those with employment rates greater than 69.0% (Czech Republic, Denmark, Germany, Estonia, France, Latvia, Lithuania, Luxembourg, Netherlands, Austria, Finland, Sweden and UK) (see Figure 9).

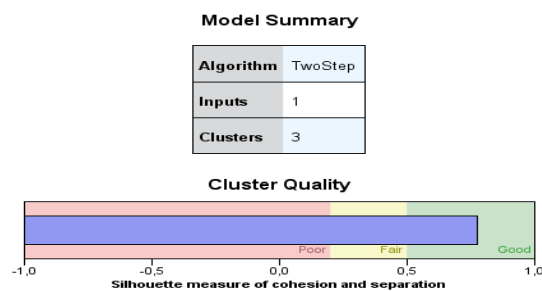


Figure 9. Cluster approach by employment rate by degree of urbanization

Source: Personal contribution using IBM-SPSS software

The best cluster quality (0.8) till now supports the idea of using the same three clusters approach.

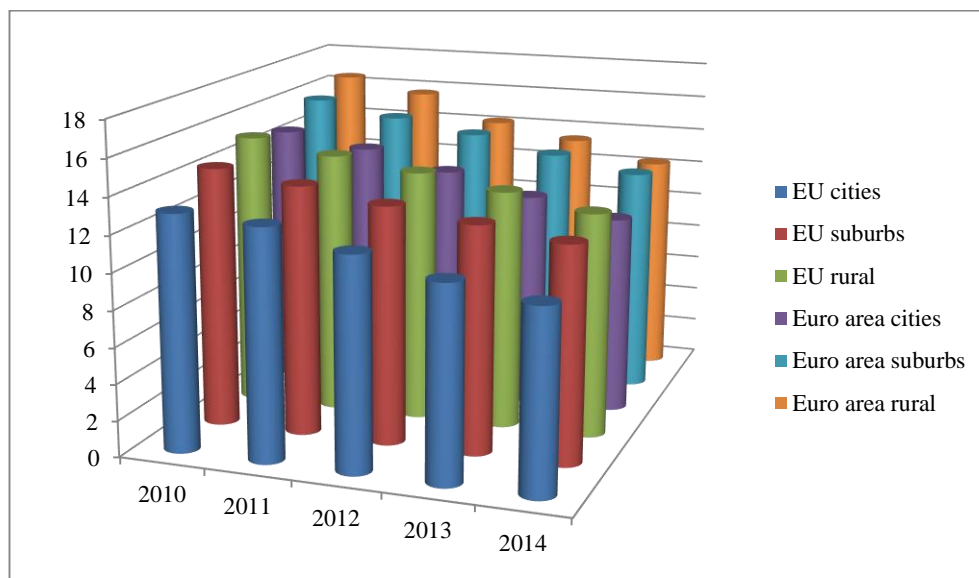


Figure 10. Early leavers from education and training by degree of urbanization (% of 18 to 24 years)

Source: Personal contribution

The employment rate and structure is a result of the early leavers from education and training. A relative low EU average early leaving rate in the cities (10.0%) is followed by a greater one in the rural areas (12.4%). The trend of this indicator is presented in Figure 10 (Eurostat 4, 2016).

Under the common cluster approach, the available statistical data lead to the following clusters: countries with early leavers rates less than 5.0% (Bulgaria, Czech Republic, Estonia, Ireland, Croatia, Lithuania, Poland and Slovakia), countries with rates between 5.0% and 8.0% (Denmark, Greece, Cyprus, Latvia, Hungary, Netherlands, Romania, Slovenia and Sweden) and countries which face to rates greater than 8.0% (Germany, Spain, France, Italy, Luxembourg, Malta, Austria, Portugal, Finland and UK). The cluster approach viability is presented in Figure 11. It supports a good cluster quality (0.8).

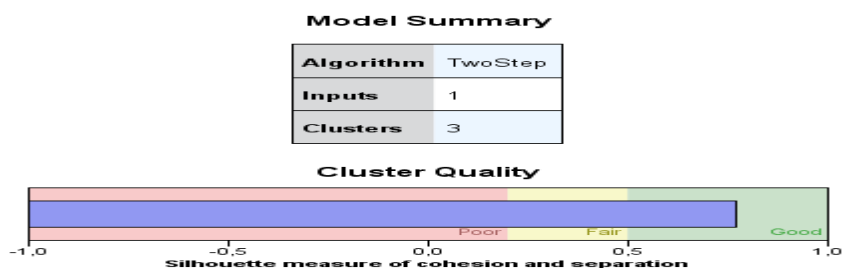


Figure 11. Cluster approach by early leavers from education and training by degree of urbanization

Source: Personal contribution using IBM-SPSS software

Pollution and other environmental problems represent a great challenge not only for the EU28. The Euro area faces to worst situation than EU28 (Eurostat 5, 2016). On the other hand, pollution is higher in the cities than in suburban and rural areas (see Figure 12).

The “classical” three clusters approach leads to the following clusters: countries with environment problems’ rates less than 18.0% (Ireland, Spain, Croatia, Cyprus, Austria, Slovenia, Finland, Sweden and UK), with rates between 18.0% and 25.0% (Czech Republic, Denmark, Estonia, France, Lithuania, Netherlands, Portugal, Romania and Slovakia) and with rates greater than 25.0% (Belgium, Bulgaria, Germany, Greece, Italy, Latvia, Luxembourg, Hungary, Malta and Poland). A quality of 0.7 and a ratio of the clusters size of 1: 1.57 support the above cluster division (see Figure 13).

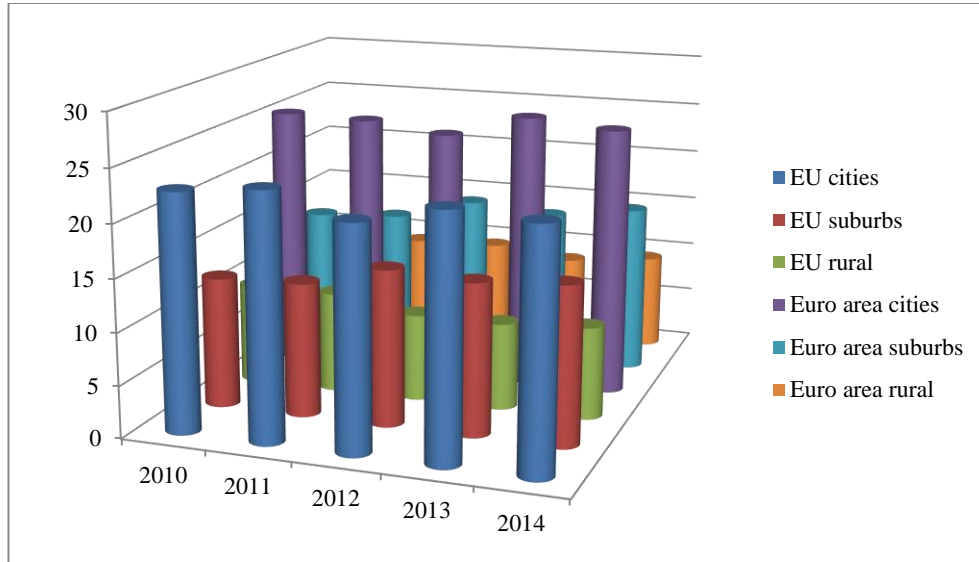


Figure 12. Pollution grime or other environmental problems by degree of urbanization (% total population)

Source: Personal contribution

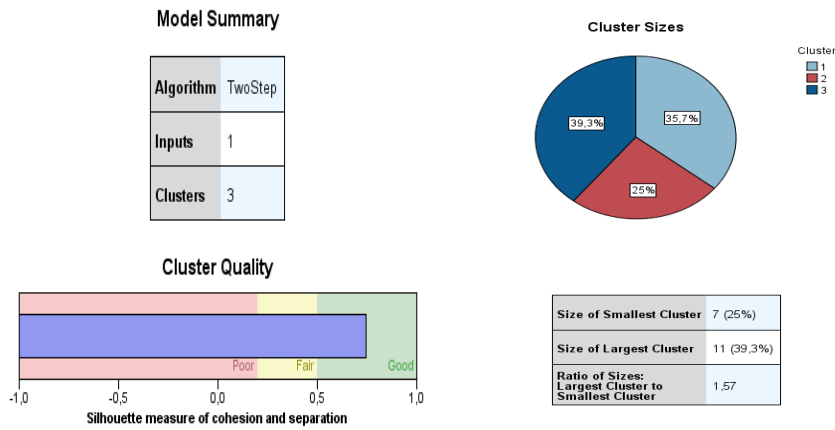


Figure 13. Cluster approach by pollution grime or other environmental problems by degree of urbanization

Source: Personal contribution using IBM-SPSS software

Last but not the least, crime, violence or vandalism make their mark on the quality of life. The indicator is more than three times higher in the cities than in the rural areas (Eurostat 6, 2016).

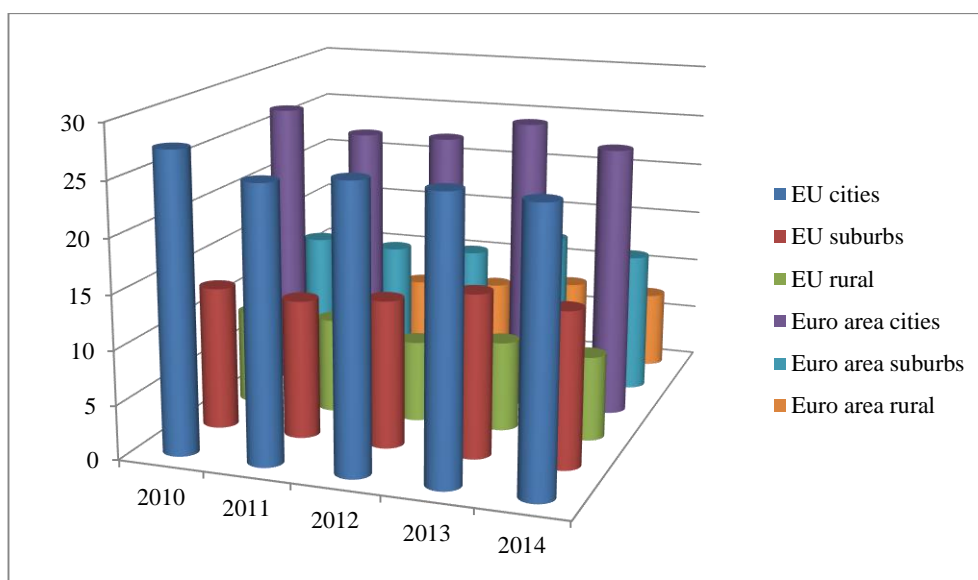


Figure 14. Crime, violence or vandalism by degree of urbanization (% total population)

Source: Personal contribution

According to Figure 14, some Member States achieved rates less than 20.0% (Estonia, Ireland, Spain, Croatia, Cyprus, Lithuania, Malta, Austria, Portugal, Romania, Slovenia, Slovakia and Finland). Other countries cover rates between 20.0% and 25.0% (Denmark, Greece, Latvia, Luxembourg, Poland and Sweden), while a third group of countries face to rates higher than 25.0% (Belgium, Bulgaria, Czech Republic, Germany, France, Italy, Hungary, Netherlands and UK). In order to check this clusters' viability, the cluster analysis leads to the following results:

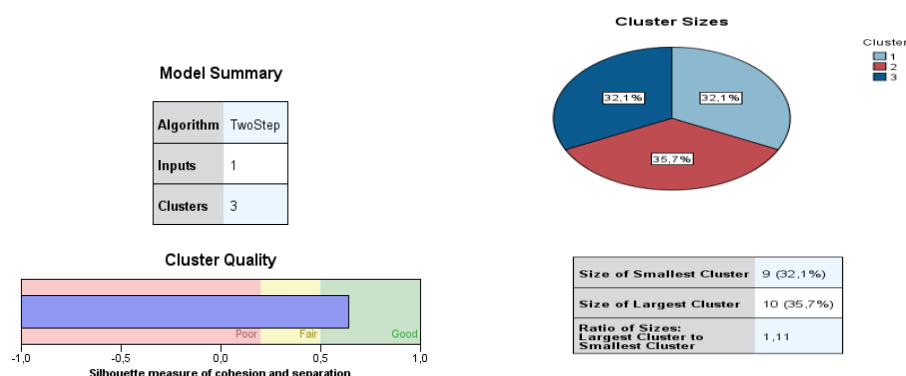


Figure 15. Cluster approach by crime, violence or vandalism by degree of urbanization

Source: Personal contribution using IBM-SPSS software

A good cluster quality (0.6) is supported by clusters ratio of sizes of 1:1.11. Both elements consist of argues for the above cluster division.

5. Conclusions

It is not easy to conclude that a Member State achieved higher quality of life than another. As a general point of view, those Member States with the best economic performances have the best quality of life.

On the other hand, this general conclusion is not the same if the analysis is focused on specific indicators. A developed economy can face to high rates of criminality or pollution with direct impact on the quality of life.

The analysis in the paper uses a lot of indicators able to support the quality of life improvement. This scientific approach leads to the idea that the Member States can be divided into three clusters. The use of these three clusters is covered by high disparities between Member States related to the quality of life.

As a result, the present EU is more heterogeneous than homogenous under the analysis of the quality of life.

6. References

- Andersen, M. & Reilly, S. (2016). Western European Cities Top Quality of Living Ranking. *Mercel Global*, February 23, pp. 1-2. UK.
- Eurostat 1 (2016). *Distribution of population by degree of urbanisation, dwelling type and income group*. 26.01.2016, Retrieved from: http://ec.europa.eu/eurostat/web/products-datasets/-/ilc_lvho01.
- Eurostat 2 (2016). *People at risk of poverty or social exclusion by degree of urbanization*. Retrieved from: http://ec.europa.eu/eurostat/web/products-datasets/-/ilc_peps13.
- Eurostat 3 (2016). *Employment rates by sex, age and degree of urbanization*. Retrieved from: <http://appsso.eurostat.ec.europa.eu/nui/show.do>.
- Eurostat 4 (2016). *Early leavers from educational and training by sex and degree of urbanization*. Retrieved from: <http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>.
- Eurostat 5 (2016). *Pollution, grime or other environmental problems by degree of urbanization*. Retrieved from: <http://appsso.eurostat.ec.europa.eu/nui/show.do>.
- Eurostat 6 (2016). *Crime, violence or vandalism in the area by degree of urbanization*. Retrieved from: <http://appsso.eurostat.ec.europa.eu/nui/show.do>.
- OECD (2013). *Guidelines on Measuring Subjective Well-being*. Paris: OECD.
- Nixon, D. (2015). 10 Countries with the Highest Quality of Life Index. *Lists*, January 19, pp. 1-11.
- NUMBEO (2016). *Quality of Life Index for Country*. Retrieved from: http://www.numbeo.com/quality-of-life/rankings_by_country.jsp.
- Stiglitz, J.E.; Sen, A. & Fitoussi, J.P. (2009). Report by the Commission on the Measurement of Economic Performance and Social Progress. *Institute national de la statistique et des etudes economiques (Insee)*, pp. 3-292.