

# SATISFACTION WITH EDUCATION AND WORK AS A BASIS FOR ASSESSING THE QUALITY OF LIFE IN SELECTED REGIONS WITH DIFFERENT LEVELS OF STANDARD OF LIVING<sup>1</sup>

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**Summary:** This article is aimed to show differences in quality of life regarding education and employment in a given area. The research hypothesis assumes the presence of the difference in quality of life across Poland and of interrelation between the quality of life and the living standards. The studies were conducted on a group of respondents selected intentionally from three provinces. The provinces were selected using a multidimensional analysis and the criterion for selection was the living standards of Polish residents. The studies were conducted as part of the individual Research Grant launched in 2011 under the title: "Living standards and quality of life among Polish residents" 1708/B/H03/2011/40 from the Ministry of Science and Higher Education.

**Keywords:** differences in quality of life, life quality measurement, quality of education and employment, standard of living, sustainable development.

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## 1. Introduction and methodological assumptions

Quality of life is a widely used concept. It usually refers to a life which is considered as a good one, well-lived, and being of value [Rojas 2014]. Quality of life belongs to a family of concepts that make reference to ultimate goals in life [Veenhoven 2001]. Ultimate goals are pursued for their own sake and not as means to attain other goals. The knowledge of the quality of life, including differences, is a major research issue from the scientific and practical points of view. An understanding of the causes and effects of the differences in the quality of life would enable more efficient planning of sustainable development. The quality of life as the effect of social and economic policy remains invariably an up-to-date issue, directly relative to sustainable development planning. Even though the quality of life is a phenomenon which is difficult to gauge, involving a subjective evaluation, yet its measurements are within the

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scope of interest among scholars from several scientific disciplines [Borys, Rogala (eds.) 2008]. However – and this may be precisely due to the variety of methodological approaches – there are still a number of challenges related to developing a complete and adequate measurement methodology. Furthermore, there is a demand for analyses of life quality on a micro, medium and macro scale. In addition, a number of different criteria for selecting research groups should be taken into account, such as demographic or geographic characteristics, enabling cause and effect dependencies to be established [Szukiełojć-Bieńkuńska, Walczak 2011]. A practical challenge is to discover and determine the relations between the quality of life and the living standards.

The objective of this study is to assess the quality of life in terms of the level of education and employment in three selected Polish provinces representing various living standards and taking into account the characteristics of the respondents.

The research hypothesis assumes that there is a difference in the assessment of the quality of life in terms of the living standards among Poland's residents.

The following research tasks were assumed:

1. To determine the effect the characteristics of the respondents to assess their quality of life.
2. Identification of differences in the sense of quality of life in selected Polish provinces.

The quality of life was surveyed in three provinces based on opinions given by respondents. Selection of the provinces for the analysis was purposeful. The selection criterion was the living standards measured by a synthetic indicator of the living standards. For the present study, it was assumed that standard of living is a category defining objective measures of people's lives and it is not identical with the concept of quality of life, for which such terms as "well-being" and "life satisfaction" are also used. In the study of the standard of living of Polish residents the method of multivariate analysis was used; it was based on a transition from multi-factorial description to single-factorial description. The decision to choose this method resulted from the analysed phenomenon being complex and multifaceted, but requiring conversion to such a form that would enable making comparisons between objects and making compilations with other variables. The procedure for constructing a measure [Frankowski 1991] starts from selecting the output variables, which include socio-economic indicators available in databases of the Polish Central Statistical Office (GUS), all

of which are relative in character. The selection of diagnostic variables follows a well-defined procedure. The pre-specified number of indicators is once again subjected to formal and statistical verification to allow further correct construction of the measure. At this stage, the criteria of variation and correlation between the variables are used. Subsequently, the use of Hellwig's parametric method is proposed [Czechowski 1997] to obtain a ranking list [Zeliaś (ed.) 2004] of Polish voivodeships in terms of the standard of living [Zeliaś (ed.) 2000; Gotowska 2008; Jakubczak 2010].

Too low level of variability defined the classic indicator of variability characteristics, which is:  $\gamma < 10\%$ , eliminates the feature from the group of potential diagnostic features. Such a variable should be regarded as quasi-steady, which gives not much information about the examined phenomenon.

**Table 1.** Example procedure for variable selection by method of Hellwig

Description	Calculations			
Calculation of the Pearson correlation coefficient $r$ , between the variables in the group of volatility $\gamma \geq 10\%$	Variables	X102 II	X105 II	X109 II
	X102 II	1.00	-0.07	0.22
	X105 II	-0.07	1.00	-0.29
	X109 II	0.22	-0.29	1.00
The calculation of the absolute value of $r$ and $\Sigma p$ for each variable	Variables	X102 II	X105 II	X109 II
	X102 II	1.00	0.07	0.22
	X105 II	0.07	1.00	0.29
	X109 II	0.22	0.29	1.00
	Sum	1.29	1.36	1.51
The choice of the first central variable (X105 II), where $r$ is the highest sum and elimination of selected variable and variables correlated with it, as the threshold adopted $r^* \geq 0.5$	Variables	X102 II	X109 II	
	X102 II	1.00	0.22	
	X109 II	0.22	1.00	
	Sum	1.22	1.22	
Selection of variables isolated	X102 II i X109 II			

Source: own study based on the results of a research grant No 1708/B/H03/2011/40 from the MSHE.

Table 1 shows the successive stages of the elimination of diagnostic features by Hellwig of variables related to area II – Demographic phenomena. Correlation coefficient was used, where the parameter  $r^*$  is used for the recognition of variables correlated with each other significantly and insignificantly. If the inequality

$$|r_{ij}| < r^*$$

Nr 12 (18)

holds, it is considered that the variables  $X_i$  and  $X_j$  are not significantly correlated with each other. Assumed threshold  $r^* \geq 0.5$ .

In each group of variables central and isolated variables have been selected, then the re-election based on substantive considerations have been made to determine the final set of variables. These were used to create comprehensive of variable. However, they could be used if their unification had been made under the direction of the impact on quality of life, that is all destimulants had been turned to stimulant according to the formula:

$$X_{it} = \frac{1}{X'_{it}}; (i = 1, 2, \dots, k; t = 1, 2, \dots, n),$$

where:

$X_{it}$  – stimulant,

$X'_{it}$  – destimulant.

This was followed by standardization of variables:

$$Z_{it} = \frac{x_{it} - \bar{x}_i}{s_i},$$

where:

$$x_i = \frac{1}{n} \sum_{i=1}^n x_{it},$$

$$s_i = \left[ \frac{1}{n} \sum_{i=1}^n (x_{ij} - x_i)^2 \right]^{0,5},$$

$Z_{it}$  – standardized diagnostic value of the variable  $X_i$  in the facility (unit of time) with the number  $t$ .

Standardized variables have been used to calculate the synthetic measure quality of life (SMQoL). The benchmark of development for the next variable was an abstract entity whose coordinates were defined by the maximum, the greatest value:

$$Z_{it} = \max_t z_{it}.$$

Then, for each object of study (region) the distance from the standard of development of the form was determined:

$$d_t = \left[ \sum_{i=1}^k (z_{it} - z_{i0})^2 \right]^{0,5}.$$

The next step was to determine the relative synthetic variable of the form:

$$M_i = 1 - \frac{a_{pi}}{D},$$

where:

$M_i$  – measure the development of the  $i$ -th object,

$d^{pi}$  – distance of the  $i$ -th object from the standard of positive,

$D$  – standard, which is the Euclidean distance between the upper pole (positive standard) and the lower pole (negative standard).

The norm is:

$$D = d(W_p, W_n) = \sqrt{\sum_{j=1}^m (z_{pj} - z_{nj})^2},$$

where:

$W_p, W_n$  – positive standard, negative standard,

$z_{pj}, z_{nj}$  – normalized value of the  $j$ -th characteristics appropriate for standard of positive and negative.

Formed this way, a synthetic variable  $M_i$  with probability close to unity ( $p \rightarrow 1$ ) takes values from the interval  $[0,1]$ . In Table 2 the basic characteristics of the formed synthetic variable are shown.

Creating a ranking of provinces in terms of standard of living has enabled the choice of three provinces representing different standards of living.

**Table 2.** Descriptive characteristics for synthetic variable describing the level of living for the Polish provinces in 2011

Descriptive characteristics	Value in 2011
The arithmetic mean	0.35
The standard deviation	0.11
Coefficient of variation	32.2%
Mediana	0.34
First quartile	0.28
Third quartile	0.44
Minimum	0.16
Maximum	0.56
Gap	0.40

Source: own study based on the results of a research grant No 1708/B/H03/2011/40 from the MSHE.

The assessed areas of the quality of life included residents' satisfaction with education and work at their place of residence.

Satisfaction with education and work was analysed in two aspects. In the educational aspect, respondents were asked to provide their opinion on the access to upper secondary education and interesting fields of studies. The quality of life in the occupational aspect was evaluated in terms of access to permanent employment for young people and unemployment.

Selection of respondents was purposefully random. The first target criterion concerned living standards and was also connected with the number of people in a group. Subsequent target criteria included: age, gender, education and place of residence. Information was obtained from respondents through surveys using a questionnaire form. The questionnaire was a multiple choice questionnaire. The total number of 300 persons was surveyed. The results are representative.

Chi-square test and classification tree method have been used to the data analysis. Classification tree method allows for the recursive divide of the population and report of ranked predictors of this division. Statistica 10.0 application has been used for the preparation of the calculation of classification trees method. The results are presented graphically in the form of charts and graphs called trees [Jakubczak, Gotowska 2013]. For the calculation of the test of independence using the chi-square the application MS Excel was used.

## 2. Quality of life as a measurable category

In contemporary literature, living conditions and quality of life are presented side by side. The quality of life is a concept that differs from the living standards in many aspects, including measurement methodology. The quality of life is subjective in character, i.e. can be assessed only by an individual to whom it refers based on the criteria accepted by such individual. In addition, it can be analysed within a specific period of time. It is a philosophical category which reflects the extent to which life provides a human being with satisfaction within a specified time [Chojecki 1974].

On the whole, it can be assumed that the quality of life is dependent on the sense of self-fulfilment in many aspects of one's life [Kryk, Włodarczyk-Śpiewak 2006]. The lack of possibility of fulfilling one's plans and developing personally, taking a rest or living in a community results in respondents feeling that their quality of life is worse. The feeling about the quality of life is culturally dependent. Specific standards and cultural expectations can make life easier for humans as

they indicate what the society expects from them or, conversely, can evoke discomfort due to the cognitive dissonance and the sense of limiting one's liberty. A similar situation occurs in reference to the social roles assumed by humans and related specific social expectations. The inability or unwillingness to meet allocated standards of behaviour results in respondents feeling that their quality of life is lower.

In science, the concept of the quality of life has not received a uniform definition. Some authors discuss it in two planes: objective and subjective. For example in the framework of the Urban Audit project it has been based on indicators of objective and subjective assessment of the different aspects of life [*Urban Audit...* 2004]. In the European study, EU-SILK, there are also a number of questions defining the subjective sense of quality of life [*Quality of Life...* 2013]. However, in the above-mentioned studies the quality of life has not been compared with standard of living at different levels, measured in a synthetic way. This study assumes that the quality of life refers to subjective indicators. Subjective indicators are those related to a system of values of an individual and affect the sense of happiness and purpose in life. Many authors consider the essence of the concept of the quality of life as relative to the extent of fulfilling one's needs in terms of one's whole existence [Bywalec 1991; Ratajczak 1993; Słaby 1990 (cit. after Johan 2005)]. In that sense, the quality of life is an expression of discrepancy between a subjectively accepted standard and the actual circumstances. This is not the only concept of the essence of the quality of life. For example, Nordenfelt and Kowalik postulate that it is related to the richness of experiences and not only to satisfying one's needs [Kowalik 1999].

With regard to the concept of the quality of life at work, it is assumed that the quality of life is a subjective category referring to the extent of fulfilment of one's needs in relation to a standard accepted by an individual within a specific time period. Therefore, an adequate method for gathering opinion on the quality of life is by a survey using a questionnaire as a tool for analysis.

### **3. Living standards and evaluation of education and employment in the place of residence of a respondent**

#### **3.1. Characteristics of the surveyed population by provinces**

The surveyed population of Polish residents can be defined as uniform in terms of the analysed characteristics. Both genders were represented in the survey, with the number of males being slightly lower (48.7%).

All age categories specified in the study participated in the survey with the lowest participation of persons aged 40–49 (15.7%) and the largest portion of respondents aged above 60 (25.3%). Participation among the remaining age groups was similar and totalled 19–20%. The highest number of respondents had completed secondary school education (31.3%) with the least numerous group being university graduates (16.0%). Among the respondents were both persons residing in urban areas (63.4%) and rural areas (36.7%). Respondents living in urban areas were subdivided into two groups: from cities with a population of up to 100,000 and from cities with a population above 100,000. The percentage of both groups was similar.

The respondents were split according to their monthly income per a household member. A large group of respondents (40%) refused to provide information on their income. Financial circumstances of over a half of the participants in the survey can be defined as better than the group average since 17.1% earns an income of PLN 751–1000 per a family member with every third respondent generating an income of more than PLN 1000. Less than 4% of respondents live on an income of less than PLN 500 per a household member.

Selected provinces differ from each other in terms of the living standards measured by a synthetic indicator of the living standards. The highest living standard is observed in Mazowieckie province and the lowest in Warmińsko-mazurskie province. Due to the varying sizes of populations to be assessed in respective provinces, the number of persons in representative groups of respondents was different (Table 3).

**Table 3.** The number of respondents in the voivodeships

Voivodeship	The number of respondents
Warmińsko-mazurskie (WM)	48
Kujawsko-pomorskie (KP)	71
Mazowieckie (M)	181

Source: own study based on the results of a research grant No 1708/B/H03/2011/40 from the MSHE.

The proportions of men and women in respective provinces corresponded to the general proportions of surveyed persons. The age structure of respondents was similar in groups divided by region and the differences within individual categories did not exceed 2 p.p.



Respondents from respective provinces varied the least in terms of secondary school education. Persons with primary school education were represented in the largest portion in Warmińsko-mazurskie. In Mazowieckie province the largest group were people with vocational education, while in Kujawsko-pomorskie – university graduates.

The same number of respondents came from rural areas, regardless the actual province. The largest number of persons from cities and towns with a population of up to 100,000 was surveyed in Warmińsko-mazurskie province. Among all three provinces, Mazowieckie province was represented by the largest number of persons from cities with a population of above 100,000.

The highest income per a household member was among respondents from Mazowieckie province, who were also more willing to reveal their income. Close to 60% of respondents in Warmińsko-mazurskie were unwilling to provide their estimated income per a family member. In this province, income figures were the lowest.

### 3.2. The level of education and employment by regions and according to the characteristics of the respondents

Subjective assessment of quality of life consisted of two elements: access to education and work. Questions that were asked to the respondents are presented in Table 4. Related questions were included in the study *Urban Audit*: questions 2 and 11.

**Table 4.** Questions to assess subjective quality of life

Questions	Grading scale		
	Negative	Positive	Neutral
Young people have a good selection of secondary schools	Strongly disagree	Rather agree	No opinion
You can study at universities of interesting fields	Disagree	Agree	
For young people there is a constant work in the area	Mildly disagree	Strongly agree	
Unemployment in the region is relatively low			

Source: own study based on a research grant No 1708/B/H03/2011/40 from the MSHE.

The parameters and assumptions of the chi-square test are shown in Table 5.

Respondents were asked whether they agree that young people have a great selection of schools over secondary level in the province, where

**Table 5.** Parameters and assumptions and the results of the chi-square test for the four variables

Parameter	Value
Number of degrees of freedom*	$df = 2$
Probability	$p = 0.05$
Chi-square parameter read from the tables	$\chi^2(p, df) = 5.9915$
Chi-square parameter computed 1	16.2787
Chi-square parameter computed 2	4.8349
Chi-square parameter computed 3	–
Chi-square parameter computed 4	–

\* To test the chi-sq the scale was narrowed down to two responses: positive and negative, omitting no opinion.

Source: own study based on a research grant No 1708/B/H03/2011/40 from the MSHE.

they live. From the results of the test of independence can be seen that the value of  $\chi^2$  calculated is higher than the array, therefore,  $H_0$  should be rejected in favour of  $H_1$  with the probability of error of less than 0.05. The  $H_1$  hypothesis assumes the existence of relationship between quality of life and satisfaction with the quality of life for residents in terms of access of young people to education at the upper secondary level.

Differences in access to upper secondary education were observed for surveyed provinces. The lowest level of access was observed in Mazowieckie province – responses of 60.5% residents of this region were within a negative range of assessment. The highest assessment for this aspect was provided in Kujawsko-pomorskie province – over 45% of respondents from this region were more or less satisfied with access to education (Table 6).

Access to interesting fields of studies was evaluated by respondents from various provinces slightly differently compared to the previous aspect of the quality of life. Worth noting are responses of residents of Warmińsko-mazurskie province who provided the lowest assessment of access to interesting fields of studies. Only one in three respondents from this group provided positive evaluation in this respect compared e.g. to 45% respondents from Kujawsko-pomorskie province. The results of chi-square test do not allow for rejecting the null hypothesis, therefore it should be considered that the residents of provinces with different levels of life are equally dissatisfied or satisfied with the analysed aspect.

**Table 6.** Assessment of life quality in the voivodeships

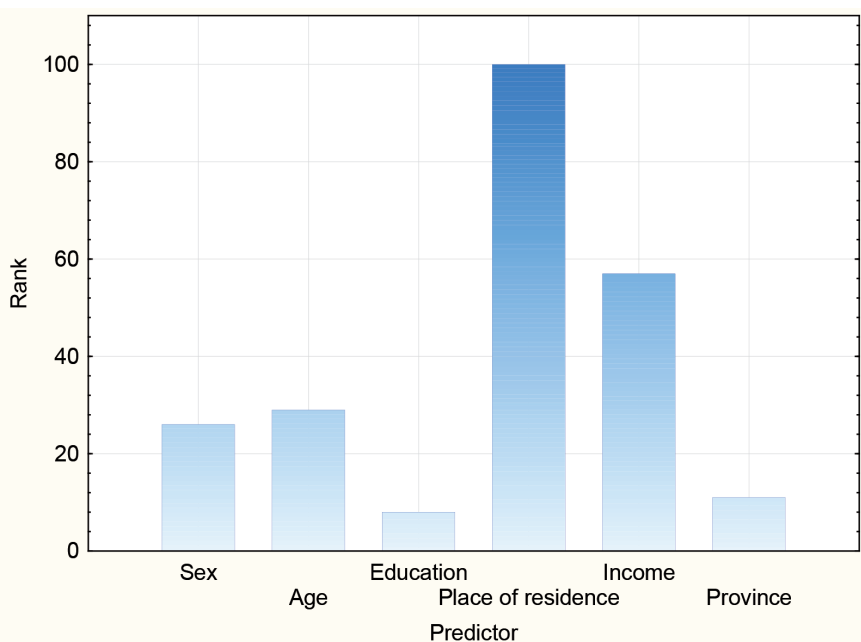
Description: categories and values in%	Strongly disagree	Disagree	Mildly disagree	Rather agree	Agree	Strongly agree	No opinion
Access to over-junior high schools							
Warmińsko-mazurskie	4.2	8.3	22.9	37.5	22.9	2.1	2.1
Kujawsko-pomorskie	5.6	9.9	16.9	52.1	12.7	1.4	1.4
Mazowieckie	3.9	10.5	26.5	28.2	22.1	6.1	2.8
Total	4.3	10.0	23.7	35.3	20.0	4.3	2.3
Access to the courses of study							
Warmińsko-mazurskie	16.7	16.7	27.1	18.8	8.3	6.3	6.3
Kujawsko-pomorskie	11.3	19.7	21.1	32.4	9.9	2.8	2.8
Mazowieckie	5.5	14.4	30.4	22.7	12.2	8.8	6.1
Total	8.7	16.0	27.7	24.3	11.0	7.0	5.3
Access to permanent employment for young people							
Warmińsko-mazurskie	41.7	33.3	18.8	4.2	2.1	0.0	0.0
Kujawsko-pomorskie	33.8	25.4	32.4	8.5	0.0	0.0	0.0
Mazowieckie	20.4	27.6	26.5	21.0	1.7	0.6	2.2
Total	27.0	28.0	26.7	15.3	1.3	0.3	1.3
Unemployment in the region							
Warmińsko-mazurskie	39.6	31.3	20.8	8.3	0.0	0.0	0.0
Kujawsko-pomorskie	36.6	19.7	31.0	9.9	1.4	0.0	1.4
Mazowieckie	11.0	32.0	30.4	17.1	6.1	0.6	2.8
Total	21.7	29.0	29.0	14.0	4.0	0.3	2.0

Source: own study based on the results of a research grant No 1708/B/H03/2011/40 from the MSHE.

It was not possible to carry out the chi-square test for the next two variables defining aspects of the assessment of satisfaction with the job market, due to insufficient number of members of one of the groups, but the results differ enough that it can be considered that we do not make a big mistake to consider that the assessment of the quality of life in these respects was associated with quality of life.

Access to work for younger residents from surveyed regions was evaluated the highest by persons from Mazowieckie province. One in five residents of this province replied they rather thought that the access was sufficient. In the remaining two provinces, respondents' opinions on this subject are more negative and similar to each other.

Residents of provinces with various living standards have different views on the issue of unemployment in their regions. The lowest assessment of unemployment level was among residents of Warmińsko-mazurskie province – 91.7% of respondents from this region expressed



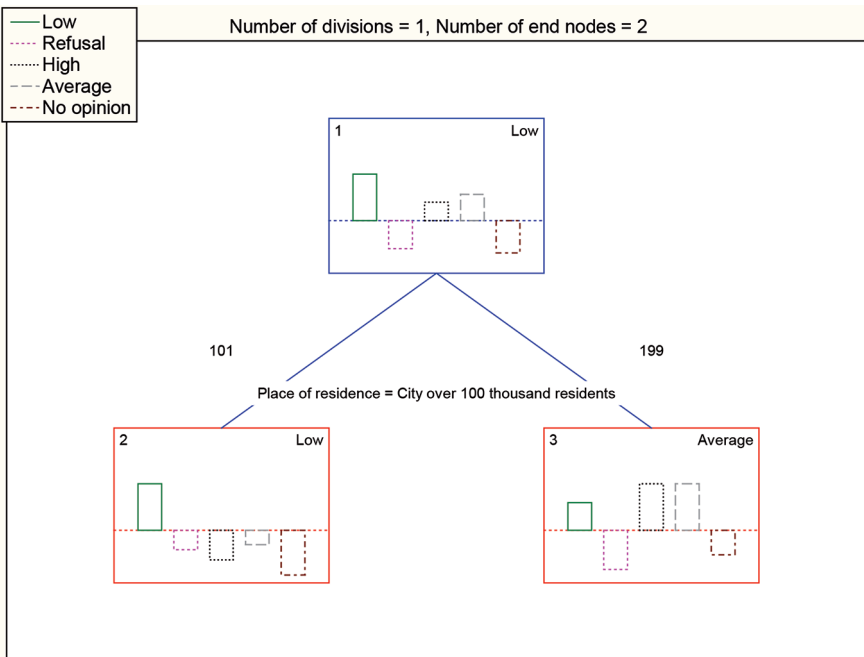
Rating on a scale of 0 (low importance) to 100 (high importance)

**Figure 1.** Ranking of predictors in assessing the availability of secondary schools according to the characteristics of the respondents

Source: own study based on the results of a research grant No 1708/B/H03/2011/40 from the MSHE.

negative opinion in this respect. Relatively high evaluation of the unemployment was among residents of Mazowieckie province with one in five respondents providing positive assessment, yet to a moderate extent.

Validity of characteristics of the respondents has been assessed by carrying out a recursive division of by data mining analysis tool. There were 4 divisions, and as a result of their 5 end nodes were obtained. The results can be interpreted in such a way that the respondents living in town of more than 100,000 residents assess the access to secondary schools as low. The low satisfaction in this regard have also residents of other localities, including the village, who refused to answer about their own income. Persons from towns up to 100,000 residents have low or average satisfaction with this aspect of education. Highest availability of secondary schools has been assessed by the rural population, including most women from the countryside. This means that certain features of respondents beyond the standard of living can have an impact on the assessment of quality of life (Figure 1).



**Figure 2.** Rating of satisfaction with learning opportunities in higher education according to the characteristics of the respondents

Source: own study based on the results of a research grant No 1708/B/H03/2011/40 from the MSHE.

Ranking of predictors, which is shown in Figure 1, clearly indicates the importance of the place of residence as a variable with the highest power in the division conducted the assessment of satisfaction of secondary education. Standard of living symbolized by the respondent belonging to the province was not a factor significantly influencing the differentiation of the assessment.

Respondents assessing the quality of life in terms of access to interesting fields of study were divided into two groups with different views. The place of residence is the differentiating factor of satisfaction with higher education. The higher rating is given by respondents from the cities over 100,000 residents. The level of satisfaction of remaining respondents can be described as average. Place of residence was the only predictor affecting the conducted division. Similarly, as in the case of secondary education, the standard of living had no significant effect on the perceived satisfaction from this aspect of quality of life.

The divisions performed in the labour market did not lead to statistically significant findings in differentiation, thus the features explaining differences presented in Table 6 have not been found (Figure 2).

#### 4. Summary

Based on the analysis of the results, the following conclusions were formulated.

1. The differences observed in quality of life, depending on the standard of living in terms of education and employment, were statistically significant in case of the assessment of access to secondary school ( $p = 0.05$ ).

2. Due to the lack of linear convergence in all assessed areas, i.e. there is no direct relation between an increase in the living standards and higher assessment of the quality of life, it can be concluded that the standards of living are not the only major factor that determines the assessment of the quality of life. Different assessments of specific areas of the quality of life may also result from respective aspects of the living standards being diversified in a given area, since not all indicators that make up the synthetic indicator of the quality of life must be equally high, e.g. access to upper secondary education was evaluated the lowest in the province with the highest living standards. Moreover, the relatively high indicators, e.g. describing accessibility to upper secondary education in Mazowieckie province compared to other Polish provinces can still be insufficient to satisfy residents' needs.

3. The differences arising from objective reasons such as respondents' education, which is again partly the effect of the living standards, affect the assessment of the quality of life itself. For example, residents of Warmińsko-mazurskie province, with the lowest portion of people with university education and the highest number of persons who had completed primary school education only, provided the lowest evaluation of interesting fields of study. This factor, however, was not statistically significant and did not lead to the division of the different groups in terms of the examined characteristics.

4. The features which significantly contributed to the statistical distribution of the possible most homogeneous groups of respondents were place of residence, income, gender. They are listed in order of importance, as predictors. They were important in the distribution of respondents by the assessment of availability of high schools. If the assessment of access to interesting fields of study there was only a place of residence. In the area of job satisfaction there has not achieved statistically significant divisions.

5. Objective assessment of the quality of life by using a synthetic indicator of the living standards corresponded to respondents' declaration on income per a family member in respective provinces.

The proposed methodology applied in measuring the living standards and the quality of life and the comparison between the two categories is valuable from a cognitive and informative points of view. The results obtained with this methodology enable at the same time demonstration of differences and indication of reasons for their occurrence. The information obtained in this way enables assessment and adaptation of the regional strategies to residents' needs and more efficient planning of the flow of funds for specific purposes, ensuring better compliance with the principles of sustainable development.

## References

- Borys T., Rogala P. (eds.), *Jakość życia na poziomie lokalnym – ujęcia wskaźnikowe*, UNDP, Warszawa 2008.
- Bywalec C., *Wzrost gospodarczy a poziom życia społeczeństwa polskiego*, Wydawnictwo Akademii Ekonomicznej w Krakowie, Kraków 1991.
- Chojecki H., *Optymalizacja jakości. Metody psychologiczne*, PWE, Warszawa 1974.
- Czechowski L., *Wielowymiarowa ocena efektywności ekonomicznej przedsiębiorstwa przemysłowego*, Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 1997.
- Frankowski Z., *Zastosowanie metod taksonomicznych w badaniach przestrzennych*, Agencja Wydawnicza Instytutu Gospodarki Przestrzennej i Komunalnej, Warszawa 1991.
- Gotowska M., *Ekonomiczne i społeczne uwarunkowania poziomu życia mieszkańców Polski*, SGGW, Warszawa 2008 [praca doktorska].

- Jakubczak A., *Economical effectiveness of enterprises by the sectors of Poland's national economy*, [in:] A.P. Balcerzak, J. Boehlke, E. Rogalska (eds.), *Enterprise in Highly Competitive Environment*, Wydawnictwo Naukowe Uniwersytetu Mikołaja Kopernika, Toruń 2010.
- Jakubczak A., Gotowska M., *Application of the one of data mining methods for analyzing the quality of life*, "Studies & Proceedings of Polish Association for Knowledge Management" 2013, nr 65, pp. 4–16.
- Johan M., *Polska – UE. Porównanie poziomu życia ludności*, Difin, Warszawa 2005.
- Kowalik S., *Jakość życia psychicznego*, Instytut Psychologii WSP, Bydgoszcz 1999 [maszynopis niepublikowany].
- Kryk B., Włodarczyk-Śpiewak K., *Wybrane aspekty jakości życia na przykładzie województwa zachodniopomorskiego*, [in:] D. Kopycińska (ed.), *Zachowania rynkowe gospodarstw domowych i przedsiębiorstw w okresie transformacji systemowej w Polsce*, Katedra Mikroekonomii Uniwersytetu Szczecińskiego, Szczecin 2006.
- Ratajczak Z., *W pogoni za jakością życia. O psychologicznych kosztach radzenia sobie w sytuacji kryzysu ekonomicznego*, "Kolokwia Psychologiczne", Warszawa 1993.
- Rojas M., *The Measurement of Quality of Life: Conceptualization Comes First. A Four-Qualities-of-Life Conceptual Framework and an Illustration to Latin America*, Mexico 2014, <http://www.iadb.org/res/laresnetwork/files/pr308finaldraft.pdf> (24.06.2014).
- Quality of Life in Cities. Perception Survey in 79 European Cities*, European Commission, Brussels 2013.
- Słaby T., *Poziom życia, jakość życia*, "Wiadomości Statystyczne" 1990, nr 6.
- Szukielojć-Bieńkuńska A., Walczak T., *Statystyczny pomiar postępu społeczno-gospodarczego w zmieniającym się świecie*, „Wiadomości Statystyczne” 2011, nr 7/8.
- Urban Audit. Methodological Handbook*, Office for Official Publications of the European Communities, Luxembourg 2004.
- Veenhoven R., *Are the Russians as unhappy as they say they are? Comparability of self-reports across nations*, „Journal of Happiness Studies” 2001, Vol. 2, pp. 111–136.
- Zeliaś A. (ed.), *Taksonomiczna analiza przestrzennego zróżnicowania poziomu życia w Polsce w ujęciu dynamicznym*, Wydawnictwo Akademii Ekonomicznej w Krakowie, Kraków 2000.
- Zeliaś A. (ed.), *Poziom życia w Polsce i krajach Unii Europejskiej*, PWE, Warszawa 2004.

## ZADOWOLENIE Z EDUKACJI I PRACY JAKO PODSTAWA DO OCENY JAKOŚCI ŻYCIA W WYBRANYCH WOJEWÓDZTWACH O RÓŻNYM POZIOMIE ŻYCIA

**Streszczenie:** Celem artykułu było przedstawienie różnic w ocenie jakości życia w zakresie edukacji i zatrudnienia w wybranych województwach Polski. Hipoteza badawcza zakładała, że występują różnice w ocenie jakości życia w Polsce i wzajemne zależności pomiędzy jakością życia a poziomem życia. Badania przeprowadzono na grupie respondentów wybranych celowo z trzech województw. Województwa zostały wybrane z użyciem wielowymiarowej analizy i kryterium wyboru był poziom życia mieszkańców Polski. Badania przeprowadzono w ramach badań własnych finansowanych z grantu (2001–2013) „Poziom życia i jakość życia mieszkańców Polski” 1708/B/H03/2011/40 z Ministerstwa Nauki i Szkolnictwa Wyższego.

**Keywords:** zróżnicowanie jakości życia, pomiar jakości życia, jakość edukacji i zatrudnienia, poziom życia, zrównoważony rozwój.