

# QUALITY OF LIFE, SOCIAL CAPITAL, POVERTY AND SOCIAL EXCLUSION IN POLAND





**CENTRAL STATISTICAL OFFICE**

**QUALITY OF LIFE,  
SOCIAL CAPITAL,  
POVERTY AND SOCIAL EXCLUSION  
IN POLAND**

**WARSAW 2013**

**Preparation of the elaboration:** Central Statistical Office,  
Social Surveys and Living Conditions Department  
Statistical Office in Łódź

**Editorial supervision:** Anna Bieńkuńska, Tomasz Piasecki

Cooperation: Piotr Łysoń

**Team:**

French National Institute for Statistics  
and Economic Studies (INSEE) Daniel Verger  
Alexandre Lebrère

Central Statistical Office Anna Bieńkuńska  
Paweł Ciecieląg  
Sławomir Nałęcz  
Paweł Piaskowski  
Robert Wieczorkowski

and Bronisław Lednicki,  
whom we shall always remember as an outstanding  
practitioner of the sampling method, and a very kind  
colleague

Statistical Office in Łódź Elżbieta Kolasa  
Izabela Jachowicz  
Tomasz Piasecki

**Cooperation:** Małgorzata Gniewaszewska, Central Statistical Office  
Dorota Napiórkowska, Statistical Office in Łódź  
Andrzej Nowicki, Central Statistical Office  
Karol Sobestjański, Central Statistical Office  
Małgorzata Szklarz, Statistical Computing Centre in Warsaw  
Jolanta Włodarczyk, Statistical Office in Łódź

**Graphics and cover design:** Katarzyna Szkopiecka, Statistical Office in Łódź

**Typesetting:** Katarzyna Szkopiecka, Statistical Office in Łódź

*English version of this elaboration is available online only.*

**ISBN 978-83-7027-526-6**

## **PREFACE**

*This elaboration, entitled “Quality of Life. Social Capital, Poverty and Social Exclusion in Poland”, contains the analysis of the results of a new multi-purpose and comprehensive household questionnaire survey, entitled “Social Cohesion Survey”, implemented by the Central Statistical Office (CSO) in 2011. The survey refers to several national and international initiatives aimed at expanding the statistical information resources in order to allow a reliable diagnosis of many aspects of the quality of life, as recommended, among others, in the Stiglitz-Sen-Fitoussi Report.*

*The results of the survey have already been presented, both as the generally-available information notes of the CSO, and during various conferences – for the first time in September 2011. This current elaboration is analytical, and it is supplemented with a description of the specific methodological solutions applied in the analysis. There has been decided to provide information on selected issues not being a the subject of any permanent studies or of regular elaborations of the CSO. However, the issues seem to be of special importance from the point of view of social policies and public interest.*

*The elaboration consists of seven parts. It begins with a chapter devoted to the quality of life, focusing on subjective assessments. An attempt was undertaken to determine the influence exerted by various factors, both material and non-material, on the level of life satisfaction.*

*In Chapter 2 there has been presented the results of a multidimensional analysis of poverty. It shows the degree to which poverty in Poland is connected with social isolation which in turn, may lead to social exclusion. Various factors contributing to the accumulation of the different forms of poverty and social isolation are also discussed.*

*In Chapter 3 issues related to digital exclusion and inclusion has been raised. Such issues are crucial in terms of the growing role of information and communication technologies in various areas of human life. It includes also an estimation of the scale of the phenomena in question as well as the socio-demographic profile of persons by both e-exclusion and e-inclusion.*

*The issues analysed in Chapter 4 focus on social capital as seen in networking terms. The social cohesion survey enabled an analysis of the resources of both the association capital that is related to the activity conducted within formal groups and organisations and the family-based and friends and neighbours-based capital forming part of the informal social capital.*

*Chapter 5 – being the last of the cross-sectional analytical chapters in the elaboration – concerns religious issues. Religiousness, as evidenced in this chapter, is seen to be conditioned both socially and culturally, and is reflected in both individual and community-based activities of people. In this chapter there has been discussed different forms of the socio-religious life led by individuals, such as their sense of affiliation with the Church, socio-religious practices and intensity of involvement in activities conducted by the Church and other religious organisations.*

*To meet the growing demand for data concerning the territorial diversification of the quality of life in a broad sense, we have also prepared an annex (part six of the elaboration) with sets of indicators by voivodship that illustrate, among other items, material situation of households, poverty levels experienced, social relationships displayed, and the sense of satisfaction with various aspects of life held by the people of Poland. The major part of the annex comprises graphic presentations, figures and tables which jointly provide the portraits of individual voivodships in terms of the issues targeted in the elaboration. These are preceded by a short methodological and analytical commentary regarding the annex data.*

*The elaboration ends with a methodological annex (part seven) that provides information on an organisational and methodological solutions adopted in the social cohesion survey.*

*At this point, we wish to express our gratitude to all the people, including those who are not explicitly mentioned, who in any way contributed to preparing and conducting the survey, and to compiling the information presented here.*

*We wish to thank the management board and experts of the INSEE, and in particular, Mr. Daniel Verger, for the opportunity to consult them, both at the preparation and results compilation stage. We also thank the INSEE and the CSO departments in charge of international cooperation for the efficient organisation of the experts' cooperation.*

*Our thanks also go to the interviewers and coordinators of field work and to the managers and employees of the Statistical Office in Łódź for their assistance and cooperation at all stages of the survey implementation and results compilation. We are also grateful to the Statistical Computing Centre for designing the registration and result verification programmes and for conducting part of the calculations.*

*We wish to specially thank all the respondents who were willing to spend time on participating in the survey.*

*The entire substantive work – from the origin of the social cohesion survey concept to the survey results analysis – was supervised by Ms. Anna Bieńkuńska from the Department of Social Surveys and Living Conditions (head of the Cross-Sectional Analysis Division), whom I wish to thank for her tremendous contribution and involvement.*

Piotr Łysoń, PhD

Director of the Social Surveys

and Living Conditions Department, CSO

## CONTENTS

Chapter	Section	Title	Page
<b>1</b>		<b>QUALITY OF LIFE .....</b>	<b>7</b>
		<i>Anna Bieńkuńska, Tomasz Piasecki, Daniel Verger, Alexandre Lebrère</i>	
	1	INTRODUCTION .....	7
	2	LIFE SATISFACTION .....	8
	3	THE DETERMINANTS OF LIFE SATISFACTION .....	13
	4	MENTAL WELL-BEING .....	22
	5	SUMMARY.....	33
<b>2</b>		<b>POVERTY, ISOLATION AND SOCIAL EXCLUSION .....</b>	<b>35</b>
		<i>Anna Bieńkuńska, Tomasz Piasecki, Daniel Verger, Alexandre Lebrère</i>	
	1	INTRODUCTION .....	35
	2	POVERTY.....	36
	3	FROM POVERTY TO SOCIAL EXCLUSION – IS POVERTY RELATED TO SOCIAL ISOLATION? .....	53
	4	SUMMARY.....	61
	5	LOGISTIC REGRESSION MODELS.....	63
<b>3</b>		<b>DIGITAL EXCLUSION AND INCLUSION OF PEOPLE AND HOUSEHOLDS.....</b>	<b>77</b>
		<i>Paweł Piaskowski</i>	
	1	VARIOUS FORMS OF E-EXCLUSION AND E-INCLUSION .....	77
	2	THE E-EXCLUSION OF HOUSEHOLDS .....	80
	3	THE E-EXCLUSION AND E-INCLUSION OF PEOPLE.....	82
	4	VIRTUAL SOCIAL CAPITAL .....	89
	5	SUMMARY.....	91
<b>4</b>		<b>SOCIAL CAPITAL IN NETWORK TERMS. INVOLVEMENT IN PRIMARY AND INFORMAL GROUPS AND SECONDARY ASSOCIATIONS.....</b>	<b>93</b>
		<i>Anna Bieńkuńska, Sławomir Nałęcz, Tomasz Piasecki</i>	
	1	INTRODUCTION .....	93
	2	ASSOCIATION-BASED SOCIAL CAPITAL - PARTICIPATION IN SECONDARY ASSOCIATIONS.....	94
	3	INFORMAL SOCIAL CAPITAL .....	116
	4	SUMMARY.....	138

Chapter	Section	Title	Page
<b>5</b>		<b>INVOLVEMENT IN SOCIAL AND RELIGIOUS ACTIVITY .....</b>	<b>139</b>
		Paweł Ciecieląg	
	1	INTRODUCTION .....	139
	2	VARIOUS FORMS OF PARTICIPATION IN THE SOCIAL AND RELIGIOUS LIFE OF THE CHURCH.....	139
	3	INVOLVEMENT IN SOCIAL AND RELIGIOUS ACTIVITY BY SELECTED SOCIO-DEMOGRAPHIC FACTORS .....	141
	4	REGIONAL AND TERRITORIAL CONDITIONS OF INVOLVEMENT IN THE SOCIAL AND RELIGIOUS ACTIVITY OF THE CHURCH.....	150
	5	SUMMARY .....	152
<b>6</b>		<b>VOIVODSHIP ANNEX. TERRITORIAL DIMENSION OF THE QUALITY OF LIFE – SELECTED INDICATORS OF THE QUALITY OF LIFE FOR VOIVODSHIPS .....</b>	<b>155</b>
		Collective study	
	1	INTRODUCTION .....	155
	2	METHODOLOGICAL AND ANALYTICAL NOTES.....	158
	3	VOIVODSHIPS PORTRAITS .....	174
<b>7</b>		<b>METHODOLOGICAL ANNEX.....</b>	<b>271</b>
		Collective study	
	1	SURVEY ORGANISATION .....	271
	2	INDICATORS OF SURVEY IMPLEMENTATION .....	275
	3	DEFINITIONS .....	277
	4	SAMPLING SCHEME IN THE SOCIAL COHESION SURVEY.....	282
	5	WEIGHTS USED IN THE SOCIAL COHESION SURVEY .....	285
	6	ACCURACY ASSESSMENT METHODU' .....	288
	7	INCOME IMPUTATION .....	296
	8	LOGISTIC REGRESSION .....	298

## 1. INTRODUCTION

In recent years, there has been growing interest in the category and statistical measurement of the quality of life. This interest is found not only among the researchers working within various disciplines, but also among the public and state authorities. Improving the quality of life and reducing the excessive differences in the material and social situation of various population groups constitute the principal objective of contemporary socioeconomic development concepts. Levelling off the disparities in the broadly-defined quality of life, along with eliminating the phenomena related to social exclusion, also form the priority of social policies in the European Union and in individual Member States.

Answering the question of how the quality of life can be effectively measured is by no means easy, yet discussion on detailed solutions in this field has been conducted in the public sphere, among the researchers, and in literature devoted to the subject matter. Hence, within the European statistical system, a consensus has come about as to the general quality measurement concept. According to the Stiglitz Report, it is assumed that the statistical measurement of the quality of life should comprise two dimensions, i.e. a set of objective conditions in a broad sense, as well as the subjective well-being, which is often left aside in the surveys of “the official statistics”. As part of the objective conditions, the following domains should be considered: material living conditions, health, education, economic activity, leisure activities and social relations, individual safety, the quality of the state and its ability to ensure basic rights to its citizens, and the methods of executing those rights, as well as the quality of infrastructure and natural environment in the place of residence. Measuring the subjective well-being there should be taken into consideration the perceived quality of life, i.e. satisfaction drawn by people from their life in general, and from its various aspects, along with the elements concerning mental well-being and emotional experiences<sup>1</sup>.

Considering both the objective and subjective dimension of the quality of life, one can indicate and highlight the premises which assign a particularly important role to the subjective aspect. Firstly, socio-economic development aims at enhancing the satisfaction drawn by people from the progressing changes. In this respect, direct assessments made by the persons concerned constitute the most adequate measures of the degree of satisfaction. Secondly, it is often very difficult, or even impossible, to produce an objective measurement of the various elements which amount to the quality of life.

---

<sup>1</sup> See e.g. *Report by the Commission on the Measurement of Economic Performance and Social Progress* (2009), <http://www.stiglitz-sen-fitoussi.fr/en/index.htm>;  
*Measurement of the Quality of Life*: TF3 Contribution to the summary report of the Sponsorship Group [http://epp.eurostat.ec.europa.eu/portal/page/portal/quality\\_life/publications](http://epp.eurostat.ec.europa.eu/portal/page/portal/quality_life/publications).



This concerns, e.g., assessing the degree of satisfaction of the higher-order needs that are related, e.g., to interpersonal relations or lifestyle. Thirdly, knowledge of the social perception of living conditions, emotional experiences and social satisfaction may have a considerable practical bearing on planning specific actions in the field of socio-economic policies. It is often the perceived quality of life, relative to other people or referring to the past, and not the objective one, which proves decisive to individual's attitudes and behaviours in the sphere of private and public life. The sense of too large dissonance between the perceived level of satisfaction of the needs and the aspirations may generate a variety of adaptation activities<sup>2</sup>.

This chapter is based on the principle of assessing the quality of life especially through its subjective dimension. The considerations are primarily focused on the subjective quality of life (i.e. as perceived by an individual), understood as the level of satisfaction drawn by people from their life, both in general and with respect to its various aspects. This assessment is supplemented with issues related to mental well-being. The wide range of the subject area of the survey has also allowed the analysis of the contribution of various factors, both material and non-material (including the factors concerning the objective quality of life), towards shaping the phenomena in question.

## **2. LIFE SATISFACTION**

Assessing the level of overall life satisfaction is one of the most common measures of the subjective quality of life. It is assumed that, when assessing the level of their own life satisfaction, people take into account all the aspects of the general quality of life which are considered significant. Therefore, this measure provides information on the degree of satisfaction with respect to individual needs and expectations.

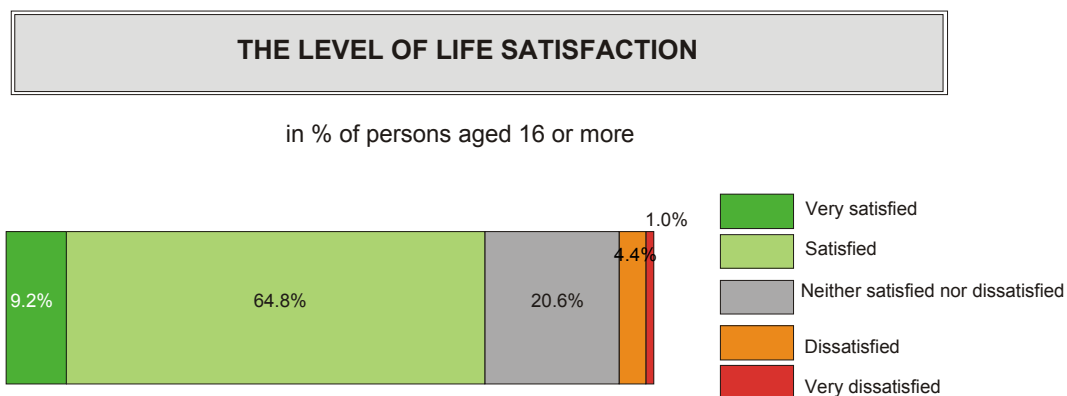
### **The level and social diversification of overall life satisfaction**

A vast majority (i.e. nearly three-fourths) of Poland's inhabitants aged 16 or more were satisfied or very satisfied with their lives. Indeed, every eleventh (approx. 9%) declared themselves to be very satisfied. Furthermore, every fifth person defined the level of his/her life satisfaction as medium. However, every twentieth person was dissatisfied with his/her life, and every hundredth claimed to be very dissatisfied.

---

<sup>2</sup> See, e.g.: *Subjective well-being and social policy(2010)*, Edited by Simon Chapple, European Commission *Directorate-General for Employment, Social Affairs and Inclusion*, <http://ec.europa.eu>; Anna Szukielojć-Bieñkuńska, Tadeusz Walczak, (2011), *Statystyczny pomiar postępu społeczno-gospodarczego w zmieniającym się świecie (Statistical measurement of the socioeconomic progress in the changing world)*, Wiadomości Statystyczne nr 7/8, Warszawa.

Figure 1.1.



The level of life satisfaction is socially diversified in terms of many characteristics and factors (see *Figure 1.2.*). Younger people are more frequently satisfied with their lives than the older ones. In the youngest age group (16-24), approx. 84% of persons were satisfied with their lives. In the consecutive age groups, the level of life satisfaction was lower, with the lowest value recorded among people aged 75 or more, where it reached approx. 62%.

Taking into consideration the diversification in terms of education, the share of persons satisfied with their lives<sup>3</sup> ranged from approx. 65% among persons with at most lower secondary education to nearly 87% among persons holding master's degree or higher.

Persons employed in top managerial positions (i.e. the managing staff, senior office workers and directors) and the group of specialists were the most satisfied with their lives (approx. 84-85%). In the group of elementary workers, farmers, gardeners and fishermen, as well as industry workers and craftsmen, the share of persons satisfied with their lives was the lowest, ranging from approx. 57% to approx. 69%.

The aforementioned factors, i.e. age, education and occupation, are connected with economic activity. The surveys have revealed that the type of activity practised considerably diversifies the level of life satisfaction. Students were the most satisfied with their lives (approx. 88%), as well as people working outside agriculture, both paid employees and self-employed persons (approx. 82%). The lowest levels of life satisfaction were observed among persons living off a disability pension (approx. 52%) and among unemployed persons (approx. 56%). The group of retired persons seems considerably diversified, depending on whether they receive their pension from the farmer system or from the employee system. Among the former, approx. 59% of persons were satisfied with their lives, i.e. by approx. 10 percentage points less than among the latter.

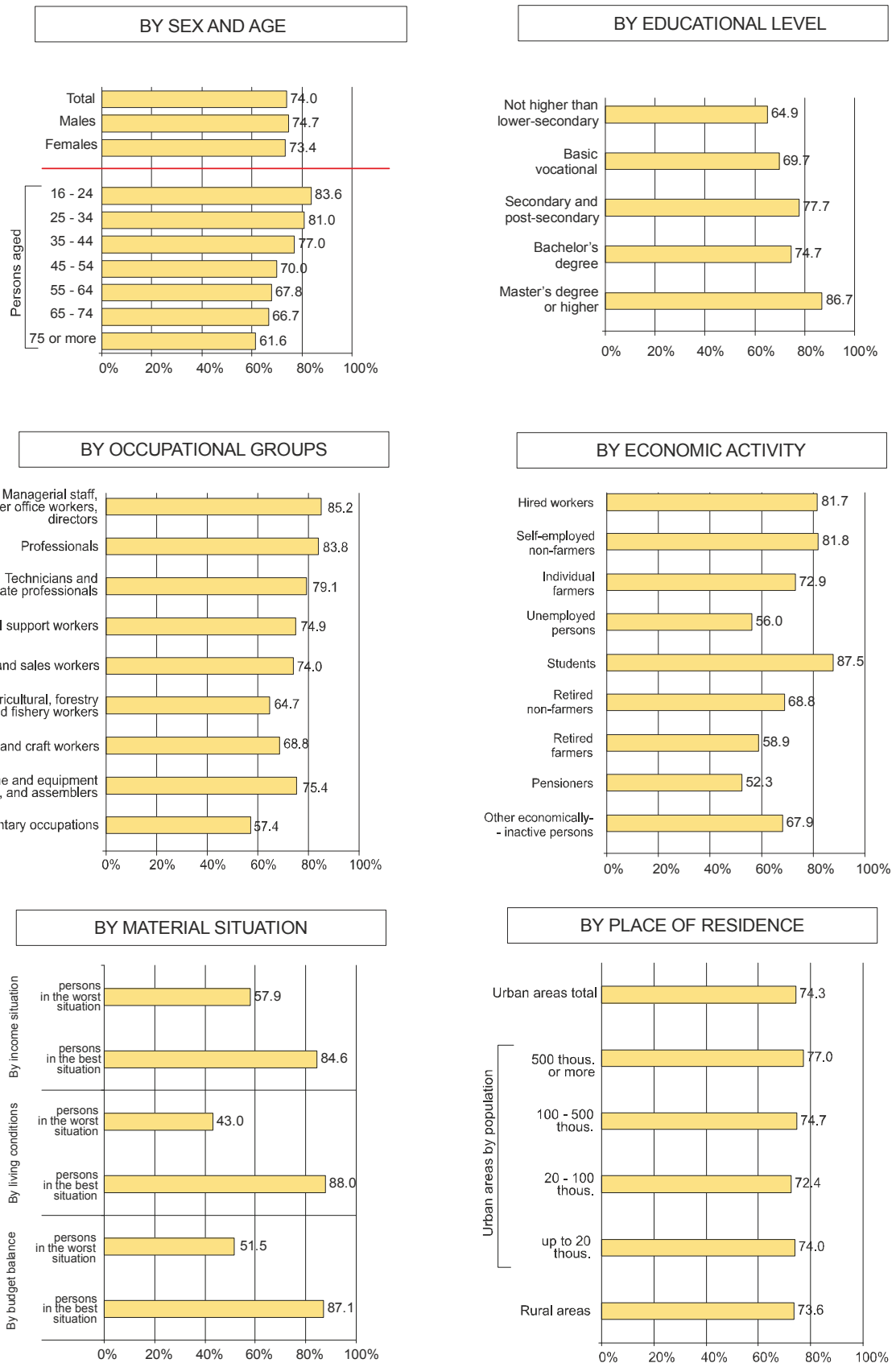
Minor differences in the level of life satisfaction were also observed among rural and urban inhabitants. From approx. 72% to 77% of urban inhabitants, depending on the size of the urban area, were satisfied with their lives, with the highest level recorded in large urban agglomerations. For rural areas approx. 74% of persons were satisfied with their lives. The material situation, and in particular the living conditions, lead to a considerable diversification of life satisfaction. Approx. 43% of persons residing in the households considered poor in terms of their living conditions were satisfied with their lives, i.e. over two times less than among the households with the best living standards. Among the poorest households in terms of income, 58% of persons were satisfied with their lives whereas among people having difficulties with balancing their household budget – approx. 52%. In comparison, in the group of people with the highest income, approx. 85% were satisfied with their lives, and in the group of people with the most favourable budget situation – approx. 87%.

<sup>3</sup> The category of people satisfied with their lives includes satisfied and very satisfied people.

Figure 1.2.

## THE LEVEL OF LIFE SATISFACTION (persons satisfied or very satisfied with their lives)

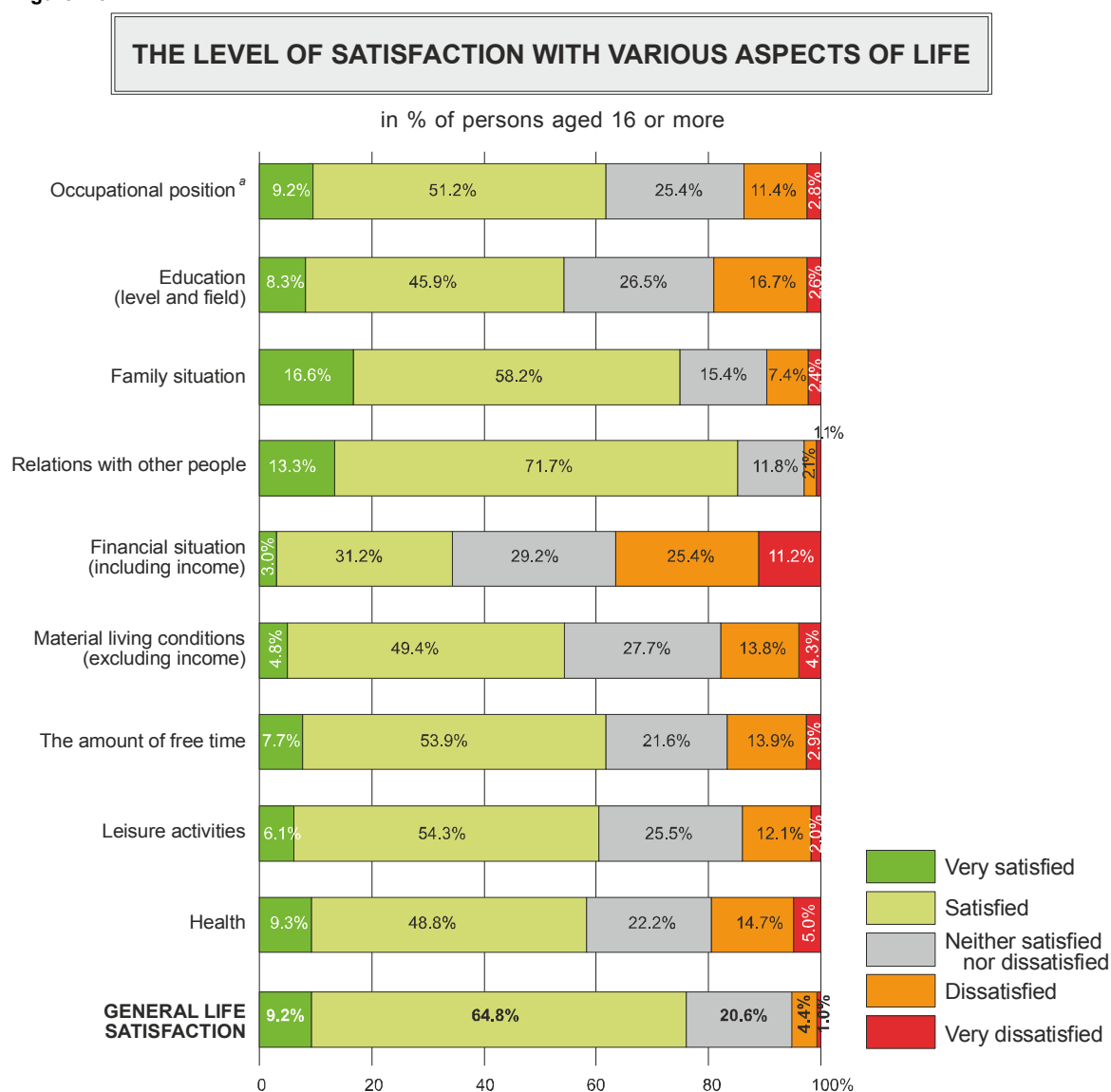
in % of persons aged 16 or more



## Satisfaction with various aspects of life

In the social cohesion survey, respondents were not only asked about their overall life satisfaction, but also about satisfaction with various aspects of life, including their occupational position, financial situation, living conditions, family situation, relations with other people and health. This made it possible to conduct additional analyses and for providing at least a partial answer to the questions of which areas of life are the most satisfactory, and which of the aspects considered may be the source of frustration, as well as whether and to what extent the level of satisfaction with various areas of life affects their overall satisfaction.

Figure 1.3.



The degree of satisfaction of Poland's inhabitants with various aspects of life was very diversified. Most satisfaction was drawn from interpersonal relations – with friends or relatives (85% of satisfied persons) and from family situation (approx. 75% of satisfied persons). Slightly over 3% of persons were dissatisfied with their interpersonal relations. As regards the family situation, this concerned 9% of persons.

The lowest assessments of satisfaction were recorded as regards the financial situation of the respondents. Only every third person (approx. 34% of all persons) was satisfied with his/her financial situation, including income. This was the only aspect where the satisfied group was less numerous than the dissatisfied one (approx. 37%). Taking into account the material living conditions, but excluding income, it was found that over 50% of Poland's inhabitants aged 16 or more were satisfied with their situation (over 54% of satisfied persons), while approx. 18% of persons were dissatisfied with their material living conditions.

Approx. 60% of all working persons were also satisfied with their occupational position (the character of work performed, working time, and wages and salaries), whereas approx. 14% of persons did not draw satisfaction from their work. A similar finding concerns the share of persons satisfied with their education (level and field). Education was considered satisfactory by approx. 54% of persons aged 16 or more<sup>4</sup>.

Furthermore, approx. 62% of persons were satisfied with the amount of free time they had. However, slightly less persons (approx. 60%) were satisfied with their leisure activities. This finding is confirmed in the analysis of "the other side" of this phenomenon – slightly more persons were dissatisfied with their amount of free time than with their leisure activities.

Approx. 58% of persons were satisfied with their health; approx. 22% expressed a neutral opinion (neither satisfied nor dissatisfied) and nearly the same percentage (21%) of persons were dissatisfied with their health.

It is worth noticing that the level of overall life satisfaction is higher than the levels for most particular aspects of life (contacts with other people constitute an exception). This leads to an optimistic conclusion that the majority of Polish society is generally satisfied with life, even though certain problems can be perceived when analysing specific aspects. A higher assessment of overall satisfaction, compared to partial assessments, suggests that positive aspects prevail over the negative ones in the general balance of areas of life, and the occurrence of certain problems in some areas of life often does not change the general assessment concerning satisfaction.

### **Satisfaction with various aspects of life and overall life satisfaction**

Based on the aforementioned data, it appears that the general level of life satisfaction differs considerably from the levels of satisfaction with various aspects of life, and it is not a simple function of the satisfaction assessment related to those aspects. An appropriate logistic regression model was constructed with a view to providing a deeper insight in the phenomenon in question, and to assessing the contribution of various areas of life to the general level of life satisfaction. This model explains overall satisfaction, whereas independent variables reveal the levels of satisfaction held for the various individual aspects of life. This analysis can be perceived in terms of disaggregation of overall life

---

<sup>4</sup> This indicator concerns the entire population meeting the age criterion, including persons who continued their education. If we limit ourselves to the group of persons who no longer learn or study, the percentage of persons satisfied with their education will amount to 51%, whereas 21% of the population will be dissatisfied with this aspect of life.

satisfaction into components, i.e. various areas of life, performed with econometric methods, based on empirical data.

While constructing the model, the phenomenon in question, i.e. overall life satisfaction, was presented as a dummy variable - where "1" referred to persons who claimed to be satisfied or very satisfied with their lives, and "0" was assigned in the remaining cases. The dummy variable constituted a dependent variable in the model. Such a definition of the dependent variable was also applied in other models used to define life satisfaction, that are seen later in this chapter.

### **MODEL 1.1. LIFE SATISFACTION – CONSIDERATIONS BASED ON PARTICULAR ASPECTS**

Assessment of the contributory significance of various factors (partial satisfaction assessment)

<b>Factor (aspect of life)</b>	<b>Wald statistics</b>
Current occupational position, school or academic studies .....	<b>72.9 ***</b>
Education.....	<b>23.1 ***</b>
Family situation.....	<b>783.1 ***</b>
Relations with other people, including friends.....	<b>101.3 ***</b>
Financial situation.....	<b>89.7 ***</b>
Material living conditions (excluding income).....	<b>139.3 ***</b>
Amount of free time .....	7.2 n.s.
Leisure activities .....	<b>162.6 ***</b>
Health .....	<b>519.5 ***</b>

The contributory statistical significance of various factors:

\*\*\* significant at the level of 1%

\*\* significant at the level of 5%

\* significant at the level of 10%

n.s. – not significant (lower than 10%)

The analysis reveals that the most significant aspects of life, in terms of the general level of satisfaction, are family situation and health. The amount of free time has proven insignificant to the general level of satisfaction, contrary to leisure activities. In fact, satisfaction with leisure activities is the third most important factor contributing to overall life satisfaction. Its impact on life satisfaction was higher than that of such factors as living conditions, relations with friends or financial situation.

Irrespective of the strength of impact and its significance, the influence of individual aspects of life on overall life satisfaction was mostly positive, i.e. the satisfaction with various aspects of life was conducive to overall satisfaction.

### **3. THE DETERMINANTS OF LIFE SATISFACTION**

The perceived level of life satisfaction is the outcome of a simultaneous contribution of several factors. A wide subject area of the social cohesion survey makes it possible to conduct a comprehensive causal analysis, taking into consideration a range of various determinants. These are not only traditional determinants, such as age, education, employment status, health or income, but also factors related to mental well-being, or even to the history of life and past experiences of a given person.

The analysis was aimed at finding determinants of life satisfaction, i.e. factors contributing to, and explaining, the level of life satisfaction, as well as determining and measuring the impact exerted by each of those factors. It was conducted using the logistic regression model, where overall life satisfaction, represented as a dummy variable, served the purpose of the dependent variable.

The application of logistic regression in the analysis of the determinants was discussed in the methodological part, subsection 8. *Logistic regression*. This approach involves an attempt at explaining the probability of occurrence of a given phenomenon (in this case, life satisfaction) by means of various factors that constitute potential determinants. To this end, we have established an appropriate model identifying the potential independent variables. The model fitting (estimation of parameters by logistic regression) provides the assessment of the impact scale of individual independent variables, allowing us to perform statistical dependency verification (the assessment of significance). Estimated effects concern the “separate” contribution of each variable, i.e. corresponding to its autonomous impact, not resulting from any correlation with other factors/variables included in the model<sup>5</sup>.

A number of explanatory variables were used in the model in order to reflect the individual life experience of a given person. The first of those variables, referred to as “the type of the way of life”, was defined on the basis of the responses provided to the question in which respondents were asked to describe their “way of life” by choosing one of the schematic pictures given. The occurrence or non-occurrence of certain important events (represented by the relevant dummy variables) in the life of a given person was also considered. Detailed information concerning the variables related to life experience is included in *Note 1.2*.

The results of model fitting (see *Model 1.2.*) indicate that the level of life satisfaction is mainly affected by the previous course of life, reflected in an appropriate “way of life” scheme. As compared to persons who considered their way of life stable, i.e. who did not experience any marked changes for better or worse throughout their lives, persons whose life was gradually improving were more inclined to draw satisfaction from it. On the other hand, such “ways of life” which testified to negative life changes constituted a strong cause of dissatisfaction (see *Note 1.2.*). The past events which exerted a considerably negative impact on life satisfaction included a significant deterioration of the material living conditions, a divorce or separation, a disintegration of a relationship, and in particular, extremely stressful episodes and mental breakdowns.

The general health status has only a slightly lower impact on life satisfaction than “the way of life”. The better the self-assessment of the general health status, the higher the level of life satisfaction, and conversely. In this context, it is worth noting that whenever a given model already

---

<sup>5</sup> In other words, this impact shows what “new” a given variable brings to the model, what is not explained through other elements of specification, i.e. by means of other explanatory variables. In terms of interpretation, this feature distinguishes the determinant analysis method from the comparison of the distribution of the variable analysed in sub-populations, which shows all kinds of differences, also those resulting from the correlations between factors; as a result of it, one impact may be assigned to several factors (see the methodological part, subsection 8. *Logistic regression*).

contains a variable reflecting health self-assessment, the impact of disability proves statistically insignificant. However, considering the high significance of health status and physical (as well as mental) well-being, it cannot be assumed that fitness and physical ability to perform various activities do not contribute to the level of life satisfaction. On the contrary, they form an extremely significant aspect. The results obtained lead to the conclusion that life satisfaction is in fact determined by the actual health status, reflected in the physical abilities of a given person, and by relating those facts to personal expectations (what *de facto* determine the self-assessment of one's health). Whether any possible "indispositions" qualify a given person as disabled (in his/her own opinion or in formal terms) does not really matter.

The group of important determinants of life satisfaction also includes mental well-being. Negative emotional experience and symptoms of poor mental well-being are not conducive to life satisfaction. Noticeable in this respect is that being in a relationship has a markedly positive impact on the perceived quality of life.

The intensity of contacts with other people outside one's own household is also important to the perceived quality of life. No or little contact (leading to social isolation) proves to be a significant factor contributing to dissatisfaction with life.

The direct influence (i.e. occurring in a different way than through other more important factors listed above) of such factors as age or education on life satisfaction was considerably weaker. This is also true of the indicator which concerns holding various skills which are necessary in terms of functioning in the contemporary reality (including holding a driving licence, having knowledge of foreign languages or computer and internet literacy (see *Note 1.1.*). Among such factors, the influence of age proved the strongest. Persons in older age groups, i.e. after 55 year of age, and the youngest persons, i.e. up to 24, were the most inclined to draw satisfaction from their lives.

The applied model specification also includes explanatory variables describing the material situation, thereby making it possible to assess its impact on life satisfaction. While describing the material situation of individual persons, it was assumed that it corresponded to the material standing of the entire household of which they were members. Information on the material situation was introduced to the model through three factors describing (independently of one another) the income situation, living conditions and the budget status. Each of these comprises three categories (levels):

- persons affected by poverty of a certain type (poverty in terms of income, living conditions or the lack of budget balance – see *Note 1.1.*),
- persons in the most favourable situation according to a given criterion (a very good income situation, very good living conditions, a very good budget status – see *Note 1.1.*),
- persons not included in either of the above categories.

The analysis conducted indicated that material situation had a relatively low impact (as compared to the other included factors) on life satisfaction. In terms of each of the three aspects



considered, a markedly negative impact on the quality of life was exerted by falling into the group affected by various types of poverty (the most unfavourable situation). As the situation improves, we observe an increase in the level of life satisfaction, but it is getting weaker – the difference between persons in the “medium” and the most favourable situation is relatively low, and as regards the income criterion, it is entirely statistically insignificant. Among the three aspects of the material situation considered, the highest impact on life satisfaction was attributed to living conditions which comprised housing, the provision of durable goods, and the ability to satisfy various consumption needs, both material and non-material.

Based on the model in question, no significant independent impact of the type of locality of residence was observed that could not be explained through the other factors considered. However, one can notice a statistically significant regional effect, though it is not as strong as in the case of the most crucial determinants. The results indicate that, in relation to the reference mazowieckie voivodship, life satisfaction is higher among inhabitants of the following voivodships: pomorskie, lubuskie, kujawsko-pomorskie, śląskie and wielkopolskie. A statistically significant negative effect, in relation to the reference voivodship, was not found for any voivodship.

**Note 1.1.**

**DEFINITIONS OF SELECTED INDEPENDENT VARIABLES USED IN THE MODEL EXPLAINING THE LEVEL OF LIFE SATISFACTION**

<b>Independent variables</b>	<b>Definition</b>
<i>Assessed at the level of the household which a given person belongs to</i>	
<b>Income situation<sup>a</sup></b>	
Income poverty	This concerns households for which the monthly equivalised income (in the period of 12 months preceding the survey) was lower than the value considered the poverty threshold. The poverty threshold was assumed at 60% of the median equivalised income. An equivalised income is a theoretical income per the so-called equivalised unit, i.e. calculated so as to be comparable between households of various demographic structures.
Very good income situation	This concerns households earning the highest income, i.e. those in which the monthly equivalised income exceeded 5/3 (approx. 167%) of the median equivalised income (i.e. approx. 2.8 times higher than the assumed relative poverty threshold).
<b>Living conditions<sup>a</sup></b>	
Living conditions poverty	This concerns households in which at least 10 out of 30 symptoms of poor living conditions were observed, concerning housing quality, the provision of durable goods, as well as deprivation of other types of consumption needs (both material and non-material).
Very good living conditions	This concerns households in which none of the 30 symptoms of poor living conditions were found.

**Note 1.1.(cont.)**

<b>Budget standing <sup>a</sup></b>	
Poverty in terms of the lack of budget balance	This concerns households considered poor in terms of “inability to deal with their budget”, i.e. in which at least 4 out of 7 symptoms were observed, concerning both subjective opinions of households as regards their material status, and facts reflecting budget difficulties (e.g. default in payments).
Very good budget standing	Households with the highest budget freedom, i.e. those which positively assessed their abilities to dispose of their income, in which none of the 7 symptoms of “inability to deal with their budget” were found.
<i>Assessed at the level of a person</i>	
Personal skills indicator	This is an aggregate indicator which includes holding a driving licence and the ability to drive a car, the number of foreign languages spoken and the level of general knowledge held, as well as computer and internet literacy. This indicator may take five different values, starting with “very low or none”, to “very high”.
Social isolation	A socially isolated person is a person for whom little (or no) intensity of social contacts with people outside his/her own household was observed. Persons affected by social isolation are persons for whom no more than three types of contacts/relations was observed. Account is taken of any contacts with family outside the household, contacts with friends and neighbours, participation in religious practice involving contacts with other people, having close friends, and participation in organisations, associations and formal groups.

*a Such terms as income poverty, living conditions poverty and the lack of budget balance, used in a descriptive analysis, correspond to households/persons in the most unfavourable income situation, living conditions or budget standing - as presented in the figures. In turn, wherever we speak of a very good income situation, very good living conditions, or very good budget standing, this corresponds to households/persons in the most favourable income situation, living conditions or budget standing - as presented in the figures.*

**MODEL 1.2. LIFE SATISFACTION – A CAUSE AND EFFECT MODEL**

Assessment of the contributory significance of various factors

<b>Factor</b>	<b>Wald statistics</b>
Sex .....	<b>7.1 ***</b>
Age .....	<b>38.8 ***</b>
Being in a formal or informal relationship .....	<b>138.5 ***</b>
Having children .....	<b>4.2 **</b>
Education .....	<b>18.6 ***</b>
Individual skills indicator .....	<b>16.0 ***</b>
Disability .....	0.5 n.s.
Unemployment .....	<b>11.1 ***</b>
General health assessment .....	<b>274.6 ***</b>
Poor mental well-being .....	<b>138.4 ***</b>
Social isolation .....	<b>46.4 ***</b>
Type of the way of life .....	<b>302.1 ***</b>
Previous occurrence of the following events:	
Divorce, separation, disintegration of a relationship .....	<b>39.7 ***</b>
Considerable improvement of living conditions .....	<b>33.3 ***</b>
Considerable deterioration of living conditions .....	<b>51.9 ***</b>
Mental breakdown, extremely stressful episodes, personal problems .....	<b>78.1 ***</b>

## MODEL 1.2. LIFE SATISFACTION – A CAUSE AND EFFECT MODEL (cont.)

Assessment of the contributory significance of various factors (cont.)

Factor	Wald statistics
Income situation .....	<b>8.4 **</b>
Living conditions .....	<b>40.5 ***</b>
Budget standing.....	<b>12.5 ***</b>
Type of locality.....	3.2 n.s.
Voivodship .....	<b>57.4 ***</b>

Parameters value and statistical significance assessment

Independent variable	Parameter value	Wald statistics
<b>Sex</b>		
Male.....	Ref.	
Female .....	<b>0.14</b>	<b>7.1 ***</b>
<b>Age</b>		
16-24 .....	<b>0.34</b>	<b>8.0 ***</b>
25-34 .....	-0.03	0.1 n.s.
35-44 .....	Ref.	
45-54 .....	0.00	0.0 n.s.
55-64 .....	<b>0.23</b>	<b>6.8 ***</b>
65-74 .....	<b>0.39</b>	<b>14.4 ***</b>
75 or more .....	<b>0.43</b>	<b>14.7 ***</b>
<b>Being in a formal or informal relationship.....</b>	<b>0.63</b>	<b>138.5 ***</b>
<b>Having children.....</b>	<b>0.15</b>	<b>4.2 **</b>
<b>Education</b>		
Not higher than lower-secondary.....	-0.08	1.2 n.s.
Basic vocational.....	-0.07	1.2 n.s.
Secondary, including post-secondary.....	Ref.	
Bachelor's degree .....	<b>-0.42</b>	<b>14.3 ***</b>
Master's degree or higher.....	0.08	0.7 n.s.
<b>Personal skills indicator</b>		
Very low or none.....	<b>-0.20</b>	<b>8.1 ***</b>
Low .....	-0.12	2.4 n.s.
Medium.....	Ref.	
High .....	<b>0.13</b>	<b>2.8 *</b>
Very high .....	0.14	1.4 n.s.
<b>Disability.....</b>	0.05	0.5 n.s.
<b>Unemployment.....</b>	-0.30	<b>11.1 ***</b>
<b>General health assessment</b>		
Very good .....	<b>1.08</b>	<b>114.0 ***</b>
Good.....	<b>0.77</b>	<b>161.3 ***</b>
Neither good nor poor.....	Ref.	
Poor .....	<b>-0.38</b>	<b>29.1 ***</b>
Very poor.....	<b>-0.60</b>	<b>16.2 ***</b>
<b>Poor mental well-being .....</b>	<b>-1.20</b>	<b>138.4 ***</b>
<b>Social isolation .....</b>	<b>-0.52</b>	<b>46.4 ***</b>

**MODEL 1.2. LIFE SATISFACTION – A CAUSE AND EFFECT MODEL (cont.)**

Parameters value and statistical significance assessment (cont.)

Independent variable	Parameter value	Wald statistics
<b>Type of the way of life</b>		
Type 1 (rising; without twists and falls) .....	<b>0.38</b>	<b>21.5 ***</b>
Type 2 (stable).....	Ref.	
Type 3 (rising; with occasional twists and falls) .....	-0.09	1.5 n.s.
Type 4 (falling; unevenly).....	<b>-0.66</b>	<b>76.3 ***</b>
Type 5 (falling; evenly).....	<b>-1.03</b>	<b>80.3 ***</b>
<b>Previous occurrence of the following events:</b>		
Divorce, separation, disintegration of a relationship .....	<b>-0.45</b>	<b>39.7 ***</b>
Considerable improvement of living conditions.....	<b>0.36</b>	<b>33.3 ***</b>
Considerable deterioration of living conditions .....	<b>-0.44</b>	<b>51.9 ***</b>
Mental breakdown, extremely stressful episodes, personal problems .....	<b>-0.56</b>	<b>78.1 ***</b>
<b>Income situation</b>		
Poverty .....	<b>-0.20</b>	<b>8.4 ***</b>
Outside the extreme groups .....	Ref.	
Very good .....	-0.01	0.0 n.s.
<b>Living conditions</b>		
Poverty .....	<b>-0.40</b>	<b>31.5 ***</b>
Outside the extreme groups .....	Ref.	
Very good .....	<b>0.23</b>	<b>7.9 ***</b>
<b>Budget standing</b>		
Poverty .....	<b>-0.19</b>	<b>7.9 ***</b>
Outside the extreme groups .....	Ref.	
Very good .....	<b>0.17</b>	<b>4.2 **</b>
<b>Type of locality</b>		
City of 500 thous. inhabitants or more .....	Ref.	
City of 100-500 thous. inhabitants .....	-0.17	2.7 n.s.
Town of 20-100 thous. inhabitants .....	-0.16	2.4 n.s.
Town of less than 20 thous. inhabitants .....	-0.16	2.3 n.s.
Village.....	-0.16	2.7 n.s.
<b>Voivodship</b>		
dolnośląskie .....	0.15	1.4 n.s.
kujawsko-pomorskie .....	<b>0.38</b>	<b>9.2 ***</b>
lubelskie .....	-0.06	0.2 n.s.
lubuskie .....	<b>0.40</b>	<b>8.6 ***</b>
łódzkie .....	-0.01	0.0 n.s.
małopolskie .....	0.12	1.1 n.s.
mazowieckie .....	Ref.	
opolskie .....	0.23	2.7 n.s.
podkarpackie .....	0.19	2.3 n.s.
podlaskie .....	-0.14	1.1 n.s.

## MODEL 1.2. LIFE SATISFACTION – A CAUSE AND EFFECT MODEL (cont.)

Parameters value and statistical significance assessment (cont.)

Independent variable	Parameter value	Wald statistics
<b>Voivodship (cont.)</b>		
pomorskie .....	<b>0.47</b>	<b>13.8 ***</b>
śląskie .....	<b>0.36</b>	<b>10.9 ***</b>
świętokrzyskie .....	0.09	0.5 n.s.
warmińsko-mazurskie.....	-0.06	0.2 n.s.
wielkopolskie .....	<b>0.28</b>	<b>5.3 **</b>
zachodniopomorskie.....	0.07	0.2 n.s.

The statistical significance of various parameters and factors included in the model:

\*\*\* significant at the level of 1%

\*\* significant at the level of 5%

\* significant at the level of 10%

n.s. – not significant (lower than 10%)

### Note 1.2.

#### THE WAY OF LIFE (TRAJECTORIES) VS. LIFE SATISFACTION

The social cohesion survey is comprised of a set of biographical questions. In it, respondents were asked, among other notions, about the occurrence of various events in their lives. They were also asked to choose one out of ten schemes which would most accurately illustrate their lives. This approach assumed that such schemes, on the one hand, reflected the actual course of life of a given person, along with the sequence and accumulation of various events and experiences, and on the other hand, testified to the subjective perception of the reality. The “way of life”<sup>6</sup> schemes defined both change directions (*a falling line indicated deterioration, a horizontal line - stability and no significant changes, and a rising line indicated improvement*) and the “pattern” of changes occurring in a person’s life (*step changes, alternate positive and negative episodes, single events changing the course of life, steady unidirectional changes*). For the purposes of the models explaining other phenomena through the “way of life” factor, and with a view to facilitating the analysis, ten schemes used in the survey were grouped together to form five types of the way of life. The assignment of schemes to various types can be seen in Figure 1.4.

The survey shows that life has generally changed for the better (rising lines) for approx. 58% of all persons aged 16 years or more,. No changes (a horizontal line) concerned 15% of respondents, while, slightly more than one-fourth (approx. 26%) of the respondents experienced changes for the worse (falling lines).

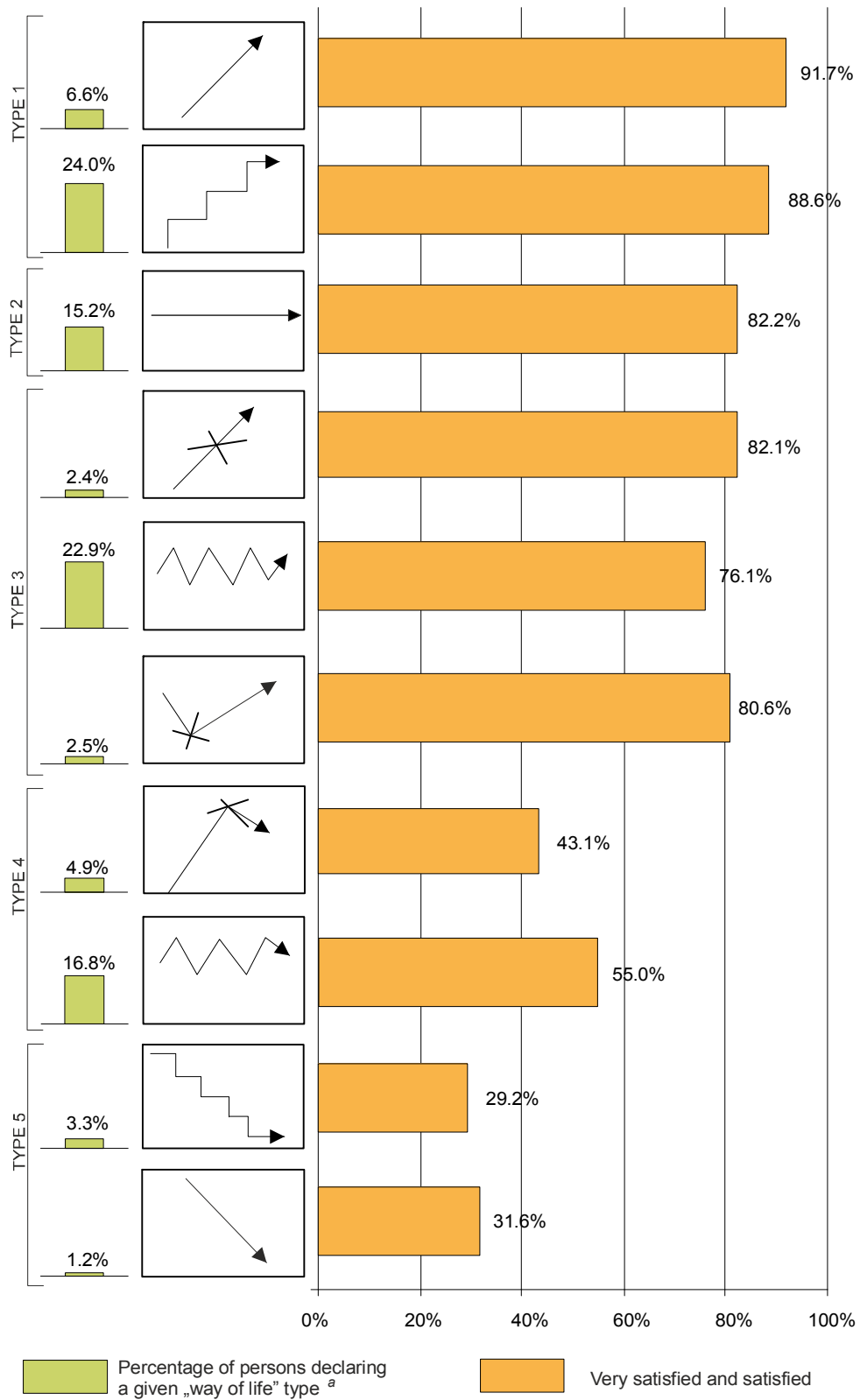
Both the direction and character of changes were reflected in the assessments of life satisfaction. Persons who experienced a continual improvement in their lives were the most satisfied (approx. 92% of all satisfied persons were in this group) and so were persons whose life improved step-wise, alternating with stabilisation episodes (approx. 89%). It is not surprising that persons who systematically (steadily or step-wise) experienced a deterioration in their lives were the least satisfied (approx. 30-32% of satisfied persons in this group).

<sup>6</sup> In literature also referred to as life trajectories.

Figure 1.4.

## THE IMPACT OF „THE WAY OF LIFE” ON SATISFACTION WITH LIFE

in % of persons aged 16 or more



<sup>a</sup> Based on the responses to the following: „Please look at the pictures and choose the one which is the best illustration of your life so far.”

#### 4. MENTAL WELL-BEING

Mental-well being was assessed on the basis of nine questions concerning the frequency of certain experiences, both positive and negative, within the last month preceding the survey<sup>7</sup>. It allowed us to analyse each of the (positive and negative) symptoms, and enabled us to construct the aggregate indicators which would permit us to determine the groups of persons in which we deal with the accumulation of positive or negative indications of mental well-being. Assuming that the occurrence of one extremely negative symptom constitutes merely a premise, and not the basis, to draw an inference on “generally good” or “generally poor” mental well-being, two aggregate indicators were established, i.e. the indicator of good mental well-being and the indicator of poor mental well-being (see *Note 1.3.*).

Out of those two aggregate indicators, more attention will be given to the indicator of poor mental well-being (i.e. the negative side of mental well-being). Symptoms of good mental well-being, as the survey reveals, are relatively common, whereas negative symptoms are rare and usually connected with specific problems as perceived by the individual respondent. The indicator of poor mental well-being is therefore a variable that differentiates the population to a greater extent. It allows us to group persons who share certain emotions and experiences, the characteristics of which differ from that of the remaining population to a higher extent than it would in the case of distinguishing a group of persons having the best mental well-being. What is more, the accumulation of “negative emotions” has a stronger impact on other phenomena, included those related to various aspects of the quality of life. In consequence, the indication of poor mental well-being was used, e.g., as an independent variable in the logistic regression model presented, explaining the contribution of various factors to life satisfaction. Therefore, the mental well-being analysis focuses more on the negative aspects - although the positive ones are by no means neglected, as their discussion is necessary to ensure descriptive completeness.

**Note 1.3.**

INDICATORS OF GOOD AND POOR MENTAL WELL-BEING

The indicators of good and poor mental well-being were constructed on the basis of nine questions concerning the frequency of various emotions experienced by respondents. They were asked how often in the last month they felt:

- 1) full of life,
- 2) very nervous,
- 3) so dispirited that nothing could raise their spirits,
- 4) calm and composed,
- 5) full of power and energy,
- 6) sad, dispirited or downcast,
- 7) exhausted,
- 8) happy,
- 9) tired.

---

<sup>7</sup> The survey made use of the set of questions used in the European population health survey, including its Polish version conducted by the CSO in 2009.

**Note 1.3. (cont.)**

The order of questions in the above compilation corresponds to the order in which they were asked during the interview.

Emotions related to various questions can be divided into those which are positive and reflect good mental well-being (positive emotions – items 1, 4, 5, 8 in the above compilation), and those which may indicate poor mental well-being (negative emotions – items 2, 3, 6, 7, 9).

The distribution of the declared frequency of occurrence of various emotions is shown in Table 1. The compilation was ordered according to the positive and negative character.

**Table 1. Emotions surveyed (indications of mental well-being)<sup>a</sup>  
in % of persons aged 16 years or more**

The persons surveyed felt <sup>b</sup> :	Frequency of occurrence				
	all the time	most of the time	for a few days	very rarely	never
Emotions which indicate good mental well-being (positive)					
Full of life	12.4	43.3	23.9	18.3	2.2
Calm and composed	9.6	59.2	21.0	9.4	0.8
Full of power and energy	9.4	43.4	26.7	17.9	2.5
Happy	12.6	46.3	26.0	13.5	1.6
Emotions which indicate poor mental well-being (negative)					
Very nervous	1.6	10.6	34.6	46.6	6.6
So dispirited that nothing could raise their spirits	0.7	5.1	15.7	41.9	36.7
Sad, dispirited or downcast	0.9	6.9	26.4	47.5	18.3
Exhausted	1.1	10.1	33.8	41.2	13.8
Tired	2.4	16.1	46.9	30.1	4.4

*The items corresponding to the symptoms of good mental well-being were marked in green, whereas symptoms of poor mental well-being – in red.*

*a Considering data rounding-ups, the sums of components in some cases may slightly diverge from 100%.*

*b Based on responses to the following: "Please specify how often in the last month you felt..."*

The symptoms of good or poor mental well-being, constituting intermediate variables in the process of constructing aggregate measures, were defined on the basis of the frequency of occurrence of various emotions:

As regards **positive emotions**, it was assumed that:

- the occurrence of a given emotion **all the time** or **most of the time** constitutes a symptom of **good mental well-being**,
- the occurrence of a given emotion **very rarely** or **never** constitutes a symptom of **poor mental well-being**.

As regards **negative emotions**, it was assumed that:

- the occurrence of a given emotion **all the time** or **most of the time** constitutes a symptom of **poor mental well-being**,
- the occurrence of a given emotion **very rarely** or **never** constitutes a symptom of **good mental well-being**.



**Note 1.3. (cont.)**

In Table 1, the items corresponding to the symptoms of good and poor mental well-being were marked in green and red – see the legend.

For each definition, there are nine possible symptoms of good and poor mental well-being. Based on each question for a given person, a symptom of good or poor mental well-being can be indicated, unless the person answered “for a few days”, in which case no symptom can be identified.

The aggregate measure of good/poor mental well-being was defined as the number of symptoms of good/poor mental well-being present in a given person. Each of these two measures can take values from 0 to 9, where “0” means the occurrence of none of the symptoms of good/poor mental well-being, whereas “9” indicates the occurrence of all symptoms.

The distribution of values of the aggregate measure of good mental well-being is shown in Table 2, based on which the (dummy) indicator of good mental well-being was employed to identify persons in the best condition. As the occurrence of certain symptoms of good mental well-being is relatively common, it was assumed that persons having the best mental well-being would be those for whom all the symptoms of good health were recorded. Therefore, the indicator of good mental well-being equals “1” for persons experiencing all symptoms concerned, i.e. for whom the measure of good mental well-being was “9”. The share of persons with the best mental well-being (in line with the indicator definition) among all persons aged 16 years or more, amounted to 14.1%.

For a given population, the indicator of good mental well-being is understood as the share of persons (among all persons aged 16 years or more) for whom the dummy indicator equals “1” at the unit level.

**Table 2. The aggregate measure of good mental well-being for persons aged 16 years or more**

Measure value ( <i>n</i> – number of symptoms)	% of persons	Accumulated % of persons with a given measure value and persons having	
		better mental well-being ( <i>n</i> symptoms or more)	worse mental well-being ( <i>n</i> symptoms or less)
9	14.1	14.1	100.0
8	12.3	26.4	85.9
7	12.5	38.9	73.6
6	12.0	50.9	61.1
5	11.3	62.2	49.1
4	9.6	71.8	37.8
3	7.8	79.6	28.2
2	7.2	86.8	20.4
1	6.0	92.8	13.2
0	7.2	100.0	7.2

*The green colour marks the item concerning part of the population comprising persons having the best mental well-being (in line with the definition of the indicator of good mental well-being).*

**Note 1.3. (cont.)**

The distribution of values of the aggregate measure of poor mental well-being is shown in Table 3, based on which the (dummy) indicator of poor mental well-being was defined. Its aim was to identify persons experiencing real problems with their mental well-being, and with emotions which had a considerably negative effect. It was assumed that persons having poor mental well-being would be those who experienced at least six out of the nine symptoms surveyed. Therefore, the indicator equals “1” for those persons who experience at least six symptoms, i.e. the value of the measure of poor mental well-being is in their case equal to or higher than “6”. Under such a definition, 5.2% of persons aged 16 years or more were considered to have poor mental well-being.

For a given population, the indicator of poor mental well-being is understood as the share of persons (among all persons aged 16 years or more) for whom the dummy indicator equals “1” at the unit level.

**Table 3. The aggregate measure of poor mental well-being for persons aged 16 years or more**

Measure value ( <i>n</i> – number of symptoms)	% of persons	Accumulated % of persons with a given measure value and persons with	
		worse mental well-being ( <i>n</i> symptoms or more)	better mental well-being ( <i>n</i> symptoms or less)
9	0.7	0.7	100.0
8	1.1	1.8	99.3
7	1.5	3.3	98.2
6	1.9	5.2	96.7
5	3.1	8.3	94.8
4	4.3	12.6	91.7
3	6.3	18.9	87.4
2	9.1	28.0	81.1
1	15.0	43.0	72.0
0	57.0	100.0	57.0

*The red colour marks the item concerning part of the population comprising persons with poor mental well-being (in line with the definition of the indicator of poor mental well-being).*

**Good mental well-being**

The survey has revealed that in the month directly preceding the survey approx. 69% of persons aged 16 years or more felt calm and composed all the time or most of the time. In the reference period, more than half of the respondents felt full of life (approx. 56%) and were full of power and energy (approx. 53%). Moreover, approx. 59% of respondents felt happy for the whole month or for most of the month. Indeed, over one-third of the surveyed experienced all the positive emotions listed, at least most of the time.

The definition of the aggregate indicator of good mental well-being assumes not only the co-existence of all four positive emotions mentioned, but also the non-occurrence (or very rare occurrence) of the five symptoms of poor mental well-being surveyed. The adoption of such strict

criteria allows us to identify those surveyed who consider that they have very good mental well-being. The criteria in question were satisfied by approx. 14% of the respondents (see *Note 1.3.*), among whom men prevailed (approx. 16%) over women (approx. 12%).

A belief in having very good mental well-being was identified especially among young people. In the 16-24 age group, this indicator reached approx. 26%, while among persons aged 25-34, it was by 10 percentage points lower. The lowest value of the indicator was recorded among persons aged 75 years or more (approx. 6%). This is reflected in the value of the indicator of good mental well-being according to economic activity. Very good mental well-being was indicated in particular, among students (approx. 28%). Among working persons, the value of this indicator ranged from approx. 12% (own-account workers outside agriculture) to approx. 15% (hired workers). The lowest number of persons having very good mental well-being was found among retired farmers and pensioners (5-6%). What seems worth noting is the high value of the indicator of good mental well-being in the group of unemployed persons (14.5%). However, at the same time, this group comprises a large number of persons with a sense of poor mental well-being (approx. 8%). The observed situation probably results, among others, from a relatively high diversity in the unemployed group, both in terms of the length of the unemployment period, and in terms of socio-demographic characteristics and the material situation.

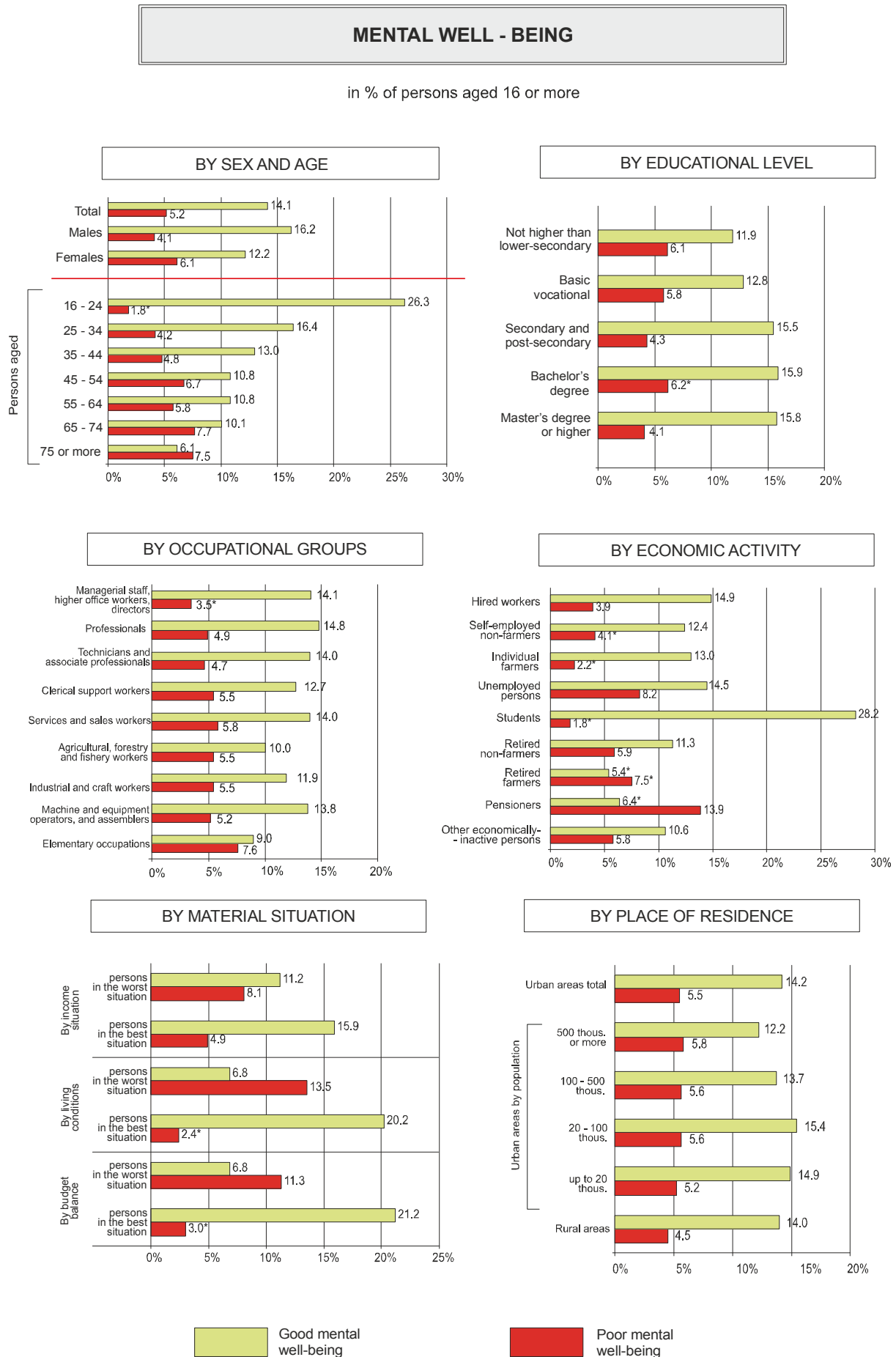
Good mental well-being (in the month preceding the survey) occurred especially in the group of specialists (approx. 15%), whereas the lowest indicator of good mental well-being was recorded in the group of persons employed to do elementary work (9%), as well as farmers, gardeners, forest workers and fishermen (10%). In other occupational groups, the value of this indicator ranged between 12 and 14%.

In terms of the correlation between material situation and mental well-being, the highest values of the indicator of good mental well-being were recorded among persons living in very good conditions (approx. 20%) and in households that do not experience any problems with balancing their budgets (approx. 21%). In turn, no significant differences were observed in terms of the current income situation. In the group of persons living in households with high income, approx. 16% considered themselves as being characterised with very good mental well-being, whereas among persons considered poor (according to the income criterion), this share amounted to approx. 11%.

What is more, no significant changes were recorded in the indicator of good mental well-being in terms of the place of residence. In urban areas, the share of persons having good mental well-being ranged from approx. 12% in cities with at least 500 thous. inhabitants, to approx. 15% in cities of less than 100 thous. inhabitants (including towns of less than 20 thous. inhabitants). In rural areas, this share amounted to 14%.

Furthermore, good mental well-being is hardly affected by the educational level. However, the group of persons ending their education at the level of vocational school or below was characterised by having a slightly lower percentage of persons with good mental well-being.

Figure 1.5.



## Poor mental well-being

According to the survey results, 12% of persons aged 16 years or more felt nervous for the whole month or for most of the month preceding the survey. Moreover, a group of approx. 11% of persons felt exhausted, and 18.5% felt tired, at least for most of the month. In addition, approx. 8% of the surveyed felt sad, dispirited or downcast, and approx. 6% were so dispirited that nothing could have raised their spirits, for the whole month, or for most of the month.

When constructing the aggregate indicator of poor mental well-being, apart from the five negative emotions mentioned, the lack (or very infrequent occurrence) of positive emotions (four symptoms) was also treated as a negative indication. A person was considered to have poor mental well-being if he/she experienced at least six out of nine symptoms given. This criterion was satisfied by 5.2% of persons. All nine symptoms of poor mental well-being were recorded among less than 1% of the surveyed, eight symptoms were identified less frequently than for every fiftieth person (approx. 2%), and approx. 3% of the population considered themselves as having seven out of nine negative symptoms.

The survey also indicated that women were more prone to poor mental well-being (approx. 6%) than men (approx. 4%). Furthermore, poor mental well-being was evidenced especially in the case of persons aged more than 65 years (approx. 8%) and persons aged 45-54 years (approx. 7%). According to the assessed age groups, the lowest value of the reference indicator was recorded among persons aged less than 24 years (approx. 2%).

Considerable differences in the level of the indicator of poor mental well-being were observed according to economic activity. Definitely the highest number of persons having poor mental well-being was observed among pensioners (approx. 14%) and unemployed persons (approx. 8%), as well as among retired persons, especially retired farmers (7.5% of retired farmers and approx. 6% of retired persons living off non-agricultural retirement pays and pensions). The lowest values of the indicator of poor mental well-being were recorded among students, and among farmers (approx. 2% each). Among hired workers and own-account workers outside agriculture, poor mental well-being concerned approx. 4% of persons from each of those groups.

The impact of education on the share of persons reporting poor mental well-being is limited. The lowest value of the reference indicator (approx. 4%) was recorded among persons holding master's degree or higher, and among persons with secondary (including post-secondary) education. In other groups, this indicator reached the level of approx. 6%.

The survey also shows that a difficult material situation fosters the accumulation of negative feelings and emotions. Among persons living in poor conditions (considered poor in terms of living conditions), 13.5% had poor mental well-being, and among persons living in the households that experienced budget problems (considered poor according to this criterion) – approx. 11% indicated the same. Among persons experiencing relatively the best living conditions and the best budget standing, poor mental well-being pertained to approx. 2-3% of the surveyed population. When comparing the level of the indicator of poor mental well-being in the population groups that are extreme in terms of income, it transpires that this indicator among poor persons amounted to approx. 8% and was only approx. 3 percentage points higher than for persons with high income.

We found that no significant differences in the indicator of poor mental well-being were recorded in terms of the place of residence. However, slightly higher values were recorded in urban areas, including especially the largest cities – approx. 6%. In small towns of up to 20 thous.

inhabitants, slightly over 5% of persons had poor mental well-being, and in rural areas – 4.5% of persons.

### Determinants of poor mental well-being

As in the case of life satisfaction, the analysis of the impact exerted by various factors on poor mental well-being makes use of the logistic regression model - where the aggregate indicator of poor mental well-being (a dummy indicator) serves as an independent variable.

As was said before, this indicator identifies persons who experienced at least six out of nine symptoms of poor mental well-being. This definition does not have an extreme character. For instance, it does not require the occurrence of all symptoms at once, but it entails a considerable accumulation of certain negative symptoms of mental status and comfort, which definitely affect the quality of life of a given person, at least when they are present. It can be said that the persons belonging to the group established by this indicator experience serious problems and inconveniences related to mental well-being, though they may not be of an extreme character.

This definition which is, on the one hand, relatively moderate, and, on the other hand, requires confirmation by a specified number of symptoms, thereby restricting the group identified to persons actually experiencing problems in the reference sphere, fosters substantive explanation and analysis of related causes and premises. Once the indicator defined is explained, we can identify such determinants that shape various phenomena (symptoms), especially when they influence several symptoms at once and are conducive to their accumulation. Nevertheless, it is not necessary for those determinants to have a simultaneous impact on all symptoms.

The analysis results indicate that the general health status (measured through self-assessment) and the person's history of life, reflected in an appropriate scheme of "the way of life", constitute the two major determinants of poor mental well-being. Obviously, as regards the first aspect, poor mental well-being is reinforced by various health problems. These are reflected in low assessment of the general health status, whereas in the case of "the way of life", the same effect is exerted by the "falling" patterns that illustrate the deterioration of the current situation as experienced by the respondent.

As the measurement of both independent variables is based on self-assessment or respondent declaration, one may have certain doubts concerning the correlation direction. This is especially so in terms of assessing the way of life, as poor mental well-being surely contributes to a more negative assessment, as compared to persons whose mental disposition is good, with more focus on problems and failures, while underestimating positive events and successes. However, it could hardly be assumed that the assessment of a given way of life is devoid of any factual premises, even though it is, to some extent, burdened with the interpretation of those facts. This is even more true for the assessment of the general health status. Therefore, such factors should be treated as significant determinants even though the statistic assessment of such correlations entails a certain degree of "reverse impact".

When analysing the correlation between mental well-being and the self-assessed general health status, attention should also be drawn to the effect of disability. Contrary to what was said about life satisfaction, disability was identified (along with the general health status) as a factor which significantly contributed to poor mental well-being, though its impact, as compared to the general

health status, was much weaker. Therefore, general health status plays a major role, while disability constitutes an additionally aggravating factor.

Considering the person's history of life, it can be noticed that not only the (partially subjective) description of the whole way of life, but also specific previous events are of special significance. Previous<sup>8</sup> experience of a serious disease or accident in the nuclear family, or an episode of a considerable decline of living conditions, proves to have a strong impact on poor mental well-being.

Other essential contributory factors include sex and age. With this in mind, men proved more prone to negative emotional states than women. Moreover, in terms of age groups, persons aged 25-44 years appeared the most sensitive, while such tendencies are much less frequent in those within both younger and older categories.

Among variables describing the material situation (income, living conditions and budget standing), a strong and statistically significant influence on mental well-being was especially noticed as regards poverty in terms of living conditions. This corresponds to the previously stated fact that an episode of a significant worsening of living conditions is a crucial determinant. The impact of income is weaker, and that of budget standing is even less important. Other factors which additionally contribute to poor mental well-being include unemployment and social isolation.

However, no statistically significant autonomic influence was identified as regards education, personal skills or being in a relationship. The same is true of the place of residence, both in terms of the locality class and region (voivodship).

### **MODEL 1.3. POOR MENTAL WELL-BEING**

Assessment of the contributory significance of various factors

<b>Factor</b>	<b>Wald statistics</b>
Sex .....	<b>30.3 ***</b>
Age .....	<b>39.7 ***</b>
Being in a formal or informal relationship .....	0.3 n.s.
Education.....	2.2 n.s.
Individual skills indicator .....	4.8 n.s.
Disability .....	<b>9.9 ***</b>
Unemployment .....	<b>4.9 **</b>
General health assessment.....	<b>197.6 ***</b>
Social isolation .....	<b>6.1 **</b>
Type of the way of life.....	<b>131.4 ***</b>
Previous occurrence of the following events:	
Serious disease or accident in the nuclear family .....	<b>14.4 ***</b>
Considerable worsening of living conditions.....	<b>30.4 ***</b>
Income.....	<b>8.2 **</b>
Living conditions .....	<b>17.6 ***</b>
Budget standing.....	<b>5.6 *</b>
Locality type.....	4.5 n.s.
Voivodship.....	19.3 n.s.

<sup>8</sup> Or current; the question used in the questionnaire did not specify the time in which the event occurred, and the fact that its consequences are, to a certain extent, still noticeable (irrespective of the period which has passed since the occurrence of the event) is reflected in the impact they exert on mental well-being or life quality.

**MODEL 1.3. POOR MENTAL WELL-BEING (cont.)**

Parameters value and statistical significance assessment

Independent variable	Parameter value	Wald statistics
<b>Sex</b>		
Male.....	Ref.	
Female .....	<b>0.52</b>	<b>30.3 ***</b>
<b>Age</b>		
16-24 .....	<b>-0.56</b>	<b>5.1 **</b>
25-34 .....	0.09	0.3 n.s.
35-44 .....	Ref.	
45-54 .....	<b>-0.30</b>	<b>3.9 **</b>
55-64 .....	<b>-0.73</b>	<b>22.2 ***</b>
65-74 .....	<b>-0.64</b>	<b>13.8 ***</b>
75 or more .....	<b>-0.82</b>	<b>18.6 ***</b>
<b>Being in a formal and informal relationship.....</b>	0.05	0.3 n.s.
<b>Education</b>		
Not higher than lower-secondary.....	-0.03	0.0 n.s.
Basic vocational.....	0.09	0.6 n.s.
Secondary, including post-secondary.....	Ref.	
Bachelor's degree .....	0.24	1.3 n.s.
Master's degree or higher.....	0.08	0.2 n.s.
<b>Personal skills indicator</b>		
Very low or none.....	-0.01	0.0 n.s.
Low.....	-0.13	0.7 n.s.
Medium.....	Ref.	
High.....	0.10	0.4 n.s.
Very high .....	<b>0.41</b>	<b>3.4 *</b>
<b>Disability.....</b>	<b>0.32</b>	<b>9.9 ***</b>
<b>Unemployment.....</b>	<b>0.33</b>	<b>4.9 **</b>
<b>General health assessment</b>		
Very good.....	<b>-1.46</b>	<b>34.8 ***</b>
Good.....	<b>-1.08</b>	<b>66.9 ***</b>
Neither good nor poor.....	Ref.	
Poor.....	<b>0.80</b>	<b>54.3 ***</b>
Very poor.....	<b>1.35</b>	<b>65.5 ***</b>
<b>Social isolation .....</b>	<b>0.29</b>	<b>6.1 **</b>
<b>Type of the way of life</b>		
Type 1 (rising; without twists and falls).....	0.09	0.2 n.s.
Type 2 (stable).....	Ref.	
Type 3 (rising; with occasional twists and falls).....	0.20	1.2 n.s.
Type 4 (falling; unevenly).....	<b>0.84</b>	<b>22.8 ***</b>
Type 5 (falling; evenly).....	<b>1.57</b>	<b>65.8 ***</b>
<b>Previous occurrence of the following events:</b>		
Serious disease or accident in the nuclear family.....	<b>0.32</b>	<b>14.4 ***</b>
Considerable worsening of living conditions .....	<b>0.53</b>	<b>30.4 ***</b>



### MODEL 1.3. POOR MENTAL WELL-BEING (cont.)

Parameters value and statistical significance assessment (cont.)

Independent variable	Parameter value	Wald statistics
<b>Income situation</b>		
Poverty .....	-0.13	1.3 n.s.
Outside extreme groups .....	Ref.	
Very good .....	<b>0.39</b>	<b>6.9 ***</b>
<b>Living conditions</b>		
Poverty .....	<b>0.45</b>	<b>16.6 ***</b>
Outside extreme groups .....	Ref.	
Very good .....	-0.15	0.8 n.s.
<b>Budget standing</b>		
Poverty .....	<b>0.24</b>	<b>4.9 **</b>
Outside extreme groups .....	Ref.	
Very good .....	-0.13	0.6 n.s.
<b>Type of locality</b>		
City of 500 thous. inhabitants or more .....	Ref.	
City of 100-500 thous. inhabitants .....	0.10	0.3 n.s.
Town of 20-100 thous. inhabitants .....	0.15	0.8 n.s.
Town of less than 20 thous. inhabitants .....	-0.12	0.4 n.s.
Village.....	-0.04	0.0 n.s.
<b>Voivodship</b>		
Dolnośląskie .....	0.10	0.2 n.s.
Kujawsko-pomorskie .....	-0.08	0.1 n.s.
Lubelskie .....	0.28	2.0 n.s.
Lubuskie .....	<b>-0.44</b>	<b>3.0 *</b>
Łódzkie .....	-0.17	0.7 n.s.
Małopolskie .....	-0.09	0.2 n.s.
Mazowieckie .....	Ref.	
Opolskie .....	-0.02	0.0 n.s.
Podkarpackie .....	-0.16	0.5 n.s.
Podlaskie .....	-0.32	1.4 n.s.
Pomorskie .....	-0.09	0.2 n.s.
Śląskie .....	0.16	0.7 n.s.
Świętokrzyskie .....	-0.38	2.4 n.s.
Warmińsko-mazurskie .....	-0.23	1.0 n.s.
Wielkopolskie .....	-0.06	0.1 n.s.
Zachodniopomorskie .....	-0.17	0.5 n.s.

The statistical significance of various parameters and factors included in the model:

\*\*\* significant at the level of 1%

\*\* significant at the level of 5%

\* significant at the level of 10%

n.s. – not significant (lower than 10%)

## 5. SUMMARY

The general quality of life indicator was adopted as the principal measure of the subjective (perceived) quality of life. It illustrates the percentage of persons (in the population surveyed, i.e. persons aged 16 years or more) who are satisfied (or very satisfied) with their life as a whole.

The survey has revealed that a vast majority (74%) of persons aged 16 years or more were satisfied with their lives. Young people, including students, along with well-educated people who are in a high occupational position and who experience a good material situation, were more likely to draw satisfaction from their lives. The lowest share of satisfied persons occurred among pensioners, unemployed persons, persons with low occupational qualifications and persons living in poverty.

The analysis of satisfaction with various aspects of life complements the description of a diversified level of life satisfaction within Polish society. In this respect, interpersonal relations (social contacts and friendships) and family situation prove to act as the major source of life satisfaction. The lowest level of satisfaction was identified as regards the material situation (including income), in which case, the number of dissatisfied persons exceeded that of satisfied ones.

The perceived satisfaction level reflects the combined effect of various factors, including such factors which are hard (or practically impossible) to measure statistically, and which arise, e.g., from cultural or psychological factors. An attempt to identify and assess the impact of at least some of these factors was made using the logistic regression model.

It turned out that the strongest influence on the level of life satisfaction was exerted by the previous course of life and the general health assessment. Considering the former, assessing the way of life (where “the ways” indicating a gradual improvement were the most conducive to life satisfaction) served as the major explanatory factor. The occurrence of specific events was also significant, though to a lower extent. Mental well-being, living in a relationship and the intensity of the interpersonal relationships experienced should also be viewed as essential determinants of life satisfaction.

What is more, the analysis has revealed the relatively low (when compared to other factors) impact of the material situation on the perceived quality of life. However, it should be noticed that no (or little) influence is observed only among persons whose basic needs are satisfied. Living in poverty affects the quality of life in a negative way. Among the three aspects of the material situation surveyed (i.e. household’s income, living conditions and budget standing), living conditions contributed the most to life satisfaction, and current income - the least.

Based on the survey questions concerning the frequency of both positive and negative emotions, it can be inferred that, in general, the population aged 16 years or more had good mental well-being. The indicators defined have shown that 14% of the surveyed assessed their mental well-being as very good (the accumulation of all positive symptoms and the lack of negative ones). At the same time, an accumulation of negative symptoms was observed among 5% of persons, as a result of which they were considered to have poor mental well-being.

The state referred to as poor mental well-being, reflecting actual problems and inconveniences experienced by the persons affected, and exerting a strong impact on their quality of life, was subject

to thorough analyses. Using the logistic regression model, the impact of various factors on mental well-being was assessed in a way similar to life satisfaction. The assessment results obtained by way of identifying major determinants delivered similar observations. Previous experience and the general health assessment by the surveyed individuals proved to be the most important factors contributing to mental well-being. The strongest correlation occurred for the type of the way of life, though, as regards life experience, the occurrence of some specific events was also of essence. Considering the subjective self-assessment related to variables concerning the way of life, and the general health assessment, it can be said that the correlation between those variables and mental well-being is of a two-fold nature (i.e. objective elements of “the way of life” and the objective general health status influence mental well-being, whereas the latter also exerts a certain impact on the perception and subjective assessment of the former). However, this does not impair the importance of the observations made.

The results obtained confirm the accuracy of the approach taken, which entailed a thorough analysis of life satisfaction and mental well-being, as conducted in the context of assessing the perceived quality of life. The similarities in the mechanism of shaping and explaining the discussed phenomena, together with a multitude of correlations, contribute to the concept combining them into a certain thematic wholeness, reflected in the subjective side of the quality of life.

It is said that subjective measures should be used along with, and not instead of, objective indicators. In order to present a reliable and thorough description of the phenomenon, it should be assigned an objective value. While doing so, it should be borne in mind that the surveys on the subjective quality of life actually comprise only one subjective element, namely personal opinion. This constitutes the starting point, whereas personal assessments and perceptions, when considered statistically, lose their subjective dimension and become fully objective social phenomena. Moreover, behaviour patterns of individuals and social groups depend more on the way a given situation is perceived than on what it objectively is<sup>9</sup>. This *de facto* makes perception an objective factor, exerting an actual influence on the reality and course of events.

At the same time, it should be stressed that the analyses presented in this chapter were combined with objective elements of the quality of life through a set of explanatory factors pertaining to the subjective sphere. Furthermore, many of those elements contribute to the phenomena which were described in detail in other sections of this publication.

---

<sup>9</sup> See J. Rutkowski (1987), *Jakość życia. Koncepcja i projekt badania (The quality of life. Survey concept and design)*, from the articles of the Centre for Economic and Statistical Surveys, Issue 162, the CSO, Warsaw.

## 1. INTRODUCTION

For years now, statistical data on poverty and social exclusion has been the subject of special interest, both among decision-makers, designers of social programmes, and the general public. With the aim to satisfy the continually growing demands of the users of statistical information, the CSO has tried to improve and gradually extend the scope of surveys and analyses in this reference area<sup>1</sup>. The analysis presented below serves as an example of such an approach. It constitutes an attempt at determining the scope and social diversification of various poverty forms, including multidimensional poverty, as well as assessing the risk of social exclusion.

While attaining the goals assumed, it proved necessary to solve a number of methodological problems<sup>2</sup>. Certain difficulties, along with the lack of consensus, have arisen already upon establishing the conceptual definitions of poverty and social exclusion. Adopting operational definitions to statistically measure certain phenomena is even more challenging. Poverty and social exclusion are complex phenomena, and while there is no binding definition of poverty, the literature provides a multitude of definitions of social exclusion. Poverty is often treated as one of the symptoms of social exclusion. The former may also be identified with the latter, which often happens in political discourse. The relationship between social exclusion and poverty constitutes the subject of theoretical considerations<sup>3</sup>, political debates and empirical studies.

Due to the heterogeneous and multidimensional character of both phenomena, we practically deal with different data regarding the scope and social diversity of poverty and social exclusion. All depends on the methodological solutions and definitions applied, and on the poverty and social exclusion symptoms considered.

The authors of the analysis presented below advocate the view that social exclusion is not a synonym of poverty. Nevertheless, they agree that poverty is one of the crucial dimensions of social

---

<sup>1</sup> Since the 1<sup>st</sup> half of the 1990s, the CSO has regularly published data concerning the range of economic poverty, using various definitions of poverty thresholds, based on the results of the Household Budget Surveys. Since 2005, the yearly European Union Statistics on Income and Living Conditions (EU-SILC) have constituted a significant source of information on poverty and on selected aspects of social exclusion. A set of commonly agreed (at the international level) indicators allows for comparing the situations in various EU Member States, and for monitoring the implementation progress of various objectives assumed by the Community in the field of reducing poverty and social exclusion.

<sup>2</sup> The methodological solutions applied were tested, e.g., using the results of the pilot social cohesion survey; See A. Szukielojć-Bieñkuńska, D. Verger et. al, *Ubóstwo i wykluczenie społeczne (Poverty and social exclusion)*, Wiadomości Statystyczne (Statistical News) 2010, No. 12, pp. 22-36.

<sup>3</sup> See e.g. R. Lister (2007), *Ubóstwo a wykluczenie społeczne (Poverty vs. Social exclusion)*, in: *Bieda (Poverty)*, Sic! Publishing Press, Warsaw; R. Szarfenberg, A. Kurowska (2010), *Ubóstwo a wielowymiarowa deprywacja, nierówności i wykluczenie społeczne (Poverty vs. multidimensional deprivation, inequality and social exclusion)*, in: *Ubóstwo i wykluczenie społeczne – perspektywa poznawcza (Poverty and social exclusion – cognitive perspective)*, ELIPSA Publishing House, Warszawa.

exclusion. This in turn may be generally defined as a combination of insufficient economic resources, social isolation, and limited access to social and civic rights.

For the purpose of this analysis, there has been adopted an operational definition of social exclusion, derived from the general definition. It assumes that social bonds constitute the essence of social integration and may be treated as a kind of “insurance” in case of crisis, whereas the lack of such bonds increases the risk of poverty and exclusion. Accordingly, persons affected by social exclusions are persons who also experience poverty and social isolation.

## **2. POVERTY**

### **Measurement concept**

The applied method of analysis is based on a relative approach, in which poverty is perceived as a form of inequality and identified as the occurrence of an excessive gap in the level of satisfaction of social needs. The households and individuals whose needs are satisfied to a lesser extent than those of other members of the society are considered poor.

In contrast to a classic mono-dimensional approach, in which poverty range is exclusively drawn on the basis of income or household expenditure, the present analysis features three complementary approaches to poverty, namely income poverty, living conditions poverty and poverty in terms of dealing with the household budget (poverty resulting from the lack of budget balance).

The poverty thresholds for each type analysed were determined in such a way that the populations of households and individuals considered poor would in each case comprise a similar number. Such an approach, based on a conventional agreement on the poverty line, fosters transparency and objectivism of interpretation of the analysis concerning various poverty forms, mutual correlations and the comparisons of various features of households and persons considered poor in each of the three dimensions. Determining the range of income poverty served as the starting point in the analysis conducted.

As it is related to the material aspect of life (the material situation of individuals and households), poverty concerns especially such features which are surveyed at the household level<sup>4</sup>. Therefore, it is analysed with reference to households, while also comprising an individual (personal) dimension. Whenever the observations refer to individuals (e.g. in the analysis of social exclusion), persons who are members of the households considered poor are also viewed as affected by poverty.

---

<sup>4</sup> A household is, by definition, a group of persons who pool their financial resources, which is why their financial situation should be similar. Although, practically speaking, the living conditions of various household members may differ to some extent, the household level, from the statistical point of view, seems the most useful to measure the phenomena which constitute different aspects of poverty.

## Income poverty

The households in which the monthly disposable monetary income (within the last 12 months preceding the survey) was lower than the assumed poverty threshold were considered poor in terms of income. While defining income poverty, along with its threshold, a reference was made to the so-called equivalised income, i.e. the income which was made comparable between households of various demographic characteristics<sup>5</sup>. In this study, the poverty threshold (line) was adopted at 60% of the median equivalised income<sup>6</sup> for the whole country.

This is a common approach used (e.g. by Eurostat) to assess the poverty range in the EU Member States<sup>7</sup>. The social cohesion survey has revealed that income below such a poverty threshold concerned approx. 15% of all surveyed households<sup>8</sup>.

Poverty affects, to a different extent, a number of population categories and depends on a series of factors, both demographic and socio-economic. In order to analyse the correlations between poverty (income poverty or other poverty types) and various features of households and household members, two approaches were used in this publication. The actual effect of various factors on the risk of poverty can be inferred from the results of the logistic regression models that were constructed for the purpose of this analysis. In turn, information on the diversity of poverty ranges, can be derived from the distribution of the poverty index by those factors (see chapter 7. Methodological annex). The approach based on logistic regression is therefore aimed at identifying the actual determinants of a given poverty type (the factors causing poverty to occur, or having a strong contributory effect). In turn, the analysis of the poverty range allows us to identify the subpopulations affected to a greater (or lesser) extent, irrespective of whether the factor constituting the identification criterion actually influences on the poverty, or the observation made is of a different character (e.g. it results from the coincidence occurring through other variables, or relations between the factor we take into account and the actual determinants of poverty).

### Determinants of income poverty

The most important factors (among the ones included) which influence the household's risk of income poverty include the principal source of income and the presence of unemployed persons in

---

<sup>5</sup> The so-called OECD-modified equivalence scale was applied, which assumes the following values of equivalent units per person in a household: for the first adult person – 1; for each consecutive household member aged 14 years or more – 0.5; for each child aged less than 14 years – 0.3. This means that a household comprising 2 adults and one child takes 1.8 equivalent units (1 + 0.5 + 0.3). If the household's income amounted to PLN 6000, the income per person equalled PLN 2000 (6000:3), whereas the income per equivalent unit was approx. PLN 3333 (6000:1,8).

<sup>6</sup> Median income. Half of individuals in households are characterised by higher, and half by lower income.

<sup>7</sup> The relative at-risk of poverty rate, defined as the share of persons with an equivalised disposable income below the poverty threshold, amounting to 60% of the national median of equivalised disposable incomes, is one of the indicators used to monitor the implementation of the objectives assumed within the Europe 2020 strategy. It is calculated on the basis of the European Union Statistics on Income and Living Conditions (EU-SILC). Data for Poland and the EU can be found at the website of Eurostat and of the CSO (<http://www.stat.gov.pl>).

<sup>8</sup> According to the criterion adopted, the poverty line for a one-person household amounted to approx. PLN 887, and for a household comprising 2 adults and two children aged less than 14 years – to approx. PLN 1863.

the household (see *Model 2.1.*). As compared to households living off hired work, a lower poverty risk concerned only the households of own-account workers (self-employed) outside agriculture. However, the highest poverty risk applied to households living off various kinds of social benefits (e.g. unemployment benefits or benefits from social welfare centres), which mostly included households affected by unemployment. A high level of income poverty risk also concerned households primarily living off pensions.

The risk of falling into the income poverty sphere is considerably influenced by both the occupation performed and the educational level of the household head. Those households where the household level has attained higher education are considerably less threatened with income poverty. The lower the educational level, the higher the poverty risk. Among the occupational groups considered, the highest poverty risk pertained to unqualified (elementary) workers, and a group consisting of farmers, gardeners, forest workers and fishermen.

The model applied, in which a household comprising four persons constituted the reference point, has revealed that the number of persons in a household exerted a strong impact on the risk of falling into the income poverty sphere; the strongest impact concerned households consisting of two and three persons, and also (though to a lesser extent) the households consisting of at least six persons. As regards households composed of two and three persons, the poverty risk was lower than in the reference household, whereas in the households of at least six persons, it was higher.

Households in which the household head was 35-44 years, were treated as the reference point for assessing the impact of the household head's age on the poverty risk. The differences in the poverty risk between the reference group of households and other groups proved significant as regards households comprising older members than the reference group. The income poverty risk decreased in higher age groups, with the lowest values concerning the households of the oldest persons (aged 65-74 years, and 75 years or more).

A considerably lower "net" impact (i.e. after eliminating the impact of other factors and correlations) on income poverty, as compared to the aforementioned factors, was exerted by the presence of a disabled person in the household (slightly increasing the poverty risk) and by the place of residence, analysed in terms of the locality type and voivodship. The risk of income poverty concerned, to the largest extent, inhabitants of rural areas and towns. When taking a household residing in mazowieckie voivodship (including the capital city – Warsaw) as a reference point, statistically significant effects were observed only in three voivodships (parameter estimates indicated a statistically significant difference in relation to the reference level), and the highest risk of income poverty was identified as regards lubelskie voivodship.

### Diversification of the income poverty range

When comparing the poverty range in terms of various household features, it should be remembered that we do not deal with only one determinant, but with several factors at once. Dependencies between these factors are very important. For instance, the diversification of the income poverty range depends, among other factors, on the economic activity of household members, and on their status on the labour market, which, in turn, depends on such factors as the age and the educational level of the individual household members. What is more, the accumulated impact of various factors, both demographic and socio-economic, can hardly be neglected while drawing the conclusions on the territorial diversification of the poverty range, and on its diversification by other factors.

Income poverty affects especially the households of persons with a low educational level. The share of households affected by this poverty type, in the group of households where the household head has completed lower-secondary education only, is nearly two times higher than the average (amounting to approx. 29%). The share is also higher than the average as regards the households of persons who have attained the level of basic vocational education (approx. 21%). In turn, the level of income poverty in the households of persons with at least secondary education was considerably lower than the average, and the share of poor households in the group of households where the head had attained the higher educational level, was very low.

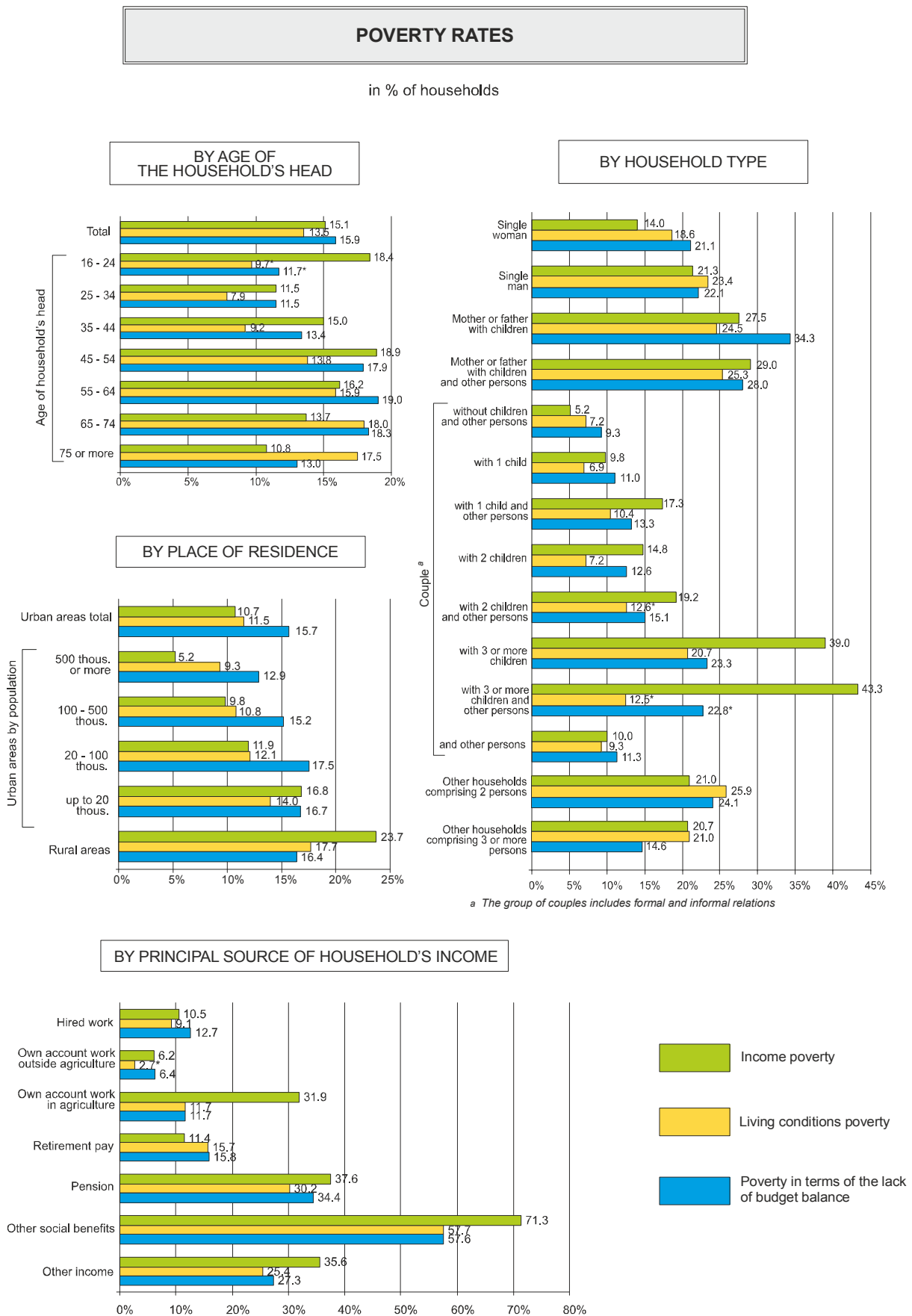
Furthermore, income poverty depends, to a large extent, on the socio-economic characteristics of households. A very high risk of this poverty type is found in households with unemployed persons (approx. 37%) and pensioners (approx. 38%). The situation of retired persons, however, is much better, among whom the share of persons affected by income poverty is more than three times lower than in the two groups mentioned. This situation is also reflected in the findings on the households age structure. The households of older persons are mostly formed by retired persons who have their own, steady source of income. Therefore, poverty defined in terms of income more frequently affects the households of young people and middle-aged persons than the households of older persons. The poverty risk is also diversified by the household type, with the risk growing in line with the number of dependent children. Apart from multi-children families, the category of households experiencing a high poverty risk also includes single-parent families.

The results of the social cohesion survey have also revealed that income poverty in Poland more often affects inhabitants of rural areas (approx. 24%) than of urban areas (approx. 11%). Moreover, the lowest level of income poverty was observed in the largest cities, while in each consecutive class, comprising increasingly smaller cities and towns, an increasingly higher share of households affected by this poverty type was recorded.

The highest income poverty indices applied to the following voivodships: lubelskie, podlaskie, podkarpackie and świętokrzyskie (approx. 20-23.5% of households).



Figure 2.1.



## **Living conditions poverty**

The range of what is considered living conditions poverty, was assessed on the basis of an aggregate indicator of poor living conditions. While constructing the indicator, a general assumption was made that it should reflect the non-satisfaction of various types of needs, both material and non-material, which are common in the society and perceived by most of its members as indispensable.

The aggregate indicator consists of thirty partial indicators which may be treated as non-satisfaction symptoms, concerning widely-understood living conditions (including the dwelling quality, the provision of durable goods, and other types of consumer needs – see *Note 2.1.*). Use was made of a simple formula of adding up the partial indicators which stand for the negative symptoms. The households in which at least ten indications (symptoms) of poor living conditions were observed, were considered at risk of poverty. This condition was met by 13.5% of households.

### *Determinants of living conditions poverty*

The adjustment results of the logistic regression model, explaining the occurrence of this poverty type, confirm that the household's income situation is the major factor behind the risk of falling into the living conditions poverty sphere. The "net" impact of each of the remaining factors included was also statistically significant, but much weaker. The factors increasing the poverty risk were a low educational level of the household head, and the presence of unemployed or disabled persons in the household. At the same time, it should be noted that, as a result of treating income as an explanatory variable in the model, and statistically confirming its major role in shaping the risk of living conditions poverty, the effects of other factors should be interpreted as reflecting their "pure" income-unrelated influence, i.e. influence reflected in other mechanisms than earning opportunities and income size. A possible impact of those factors, exerted through affecting the income size, is included in the income effect, as a result of which it is not reflected in the assigned "specific" effects.

The locality type and voivodship proved to have a different impact on the risk of living conditions poverty than on income poverty. The risk of living conditions poverty among households bearing the same features (e.g. the same educational level, the same occupation of the household head, and the same income) in smaller towns and in rural areas was lower than in cities with more than 500 thous. inhabitants. Based on the model applied, it can also be noted that at least in six voivodships, i.e. podlaskie, opolskie, wielkopolskie, podkarpackie, małopolskie and lubelskie (in which cases, the parameter estimations were statistically significant), households bearing the same socio-economic features were less threatened with living conditions poverty than households located in mazowieckie voivodship (which constituted the reference point).

### Diversification of the living conditions poverty range

The analysis of poverty rates among the population of households bearing selected socio-economic features has shown that living conditions poverty affects, to the highest extent, the households of persons with a low educational level. Considerable differences were observed between the households in which the household head had completed lower-secondary education (with living conditions poverty amounting to 31%) and the households whose head had attained basic vocational education (approx. 17%). As in the case of income poverty, the level of living conditions poverty in the households of persons with at least secondary education was considerably lower than the average poverty level, and the share of poor households in which the household head had higher education was very small.

A very high risk of living conditions poverty is found in families including unemployed persons (21%). This poverty type often affects farmer households, and the households of pensioners and other economically inactive persons. What is more, over 50% of households in this poverty sphere were households in which social benefits constituted the major source of income.

As in the case of income poverty, the at-risk of living conditions poverty rate has reached high values for multi-children families. The category of households affected by living conditions poverty also includes single-parent families. The threat of experiencing this poverty form is also higher for the households of middle-aged persons (45-64 years). Contrary to income poverty, the threat of living conditions poverty also concerns the households of older persons, i.e. aged 65 years or more.

Although, as shown in the model, living in rural or urban areas does not exert a direct impact on the risk of living conditions poverty, the accumulation of various poverty conditions (determinants), combined with the diversified characteristics of urban and rural inhabitants, has led to a relatively more frequent occurrence of living conditions poverty among inhabitants of rural areas (approx. 18%) than among urban inhabitants (approx. 12%), which was also true of income poverty. The level of risk of this poverty form declines in line with a growing locality.

The highest rates of living conditions poverty were recorded in warmińsko-mazurskie, świętokrzyskie and zachodnio-pomorskie voivodships (approx. 18-20%).

**Note 2.1.**

## PRINCIPLES OF CONSTRUCTING THE AGGREGATE INDICATOR OF POOR LIVING CONDITIONS

The living conditions poverty range was measured on the basis of an aggregate indicator of poor living conditions. While constructing the indicator, a general assumption was made that it should reflect the non-satisfaction of various types of needs, both material and non-material, which are common in the society and perceived by most of its members as indispensable.

The first step in compiling the aggregate indicator involved selecting the variables which could be treated as symptoms of poor living conditions. Both objective and subjective information was taken into account, concerning the dwelling situation, the provision of durable goods and the deprivation of (i.e. the inability to satisfy) various kinds of material and non-material needs. In order to avoid an arbitrary approach to the highest extent possible, while selecting the constituents of the indicator, an attempt was made to comply with the following applicable theoretical principles: the "frequency-based verification" principle (considering, in general, those goods which occur among at least half of the population<sup>9</sup>, hence being rather common than rare) and the "social consensus" principles (having certain goods or satisfying certain needs is considered within a given society as indispensable). As the social cohesion survey did not contain any information that would allow us to verify the choice of constituents in line with the "social consensus" principle, a reference was made in this case to expert knowledge and to other surveys. It was also examined whether a certain "good" constitutes (according to the economic theory) a normal good (i.e. the consumption/possession of which increases with growing income), or not. While selecting the symptoms of poor living conditions, the recommendation to consider the components which, in principle, concern the entire population (the so-called Dicks axiom) was complied with. As a result, the aggregate indicator of living conditions did not include any variables referring to the difficulties of satisfying children-specific needs, despite the availability of such information in the survey.

Moreover, in order to avoid overrepresentation (especially as regards substitute goods or services), and thereby not to attach too much importance to the components concerning some areas and aspects of life, in many cases, single symptoms were combined into aggregate partial indicators (aggregate partial variables). An indicator of poor sanitary conditions in a dwelling may be considered an adequate example. The aim of combining components and establishing aggregate intermediate indicators was also to comply with the "frequency-based verification" principle and the Dicks axiom.

As a result of conducting consecutive analysis stages, the list of elementary variables was used to establish thirty intermediate variables (partial indicators) which were taken into account while constructing the aggregate (aggregate) indicator of poor living conditions.

---

<sup>9</sup> Which implies that the negative symptom (i.e. the lack of a certain good or the non-satisfaction of a certain need), constituting an indicator component, should refer to less than half of the population.

Note 2.1. (cont.)

Table 1. List of intermediate variables (partial indicators) included in the aggregate indicator of poor living conditions, including information on the frequency of occurrence of a given symptom

Components of the indicator of poor living conditions (intermediate variables)	% of households representing a given symptom (the intermediate variable value=1)
1. Poor condition or no electrical system available	8.1%
2. No central heating or a fuel-fired (coal, wood, sawdust) furnace	15.7%
3. Poor sanitary conditions (no running water, including hot water, no bathroom or toilet)	23.4%
4. Dark and damp dwelling	17.1%
5. Dwelling located in a noisy neighbourhood or in a region with contaminated natural environment (dust, smoke, other contaminants)	18.0%
6. Too small dwelling (as for the household needs) or not every adult person has a separate room or a separate space in a dwelling to rest, study and work	26.2%
7. Inability to maintain an adequate temperature in a dwelling (not warm enough in the winter, and not cool enough in the summer)	35.8%
8. Poor dwelling conditions — general (subjective) assessment	5.1%
9. No washing machine	9.3%
10. No fridge or freezer	1.0%
11. No microwave or multifunction robot	20.1%
12. No vacuum cleaner	2.1%
13. No radio or TV set	3.1%
14. No CD, DVD or MP3 player, no cable or satellite TV	5.7%
15. No (landline or mobile) phone	1.6%
16. No computer	9.3%
17. No access to the Internet for financial reasons	11.4%
18. Poor provision of durable goods in the household — general (subjective) assessment	4.9%
19. No car for financial reasons	12.4%
20. No money for entertainment (tickets to cinema, theatre, concerts, visits in restaurants, etc.)	37.1%
21. No money for at least one week of holiday once a year	42.9%
22. Household cannot afford to invite their family or friends to dinner, supper or other meal once a year	14.4%
23. Household cannot afford to buy presents for their nuclear family (parents, siblings or adult children) once a year	11.7%
24. No money to buy books or press items	17.9%
25. No money to buy pharmaceuticals	14.5%
26. No money to visit specialist doctors or dentists	26.2%

Note 2.1. (cont.)

Table 1. List of intermediate variables (partial indicators) included in the aggregate indicator of poor living conditions, including information on the frequency of occurrence of a given symptom (cont.)

Components of the indicator of poor living conditions (intermediate variables)	% of households representing a given symptom (the intermediate variable value=1)
27. No money to buy footwear, clothing and bedclothes	13.4%
28. No money to replace worn-off furniture	30.3%
29. No money to buy food (resigning from meat, fresh fruits and vegetables)	9.3%
30. The need to resign from any of the basic meals (breakfast, dinner or supper) for financial reasons	2.1%

While compiling aggregate indicators, a question needs to be answered whether the aggregate indicator will correspond to a simple sum of individual components (which assumes that all partial variables are of equal significance), or different weights will be assigned to individual components. The weights system applied would need to be adequately justified, whether in substantive or statistical terms. The analysis discussed entailed a simple adding up of partial indicators. It was assumed that whenever a given symptom of poor living conditions was observed in the household, the partial indicator would take value 1, while otherwise it would amount to 0. According to the authors, such an approach was the safest and the least arbitrary in light of previous experience in similar analyses. Any weights system, even though it has some objective or subjective bases, involves an additional element of arbitrariness (e.g., related to determining certain compilation principles) and specific assumptions. At the same time, in many cases when “drastic” weights neither favour nor depreciate certain factors, their impact on the indicator values may be insignificant. Furthermore, irrespective of the aspect of living conditions, there is always a risk that for a given household, the significance of a certain component may differ from the role it plays in most households. Therefore, instead of using weights, such measure construction was adopted that would express the diversified aspects of living conditions in a relatively balanced and universal way, so that none of the aspects would be favoured in an unjustified matter through the number of corresponding components, while the components would be given equal weights.

The aggregate indicator was statistically verified by way of analysing the correlations between its components (intermediate variables). To this end, the Cronbach’s alpha, treated as an internal consistency measure of aggregate indicators, was applied. The resultant value of the Cronbach’s alpha amounted to 0.86. The correlations of all constituents with the aggregate indicator turned out positive, though the correlation degree was not even. Moreover, the verification results revealed the internal consistency of the indicator. Hence, the various components reflected, to a large extent, the elements of the one complex phenomenon that is deemed “poor living conditions”.

Note 2.1. (cont.)

Table 2. Distribution of values of the aggregate indicator of poor living conditions – in % of households

Indicator value ( <i>n</i> – number of symptoms)	% of households	Accumulated % of households which corresponds to households with a given indicator value <sup>a</sup> and households:		
		in worse situation ( <i>n</i> symptoms or more)	in better situation (no more than <i>n</i> symptoms)	
0	14.8	100.0	14.8	
1	16.8	85.2	31.6	
2	13.4	68.4	45.0	
3	10.1	55.0	55.1	
4	7.7	44.9	62.8	
5	7.3	37.2	70.1	
6	5.0	29.9	75.1	
7	4.5	24.8	79.7	
8	3.8	20.3	83.5	
9	3.0	16.5	86.5	
10	2.7	13.5	89.2	POVERTY THRESHOLD
11	2.1	10.8	91.3	
12	1.7	8.8	92.9	
13	1.3	7.1	94.2	
14	1.2	5.8	95.4	
15	0.9	4.5	96.4	
16	0.7	3.6	97.1	
17	0.7	2.9	97.8	
18	0.7	2.2	98.5	
19	0.4	1.6	98.8	
20	0.3	1.2	99.1	
21	0.2	0.9	99.3	
22	0.2	0.6	99.6	
23	0.2	0.5	99.7	
24	0.1	0.3	99.8	
25	0.1	0.2	99.9	
26-30	0.1	0.1	100.0	

↑ GOOD SITUATION

↓ POVERTY

a I.e. with an indicator value equal to the value included in the table side.

The aggregate indicator established takes values from 0 to 30, where 0 means that none of the symptoms of poor living conditions was observed in the household. Households for which the aggregate indicator value amounted to 0 were viewed as living in very good conditions. An increase in the indicator value indicates a deterioration in the household's situation.

While defining the notion of living conditions poverty for the purpose of this analysis, the value of 10 was conventionally adopted as the poverty threshold. The households, including all household members, for which the aggregate indicator of poor living conditions was equal to, or higher than, 10 were considered affected by, or threatened with, living conditions poverty. Thus, the indicator of living conditions poverty is a dummy indicator which serves to identify such households.

## **Poverty in terms of the lack of budget balance**

The starting point towards analysing this poverty form was provided by the aggregate indicator of the lack of budget balance, taking into consideration both the subjective opinions of households concerning their financial status, and the facts reflecting the household's budget difficulties (including payment arrears). A household was considered poor in terms of "budget balance problems" if at least four out of the seven symptoms considered were identified (see *Note 2.2.*). Such a situation concerned approx. 16% of the households surveyed.

### *Determinants of poverty in terms of the lack of budget balance*

It is hardly surprising that the household's income situation is the major factor determining the risk of falling into the sphere of poverty in terms of the lack of budget balance – the lower the level of equivalised income, the higher the probability of accumulating the symptoms reflecting the lack of budget balance. As in the case of living conditions poverty, this means that the effects connected with other factors should be treated as income-unrelated.

Significant factors contributing (independently of their negative impact on income) to such a poverty threat include the presence of unemployed or disabled persons in the household. The model applied has shown that, in terms of the impact exerted by the household head's age, the age of 35-44 years constituted one of the factors contributing to budget difficulties. A small household size proved to be another contributory factor. This is especially true of households consisting of less than four persons, and mostly of one-person households. For these, the risk of this poverty form is considerably higher (with comparable values of other features, including equivalised income) than for households made of four persons. However, the independent ('pure') influence of the household size, with regard to households with more than four members, did not prove statistically significant.

As in the case of the previously analysed poverty forms (income and living conditions poverty), the occurrence of poverty in terms of the lack of budget balance is fostered by a low educational level and low occupational qualifications. Similar to living conditions poverty, the locality type influences the risk of accumulation of various indications of the lack of budget balance. Households bearing comparable socio-economic features, living in large urban agglomerations, run a higher risk of poverty in terms of the lack of budget balance than do inhabitants of smaller towns and villages. The influence of residing in a given voivodship proved statistically significant only in few cases. The strongest effect indicating an increased risk of this poverty form coming about was seen in case of inhabitants of warmińsko-mazurskie voivodship, whereas residing in podkarpackie, podlaskie, lubelskie and opolskie voivodships appears to decrease the theoretical risk of experiencing this poverty form once the effects related to other factors (including income) considered in the model are eliminated.

As regards the interpretation of various determinants of poverty in terms of the lack of budget balance, attention should be drawn to one specific aspect related to the nature of this phenomenon, and to the model used in its analysis. The budget balance results from the combined effect, or compilation, of two major factors, i.e. household's needs (and aspirations), expenditures and liabilities, on the one hand, and income available to cover the said expenses, on the other. Income



determinants are analysed in detail when explaining income poverty, whereas for other poverty types, the equivalised income was explicitly included in the model as an explanatory variable. In consequence, in the case of other factors, only their income-unrelated effects are *de facto* explained. As regards budget balance, this implies that the effects analysed concern mainly the impact of the relevant factors on the balance side related to expenditures, liabilities, needs and aspirations, which constitutes a significant interpretation element.

#### *Diversification of the range of poverty in terms of the lack of budget balance*

Poverty in terms of the lack of budget balance, understood as the occurrence of difficulties with balancing the household budget, similarly to the previously analysed poverty forms (income and living conditions poverty), more often affects the households of persons with low education, including especially those households, whose head has up to lower-secondary education (approx. 27%). The share of poor households comprised of persons with basic vocational education is also high (approx. 20%). As regards the households of persons with at least secondary education, the level of poverty in terms of the lack of budget balance is slightly lower than the average, whereas among the households of persons with higher education, it is insignificant (approx. 3% in the households in which the household head had earned at least a Master's degree and approx. 5% for persons with a Bachelor's degree).

This poverty form concerns, to a large extent, the households in which at least one person is unemployed (approx. 32%). As in the case of income poverty, poverty in terms of the lack of budget balance is relatively more frequent among the households of persons living off social benefits, pensioners and single-parent families, and families with at least three dependent children. The households of single persons, and older and middle-aged persons (over 45 years) are also more threatened with this poverty form.

Budget balance problems affect inhabitants of rural and urban areas to a similar degree (approx. 16%), and the size of the town/city is relatively unimportant. Although the poverty rates are not strongly diversified, it can be noted that, in the largest cities with over 500 thous. inhabitants, the share of households affected by poverty in terms of the lack of budget balance is lower, despite the fact that the explaining model indicates such place of residence as a factor increasing the poverty risk. The relatively good situation in large cities should, therefore, be treated as being due to the impact of the favourable structure in terms of other major determinants of the phenomenon in question.

The highest rate of poverty in terms of the lack of budget balance was recorded in warmińsko-mazurskie voivodship (23%). Other voivodships with high shares of households experiencing difficulties with balancing their budgets included zachodnio-pomorskie, lubuskie and łódzkie voivodships (19%).

Note 2.2.

## PRINCIPLES OF CONSTRUCTING THE AGGREGATE INDICATOR OF THE LACK OF BUDGET BALANCE

In the case of the third poverty type defined, different means of scrutinising and revealing the household's budget problems were considered. The aggregate indicator of the lack of budget balance combines both subjective poverty elements (e.g. opinions concerning the ability to use one's own income, and the reference of one's own income to the subjective poverty threshold), and the facts indicating budget difficulties experienced by the household (payment arrears and loans taken to cover the most basic consumer needs). The aggregate indicator of the lack of budget balance consists of seven intermediate variables (partial indicators).

Table 1. **List of intermediate variables (partial indicators) included in the aggregate indicator of the lack of budget balance, including information on the frequency of occurrence of a given symptom**

Components of the indicator of the lack of budget balance (intermediate variables)	% of households representing a given symptom (the intermediate variable value=1)
1. Arrears in rent, electricity or gas payments (at least two months in arrears), and in mortgage repayment (at least one month in arrears)	4.2%
2. Subjective household's opinion on the inability to "make ends meet" (it is difficult or extremely difficult for the household to "make ends meet")	30.7%
3. The household has to save money on a daily basis, or there is not enough money in the household to satisfy even the most basic needs (self-assessment)	36.8%
4. Declared household's income is lower than the necessary (minimum) level of income that would allow to "make ends meet"	26.8%
5. Loan or credit was contracted to cover the current consumer expenses (on food, clothing, footwear, regular payments)	7.2%
6. Household's perception of considerable difficulties in making current expenses, due to loan/credit repayment	11.8%
7. Household's declaration indicating the lack of any financial leeway (inability to cover an unexpected expense of PLN 400-500)	42.0%

It was assumed that if a given indication of the lack of budget balance was observed in the household, the partial indicator would equal 1, and otherwise it would be 0. Similar to the aggregate indicator of living conditions, a simple formula of adding up partial indicators was applied. As a result, the aggregate indicator value ranged from 0 (none of the symptoms of the lack of budget balance was indicated) to 7 (all symptoms were identified jointly).

Note 2.2. (cont.)

Table 2. **Distribution of values of the aggregate indicator of the lack of budget balance – in % of households**

Indicator value ( <i>n</i> – number of symptoms)	% of households	Accumulated % of households which corresponds to households with a given indicator value <sup>a</sup> and households:	
		in worse situation ( <i>n</i> symptoms or more)	in better situation (no more than <i>n</i> symptoms)
0	38.2	100.0	38.2
1	20.0	61.8	58.2
2	13.2	41.8	71.4
3	12.8	28.7	84.1
4	9.9	15.9	94.0
5	3.8	5.9	97.9
6	1.6	2.1	99.5
7	0.5	0.5	100.0

POVERTY THRESHOLD

GOOD SITUATION

POVERTY

<sup>a</sup> With an indicator value equal to the value included in the table side.

To assess internal consistency of the indicator, the Cronbach's alpha correlation coefficient was calculated for all its components (intermediate variables), amounting to 0.72. A relatively high coefficient value reflects the high internal consistency of the indicator, and the consistency of all elements considered which constitute the measure of budget balance, and which indirectly reflects the corresponding poverty form.

A household (including all household members) was considered poor if at least four out of seven indications of the lack of budget balance were identified (i.e. the indicator of the lack of budget balance was equal to, or higher than, 4). The dummy indicator identifying households affected by this poverty type, is referred to as the indicator of the lack of budget balance.

### **Towards multidimensional poverty – the accumulation of various poverty forms**

The analysis conducted allowed us to answer the questions concerning the mutual correlations between various poverty forms. It has shown that the households with relatively the lowest income are not always those which have the worst living conditions or the biggest difficulties with balancing their budgets.

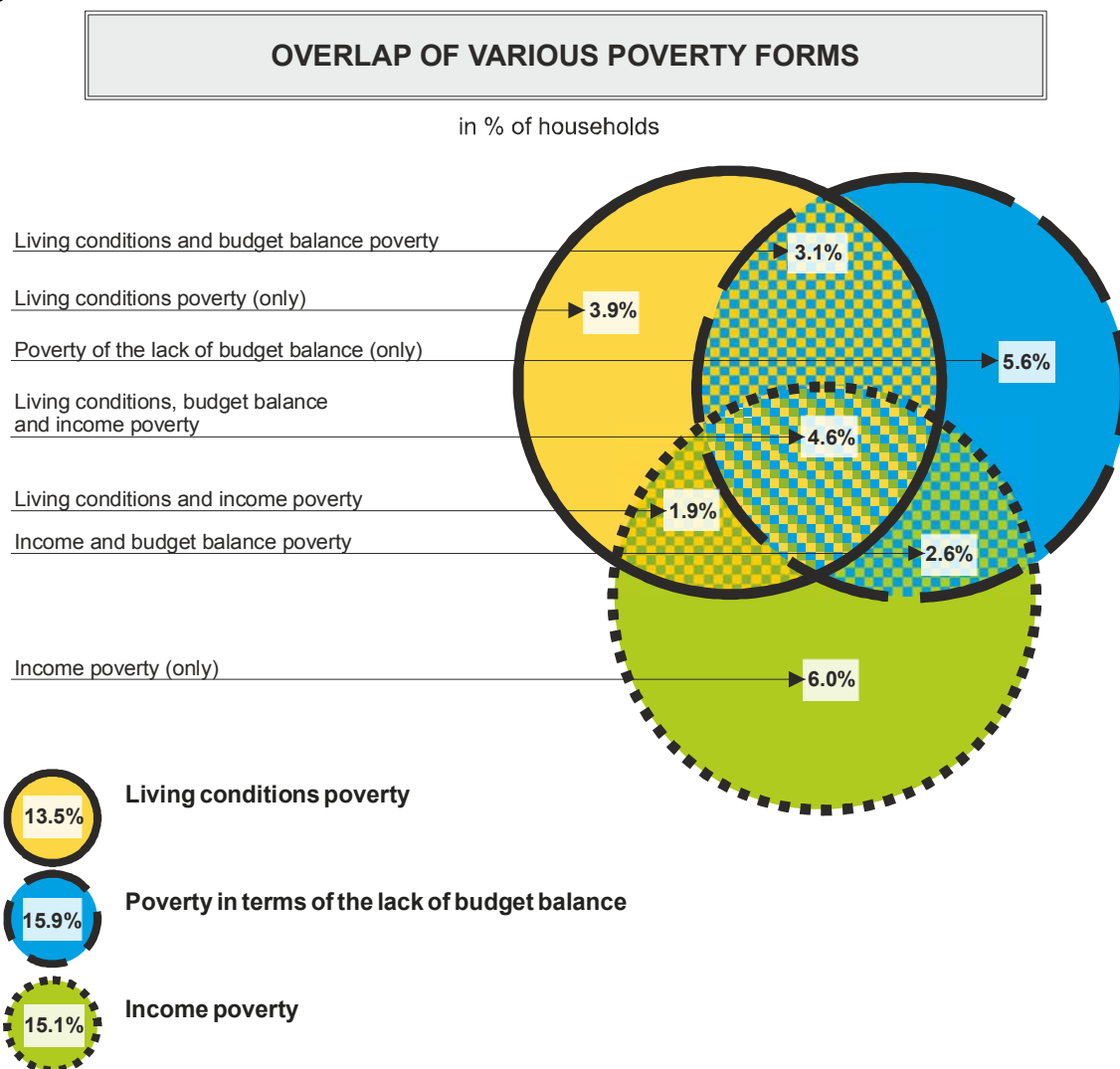
According to the criteria adopted, over one-fourth of all households (approx. 28%) belonged to at least one poverty sphere. In most cases (15.5%), these were families affected by one poverty type. Approx. 8% of households struggled with two poverty forms, and all three types of poverty accumulated in almost every twentieth household (4.6%). The latter group can be viewed as affected by multidimensional poverty.

Table 2.1.

<b>COEXISTENCE OF VARIOUS POVERTY FORMS</b>	
in % of households	
<i>HOUSEHOLDS</i>	<i>% OF HOUSEHOLDS</i>
<b>Not affected by any poverty form</b>	<b>72.3</b>
<b>Affected by at least one poverty form</b>	<b>27.7</b>
of which:	
<b>affected by one poverty form<sup>a</sup></b>	<b>15.5</b>
of which:	
- income poverty	6.0
- living conditions poverty	3.9
- poverty in terms of the lack of budget balance	5.6
<b>affected by two poverty forms<sup>b</sup></b>	<b>7.6</b>
of which:	
- living conditions and income poverty	1.9
- living conditions and budget balance poverty	3.1
- budget balance and income poverty	2.6
<b>affected by three poverty forms</b>	<b>4.6</b>

a This item concerns the occurrence of one poverty form, so it does not refer to households in which two or three forms occurred at once.  
 b This item concerns the occurrence of two poverty forms, so it does not refer to households in which three forms occurred at once.

Figure 2.2.



The degree of mutual correlation between various aspects of the material situation and related poverty forms can also be established on the basis of the relevant correlation coefficients between the indicators.

Correlation was assessed in pairs (it always concerns the relations between two aspects of the material situation) at two levels. The first level entailed assessing the correlation between the measures reflecting the household's situation in a certain aspect (measures which provide the bases for compiling poverty rates) – the equivalised income as regards the income aspects, and aggregate indicators of poor living conditions and the lack of budget balance. The second level involved assessing the correlation between various dummy poverty indicators.

Table 2.2.

**CORRELATIONS BETWEEN VARIOUS POVERTY FORMS  
PEARSON'S CORRELATIONS COEFFICIENT**

<i>SPECIFICATION (indicators pair)</i>	<i>PEARSON'S CORRELATION COEFFICIENT</i>
<b>Assessment of the correlation between base indicators</b>	
Aggregate indicator of poor living conditions - level of household income	-0.41
Aggregate indicator of poverty in terms of the lack of budget balance - level of household income	-0.45
Aggregate indicator of poor living conditions - composite indicator of the lack of budget balance	0.67
<b>Assessment of the correlation between poverty indicators</b>	
Living conditions - income	0.37
Living conditions - the lack of budget balance	0.45
Income - the lack budget balance	0.36

One can generally speak of moderate correlation between various poverty forms. The strongest significant correlation was observed for living conditions poverty and poverty in terms of the lack of budget balance (the correlation coefficient of 0.45). The fact that poor living conditions are often combined with the inability to balance the household budget is confirmed by a high positive value of the correlation coefficient of the aggregate indicator of poor living conditions and the indicator of budget difficulties (0.67).

Weaker correlations between income poverty and other poverty forms indicate that a difficult income situation, assessed on the basis of monetary income, may not automatically translate itself into the occurrence of other poverty forms. The causes for this may be of a two-fold nature, arising either from measurement imperfections or from actual differences in the phenomena surveyed. The former may be connected, e.g., with the failure to consider income in kind when measuring general income. However, factors related to a different nature of the phenomena are of greater importance. The current material situation, especially, both in terms of living conditions, and the ability to maintain financial liquidity and to deal with the budget, depends not only on current, but also on previous income, along with the general material resources which may, but do not have to, be related to (both current and previous) income. The time factor is, therefore, extremely important. An unfavourable income situation, continuing for a longer period, fosters the accumulation of poor living conditions and budget difficulties.

The analyses conducted further allowed us to determine the type of households which struggled with the accumulation of various poverty forms, and the socio-demographic features characterising the households threatened with pauperism. Based on the model, the identification of the major determinants of multidimensional poverty was also feasible.

The coexistence of all three poverty forms in Poland can be found among inhabitants of rural areas to a higher extent (approx. 6%) than urban inhabitants (approx. 4%). The differences in favour of urban areas concern especially large agglomerations. In small urban localities, the multidimensional poverty range reaches the level similar to the one observed in rural areas.

All three poverty forms affect especially the households of persons with a low educational level, unqualified workers, unemployed persons, pensioners, single-parent and multi-children families, and single men. In these groups of households, the coexistence of all poverty forms is at least two times more frequent than the average.

An attempt was also made to explain the coexistence of all poverty forms through a logistic regression model, by defining the potential determinants of the occurrence of such a strong accumulation of negative phenomena in the material sphere, and by estimating the “net” impacts of those determinants (i.e. after removing the effects of other included factors).

The estimations of the effects of individual explanatory variables, obtained through model adjustment, indicate that the strongest “net” contribution to multidimensional poverty is attributed to the type of the source of income, the presence of an unemployed person in the household, or the educational level of the household’s head. In turn, the impact of the locality type proved statistically insignificant. Therefore, the range of multidimensional poverty in rural areas being higher than in cities results from other factors included in the model, and does not constitute an independent source of explanation. The diversification of multidimensional poverty in terms of the locality type reflects the combined effect of various factors, including the different socio-economic features of the populations of rural and urban inhabitants which constitute actual determinants (see Model 2.4. *Multidimensional poverty*).

### **3. FROM POVERTY TO SOCIAL EXCLUSION – IS POVERTY RELATED TO SOCIAL ISOLATION?**

For the purpose of this analysis, there was adopted an operational definition of social exclusion. Accordingly, social exclusion is understood as the accumulation process of an unfavourable material situation (poverty) with no (or very limited) social relations (referred to as social isolation).

#### **Social isolation**

It was assumed that a person is socially isolated if he/she does not maintain (frequent enough) contacts with the surrounding social environment outside his/her own household. The lack, or sporadic character, of certain types of relations, for whatever reason, was treated as a symptom of isolation. The social isolation threat was assessed on the basis of an aggregate indicator of social contacts whose values ranged from 0 (a “strongly socially isolated” person) to 10 (a person “strongly socially integrated”). The social isolation threshold was adopted at 3 (see *Note 2.3.*).

**Note 2.3.**

**PRINCIPLES OF CONSTRUCTING THE INDICATOR OF SOCIAL CONTACTS  
AND SOCIAL ISOLATION**

Intermediate variables enabling a synthetic description of various types of relations were established with a view to analysing the general intensity of social contacts. A set of relation types, corresponding to intermediate variables, was identified. It was assumed that only relations with persons from outside the household would be taken into consideration (relations inside the household do not influence intermediate variables, or indicator values). Additionally, in order to be considered, a given relation must meet specific intensity (frequency) requirements.

The types of contacts identified, which correspond to intermediate variables, include:

- Contacts with parents and children living outside the respondent's household,
- Contacts with brothers and sisters living outside the respondent's household,
- Contacts with parents-in-law (great-) grandparents (great-) granddaughters and (great-) grandsons,
- Contacts with other relatives,
- Contacts with friends and colleagues,
- Having friends,
- Relations with neighbours,
- Relations arising from religious life,
- Active involvement in associations, parties, clubs and social organisations.

As regards the variables illustrating contacts with various groups of persons in the respondent's surrounding (the first five intermediate variables), contacting at least one of the persons belonging to a given group, either personally at least several times in a year, or by mail/phone/the Internet at least once a month, was treated as an indication of an existing relation. In this case, the intermediate variable equalled "1". Otherwise it amounted to "0".

In the case of other intermediate variables, value "1" was assigned to:

- relations with neighbours, provided that one could speak of good relations with at least one neighbour (spending free time together, visiting one another or doing small favours),
- having friends, provided that the respondent claimed to have at least one good friend (outside his/her family), irrespective of the contact frequency,
- relations arising from religious life, provided that the respondent participated in masses, services or religious meetings at least once a week.

The intermediate variable concerning the contacts connected with an involvement in the activity of various types of organisations (parties, clubs, NGOs, communities, religious organisations, etc.) could take two non-zero values representing various contact intensity. Two types of involvement were considered, i.e. active involvement, reflected in social work performed for the benefit of a given organisation, or passive involvement, related to the participation in various events organised by a given organisation or institution. The assessment of contact intensity depends on the type and frequency of involvement, and on the number of types (diversity) of organisations in which a person is involved.

**Note 2.3. (cont.)**

Variables could take the following values:

“2” (higher intensity) – if the respondent was in any way involved (through work or participation in events) in the activity of at least two types of organisations, with the frequency of at least once every six months, or worked for the benefit of any organisation with the frequency of at least once a month; “1” (lower intensity) – if the respondent was in any way involved in the activity of any organisation with the frequency of at least once every six months, but failed to satisfy the above intensity criteria applicable to higher intensity “2”.

If none of the intensity conditions specified were satisfied, the intermediate variables were equal to “0”. Hence, “0” was treated as the lack of any social relation of a given type, the intensity of which would allow for its inclusion in the analysis, and in the value of the synthetic measure of social contacts. Intermediate variables, along with the aggregate indicator established, reflect the occurrence or non-occurrence of a relation, whether the latter results from the respondent’s own decision, or from other independent factors (e.g. the respondent does not have any relatives from a given group who live outside his/her household).

**Table 1. Distribution of intermediate variables (partial indicators) included in the aggregate indicator of social contacts – in % of persons aged 16 years or more**

Type of relation/contact (intermediate value)	Share of persons maintaining a given type of relations (the variable equals “1”)
Contacts with parents and children living outside the respondent’s household	65.8
Contacts with brothers and sisters living outside the respondent’s household	67.8
Contacts with parents-in-law (great-) grandparents (great-) granddaughters and (great-) grandsons	73.3
Contacts with other relatives	82.7
Contacts with friends and colleagues	75.6
Having friends	77.7
Relations with neighbours	57.1
Relations arising from religious life	50.1
Active involvement in associations, parties, clubs and social organisations:	
intensive – the variable equals to “2”	14.7
less intensive – the variable equals to “1”	14.2

The resultant intermediate variables (partial indicators) were used to construct an aggregate indicator of social contacts. As in the case of the indicator of living conditions, there was a number of possible methods of aggregating the intermediate variables selected. Based on the analysis conducted, it was decided that the aggregate indicator of social relations would be defined as a non-weighted sum of intermediate variables.



**Note 2.3. (cont.)**

The aggregate indicator established takes values from 0 to 10, expressing – in the most basic interpretation – the number of registered relations. Low indicator values should be treated as an indication of social isolation, whereas high values testify to strong social integration.

For the purpose of this analysis, the social isolation threshold was conventionally adopted at 3. Any person for whom the indicator of social contacts was equal to, or lower than, 3 was considered at risk of social isolation.

**Table 2. Distribution of values of the aggregate indicator of social contacts – in % of persons aged 16 years or more**

Indicator value ( <i>n</i> – number of relations)	% of persons	Accumulated % of persons which corresponds to persons with a given indicator value <sup>a</sup> and persons:	
		with weaker social contacts ( <i>n</i> relations or less)	with stronger social contacts ( <i>n</i> relations or more)
0	0.2	0.2	100.0
1	0.7	0.9	99.8
2	2.4	3.3	99.1
3	5.6	8.9	96.7
4	11.1	20.0	91.1
5	19.0	39.0	80.0
6	22.4	61.4	61.0
7	20.0	81.4	38.6
8	11.7	93.1	18.6
9	5.2	98.3	6.9
10	1.7	100.0	1.7

ISOLATION  
THRESHOLD

↑ SOCIAL ISOLATION  
↓ SOCIAL INTEGRATION

<sup>a</sup> With an indicator value equal to the value included in the table side.

Along with the substantive criteria, statistical criteria were also considered while constructing the aggregate indicator. The types of relations were grouped together so as not to establish separate intermediate variables that would reflect certain relations occurring only in a small part of the population, and so that each of the variables would be relatively independent of the age and the family situation of the respondent. The aggregate indicator was statistically verified by way of analysing the correlations between its components (intermediate variables) and its internal

in this publication. However, it should be noted that all intermediate (partial) variables are positively correlated with the aggregate indicator, which confirms the relative consistency of the approach taken.

Relatively insignificant correlations between individual components (intermediate variables) arise from the fact that they have, to some extent, a substitutive character. For instance, the more time we spend with our friends, the lesser significance we may attach to maintaining close and frequent relations with our family. Therefore, we encounter a certain degree of complementation of information that is included in some intermediate variables. Thus, intermediate variables do not really constitute various methods of measuring a consistent phenomenon (at least this is not their only role), but they rather measure the effects jointly amounting to the analysing phenomenon.

### Determinants of social isolation

With a view to defining the determinants, i.e. the factors that exert a specified influence on the occurrence of social isolation, logistic regression was employed (see Model 2.5. *Social isolation*). The model fitting results have revealed that age had the strongest “net” impact on the risk of social isolation. The oldest persons (aged 75 years or more) were the most threatened with social isolation, and the youngest ones (up to 24 years) ran the lowest risk. The weakening of social contacts was also fostered by a poor income situation (this especially concerned the lowest two decile groups). As regards education, a statistically significant influence on increasing the isolation risk was recorded in the case of persons with education up to lower secondary school. Disability constituted another factor contributing to the weakening of social relations. The “net” influence of the place of residence, both in terms of the locality type and voivodship, also proved important. Considering persons with the same socio-economic features, inhabitants of the largest cities were running the highest risk of social exclusion, contrary to inhabitants of rural areas, for whom this risk was the lowest. The highest risk of social isolation in terms of the region of residence was observed in łódzkie, śląskie, zachodnio-pomorskie, pomorskie and lubuskie voivodships. Finally, it was found that men, including especially single men, were more threatened with social exclusion than women.

However, the model shows that neither the occupation performed, nor the unemployment status have an autonomous influence on the weakening of social relations (which does not mean that the reference variables cannot diversify the population in terms of the degree of social exclusion, but if they indeed do so, this results from the combined effect of other factors included).

### Diversification of the social isolation range

When analysing the diversification of social isolation, it has to be borne in mind that, as in the case of other social phenomena, we practically deal with the effect of several (not just one) factors which simultaneously contribute to the level of a given phenomenon. Therefore, despite the fact that the occupation performed on its own does not constitute a significant determinant of social isolation, we can observe a strong diversification of this phenomenon by occupational group. Definitely the most isolated persons are those with the lowest occupational qualifications (elementary workers – 14%), and the least isolated are specialists, managerial staff and higher office workers (approx. 5-6%). This corresponds to the distribution of the indicator of social isolation by educational level. The highest indicator values were recorded among persons with education up to lower-secondary school (approx. 15%), and the lowest among persons with higher education, holding at least a Master's degree (approx. 4%).

Disabled and older persons are especially evident within the category of having limited social contacts. In the former group, social isolation affected 17% of the population. Among persons aged 65-74 years, the indicator of social isolation amounted to approx. 11%, and among the population aged 75 years or more, the share of socially isolated persons amounted to approx. 23%. In younger age groups, the indicator of social isolation ranged from approx. 6%, to approx. 9%.

The social isolation is also faced more often by persons outside the labour market, i.e. pensioners, unemployed and retired persons (with the isolation rate ranging between approx. 13-17%). Students were also more threatened with social isolation than were working persons (approx. 7%).

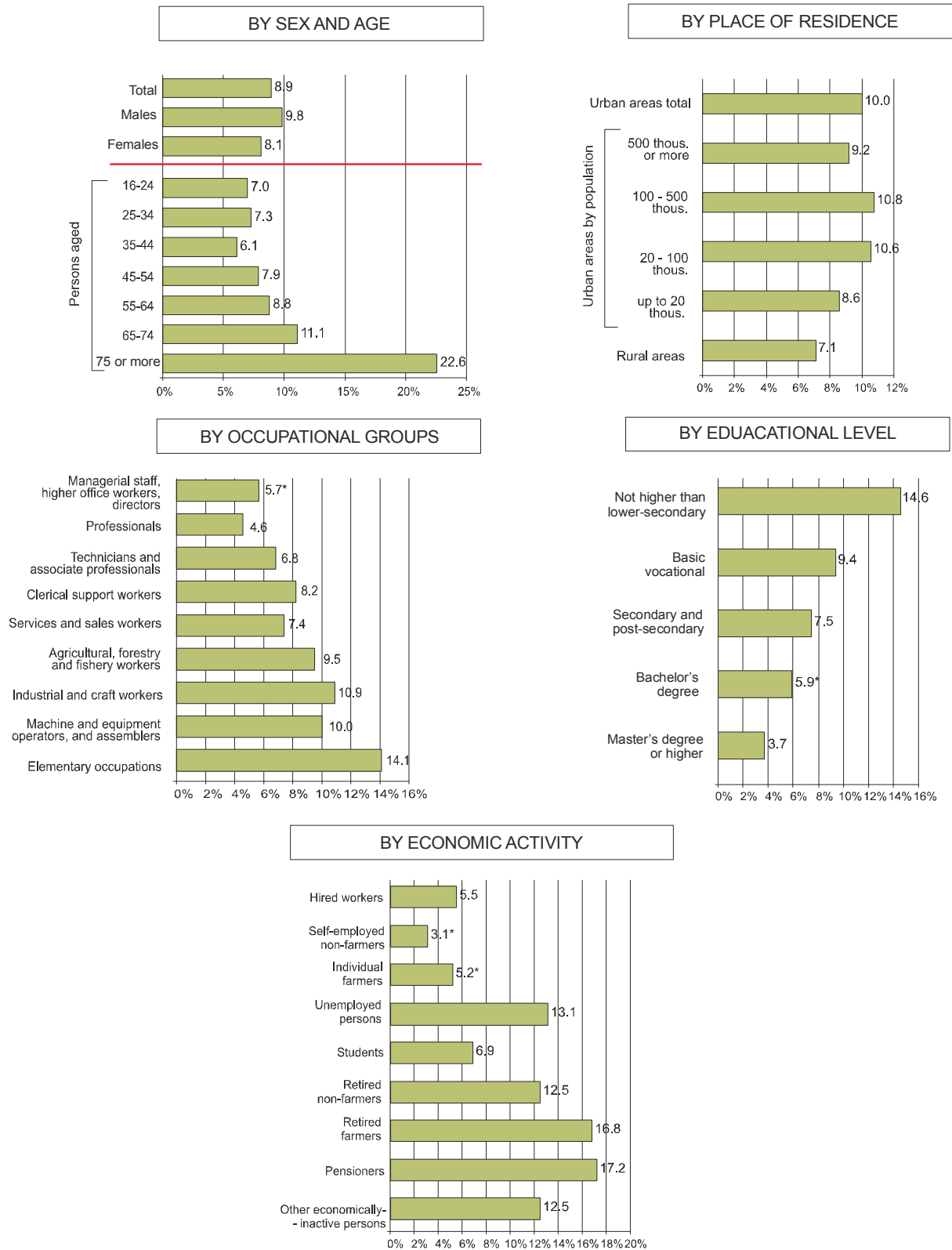
Inhabitants of urban areas were socially isolated to a slightly higher extent than were rural inhabitants (10% – in urban areas, and 7% in the rural ones). The highest share of socially isolated persons was recorded in large (but not the largest) and medium-sized cities (of 100-500 thous. and 20-100 thous. inhabitants) – approx. 11%. In the largest and smallest urban centres, the indicator of social isolation amounted to approx. 9%.

Depending on the voivodships, the indicator of social isolation ranged from approx. 6% in małopolskie and mazowieckie voivodships, to approx. 14% in łódzkie voivodship. High indicator values were also recorded in śląskie and zachodniopomorskie voivodships (approx. 11% and approx. 13%, respectively).

Figure 2.3.

## INDICATOR OF SOCIAL ISOLATION

in % of persons aged 16 or more



## Coexistence of poverty and social isolation

Based on the assumptions made, the threat of at least one poverty form (i.e. income poverty, living conditions poverty, or poverty in terms of the lack of budget balance) or social isolation was found to concern nearly every-third of the population aged 16 years or more (over 32%), among whom socially isolated persons constituted approx. 9%. However, the majority of socially isolated persons were not affected by any poverty form, as this group also included persons who were in a very good material situation. At the same time, social isolation combined with at least one poverty form was experienced by every twenty-fifth person (4%) who was considered at risk of social exclusion. Slightly less than a half of those persons were affected by one poverty form. Furthermore, a simultaneous occurrence of multidimensional poverty (understood as the accumulation of all three types of poverty) and social isolation was recorded for every hundredth inhabitant of Poland aged 16 years or more. Yet a small number of those persons did not allow for presenting (based on the results of the sample social cohesion survey) a detailed socio-demographic characteristics. The logistic regression model explaining the phenomenon in question, the adjustment of which was attempted at (see Model 2.7. *Total exclusion*), has revealed that these are mainly persons without education and work (unemployed persons), as well as disabled persons. Therefore, we deal with the accumulation of both economic and non-economic factors having a potentially excluding effect, which can lead, with a high likelihood, to social marginalisation.

Table 2.3.

### COEXISTENCE OF POVERTY AND SOCIAL ISOLATION

in % of persons aged 16 or more

	% OF PERSONS
<b>No symptoms of either poverty or social isolation</b>	<b>67.8</b>
Only social isolation (without poverty)	4.9
Poverty (at least one form) without social isolation	23.3
<b>Simultaneous occurrence of poverty (at least one form) and social isolation → social exclusion:</b>	<b>4.0</b>
■ social isolation and one poverty form <sup>a</sup>	1.8
■ social isolation and two poverty forms <sup>b</sup>	1.2
■ social isolation and three poverty forms	1.0

*a* This item concerns the occurrence of one poverty form, so it does not refer to households in which two or three forms occurred at once.

*b* This item concerns the occurrence of two poverty forms, so it does not refer to households in which three forms occurred at once.

#### 4. SUMMARY

Poverty and social exclusion are understood (by the authors) as the accumulation processes of various negative factors related both to economic and to social marginalisation.

As regards poverty, three complementary dimensions were considered, i.e. income poverty, living conditions poverty, and poverty in terms of the lack of budget balance. It was assumed that poverty constitutes one of the significant dimensions of social exclusion.

Socially isolated persons affected by at least one poverty form, were considered at risk of social exclusion.

Socially isolated persons were those for whom small intensity or lack of social contacts with persons from outside their household was observed. Assessing the indicator of social isolation, contacts with family, neighbours, friends and colleagues were taken into account, along with the degree of involvement in social life and in the activities of various organisations.

Extending the poverty analysis so as to cover income-unrelated aspects allowed us to draw a more complete picture of this phenomenon. Our analysis has shown that there is a group of households whose current income considerably exceeds the income poverty threshold, but which nevertheless face a number of difficulties with balancing their budget, or which live in poor conditions. This refers, in particular, to the households of older persons, who in Poland, belong to the group of households with relatively the lowest income poverty rate.

Poverty was also analysed in multidimensional terms, i.e. by assessing the combined or separate occurrence (co-occurrence) of various poverty forms.

Based on the criteria adopted, approx. 28% of households belonged to at least one of the three poverty spheres that were considered (income poverty, living conditions poverty, or poverty in terms of the lack of budget balance), the majority of which were affected by one poverty form alone (15.5%). However, all three dimensions of poverty were accumulated in every twentieth household (approx. 5%). This group of households may be referred to as being affected by multidimensional poverty.

Logistic regression models were employed to examine various determinants of poverty. Income determinants were analysed in the first model. This explained income poverty. In other models, the equivalised household's income (decile) functioned as one of the explanatory factors (which always proves the most crucial), as a result of which, the analysis of impact of other variables should be perceived as income-unrelated.

The underlying factors increasing the poverty threat, as regards all three forms analysed, were a low educational level, related to the household's head having a low occupational status, along with unemployment and disability.

A diversified range of various poverty forms was also observed for different variables which were not identified (based on the models applied) as important determinants. This is usually connected with the coexistence of various factors. Although a given variable, was not identified as a crucial determinant, the poverty range may have exhibited a considerable diversification by other variables or features which constitute the actual determinants. Such a variable might also influence income, without having a direct ("income-unrelated") impact on the poverty form analysed, which would also differentiate the distribution by way of indirect relationships. These effects were reflected in the assessments of the poverty range by various socio-economic features, including the place of residence.

Based on the models concerning living conditions poverty and poverty in terms of the lack of budget balance, taking into consideration the equivalised income, the influence of the household size was also examined by making an indirect assessment of the equivalence scale applied. While bigger households, with respect to a comparable (similar) total income, are in a definitely less favourable situation (which seems obvious, and which was additionally confirmed by testing alternative models and analyses of conditional distributions), the correlation between the poverty risk and the household size is relatively small when considering the equivalised income, with the risk of living conditions poverty, and poverty in terms of the lack of budget balance, being slightly weaker in the case of the smallest households. Such a presentation of the reference correlations confirms the accuracy of the equivalence scale adopted<sup>10</sup>. Obviously, a conclusion should not be drawn that larger households are generally in a better material situation. Actually, as can be inferred by comparing the distributions of poverty by household size, it is quite to the contrary, but this is connected with the fact that larger households usually have a lower equivalised income.

Multidimensional poverty mainly affected the households of persons with a low educational level, unqualified workers and pensioners, as well as households that include unemployed persons, single-parent and multi-children families, and single men. The accumulation of various poverty forms was most frequently observed in rural areas and in towns.

The weakening of social bonds and interpersonal relations is nowadays considered one of the major factors contributing to social exclusion. Social isolation is often viewed as “the essence of social exclusion”<sup>11</sup>.

Approx. 9% of the population aged 16 years or more were considered socially isolated. Limited social contacts concerned mainly older and disabled persons.

The survey results indicate the lack of strong correlations between material poverty and social isolation. The majority of persons living in poverty manage to avoid social isolation. Therefore, with respect to decision-makers and social security systems, attention should be directed towards persons affected jointly by poverty and the lack (or a very limited level) of social relations.

Social isolation was also connected with at least one poverty form among 4% of the population aged 16 years or more. This group was referred to as being at risk of social exclusion. Furthermore, every hundredth person was affected by both multidimensional poverty (three poverty forms combined) and social isolation. The underlying determinants of social exclusion included the lack education, unemployment and disability.

---

<sup>10</sup> Certainly, it does not lead to overestimating the equivalised income of large households. Such fears could have arisen as the OECD-modified scale was adopted, which assumes lower coefficients of maintenance costs for consecutive adults and children in the household (0.5 and 0.3, respectively), in relation to the so-called original OECD scale (0.7 and 0.5). This could result in underestimating the maintenance costs of multi-person/multi-children households, and, in consequence, to overestimating their equivalised income.

It would be ideal to obtain the equivalised income measure in which the material living conditions and the budget situation of the households with a similar equivalised income value would prove independent of the household size. In this case, however, the correlation exists, but it is much weaker than it would be if total income, or income per capita, was used instead of the equivalised income, or if an alternative equivalence scale (the original OECD scale) was applied.

<sup>11</sup> R. Lister (2007), *Bieda (Poverty)*, Sic! Publishing Press, Warsaw, p.107.

## 5. LOGISTIC REGRESSION MODELS

### MODEL 2.1. INCOME POVERTY

Assessment of the contributory significance of various factors

Factor	Wald statistics
Principal source of household's income .....	<b>520.5 ***</b>
Household size .....	<b>143.2 ***</b>
Age of the household head.....	<b>136.0 ***</b>
Educational level of the household head .....	<b>151.9 ***</b>
Occupation of the household head .....	<b>155.2 ***</b>
A disabled person in the household.....	<b>8.2 ***</b>
An unemployed person in the household .....	<b>360.9 ***</b>
Type of locality.....	<b>39.9 ***</b>
Voivodship .....	<b>55.5 ***</b>

Parameters value and statistical significance assessment

Explanatory variable	Parameter value	Wald statistics
<b>Principal source of household's income</b>		
Hired work .....	Ref.	
Own account work outside agriculture.....	<b>-0.29</b>	<b>4.4 **</b>
Own account work in agriculture.....	0.19	2.2 n.s.
Retirement pay .....	<b>0.62</b>	<b>42.8 ***</b>
Pension .....	<b>1.70</b>	<b>266.3 ***</b>
Other social benefits.....	<b>2.55</b>	<b>312.7 ***</b>
Other income .....	<b>1.48</b>	<b>82.6 ***</b>
<b>Household size</b>		
1 person .....	-0.06	0.3 n.s.
2 persons.....	<b>-0.68</b>	<b>53.6 ***</b>
3 persons.....	<b>-0.52</b>	<b>33.7 ***</b>
4 persons.....	Ref.	
5 persons.....	0.06	0.4 n.s.
6 persons.....	<b>0.24</b>	<b>3.9 **</b>
7 persons.....	<b>0.42</b>	<b>5.8 **</b>
8 persons or more .....	<b>0.36</b>	<b>3.0 *</b>
<b>Age of the household head</b>		
16-24 .....	-0.09	0.2 n.s.
25-34 .....	0.09	0.6 n.s.
35-44 .....	Ref.	
45-54 .....	<b>-0.18</b>	<b>4.3 **</b>
55-64 .....	<b>-0.62</b>	<b>39.6 ***</b>
65-74 .....	<b>-0.95</b>	<b>54.3 ***</b>
75 or more .....	<b>-1.55</b>	<b>114.0 ***</b>
<b>Educational level of the household head</b>		
Not higher than lower-secondary.....	<b>0.88</b>	<b>100.2 ***</b>
Basic vocational.....	<b>0.43</b>	<b>31.8 ***</b>
Secondary and post-secondary .....	Ref.	
Bachelor's degree .....	<b>-0.66</b>	<b>9.4 ***</b>
Master's degree or higher.....	<b>-1.31</b>	<b>37.0 ***</b>



## MODEL 2.1. INCOME POVERTY (cont.)

Parameters value and statistical significance assessment (cont.)

Explanatory variable	Parameter value	Wald statistics
<b>Occupation of the household head</b>		
Managerial staff, higher office workers, directors .....	<b>-1.32</b>	<b>27.7 ***</b>
Specialists .....	<b>-0.55</b>	<b>8.4 ***</b>
Technicians and other medium-rank staff.....	<b>-0.44</b>	<b>10.9 ***</b>
Office workers.....	-0.06	0.2 n.s.
Service workers and sales assistants.....	0.02	0.0 n.s.
Farmers, gardeners, forest workers and fishermen.....	<b>0.62</b>	<b>34.3 ***</b>
Industrial workers and craftsmen.....	Ref.	
Operators and installers of machinery and equipment .....	<b>-0.30</b>	<b>10.8 ***</b>
Elementary workers.....	<b>0.56</b>	<b>37.1 ***</b>
Missing data .....	0.01	0.0 n.s.
<b>A disabled person in the household</b>		
None.....	Ref.	
At least one .....	<b>0.17</b>	<b>8.2 ***</b>
<b>An unemployed person in the household</b>		
None.....	Ref.	
At least one .....	<b>1.24</b>	<b>360.9 ***</b>
<b>Type of locality</b>		
City of 500 thous. inhabitants or more .....	Ref.	
City of 100-500 thous. inhabitants .....	0.20	1.8 n.s.
Town of 20-100 thous. inhabitants .....	<b>0.24</b>	<b>2.7 *</b>
Town of less than 20 thous. inhabitants .....	<b>0.51</b>	<b>12.2 ***</b>
Village.....	<b>0.59</b>	<b>18.8 ***</b>
<b>Voivodship</b>		
dolnośląskie .....	<b>-0.33</b>	<b>4.7 **</b>
kujawsko-pomorskie .....	0.09	0.4 n.s.
lubelskie .....	<b>0.48</b>	<b>13.4 ***</b>
lubuskie .....	-0.06	0.1 n.s.
łódzkie .....	-0.08	0.3 n.s.
małopolskie .....	<b>0.31</b>	<b>5.4 **</b>
mazowieckie .....	Ref.	
opolskie .....	0.14	0.8 n.s.
podkarpackie .....	0.17	1.6 n.s.
podlaskie .....	0.21	1.9 n.s.
pomorskie .....	-0.07	0.2 n.s.
śląskie .....	-0.03	0.0 n.s.
świętokrzyskie .....	0.11	0.6 n.s.
warmińsko-mazurskie.....	-0.15	1.1 n.s.
wielkopolskie .....	-0.18	1.6 n.s.
zachodniopomorskie.....	0.09	0.3 n.s.

The statistical significance of various parameters and values included in the model:

\*\*\* significant at the level of 1%

\*\* significant at the level of 5%

\* significant at the level of 10%

n.s. – not significant (lower than 10%)

## MODEL 2.2. LIVING CONDITIONS POVERTY

Assessment of the contributory significance of various factors

Factor	Wald statistics
Household size .....	<b>136.5 ***</b>
Equivalised income (decile).....	<b>1022.4 ***</b>
Age of the household head.....	<b>13.4 **</b>
Educational level of the household head .....	<b>101.8 ***</b>
Occupation of the household head .....	<b>41.4 ***</b>
A disabled person in the household.....	<b>57.6 ***</b>
An unemployed person in the household .....	<b>75.1 ***</b>
Type of locality.....	<b>19.1 ***</b>
Voivodship .....	<b>73.4 ***</b>

Parameters value and statistical significance assessment

Explanatory variable	Parameter value	Wald statistics
<b>Household size</b>		
1 person .....	<b>1.02</b>	<b>90.1 ***</b>
2 persons.....	<b>0.65</b>	<b>41.1 ***</b>
3 persons.....	<b>0.27</b>	<b>7.1 ***</b>
4 persons.....	Ref.	
5 persons.....	0.02	0.0 n.s.
6 persons.....	-0.25	2.5 n.s.
7 persons.....	-0.14	0.4 n.s.
8 persons or more .....	0.22	0.8 n.s.
<b>Equivalised income (decile)</b>		
1. decile .....	<b>2.48</b>	<b>367.1 ***</b>
2. decile .....	<b>1.80</b>	<b>194.4 ***</b>
3. decile .....	<b>1.19</b>	<b>83.9 ***</b>
4. decile .....	<b>0.76</b>	<b>30.4 ***</b>
5. decile .....	<b>0.29</b>	<b>4.1 **</b>
6. decile .....	Ref.	
7. decile .....	<b>-0.33</b>	<b>3.1 *</b>
8. decile .....	<b>-1.19</b>	<b>28.0 ***</b>
9. decile .....	<b>-1.56</b>	<b>26.5 ***</b>
10. decile .....	<b>-1.61</b>	<b>20.1 ***</b>
<b>Age of the household head</b>		
16-24 .....	<b>-0.54</b>	<b>6.3 **</b>
25-34 .....	0.13	1.0 n.s.
35-44 .....	Ref.	
45-54 .....	0.01	0.0 n.s.
55-64 .....	-0.05	0.3 n.s.
65-74 .....	-0.13	1.3 n.s.
75 or more .....	<b>-0.23</b>	<b>3.2 *</b>
<b>Educational level of the household head</b>		
Not higher than lower-secondary.....	<b>0.85</b>	<b>86.2 ***</b>
Basic vocational.....	<b>0.37</b>	<b>19.9 ***</b>
Secondary and post-secondary .....	Ref.	
Bachelor's degree .....	-0.10	0.2 n.s.
Master's degree or higher.....	<b>-0.70</b>	<b>9.5 ***</b>

## MODEL 2.2. LIVING CONDITIONS POVERTY (cont.)

Parameters value and statistical significance assessment (cont.)

Explanatory variable	Parameter value	Wald statistics
<b>Occupation of the household head</b>		
Managerial staff, higher office workers, directors .....	<b>-0.73</b>	<b>8.3 ***</b>
Specialists .....	<b>-0.43</b>	<b>4.6 **</b>
Technicians and other medium-rank staff.....	<b>-0.30</b>	<b>4.5 **</b>
Office workers.....	-0.10	0.5 n.s.
Service workers and sales assistants.....	0.05	0.2 n.s.
Farmers, gardeners, forest workers and fishermen.....	<b>-0.25</b>	<b>6.0 **</b>
Industrial workers and craftsmen.....	Ref.	
Operators and installers of machinery and equipment .....	-0.09	0.9 n.s.
Elementary workers.....	<b>0.27</b>	<b>8.1 ***</b>
Missing data .....	0.09	0.4 n.s.
<b>A disabled person in the household</b>		
None.....	Ref.	
At least one .....	<b>0.45</b>	<b>57.6 ***</b>
<b>An unemployed person in the household</b>		
None.....	Ref.	
At least one .....	<b>0.61</b>	<b>75.1 ***</b>
<b>Type of locality</b>		
City of 500 thous. inhabitants or more .....	Ref.	
City of 100-500 thous. inhabitants .....	<b>-0.29</b>	<b>4.5 **</b>
Town of 20-100 thous. inhabitants .....	<b>-0.40</b>	<b>9.4 ***</b>
Town of less than 20 thous. inhabitants .....	<b>-0.51</b>	<b>13.5 ***</b>
Village.....	<b>-0.49</b>	<b>14.8 ***</b>
<b>Voivodship</b>		
dolnośląskie .....	-0.04	0.1 n.s.
kujawsko-pomorskie .....	-0.11	0.6 n.s.
lubelskie .....	<b>-0.37</b>	<b>6.8 ***</b>
lubuskie .....	-0.04	0.1 n.s.
łódzkie .....	0.01	0.0 n.s.
małopolskie .....	<b>-0.37</b>	<b>6.6 **</b>
mazowieckie .....	Ref.	
opolskie .....	<b>-0.71</b>	<b>15.2 ***</b>
podkarpackie .....	<b>-0.40</b>	<b>7.4 ***</b>
podlaskie .....	<b>-0.82</b>	<b>21.5 ***</b>
pomorskie .....	-0.20	1.6 n.s.
śląskie .....	-0.21	2.4 n.s.
świętokrzyskie .....	0.11	0.5 n.s.
warmińsko-mazurskie.....	0.16	1.1 n.s.
wielkopolskie .....	<b>-0.46</b>	<b>9.0 ***</b>
zachodniopomorskie.....	-0.03	0.0 n.s.

The statistical significance of various parameters and values included in the model:

\*\*\* significant at the level of 1%

\*\* significant at the level of 5%

\* significant at the level of 10%

n.s. – not significant (lower than 10%)

### MODEL 2.3. POVERTY IN TERMS OF THE LACK OF BUDGET BALANCE

Assessment of the contributory significance of various factors

Factor	Wald statistics
Household size .....	<b>119.5 ***</b>
Equivalised income (decile) .....	<b>1311.7 ***</b>
Age of the household head .....	<b>106.4 ***</b>
Educational level of the household head .....	<b>54.7 ***</b>
Occupation of the household head .....	<b>48.2 ***</b>
A disabled person in the household .....	<b>43.5 ***</b>
An unemployed person in the household .....	<b>53.8 ***</b>
Type of locality .....	<b>101.7 ***</b>
Voivodship .....	<b>107.1 ***</b>

Parameters value and statistical significance assessment

Explanatory variable	Parameter value	Wald statistics
<b>Household size</b>		
1 person .....	<b>0.86</b>	<b>76.4 ***</b>
2 persons .....	<b>0.61</b>	<b>44.8 ***</b>
3 persons .....	<b>0.26</b>	<b>8.4 ***</b>
4 persons .....	Ref.	
5 persons .....	-0.05	0.3 n.s.
6 persons .....	-0.21	2.1 n.s.
7 persons .....	-0.13	0.4 n.s.
8 persons or more .....	0.11	0.2 n.s.
<b>Equivalised income (decile)</b>		
1. decile .....	<b>2.59</b>	<b>494.6 ***</b>
2. decile .....	<b>1.91</b>	<b>277.1 ***</b>
3. decile .....	<b>1.33</b>	<b>133.6 ***</b>
4. decile .....	<b>0.89</b>	<b>55.5 ***</b>
5. decile .....	<b>0.39</b>	<b>9.8 ***</b>
6. decile .....	Ref.	
7. decile .....	<b>-0.50</b>	<b>9.3 ***</b>
8. decile .....	<b>-0.90</b>	<b>30.9 ***</b>
9. decile .....	<b>-1.69</b>	<b>52.6 ***</b>
10. decile .....	<b>-2.95</b>	<b>48.4 ***</b>
<b>Age of the household head</b>		
16-24 .....	<b>-1.10</b>	<b>29.7 ***</b>
25-34 .....	0.00	0.0 n.s.
35-44 .....	Ref.	
45-54 .....	-0.05	0.4 n.s.
55-64 .....	<b>-0.23</b>	<b>6.4 **</b>
65-74 .....	<b>-0.53</b>	<b>23.0 ***</b>
75 or more .....	<b>-1.03</b>	<b>66.2 ***</b>
<b>Educational level of the household head</b>		
Not higher than lower-secondary .....	<b>0.42</b>	<b>24.3 ***</b>
Basic vocational .....	<b>0.19</b>	<b>6.5 **</b>
Secondary and post-secondary .....	Ref.	
Bachelor's degree .....	<b>-0.78</b>	<b>15.3 ***</b>
Master's degree or higher .....	<b>-0.66</b>	<b>17.5 ***</b>

### MODEL 2.3. POVERTY IN TERMS OF LACK OF BUDGET BALANCE (cont.)

Parameters value and statistical significance assessment (cont.)

Explanatory variable	Parameter value	Wald statistics
<b>Occupation of the household head</b>		
Managerial staff, higher office workers, directors .....	<b>0.31</b>	<b>3.5 *</b>
Specialists .....	0.21	1.8 n.s.
Technicians and other medium-rank staff.....	0.18	2.3 n.s.
Office workers.....	<b>0.26</b>	<b>4.5 **</b>
Service workers and sales assistants.....	<b>0.22</b>	<b>5.3 **</b>
Farmers, gardeners, forest workers and fishermen.....	<b>-0.36</b>	<b>12.4 ***</b>
Industrial workers and craftsmen.....	Ref.	
Operators and installers of machinery and equipment .....	0.00	0.0 n.s.
Elementary workers.....	<b>0.29</b>	<b>9.9 ***</b>
Missing data .....	<b>0.29</b>	<b>3.5 *</b>
<b>A disabled person in the household</b>		
None.....	Ref	
At least one .....	<b>0.37</b>	<b>43.5 ***</b>
<b>An unemployed person in the household</b>		
None.....	Ref.	
At least one .....	<b>0.48</b>	<b>53.8 ***</b>
<b>Type of locality</b>		
City of 500 thous. inhabitants or more .....	Ref.	
City of 100-500 thous. inhabitants .....	<b>-0.33</b>	<b>7.7 ***</b>
Town of 20-100 thous. inhabitants .....	<b>-0.43</b>	<b>14.5 ***</b>
Town of less than 20 thous. inhabitants .....	<b>-0.75</b>	<b>37.1 ***</b>
Village.....	<b>-0.94</b>	<b>68.0 ***</b>
<b>Voivodship</b>		
dolnośląskie .....	0.12	0.8 n.s.
kujawsko-pomorskie .....	0.01	0.0 n.s.
lubelskie .....	<b>-0.42</b>	<b>9.4 ***</b>
lubuskie .....	0.21	2.0 n.s.
łódzkie .....	0.03	0.1 n.s.
małopolskie .....	-0.10	0.5 n.s.
mazowieckie .....	Ref.	
opolskie .....	<b>-0.42</b>	<b>6.5 **</b>
podkarpackie .....	<b>-0.67</b>	<b>20.4 ***</b>
podlaskie .....	<b>-0.57</b>	<b>12.1 ***</b>
pomorskie .....	<b>0.25</b>	<b>3.2 *</b>
śląskie .....	-0.16	1.6 n.s.
świętokrzyskie .....	-0.23	2.4 n.s.
warmińsko-mazurskie.....	<b>0.44</b>	<b>10.3 ***</b>
wielkopolskie .....	0.07	0.3 n.s.
zachodniopomorskie.....	-0.06	0.2 n.s.

The statistical significance of various parameters and values included in the model:

\*\*\* significant at the level of 1%

\*\* significant at the level of 5%

\* significant at the level of 10%

n.s. – not significant (lower than 10%)

## MODEL 2.4. MULTIDIMENSIONAL POVERTY

Assessment of the contributory significance of various factors

Factor	Wald statistics
Principal source of household's income .....	<b>261.5 ***</b>
Household size .....	<b>45.5 ***</b>
Age of the household head.....	<b>65.9 ***</b>
Educational level of the household head .....	<b>93.8 ***</b>
Occupation of the household head .....	<b>60.6 ***</b>
A disabled person in the household.....	<b>29.9 ***</b>
An unemployed person in the household .....	<b>165.1 ***</b>
Type of locality.....	5.7 n.s.
Voivodship.....	<b>25.1 **</b>

Parameters value and statistical significance assessment

Explanatory variable	Parameter value	Wald statistics
<b>Principal source of household's income</b>		
Hired work .....	Ref.	
Own account work outside agriculture.....	-0.46	2.6 n.s.
Own account work in agriculture.....	<b>-0.62</b>	<b>4.8 **</b>
Retirement pay .....	0.21	1.8 n.s.
Pension .....	<b>1.23</b>	<b>69.0 ***</b>
Other social benefits.....	<b>2.09</b>	<b>189.6 ***</b>
Other income.....	<b>1.29</b>	<b>35.1 ***</b>
<b>Household size</b>		
1 person .....	<b>0.57</b>	<b>12.6 ***</b>
2 persons.....	-0.17	1.2 n.s.
3 persons.....	<b>-0.27</b>	<b>3.2 *</b>
4 persons.....	Ref.	
5 persons.....	-0.30	2.7 n.s.
6 persons.....	0.02	0.0 n.s.
7 persons.....	0.06	0.0 n.s.
8 persons or more .....	0.24	0.6 n.s.
<b>Age of the household head</b>		
16-24 .....	-0.42	1.7 n.s.
25-34 .....	0.17	0.9 n.s.
35-44 .....	Ref.	
45-54 .....	-0.04	0.1 n.s.
55-64 .....	<b>-0.53</b>	<b>10.7 ***</b>
65-74 .....	<b>-0.70</b>	<b>11.3 ***</b>
75 or more .....	<b>-1.81</b>	<b>50.4 ***</b>
<b>Educational level of the household head</b>		
Not higher than lower-secondary.....	<b>1.30</b>	<b>74.4 ***</b>
Basic vocational.....	<b>0.86</b>	<b>39.6 ***</b>
Secondary and post-secondary .....	Ref.	
Bachelor's degree .....	<b>-2.44</b>	<b>5.8 **</b>
Master's degree or higher.....	<b>-1.53</b>	<b>9.2 ***</b>

## MODEL 2.4. MULTIDIMENSIONAL POVERTY (cont.)

Parameters value and statistical significance assessment (cont.)

Explanatory variable	Parameter value	Wald statistics
<b>Occupation of the household head</b>		
Managerial staff, higher office workers, directors .....	<b>-1.39</b>	<b>5.4 **</b>
Specialists .....	-0.69	2.4 n.s.
Technicians and other medium-rank staff.....	<b>-0.46</b>	<b>3.1 *</b>
Office workers.....	0.01	0.0 n.s.
Service workers and sales assistants.....	0.12	0.6 n.s.
Farmers, gardeners, forest workers and fishermen .....	<b>0.40</b>	<b>5.1 **</b>
Industrial workers and craftsmen.....	Ref.	
Operators and installers of machinery and equipment .....	-0.11	0.5 n.s.
Elementary workers .....	<b>0.75</b>	<b>32.1 ***</b>
Missing data .....	0.09	0.1 n.s.
<b>A disabled person in the household</b>		
None.....	Ref.	
At least one .....	<b>0.53</b>	<b>29.9 ***</b>
<b>An unemployed person in the household</b>		
None.....	Ref.	
At least one .....	<b>1.32</b>	<b>165.1 ***</b>
<b>Type of locality</b>		
City of 500 thous. inhabitants or more .....	Ref.	
City of 100-500 thous. inhabitants .....	-0.06	0.1 n.s.
Town of 20-100 thous. inhabitants .....	-0.30	2.1 n.s.
Town of less than 20 thous. inhabitants .....	0.00	0.0 n.s.
Village.....	-0.20	1.0 n.s.
<b>Voivodship</b>		
dolnośląskie .....	<b>-0.45</b>	<b>4.3 **</b>
kujawsko-pomorskie .....	-0.35	2.5 n.s.
lubelskie .....	-0.30	2.0 n.s.
lubuskie .....	-0.13	0.3 n.s.
łódzkie .....	<b>-0.45</b>	<b>4.3 **</b>
małopolskie .....	-0.17	0.7 n.s.
mazowieckie .....	Ref.	
opolskie .....	<b>-0.88</b>	<b>9.8 ***</b>
podkarpackie .....	<b>-0.65</b>	<b>7.5 ***</b>
podlaskie .....	<b>-0.46</b>	<b>3.1 *</b>
pomorskie .....	-0.30	1.8 n.s.
śląskie .....	<b>-0.61</b>	<b>8.2 ***</b>
świętokrzyskie .....	-0.29	1.5 n.s.
warmińsko-mazurskie.....	-0.05	0.1 n.s.
wielkopolskie .....	<b>-0.54</b>	<b>5.4 **</b>
zachodniopomorskie.....	-0.37	2.5 n.s.

The statistical significance of various parameters and values included in the model:

\*\*\* significant at the level of 1%

\*\* significant at the level of 5%

\* significant at the level of 10%

n.s. – not significant (lower than 10%)

## MODEL 2.5. SOCIAL ISOLATION

Assessment of the contributory significance of various factors

Factor	Wald statistics
Sex .....	<b>14.4 ***</b>
Age .....	<b>98.8 ***</b>
Being in a relationship .....	<b>38.6 ***</b>
Educational level .....	<b>15.5 ***</b>
Occupation .....	12.0 n.s.
Disability .....	<b>34.0 ***</b>
Unemployment .....	<b>2.8 *</b>
Household type.....	<b>91.1 ***</b>
Equivalised income (decile).....	<b>83.2 ***</b>
Type of locality.....	<b>62.2 ***</b>
Voivodship.....	<b>50.7 ***</b>

Parameters value and statistical significance assessment

Explanatory variable	Parameter value	Wald statistics
<b>Sex</b>		
Male.....	Ref.	
Female .....	<b>-0.32</b>	<b>14.4 ***</b>
<b>Age</b>		
16-24 .....	<b>-0.70</b>	<b>14.4 ***</b>
25-34 .....	-0.16	1.3 n.s.
35-44 .....	Ref.	
45-54 .....	0.03	0.1 n.s.
55-64 .....	-0.07	0.3 n.s.
65-74 .....	0.10	0.4 n.s.
75 or more .....	<b>0.79</b>	<b>27.0 ***</b>
<b>Being in a relationship .....</b>	<b>-0.58</b>	<b>38.6 ***</b>
<b>Educational level</b>		
Not higher than lower-secondary .....	<b>0.30</b>	<b>8.8 ***</b>
Basic vocational.....	<b>0.18</b>	<b>3.2 *</b>
Secondary and post-secondary .....	Ref.	
Bachelor's degree .....	-0.23	1.4 n.s.
Master's degree or higher.....	<b>-0.39</b>	<b>5.3 **</b>
<b>Occupation</b>		
Managerial staff, higher office workers, directors .....	-0.08	0.2 n.s.
Specialists .....	-0.08	0.2 n.s.
Technicians and other medium-rank staff.....	-0.00	0.0 n.s.
Office workers.....	0.15	1.0 n.s.
Service workers and sales assistants.....	-0.04	0.1 n.s.
Farmers, gardeners, forest workers and fishermen.....	0.13	0.8 n.s.
Industrial workers and craftsmen.....	Ref.	
Operators and installers of machinery and equipment .....	-0.05	0.1 n.s.
Elementary workers .....	<b>0.22</b>	<b>3.2 *</b>
Missing data .....	<b>0.39</b>	<b>5.3 **</b>
<b>Disability .....</b>	<b>0.45</b>	<b>34.0 ***</b>
<b>Unemployment.....</b>	<b>0.20</b>	<b>2.8 *</b>



## MODEL 2.5. SOCIAL ISOLATION (cont.)

Parameters value and statistical significance assessment (cont.)

Explanatory variable	Parameter value	Wald statistics
<b>Household type</b>		
Single woman .....	0.24	1.5 n.s.
Single man.....	<b>0.86</b>	<b>19.5 ***</b>
Mother or father with children .....	<b>0.56</b>	<b>6.7 ***</b>
Mother or father with children and other persons .....	<b>1.35</b>	<b>25.5 ***</b>
Couple <sup>a</sup> without children and other persons .....	<b>0.50</b>	<b>8.0 ***</b>
Couple <sup>a</sup> with one child .....	0.03	0.0 n.s.
Couple <sup>a</sup> with one child and other persons.....	<b>0.83</b>	<b>13.9 ***</b>
Couple <sup>a</sup> with 2 children .....	Ref.	
Couple <sup>a</sup> with 2 children and other persons .....	0.34	1.5 n.s.
Couple <sup>a</sup> with 3 or more children .....	0.22	0.9 n.s.
Couple <sup>a</sup> with 3 or more children and other persons .....	0.45	2.0 n.s.
Couple <sup>a</sup> and other persons .....	<b>0.67</b>	<b>12.8 ***</b>
Other households comprising 2 persons .....	<b>0.94</b>	<b>22.9 ***</b>
Other households comprising 3 persons or more .....	<b>1.05</b>	<b>26.5 ***</b>
<b>Equivalised income (decile)</b>		
1. decile .....	<b>0.78</b>	<b>32.0 ***</b>
2. decile .....	<b>0.45</b>	<b>10.3 ***</b>
3. decile .....	<b>0.24</b>	<b>3.0 *</b>
4. decile .....	0.18	1.6 n.s.
5. decile .....	0.15	1.1 n.s.
6. decile .....	Ref.	
7. decile .....	-0.15	0.8 n.s.
8. decile .....	-0.14	0.9 n.s.
9. decile .....	<b>-0.49</b>	<b>8.0 ***</b>
10. decile .....	<b>-0.34</b>	<b>3.1 *</b>
<b>Type of locality</b>		
City of 500 thous. inhabitants or more .....	Ref.	
City of 100-500 thous. inhabitants .....	-0.10	0.5 n.s.
Town of 20-100 thous. inhabitants .....	<b>-0.28</b>	<b>4.5 **</b>
Town of less than 20 thous. inhabitants .....	<b>-0.57</b>	<b>14.3 ***</b>
Village.....	<b>-0.79</b>	<b>32.7 ***</b>
<b>Voivodship</b>		
dolnośląskie .....	0.19	1.1 n.s.
kujawsko-pomorskie .....	0.12	0.5 n.s.
lubelskie .....	-0.12	0.4 n.s.
lubuskie .....	<b>0.48</b>	<b>6.6 **</b>
łódzkie .....	<b>0.56</b>	<b>13.5***</b>
małopolskie .....	-0.11	0.4 n.s.
mazowieckie .....	Ref.	
opolskie .....	0.05	0.1 n.s.
podkarpackie .....	0.10	0.3 n.s.
podlaskie .....	0.08	0.2 n.s.
pomorskie .....	<b>0.40</b>	<b>5.1 **</b>
śląskie .....	<b>0.49</b>	<b>10.1 ***</b>
świętokrzyskie .....	-0.02	0.0 n.s.
warmińsko-mazurskie.....	0.03	0.0 n.s.
wielkopolskie .....	0.16	0.8 n.s.
zachodniopomorskie.....	<b>0.46</b>	<b>6.0 **</b>

*a The group of couples includes formal and informal relations.*

The statistical significance of various parameters and values included in the model:

\*\*\* significant at the level of 1%

\*\* significant at the level of 5%

\* significant at the level of 10%

n.s. – not significant (lower than 10%)

## MODEL 2.6. PARTIAL EXCLUSION

Assessment of the contributory significance of various factors

Factor	Wald statistics
Sex .....	0.5 n.s.
Age .....	<b>40.2 ***</b>
Being in a relationship .....	<b>24.3 ***</b>
Educational level .....	<b>45.6 ***</b>
Occupation .....	<b>36.5 ***</b>
Disability .....	<b>64.0 ***</b>
Unemployment .....	<b>48.0 ***</b>
Household type.....	<b>64.3 ***</b>
Type of locality.....	<b>16.6 ***</b>
Voivodship .....	<b>27.6 **</b>

Parameters value and statistical significance assessment

Explanatory variable	Parameter value	Wald statistics
<b>Sex</b>		
Male.....	Ref.	
Female .....	-0.09	0.5 n.s.
<b>Age</b>		
16-24 .....	<b>-1.53</b>	<b>32.8 ***</b>
25-34 .....	-0.16	0.6 n.s.
35-44 .....	Ref.	
45-54 .....	0.00	0.0 n.s.
55-64 .....	-0.27	2.1 n.s.
65-74 .....	-0.25	1.4 n.s.
75 or more .....	-0.17	0.6 n.s.
<b>Being in a relationship .....</b>	<b>-0.69</b>	<b>24.3 ***</b>
<b>Educational level</b>		
Not higher than lower-secondary .....	<b>0.75</b>	<b>27.0 ***</b>
Basic vocational.....	<b>0.39</b>	<b>7.7 ***</b>
Secondary and post-secondary .....	Ref.	
Bachelor's degree .....	<b>-0.95</b>	<b>4.6 **</b>
Master's degree or higher.....	<b>-1.41</b>	<b>13.0 ***</b>
<b>Occupation</b>		
Managerial staff, higher office workers, directors .....	<b>-0.76</b>	<b>3.9 **</b>
Specialists .....	<b>-0.62</b>	<b>3.2 *</b>
Technicians and other medium-rank staff.....	<b>-0.74</b>	<b>7.9 ***</b>
Office workers.....	-0.16	0.5 n.s.
Service workers and sales assistants .....	-0.23	1.6 n.s.
Farmers, gardeners, forest workers and fishermen .....	0.26	2.1 n.s.
Industrial workers and craftsmen.....	Ref.	
Operators and installers of machinery and equipment .....	-0.17	0.9 n.s.
Elementary workers .....	<b>0.28</b>	<b>3.2 *</b>
Missing data .....	<b>0.66</b>	<b>9.2 ***</b>
<b>Disability .....</b>	<b>0.84</b>	<b>64.0 ***</b>
<b>Unemployment.....</b>	<b>0.99</b>	<b>48.0 ***</b>

## MODEL 2.6. PARTIAL EXCLUSION (cont.)

Parameters value and statistical significance assessment (cont.)

Explanatory variable	Parameter value	Wald statistics
<b>Household type</b>		
Single woman.....	0.18	0.5 n.s.
Single man.....	<b>1.03</b>	<b>15.1 ***</b>
Mother or father with children.....	<b>0.80</b>	<b>8.1 ***</b>
Mother or father with children and other persons.....	<b>1.06</b>	<b>8.7 ***</b>
Couple <sup>a</sup> without children and other persons.....	-0.18	0.5 n.s.
Couple <sup>a</sup> with one child.....	-0.25	0.7 n.s.
Couple <sup>a</sup> with one child and other persons.....	0.30	0.9 n.s.
Couple <sup>a</sup> with 2 children.....	Ref.	
Couple <sup>a</sup> with 2 children and other persons.....	-0.20	0.2 n.s.
Couple <sup>a</sup> with 3 or more children.....	0.38	1.6 n.s.
Couple <sup>a</sup> with 3 or more children and other persons.....	0.32	0.6 n.s.
Couple <sup>a</sup> and other persons.....	-0.28	0.9 n.s.
Other households comprising 2 persons.....	<b>0.57</b>	<b>4.4 **</b>
Other households comprising 3 persons or more.....	<b>0.67</b>	<b>5.7 **</b>
<b>Type of locality</b>		
City of 500 thous. inhabitants or more.....	Ref.	
City of 100-500 thous. inhabitants.....	-0.02	0.0 n.s.
Town of 20-100 thous. inhabitants.....	-0.14	0.5 n.s.
Town of less than 20 thous. inhabitants.....	<b>-0.55</b>	<b>6.1 **</b>
Village.....	<b>-0.46</b>	<b>5.3 **</b>
<b>Voivodship</b>		
dolnośląskie.....	0.10	0.1 n.s.
kujawsko-pomorskie.....	-0.01	0.0 n.s.
lubelskie.....	-0.26	1.0 n.s.
lubuskie.....	0.42	2.7 n.s.
łódzkie.....	<b>0.52</b>	<b>5.7 **</b>
małopolskie.....	0.10	0.2 n.s.
mazowieckie.....	Ref.	
opolskie.....	-0.30	0.9 n.s.
podkarpackie.....	0.08	0.1 n.s.
podlaskie.....	-0.07	0.1 n.s.
pomorskie.....	0.16	0.4 n.s.
śląskie.....	0.32	2.2 n.s.
świętokrzyskie.....	-0.24	0.7 n.s.
warmińsko-mazurskie.....	-0.12	0.2 n.s.
wielkopolskie.....	-0.32	1.3 n.s.
zachodniopomorskie.....	0.00	0.0 n.s.

<sup>a</sup> The group of couples includes formal and informal relations.

The statistical significance of various parameters and values included in the model:

\*\*\* significant at the level of 1%

\*\* significant at the level of 5%

\* significant at the level of 10%

n.s. – not significant (lower than 10%)

## MODEL 2.7. TOTAL EXCLUSION

Assessment of the contributory significance of various factors

Factor	Wald statistics
Sex .....	0.1 n.s.
Age .....	<b>33.6 ***</b>
Being in a relationship .....	2.6 n.s.
Educational level .....	<b>24.5 ***</b>
Occupation .....	14.4 n.s.
Disability .....	<b>41.9 ***</b>
Unemployment .....	<b>38.7 ***</b>
Household type.....	<b>40.6 ***</b>
Type of locality.....	<b>14.3 ***</b>
Voivodship .....	18.6 n.s.

Parameters value and statistical significance assessment

Explanatory variable	Parameter value	Wald statistics
<b>Sex</b>		
Male.....	Ref.	
Female .....	-0.07	0.1 n.s.
<b>Age</b>		
16-24 .....	<b>-1.81</b>	<b>13.2 ***</b>
25-34 .....	-0.41	1.2 n.s.
35-44 .....	Ref.	
45-54 .....	0.00	0.0 n.s.
55-64 .....	-0.38	1.4 n.s.
65-74 .....	<b>-0.78</b>	<b>3.9 **</b>
75 or more .....	<b>-2.31</b>	<b>17.0 ***</b>
<b>Being in a relationship .....</b>	-0.43	2.6 n.s.
<b>Educational level</b>		
Not higher than lower-secondary.....	<b>1.39</b>	<b>20.0 ***</b>
Basic vocational.....	<b>1.04</b>	<b>12.4 ***</b>
Secondary and post-secondary .....	Ref.	
Higher .....	<b>-1.88</b>	<b>3.0 *</b>
<b>Occupation</b>		
Managerial staff, higher office workers, directors .....	-1.05	1.0 n.s.
Specialists .....	-1.50	1.8 n.s.
Technicians and other medium-rank staff.....	<b>-1.11</b>	<b>3.0 *</b>
Office workers.....	-0.20	0.2 n.s.
Service workers and sales assistants.....	<b>-0.80</b>	<b>5.1 **</b>
Farmers, gardeners, forest workers and fishermen.....	0.06	0.0 n.s.
Industrial workers and craftsmen.....	Ref.	
Operators and installers of machinery and equipment .....	-0.11	0.1 n.s.
Elementary workers .....	0.10	0.1 n.s.
Missing data .....	0.54	1.8 n.s.
<b>Disability .....</b>	<b>1.30</b>	<b>41.9 ***</b>
<b>Unemployment.....</b>	<b>1.46</b>	<b>38.7 ***</b>

## MODEL 2.7. TOTAL EXCLUSION (cont.)

Parameters value and statistical significance assessment (cont.)

Explanatory variable	Parameter value	Wald statistics
<b>Household type</b>		
Single woman .....	-0.01	0.0 n.s.
Single man .....	<b>0.76</b>	<b>3.1 *</b>
Mother or father with children .....	0.68	2.3 n.s.
Mother or father with children and other persons .....	0.44	0.5 n.s.
Couple <sup>a</sup> without children and other persons .....	<b>-1.09</b>	<b>5.9 **</b>
Couple <sup>a</sup> with one child .....	<b>-1.62</b>	<b>6.2 **</b>
Couple <sup>a</sup> with one child and other persons .....	-0.72	1.2 n.s.
Couple <sup>a</sup> with 2 children .....	Ref.	
Couple <sup>a</sup> with 2 children and other persons .....	-0.74	0.9 n.s.
Couple <sup>a</sup> with 3 or more children .....	0.00	0.0 n.s.
Couple <sup>a</sup> with 3 or more children and other persons .....	-0.28	0.1 n.s.
Couple <sup>a</sup> and other persons .....	<b>-0.94</b>	<b>3.6 *</b>
Other households comprising 2 persons .....	-0.22	0.2 n.s.
Other households comprising 3 persons or more .....	-0.64	1.3 n.s.
<b>Type of locality</b>		
City of 500 thous. inhabitants or more .....	Ref.	
City of 100-500 thous. inhabitants .....	-0.29	0.6 n.s.
Town of 20-100 thous. inhabitants .....	<b>-0.94</b>	<b>6.0 **</b>
Town of less than 20 thous. inhabitants .....	<b>-0.94</b>	<b>5.2 **</b>
Village .....	<b>-0.98</b>	<b>7.1 ***</b>
<b>Voivodship</b>		
dolnośląskie .....	-0.57	1.3 n.s.
kujawsko-pomorskie .....	-0.21	0.2 n.s.
lubelskie .....	-0.30	0.4 n.s.
lubuskie .....	0.37	0.7 n.s.
łódzkie .....	0.14	0.1 n.s.
małopolskie .....	-0.15	0.1 n.s.
mazowieckie .....	Ref.	
opolskie .....	-0.91	2.1 n.s.
podkarpackie .....	-0.03	0.0 n.s.
podlaskie .....	<b>-1.13</b>	<b>2.9 *</b>
pomorskie .....	0.13	0.1 n.s.
śląskie .....	-0.32	0.6 n.s.
świętokrzyskie .....	<b>-1.52</b>	<b>3.8 *</b>
warmińsko-mazurskie .....	-0.29	0.4 n.s.
wielkopolskie .....	<b>-1.26</b>	<b>3.7 *</b>
zachodniopomorskie .....	0.06	0.0 n.s.

*a The group of couples includes formal and informal relations.*

The statistical significance of various parameters and values included in the model:

\*\*\* significant at the level of 1%

\*\* significant at the level of 5%

\* significant at the level of 10%

n.s. – not significant (lower than 10%)

## 1. VARIOUS FORMS OF E-EXCLUSION AND E-INCLUSION

### The phenomenon of digital exclusion – the crux of the matter

Digital exclusion (e-exclusion) can be defined in many ways, using both very simple or complex criteria. A general definition (as used, e.g. in the documents of the European Union), states that digital exclusion means exclusion from being able to function in an information society. Such a grasp of digital exclusion results from awareness of the constantly growing number of areas that are being influenced by modern Information and Communication Technologies (ICTs).

### Criteria included in the definitions of e-exclusion and e-inclusion

The detailed definitions of e-inclusion and e-exclusion include, first and foremost, the following elements: having access to modern ICTs (not only having the possession of equipment enabling adequately-effective use of the global network, but also possessing autonomy in using this equipment); having the skills necessary to actually use them, having access to a computer and to the Internet (especially being in the position to necessitate their use); and having a regular habit of using ICTs<sup>1</sup>. In practice, the definitions of e-exclusion refers to a computer and the Internet, though one can find some propositions of a broader conceptualisation of this phenomenon, taking into account other devices, most of all mobile phones<sup>2</sup>, and sometimes interactive digital television<sup>3</sup>.

The inclusion of both the tools and the skills to use them in the analyses of e-exclusion appears justified all the more so, as the differences in the level of access and in the share of persons using the global network, tend to decrease (both between respective countries and inside them) in contrast to persisting considerable differences in the scope of digital competences and advantages gained, owing to active functioning on the Internet<sup>4</sup>. It should be noticed though, that ICTs can contribute to the preservation of the current social hierarchy and strengthen (petrify) the disproportions

---

<sup>1</sup> For example, the list of five criteria for digital inclusion proposed by G. Bradbrook and F. Fisher, is cited particularly often. This is the so-called ladder of digital inclusion (the 5 Cs – connectivity, capability, content, confidence and continuity): access to ICTs, skills to use them, effective use (an ability to find suitable content and resources), feeling secure while using them, and regular use (the role of these technologies in everyday life). See Bradbrook, G. & Fisher, J. (2004) *Digital Equality: Reviewing digital inclusion activity and mapping the way forwards*, Citizens Online, 2004.

<sup>2</sup> Cf. D. Batorski *Relacja wykluczenia społecznego z wykluczeniem informacyjnym (The relation between social and informational exclusion)*, Warszawa, 2008.

<sup>3</sup> Cf. *Understanding Digital Exclusion – Research Report*, Communities and Local Government, London, 2008, p. 8.

<sup>4</sup> Cf. *RIIR – Rapporto sull'Innovazione nell'Italia delle Regioni*, Edizioni Forum PA and CISIS – Centro Interregionale per i Sistemi informatici, geografici e statistici, Rome, 2011, p. 192.

between social groups<sup>5</sup>. This stems from a necessity to have, among others, greater knowledge and skills, better tools, and also time and resources to acquire them. In consequence, digital exclusion can be a result of social exclusion, and it can be noticed that these two overlap to a large extent increasingly.

### **The necessity to adopt multi-element definitions of e-exclusion and e-inclusion**

The increasing influence of modern technologies upon the effective functioning of an individual in a society justifies the adoption of a suitably-developed, multi-element definition of digital exclusion. Such a definition should take into account the aforementioned elements. In the literature of subject, one may find, for example the concept of “digital citizenship”, which highlights the significant role of ICT in an information society. The term “digital person” refers to a person that uses the Internet efficiently and regularly, so on an every-day basis<sup>6</sup>. We should point out that the efficiency of using the global network is connected, among others, with the quality of connection – broadband connections provide faster access to all the content, and especially to large files, e.g. audio and video.

The definition of a “digital citizen” mentioned above disregards the use of other tools and devices characteristic of an information society. Instead it focuses on the advantages gained owing to the access to this most important tool. The efficiency of using the Internet, mentioned in the cited definition, can be also understood as being able to use it for different purposes. Some of these goals can be perceived as being particularly desirable from the point of view of their usefulness in developing the social inclusion of an individual, as, for example, using the Internet to learn, to work, to acquire information facilitating one’s functioning in the society, or to keep in touch with family and friends.

### **E-exclusion and e-inclusion viewed as gradable phenomena**

E-exclusion should be understood as a continuum – stating a specific threshold or point that divides population into the e-excluded and e-included is always arbitrary. The differences are caused, among others, by the dynamics of changes – including the scope of potential uses for the Internet (the development of new services, e.g. internet banking, the popularisation of social networking websites) and available technological solutions (better or more comfortable equipment or software and increased data transfer speed). With access to the global network becoming more widespread, and the growing range of issues that can be taken care of via the Internet (sometimes only this way), result in a constant shifting of this point.

It would also be difficult to use just one definition of e-exclusion, because there are sub-populations in which the share of at risk of digital exclusion is particularly high or low. Thus, it is necessary to conceptualize the definitions that would allow to conduct in-depth analyses of the

---

<sup>5</sup> See e.g.: C. Parsons, S. Hick *Moving From Digital Divide to Digital Inclusion*, Currents: New Scholarship in the Human Services, Calgary, 2008, p. 4.

<sup>6</sup> Karen Mossberger, Caroline J. Tolbert, Ramona S. McNeal *Digital Citizenship. The Internet, Society and Participation*, Massachusetts Institute of Technology, 2008.

discussed phenomenon also in such sub-populations, treating the problem of e-exclusion in a relative way. With this in mind, it would be worthwhile to enumerate various e-exclusion indices, and then next to select the ones which would be used in the comparison of the selected areas of life of those e-excluded and e-included.

Similarly to e-exclusion, in the case of e-inclusion, we should mention the gradable nature of this phenomenon. At one point, there takes place the passing of the “e-inclusion threshold”; however, we should not treat households and e-included persons as a homogeneous group due to analogous reasons, hence we cannot adopt just one definition of e-exclusion.

### **The criteria included in the analyses of e-exclusion and e-inclusion conducted on the basis of the results of the social cohesion survey**

Access to a computer as the basic tool that enables the use of digital technologies, as well as access to the Internet (as a basic digital service) were assumed as a starting point in the analysis of e-exclusion and e-inclusion based on the social cohesion survey. The skills of users (based on self-assessment) and how actively they use available devices and technologies (e.g. the frequency of using a computer, the degree of home access to the Internet that they have, the purposes of using the Internet, which they state) were also taken into account to some extent. In the case of households, the definitions of e-exclusion based on having access to (or owning) a computer as a basic tool that enables the use of digital technologies and the access to the Internet.

The survey did not take into account, among others, the issue of using a computer through other people, though, undoubtedly, persons who are not using a computer on their own, but who can get such support should be deemed digitally excluded to a lesser extent than those who are deprived of such option.

The analyses are focused on the e-exclusion of persons. However, they also featured a reference to households as a whole – among others, due to the fact that the e-inclusion of just one member of a household is conducive to the indirect using of ICTs also by other household members.

### **Virtual social capital**

One of the consequences of the constant improvement in the digital competences of Polish people is the creation of virtual societies. These play an increasingly important role, not only in virtual, but also in non-virtual reality (“offline”). Given that, the study will also present a general analysis of the so-called virtual social capital, also referred to as “online” social capital.



## 2. THE E-EXCLUSION OF HOUSEHOLDS

### The possibilities of analysing the results of the social cohesion survey

The design of the indices of e-exclusion of households and people is very similar. In both cases, we can analyse the ownership of and the use of a computer, while in the case of people and households declaring access to and the use of a computer – we can ascertain the availability and abilities to use the Internet. In the case of households without access to the Internet, the social cohesion survey enables a division into those declaring that the lack of access to the global network is in line with their preferences, and those which have no access to the Internet despite a declared wish to use it.

Indices at the household level refer to owning a computer and access to the Internet. These characteristics refer to whole households and are measured at this level. Indices at the individual (personal) level enable us to analyse the actual scope of using a computer, as well as the services and functionalities that are offered by modern digital technologies, in addition to persons' abilities in this area and their digital competences.

Digital exclusion indices at the household level that are analysed in this publication have been defined in the box below.

**Note 3.1.**

THE DIGITAL EXCLUSION INDICES ASSUMED AT THE  
HOUSEHOLD LEVEL

Complete e-exclusion – the share of households that do not have access to the Internet and computer – both due to financial and other reasons.

Considerable e-exclusion – the share of households that had owned a computer, but had no Internet access at home – both due to financial and other reasons.

### Owning a computer and access to the Internet – the scale of household exclusion and its diversification

As already mentioned, in an information society, access to a computer and the Internet are of top importance. Therefore, one of the more important issues is the simplest of proposed indices, namely the share of digitally-excluded households in the view of the basic definition. There were approx. 32% of such households, and significant differences were noticed especially with regard to age, education level, economic activity, and the sex of the head of a household, and also depending on disabled persons being present in a household.

Another 5% of households owned a computer, but had no access to the Internet at home, thus being digitally excluded to a considerable extent. This means that among households equipped with a computer, approx. 7.5% had no access to the Internet. Such a situation occurred the most in the świętokrzyskie voivodship, where approx. 14% of all households equipped with a computer had no access to the Internet. Pomorskie voivodship was at the opposite end of the scale, where only approx. 5% of households equipped with a computer had no access to the Internet. A particularly high share of digitally-excluded households was recorded among those whose head was a person aged 75 years or more. In this case, approx. 19% of all households equipped with a computer had no access to the Internet, similarly to households whose head was “economically inactive due to other reasons”, that is not categorised as unemployed, student, retiree or pensioner.

### **The reasons for not having access to the Internet**

Households that declared no access to the Internet at home were divided into three groups, depending on the stated reasons for such a state of affairs.

Some of the households surveyed (13.6% in the population in general) gave reasons that are connected with discouragement to the Internet, the lack of need to use it, or the sense of anxiety about the effects of using the Internet (privacy or security reasons), yet showing no reasons from outside this group.

A similar share of households (13.8%) did not recall any of the aforementioned reasons, and the answers given suggested that these households would like to have access to the global network at home. Stated among the reasons for the lack of access to the Internet indicated by these households were: too high costs of equipment or of the access itself (e.g. subscription fee, telephone charges), the lack of adequate skills, disability of household members and the lack of technical capacity to connect to the Internet (no infrastructure). In the case of 5.5% of the surveyed households, answers were recorded indicating both the will to have access to the Internet and the sense of anxiety connected with using the global network.

In order to facilitate the explicitness of results, households that justified the lack of Internet access by difficult to interpret “other reasons”, or by having access to the global network in some other place (e.g. at work) were not taken into account<sup>7</sup>.

---

<sup>7</sup> Having access to the Internet in another place than home (e.g. at work) was indicated as a reason for its lack in the place of residence by approx. 1.5% households. Other reasons amounted to approx. 3%.

### 3. THE E-EXCLUSION AND E-INCLUSION OF PEOPLE

The analyses of the digital exclusion and inclusion of people will focus on using a computer and having access to the Internet. In the box below, there is a set of indicators adopted to the analyses of e-exclusion and e-inclusion of people.

**Note 3.2.**

THE INDICATORS OF DIGITAL EXCLUSION AND INCLUSION  
ADOPTED WITH REFERENCE TO PEOPLE

Complete e-exclusion – the share of persons aged 16 years or more who have never personally used a computer.

Considerable e-exclusion – the share of persons aged 16 years or more who have personally used a computer, but are not Internet users.

Moderate e-exclusion – the share of persons aged 16 years or more who have personally used a computer and the Internet (not in the first two categories of the e-excluded), but the scope of this use was relatively small. This includes persons who have declared that they had used the Internet for at least three out of the fifteen reasons enumerated in the question<sup>8</sup>. Due to the importance of exchanging messages via e-mails, those who declared a larger number of purposes, but not included using e-mail as one of these, were deemed to be e-excluded. What is more, the e-excluded group encompassed also those who declared that they were not using a computer at the time of survey, irrespective of their answers to the questions concerning their past Internet activity.

E-exclusion in terms of limited autonomy of using a computer and the Internet – concerns persons aged 16 years or more who used the Internet at work or some other place, but not at home – irrespective of other factors, including the number of reasons for using the global network<sup>9</sup>. To be precise, we should also add that there are also other causes of the restriction of autonomy in using ICTs than those included in the adopted definition, and they often concern persons that do not use ICTs on their own, but through other persons. And thus these restrictions of autonomy can stem from, e.g. health problems, including mental problems, and also from the restriction of access to equipment and connection to the global network.

E-inclusion – this indicator includes not only the accessibility of tools, namely possessing a computer and possessing access to the Internet, but also the self-assessment of one's skills at using a computer. Deemed as e-included, were persons aged 16 or older who used a computer often, used the Internet at home (solely at home or also in other places), and assessed as well their computer skills as being at an advanced or occupational level. On the other hand, persons who were not able to assess their skills in this respect were deemed as not fulfilling the criterion of e-inclusion.

<sup>8</sup> A cafeteria-style checklist included 15 following items: sending, receiving e-mails; using instant messengers (Gadu-Gadu, Skype); using social networking websites; reading online newspapers and magazines; watching films, concerts; using internet banking; using public administration services (e.g. downloading official forms, sending filled-out forms); internet courses, e-learning; purchasing goods and services; job hunting, sending employment-related offers; searching for information on goods and services; searching for information on health (e.g. injuries, diseases, nutrition, prophylaxis); searching for information needed for work, learning; and other.

<sup>9</sup> There are also more complex proposition of definitions concerning the autonomy of using the Internet, e.g. a situation where an Internet user can use the Internet only for a limited time – even at home due to e.g. a large number of people using the Internet on one computer, high costs of using the Internet depending on the session length or data transfer – these situations can be also deemed the lack of such autonomy.

**Note 3.2. (cont.)**

Considerable e-inclusion – persons who often personally used a computer, who assessed their skills in doing so as advanced or occupational, who used the Internet at home (solely at home or also in other places), and who used it for a suitably large number of reasons, i.e. at least four (referring to moderate e-exclusion) were deemed to fulfil this criterion. Using the Internet to send and receive e-mails was deemed a necessary requirement to fulfil the considerable e-inclusion criterion. Similarly to other indicators, this also concerns persons aged 16 or older.

Not taking into account the self-assessment of using a computer being a subjective factor in the construction of the e-exclusion indices described in the box above stems from the fact that one group was not able to assess their skills at using a computer. Thus we adopted as an assumption that e-exclusion indicators will focus on objective measures. In turn, in the proposed e-inclusion indicator, there has been disregarded the purposes for using the Internet. This stemmed from a wish to create an index that would not be a mirror reflection of the moderate e-exclusion index.

### **The complete digital exclusion of people**

The survey results indicate that 33.0% of all persons aged 16 years or more have never personally used a computer. This share was strongly diversified in respect of age. It amounted to less than 2% of persons aged 16-14 and nearly 94% of persons aged 75 years or more.

The share of persons living in rural areas who have never used a computer corresponded to approx. one and a half of the share attributed to persons living in urban areas – and amounted to 41%. However, in the cities, there can be noticed clear differences depending on the number of inhabitants. In the largest cities (those with 500 thous. inhabitants or more), only one out of five people had never used a computer, whereas, in towns (those with less than 20 thous. inhabitants), the figure was one out of three.

The discussed group (persons who were completely digitally excluded) included almost two thirds of all persons with at most lower secondary education, and only one out of fifteen of those with a higher education level (a bachelor's degree or higher). The survey also shows that almost every school or university student (99.5%) has already used a computer in person. However, in the case of retired persons, the situation was reversed – only approx. 1% had done so.

Another variable that quite clearly divided the population was income. The shares of digitally excluded persons were substantially lower in the highest decile groups; however, this relation becomes significant only above a particular income level. In the first five decile groups (the “poorer” half of population), 39 to 46% of all persons surveyed had never used a computer in person, in the three next groups – this figure ranged from 26 to 32%, in the last but one decile group, this amounted to approx. 19%, and in the last one (the members of households with the highest equivalent income) – only approx. 8% were digitally excluded.

Furthermore, some differences were also spotted in the territorial pattern. In some voivodships the share of persons who have never used a computer amounted to approx. 30% (małopolskie,

opolskie, śląskie, and pomorskie voivodships), while in others, it exceeded 40% (świętokrzyskie and lubelskie voivodships).

Approx. two thirds of the disabled persons surveyed were afflicted with this kind of exclusion. In turn, among unemployed persons<sup>10</sup>, the share of persons who have never used a computer was lower than in the case of the rest of population (approx. 24% against 34%). It should be also noticed that the phenomenon of complete digital exclusion was more common among women (35.5%) than men (approx. 30%).

### **The substantial digital exclusion of people**

The survey results indicate that the share of persons who have personally used a computer, but are not Internet users amounted in 2011 to approx. 5%. With respect to this figure, slightly above-average shares were noticed among office workers (8.5%), in the group of persons with the lowest incomes (the first decile group), and also among unemployed persons – both approx. 8%.

The discussed phenomenon was not applicable for students, and also in the group of retired farmers (both 0.5%). With respect to students, this is due to the fact that almost all of them had made use of both computers and the Internet, whereas, in the case of retired farmers, it is connected with there being a small share of those using a computer at all.

The differences between particular groups can be seen more clearly when we adopt the population of persons using a computer as a basis for calculation. With such a basis, the share of persons who have never used the Internet amounted to 7.5%. This figure was distinctly higher, among others, as regards the elderly – especially those older than 65 years (approx. 36%), retired persons (26.5%), pensioners (21.5%), disabled persons (approx. 20%), and those with basic vocational and lower education (12.5%). Furthermore, we should pay attention to clear regional differences – the discussed phenomenon was the most prevalent in eastern voivodships, whereas it was the rarest in southern voivodships – from dolnośląskie to małopolskie voivodships.

These results indicate that for the persons included in the enumerated groups, gaining digital competences proves to be more difficult. While they have acquired general computer skills, they often stop at this stage, losing the benefits of being able to function within a global network. However, in order to avoid digital exclusion, it is necessary to keep up with changes – with this “shifting” point of division into the e-excluded and e-included. The substantial representation of the elderly in the category of digital exclusion means that they had ended their occupational careers in the stage of informatisation when personal computers were becoming a standard, but they still lacked access to the global network. Such a state of affairs can also be linked to the lack of desire for bearing the constant expenditures connected with maintaining access to the Internet. This lack of approval can also stem from being within an unfavourable material situation, as well as from the lack of motivation to bear such expenditures (the lack of a need of which one would be conscious enough).

---

<sup>10</sup> As “unemployed” were deemed such persons that declared such status in their self-assessment, giving such an answer to the question concerning their current status on the labour market: “Do you deem yourself to be mainly...”

## The moderate digital exclusion of people

In the totality of population, the share of those who used the Internet to limited extent amounted to 19.5%. In turn, if we were to include persons who state that they use both a computer and the Internet (so experiencing neither complete nor substantial exclusion) as a basis for this, the value would go up to 31.5%. In further analyses, we will use indicators that employ the population of Internet users as their bases.

The share of digitally excluded persons to a moderate extent (in the population of Internet users) depended, similarly to other above-mentioned e-exclusion indicators, among others, on age, education, income, occupation, economic activity, place of residence and disability. Sex did not matter much – approx. 32% of the women, and 30.5% of the men using the Internet, were digitally excluded to a moderate extent. However, there was a substantial disparity between persons living in rural and urban areas (41.5% against 26.5%). A particularly high share of moderate digital exclusion was observed among persons doing jobs that in principle did not require using a computer, e.g. among industrial workers or machine and equipment assemblers and operators (approx. 48% respectively), and especially among farmers, gardeners, foresters and fishermen (approx. 66%). The correlation at the level of income was also very clear – 45.5% of all Internet users belonging to the first decile group and 15.5% belonging to the last decile group were deemed digitally excluded to a moderate extent. The differences between voivodships were also significant – ranging from less than 25% in opolskie and pomorskie voivodships, to more than 40% in podlaskie and świętokrzyskie voivodships.

Figure 3.1.

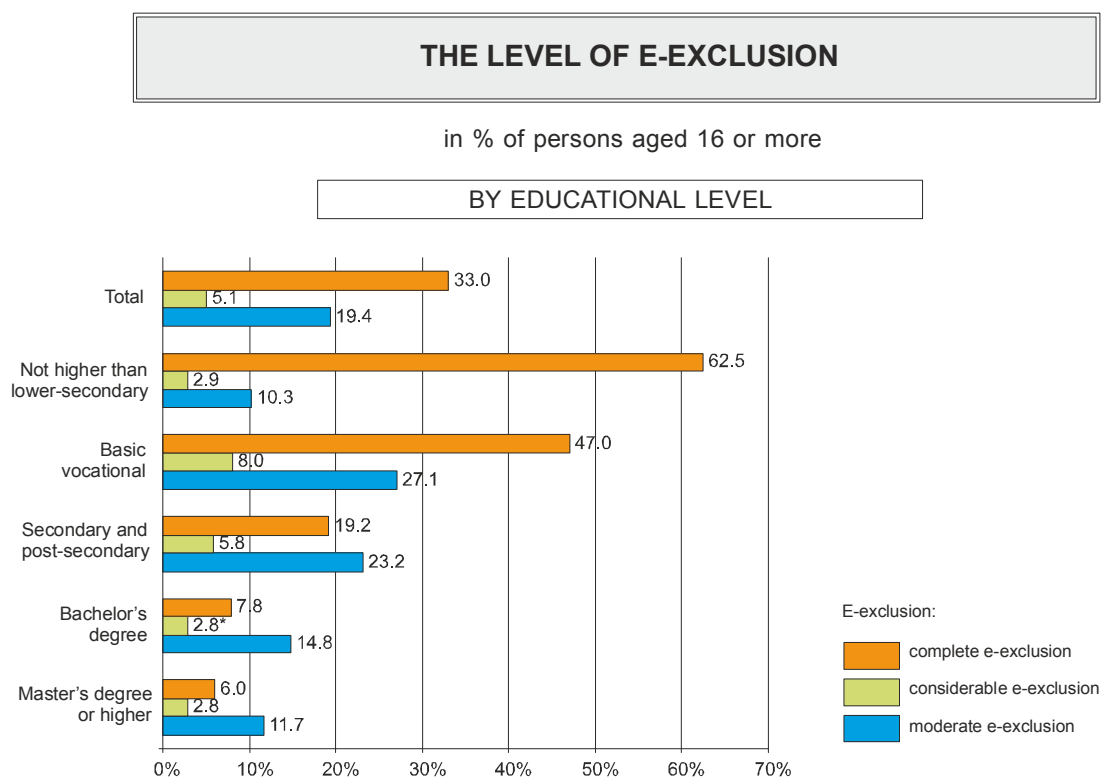
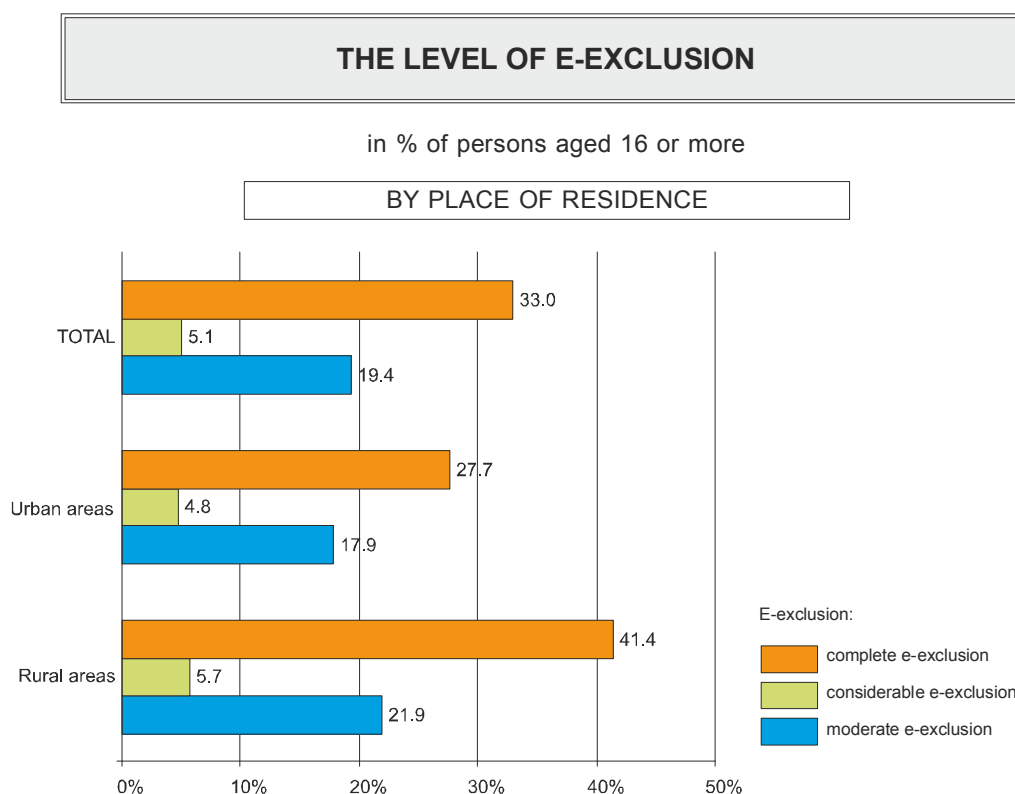


Figure 3.2.



### Digitally excluded persons (irrespective of the degree of exclusion)

The three types of exclusion analysed before, which correspond to its different degrees, were defined in such a way that the groups of persons affected by exclusion are disjoint. Thus we can sum up the values of particular indicators (shares) and come up with a total indicator, showing the share of persons affected by digital exclusion, irrespective of its degree. In other words, it includes all persons who were included in any of the aforementioned groups.

This share for the whole population aged 16 years or more amounted to 57.5%. If we wanted to interpret this indicator as a measure of the range of any form of e-exclusion, we would have to regard it as underestimated, among others, due to the existence of other forms of e-exclusion that have not as yet been discussed. However, it is difficult to explicitly specify the place of these forms on an ordinal scale of e-exclusion (attribute the “degree”), as they stir up more controversies than do relatively simple indicators.

One of such forms of e-exclusion is the lack of autonomy in respect of using the Internet (as we discuss below). Another reason for the underestimation of the value of e-exclusion indicator boils down to disregarding the many aspects of e-exclusion, including the ones enumerated at the beginning of this chapter (e.g. having sufficient skills, the frequency of using a computer and accessing the Internet). We should also keep in mind the arbitrariness of the criteria adopted for the

development of the moderate e-exclusion indicator (e.g. one could justify the adoption of a larger number of reasons for using the Internet which would serve as a threshold in qualifying persons to being placed within the e-excluded group).

The indicators of e-inclusion and substantial e-inclusion analysed in the following part of this study can, however, be a kind of an answer to the imperfect character of the above-mentioned indicator.

Yet, irrespective of adopted assumptions on the more complex indicators, the share of persons affected by various forms of digital exclusion should be regarded as too high. This leads to the conclusion that we need to take up actions aimed at providing the inhabitants of Poland with the opportunity of having more complete participation in today's information society.

### **The restriction of autonomy in using a computer and the Internet**

The results of the social cohesion survey indicate that the share of persons with limited autonomy in using a computer and the Internet – meaning such persons who used the Internet at work or in some other place, but not at home – amounted to 6.5% of the total Internet users categorised. To put that into perspective, approx. 55% of Internet users used the global network at home only, and do not use it elsewhere.

A high share of Internet users with limited autonomy in using Internet was observed, e.g., among unemployed persons (12.5%), and the elderly – aged 65 years or more, as well as in persons with basic vocational education who are living in rural areas (all amounting to approx. 9%). Lower values were recorded, e.g. in the case of non-agricultural own-account workers (2.5%), school and university students (4.5%), persons employed as managers, higher office workers and supervisors (4.5%), and also among urban inhabitants and persons with higher education (both amounting to approx. 5%). Regional differences ran at levels similar to other e-exclusion indicators, while disability and sex had little influence on the level of autonomy limitation of using the Internet.

### **The e-inclusion of people**

In the population of persons aged 16 years or more, the share of e-included persons (see Note 3.2.) amounted to approx. 28%, and among Internet users – to approx. 45%. In further analyses, we shall use the aforementioned shares pertaining to Internet users.

E-inclusion was the domain of young people – the e-inclusion criteria were fulfilled by 66.5% of all persons aged 16-24. In every consecutive age category, this share diminished (reaching nearly 7% in the group of persons aged 75 years or more). The difference between men and women was also quite significant. In the case of the former, e-inclusion amounted to 49%, and with respect to the latter – to 41.5%. In the urban areas, nearly half (49.5%) of all Internet users should be considered as e-included, while in rural areas, this figure is 36.5%.



Among Internet users included in the group of persons with the lowest income, that is included in the first decile group, approx. 26% were e-included; and in the group of persons with the highest income – approx. 62%. The opportunities for e-inclusion were restricted by disability and unemployment. Approx. 30% of disabled persons were e-included, whereas in the case of unemployed persons, this amounted to approx. 36%. In two voivodships, namely in mazowieckie and łódzkie, more than half of all Internet users were digitally included, whereas, in świętokrzyskie voivodship this figure was less than 40%.

The relation between e-inclusion and the level of education is ambiguous. A bit more than a half of all Internet users with at most primary education met the criteria of e-inclusion, while among Internet users with higher education, two out of three were e-included. On the other hand, the lowest share of e-included was observed in the remaining groups, e.g., among persons with basic vocational education - approx. 17%, and secondary (including post-secondary) education - approx. 41.5%.

Figure 3.3.

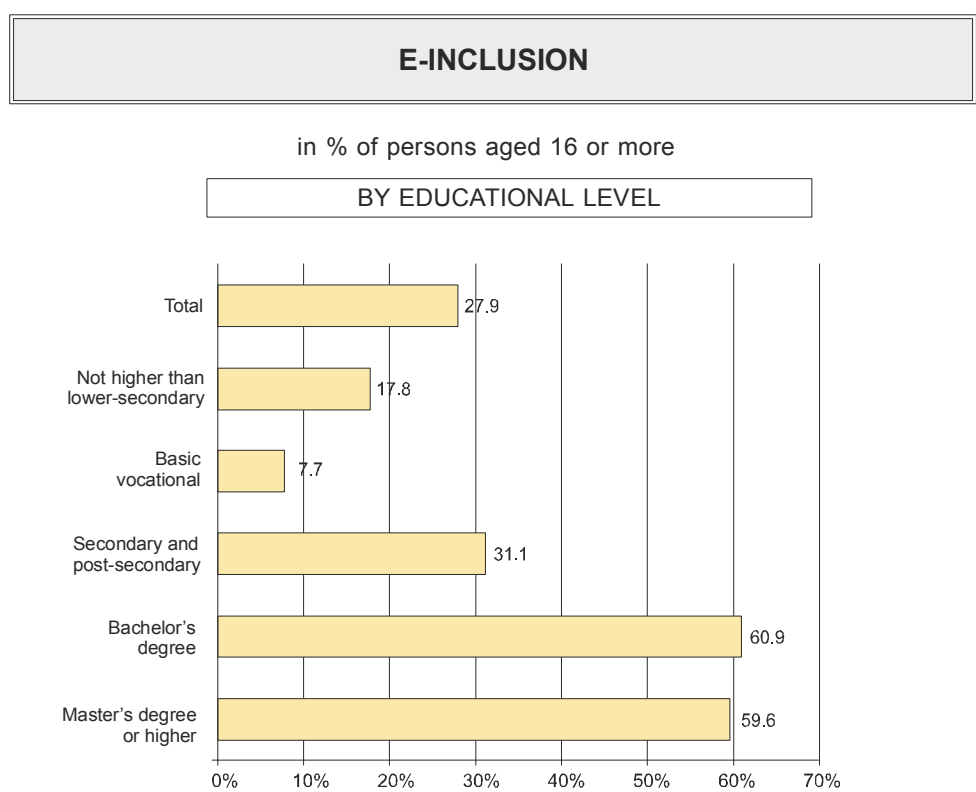
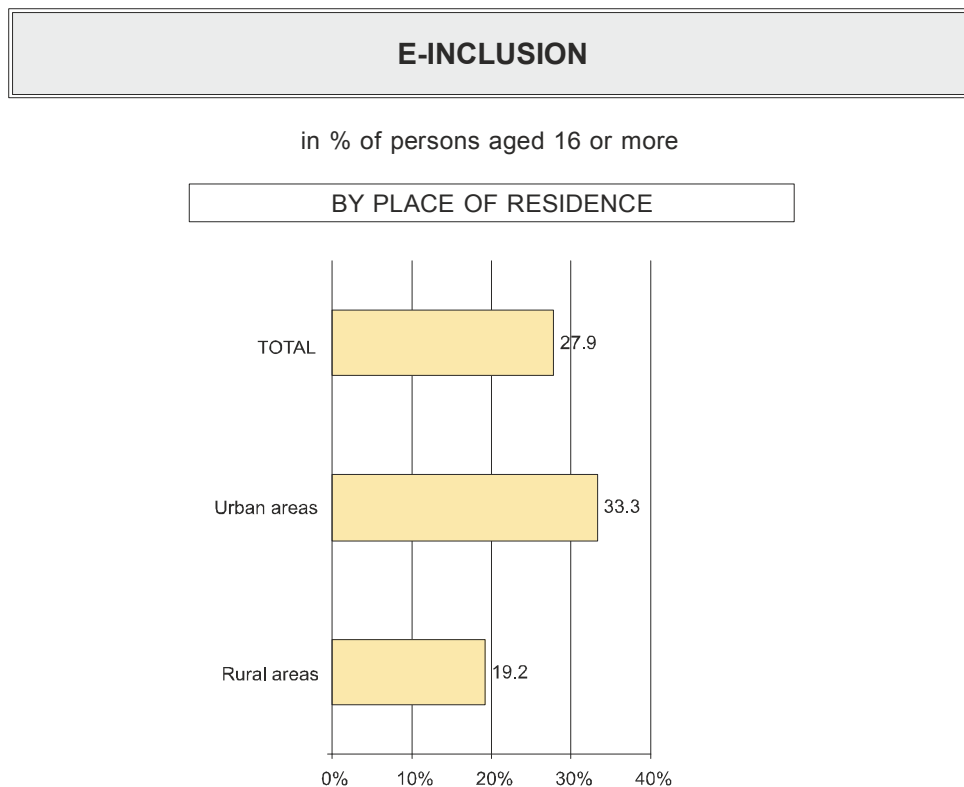


Figure 3.4.



#### The substantial e-inclusion of people

In 2011, approx. 25.5% (and 41% among those deemed Internet users) of the persons surveyed were e-included to a substantial extent. Thus, we can say with all certainty that these persons were not affected by any form of e-exclusion, irrespective of the employed set of indicators used in this paper.

This means that in the case of the remaining persons, namely 74.5% of all Poland's inhabitants aged 16 years or more, we can observe some signs or symptoms of digital exclusion, despite this not being intense enough to classify them as e-excluded persons.

#### 4. VIRTUAL SOCIAL CAPITAL

For a couple of years now, virtual societies have been becoming an increasingly noticeable phenomenon. Initially, they were created especially on discussion forums that gathered persons with similar interests. Mailing lists and chats were also popular. Currently, instant messengers and social networking websites are the primary tools that enable people to establish and maintain acquaintances. Their basic function is to maintain interpersonal contact, though we can also notice the commercialisation of these tools, e.g. the growing number of companies and organisations owning profiles on social networking websites.

Fundamentally, we can state that the users of instant messengers and social networking websites employ them mainly to maintain and develop their contact with other people. What is more,

some users treat them as a method of maintaining their real-life acquaintances, while others use them to get to know other people. Furthermore, the extent to which the activity of persons actually develops and supplements their social capital tends to be varied. Some of them become deeply involved in activities of larger groups, others prefer to maintain individual contacts. Due to this, the data concerning the extent of using social networking websites and instant messengers can be deemed only an approximate scale of the “virtual social capital” of Poland’s inhabitants. The survey of this phenomenon can be justified, among others, due to the increasing use of the Internet for communicating with other people and for exchanging information and opinions, and hence inducing the relationships to be maintained via the Internet, having a growing substantial impact on the non-virtual reality.

### **Building online social capital in Poland**

The results of the social cohesion survey indicate that, in 2011, approx. 45% of all Poland’s inhabitants were using instant messengers or social networking websites, and 24% of them were using both of these tools; however, instant messengers proved to be a bit more popular than internet portals.

The discussed forms of contact with other people were the most popular among young people, especially those aged 16-24. Only one out of nine in this group was not using any of these tools. In every consecutive age group, we can notice a substantial difference in the share of persons using instant messengers and social networking websites. In the group of persons aged 35-44, every second person was a user of at least one of these tools, with respect to those aged 45-54 – every third, and with regard to those aged 55-64 – every fifth. In the case of persons aged 65 years or more, this amounted only to several percent.

Considerable differences were also observed depending on person’s education – social networking websites and instant messengers were used the least by persons with lower secondary, primary, or basic vocational education, and the most by those with higher education, especially graduates of 1st degree studies (Bachelor’s and Engineer’s degree studies)<sup>11</sup>.

Considerable differences were also observed between inhabitants of urban and rural areas. With respect to this, the use of social networking websites or instant messengers was declared the most by the inhabitants of cities with 500 thous. inhabitants or more (approx. 55%) and of the cities with 100-500 thous. inhabitants (approx 52%). In rural areas, less than 38% persons used any of the discussed tools.

Data suggests that disability can be a substantial limitation in using social networking websites and instant messengers. Only more or less every sixth disabled person surveyed declared that they employed these tools.

However, unemployment was not a limitation of this type of activity. More than half of unemployed persons who were surveyed established or maintained acquaintances via social

---

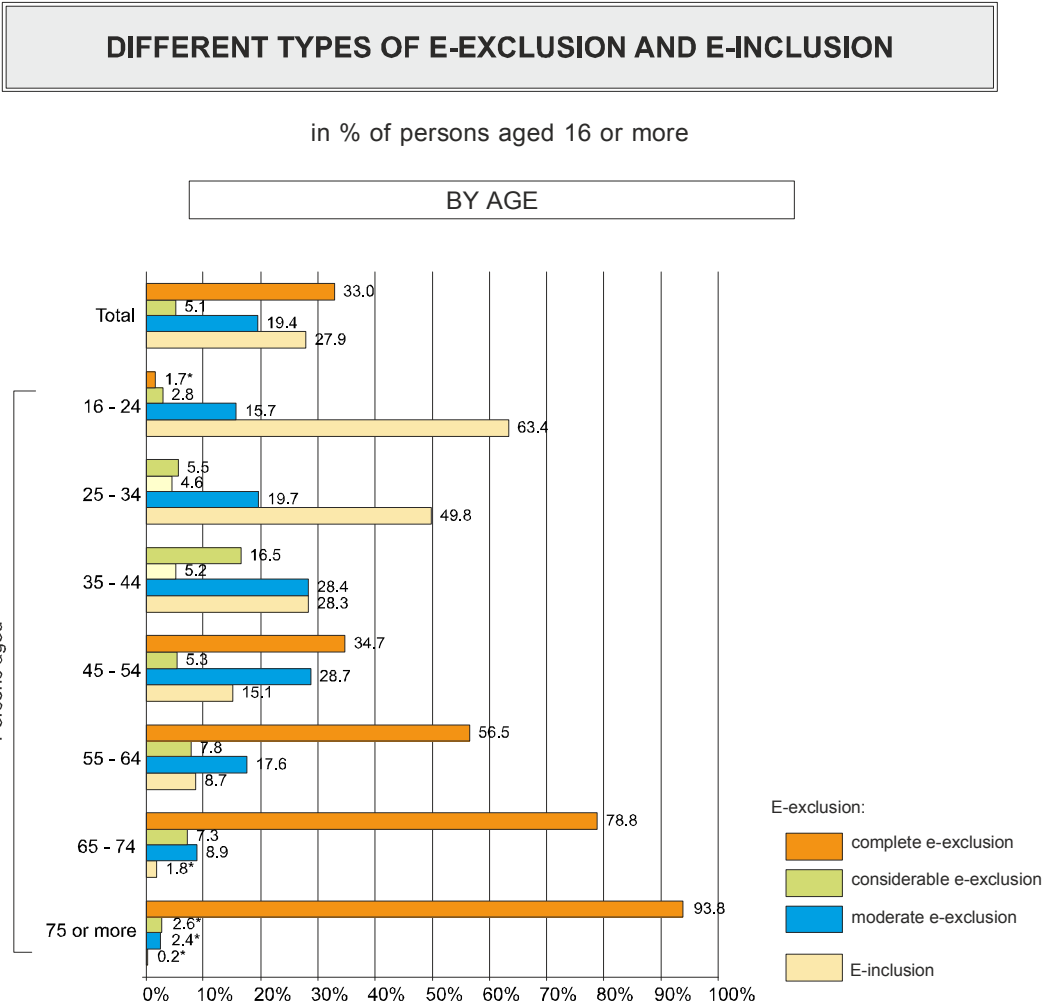
<sup>11</sup> This majority of Bachelor’s and Engineer’s degree studies graduates resulted from their lower age than in the case of Master’s degree studies graduates.

networking websites or internet messengers. This is a higher indicator value than in the case of society in general.

**5. SUMMARY**

Digital exclusion affects a considerable number of Poland’s inhabitants. Adopting a broad definition of this phenomenon, based on the criterion of a person being classified to be within the group of completely e-excluded, substantially e-excluded or moderately e-excluded, then some forms of e-exclusion or at least its symptoms (even singular) could be observed among approx. three fifths of the society<sup>12</sup>. The range of this phenomenon is very diversified, mainly depending on person’s age, and also, to some extent, on their economic activity. This range is also above average in the case of disabled persons, though it is such persons that could relatively benefit the most from digital inclusion. The elderly people living in rural areas, and persons with education levels up to secondary are the greatest risk of e-exclusion.

Figure 3.5.



<sup>12</sup> If we were to adopt the non-fulfilment of substantial e-inclusion criterion as the e-exclusion criterion, then e-exclusion symptoms could be observed among approx. three fourths of the society (see “Substantial e-inclusion” on page 89).

Among the groups distinguished on the basis of economic activity, there are such in which almost everyone is e-excluded (e.g. retired farmers), but also such in which there is virtually no digitally excluded persons (e.g. school and university students). The level of digital exclusion is also correlated with, e.g. variables concerning work, and also the possession of various skills. We can also record a relation between e-exclusion and some aspects of life satisfaction.

The populations of e-included and e-excluded persons differ in terms of demographic and socio-economic characteristics, which can corroborate the link between these characteristics and the shaping of attitude towards ICTs.

The degree of digital inclusion cannot be, however, regarded as the main cause of the observed differences in many aspects of the lives of particular groups of persons distinguished due to the aforementioned characteristics – yet there occurs some correlation without a doubt. If we were to take into account the correlations between e-exclusion and e-inclusion and socio-economic characteristics, it would be difficult to explicitly indicate what is the cause and what the result of this correlation. Probably, these correlations are of a bidirectional character. On the one hand, characteristics like economic activity, education and skills, lifestyle, occupational, social and financial standing, influence, together with demographic characteristics, the attitude towards new technologies and engagement in their use. On the other hand, the degree of digital inclusion can also shape one's situation from the point of view of the aforementioned characteristics and criteria (to a smaller or larger extent, depending on the specificity of this characteristic).

We can, for example, presume that digital competences facilitate getting a satisfying job, including such connected with supervising other people's work. What is more, the significance of using new information and communication technologies in employment contexts will be more and more important. This is indicated by the growing expectations of employers, which have been reflected, among others, in European Union's forecasts estimating that in 2015, approx. 90% of jobs will require at least basic digital competences<sup>13</sup>.

It is also worth highlighting that those e-included are persons who much more often declared having knowledge of foreign languages, especially of the English language. This fact also to a large extent influences their situation on the labour market, irrespective of the character (not necessarily cause-and-effect) of the mechanisms and relations linking both phenomena (digital inclusion and language competences).

Digital inclusion favours the circulation of information. E-included persons gain access to knowledge, among others, about cultural events or have opportunities for self-education, based on materials available on the Internet. They can also use resources such as online music, films and magazines. All this influences their lifestyles, including their way of spending their free time – persons deemed e-included read books and participate in various cultural events more often than others. In turn, e-excluded persons watched TV more often.

The social cohesion survey enabled us to conduct a general analysis of the so-called virtual social capital. The results of this survey indicate that nearly half of the inhabitants of Poland aged 16 or more use instant messengers or internet portals. This usage facilitates, among others, exchanging opinions and creating groups that can influence non-virtual reality.

---

<sup>13</sup> *Digital competences in the Digital Agenda. Digital Agenda Scoreboard, 2012, p. 3.*

# 4

## SOCIAL CAPITAL IN NETWORK TERMS INVOLVEMENT IN PRIMARY AND INFORMAL GROUPS AND SECONDARY ASSOCIATIONS

### 1. INTRODUCTION

For several decades now, social capital has not only been of interest to academics, but has also constituted a critical issue across many public debates, as well as being an important area in national-development policies<sup>1</sup>. Its growing popularity is primarily due to the fact that it has been recognized as contributing to the understanding and emergence of important social and economic phenomena and processes. Next to its financial, physical and human counterparts, social capital is perceived as a driver of economic growth, while at the level of an individual components of the social capital also determine the quality of life of individual citizens<sup>2</sup>.

Most of social capital definitions assume that social networks are one of its primary components. Such networks are systems of connections between individuals "cumulated by way of interaction" – in one's family life, place of residence, at work, during leisure or social/public activities. The Internet, too, has been emerging as a platform for establishing and maintaining of various relationships. Social capital also includes norms and values shared within a given community and governing both individual and joint initiatives. This study, based on social cohesion survey findings, focuses on the network dimension of social capital. Such networks can be of different character, depending on the nature of the group in which people take part. In informal groups, such as a family or a group of friends, interactions are personal in nature and their function is to satisfy the underlying needs across the emotional domain, and, if need be, also in the material one. In addition, such groups constitute the primary environment for developing the social attitudes of an individual. This is why Charles Cooley introduced the concept of primary groups to distinguish these, as opposed to secondary groups, which are less likely to be influential in forging one's identity<sup>3</sup>. Due to the informal character of the ties in familial<sup>4</sup>, friendly or neighbourly relationships, the underlying social capital will be from now on referred to as informal social capital, while this type of ties will be deemed informal networks.

The aforementioned secondary groups, could, in turn, be described as formal or semi-formal organisations where individuals interact to achieve some common objectives regarded by a given organisation as its mission. A typical example of such structures are associations, hence Alexis

<sup>1</sup> The Social Capital Development Strategy is one of 9 integrated strategies identifying public-intervention priorities in areas recognized by the Government as of particular significance for the development of Poland.

<sup>2</sup> Anna Bieńkuńska, Karolina Goś-Wójcicka, Sławomir Nałęcz, Paweł Piaskowski, Małgorzata Żyra *Kapitał społeczny w badaniach statystyki publicznej (Social capital in official statistical surveys). Notatka na posiedzenie Rady Statystyki w dn. 20.02.2012 r. Warszawa, GUS, (A memorandum for the Statistical Council meeting on 20 February 2012, Warsaw, CSO).*

<sup>3</sup> Jacek Szmátka *Małe struktury społeczne (Small social structures)*, Warszawa, PWN, 2007, p. 67 onwards.

<sup>4</sup> We focus on the sociological aspect of a family as an informal group, taking no account of the formal and legal relations arising out of the Family or Guardianship Law, etc.

de Tocqueville, a 19<sup>th</sup> Century thinker and historian investigating North-American democracy, began employing the term "association" (or "union") to refer to all formal groups established at the grass roots. Two centuries later, Robert Putnam, when analysing the performance of a democratic state in different regions across Italy<sup>5</sup>, as well as the social capital in the USA<sup>6</sup>, also recognized the essential role played by civic associations. Concerning the way which concepts such as "association- and civic-based social capital are used in, relevant Polish literature also clearly advocates the importance of associations and similar social organisations, as major building blocks of social capital<sup>7</sup>. Taking the above into consideration, the assessment of social capital based on the participation in various types of associations, unions and other social organisations of this kind, will employ the term of an association-based social capital.

## 2. ASSOCIATION-BASED SOCIAL CAPITAL – PARTICIPATION IN SECONDARY ASSOCIATIONS

Secondary groups generally take the form of associations, unions or similar social organisations, hence termed "secondary associations" by Robert Putnam. The terms *secondary group* and *secondary association* are used throughout this chapter interchangeably, even though, as pointed out by Putnam, the level of actual activity among members of different associations is of importance here, as membership that is passive, formal-only, and deprived of personal contact, does not, in fact, create social capital, and, therefore, structures in which participation is limited to being listed as a member and, possibly, paying membership contributions, should be, as suggested by the same, considered separately and referred to as *tertiary associations*<sup>8</sup>.

In view of the above, indicators for association-based social capital connected with the participation in secondary associations, will not cover passive membership, but will include only participation that involves volunteer work within a given organisation or satisfactory level of attendance at events, functions, etc. organised by the same.

Association-based social capital, measured here by participation in secondary associations, has been determined on the basis of a joint assessment of the following three criteria:

- 1) devoting one's time to perform non-compulsory and unpaid work within a given secondary association,
- 2) participation in events organised by a secondary association,
- 3) membership/sense of being part of an organisation.

---

<sup>5</sup> Robert D. Putnam, *Making Democracy Work: Civic Traditions in Modern Italy*, Krakow-Warsaw: Instytut Wydawniczy Znak, Stefan Batory Foundation, 1993.

<sup>6</sup> Robert D. Putnam, *Bowling Alone. The Collapse and Revival of American Community*, Warsaw: Wydawnictwa Akademickie i Profesjonalne, 2008.

<sup>7</sup> Tomasz Żukowski, Maria Theiss, *Stowarzyszeniowo-obywatelski kapitał społeczny (Association- and civic-based social capital), Komunikat z badań (Research communication) No. BS/133/2008*, Warszawa: CBOS Public Opinion Research Centre, 2008.

<sup>8</sup> Robert D. Putnam, *Bowling Alone: America's Declining Social Capital*, *Journal of Democracy*, 1995, No. 6 (1), pp. 65-78.

To further elaborate on the concept put forward by Robert Putnam, this study will distinguish the most "useful" part of the association-based social capital, i.e. the bridging, social capital. Its favourable impact on the operation of the social system, results not from its reinforcing of trust and reciprocity in a given individual's group, but rather from establishing new bonds within the organisation to bring together people from diverse backgrounds. Participation in various types of secondary associations, an individual can establish and maintain relationships with several different social groups simultaneously, thus being able to better understand various social circles, while also enjoying greater trust and ability to cooperate with individuals from outside the group. In systemic terms, the bridging social capital of secondary associations helps to unlock extensive and diversified social potential so as to facilitate the country's social and economic development. Moreover, it mitigates conflicts and counteracts further perpetuation of social divides, and prevents the potential negative consequences of too strong attachment, which can sometimes lay at the foundation of a separate type of social capital known as bonding social capital<sup>9</sup>.

To measure bridging social capital, this chapter will use an indicator based on the involvement in two or more secondary associations. The detailed description of the indicator, and other indicators covering involvement in secondary associations, compiled on the basis of the social cohesion survey data, are presented in Note 1.

### **Basic dimensions of association-based social capital – involvement in secondary associations<sup>10</sup>**

Basic dimensions of involvement in secondary associations include volunteering and participation in events organised by secondary associations. As revealed by the data presented in Tables 4.1. and 4.2., these are not widespread in Polish society. Regular, i.e. at least once every six months, volunteer work in at least one secondary association is reported to have been undertaken by only 13% of Poles aged over 16, with the majority of them (8%) being involved in associations, foundations or similar secular organisations. Religious communities, groups or organisations, in turn, enjoy the support in form of volunteer work of 6% of persons. Other relevant, albeit small, shares include persons volunteering for various public institutions (3%) or trade unions, or worker's organisations (2%).

---

<sup>9</sup> The analysis of negative outcomes of strong bonding social capital bonds, such as the establishment of privileges, the appropriation of public property for one's own group, the isolation of group members from the general community, the restriction of group members in terms of their freedom, innovativeness and social advancement, can be found e.g. in an article by Alejandro Portes and Patrycja Landolt entitled *The Downside of Social Capital* published in *The American Prospect* w 1996, No. 26, pp. 18-22.

<sup>10</sup> The whole chapter uses rounding and provides figures in integers.



Table 4.1.

## VOLUNTEER WORK FOR SECONDARY ASSOCIATIONS

in % of persons aged 16 or more

	At least				Less frequently than once every six months	Never
	once a week	once a month	once every three months	once every six months		
Secular NGOs <sup>a</sup>	2.1	2.3	2.5	1.5	2.6	88.9
Churches, religious associations and organizations <sup>b</sup>	1.6	1.6	1.4	1.6	3.8	89.8
Trade unions and other worker's organizations	0.3	0.5	0.7	0.5	1.1	97.0
Political parties	0.1	0.1	0.2	0.2	0.2	99.2
Professional and business organizations <sup>c</sup>	0.1	0.3	0.4	0.4	0.5	98.4
Cooperatives	0.1	0.2	0.3	0.2	0.8	98.4
Housing condominiums	0.2	0.3	0.4	0.6	1.1	97.4
Initiatives that fall within the operation of public institutions (local-government or government) <sup>d</sup>	0.5	0.7	0.6	0.7	1.3	96.2
<b>At least one type of the above - mentioned secondary associations</b>	<b>4.0</b>	<b>4.6</b>	<b>4.4</b>	<b>3.7</b>	<b>6.2</b>	<b>77.0</b>
<b>including secular secondary associations</b>	<b>2.8</b>	<b>3.5</b>	<b>3.9</b>	<b>2.9</b>	<b>4.6</b>	<b>82.3</b>

<sup>a</sup> Such as: associations, foundations, sports clubs, volunteer fire brigades, hunting or fishing associations, parent's association, internet groups  
<sup>b</sup> Such as: parishes, parish councils, rosary associations, charity groups, Caritas, the Catholic Action, Orthodox brotherhoods, diaconies, Orthodox mercy centres  
<sup>c</sup> Such as: farmer's associations, country housewife's clubs, guilds and chambers of crafts, chambers of commerce, chambers of physicians and dentists, or chambers of nurses, bar councils, etc., trade, services and transport associations.  
<sup>d</sup> Such as: choirs, bands, clubs, hobbyists clubs operating at community centres, nursing centres, public libraries, local-authority auxiliary units, etc.

The share of adult Poles who partake in events or functions organised by various organisations, communities or groups is also rather small, although several percentage points higher than for community service. Regular, i.e. at least biannual, participation in such events is reported by 18% persons. The majority of them (9%) take part in events organised by associations, foundations and similar non-religious organisations or groups. The number of persons who participate in events or functions organised by religious groups at least once every six months is slightly lower (7%). As evidenced by both identified types of secondary associations, the volume of persons taking part in events is at the same level as the share of those devoting their time to work free of charge within such frameworks. Statistically relevant, but nevertheless minor, are the differences between the share of persons taking part in events and the share of community service providers operating within public institutions, such as public libraries, community centres, nursing homes, hospitals, etc. (more than 4% of the former, against 3% of the latter).

Table 4.2.

**PARTICIPATION IN EVENTS ORGANIZED  
BY SECONDARY ASSOCIATIONS**

in % of persons aged 16 or more

	At least				Less frequently than once every six months	Never
	once a week	once a month	once every three months	once every six months		
Secular NGOs <sup>a</sup>	0.8	1.4	2.0	4.5	6.3	85.1
Churches, religious associations and organizations <sup>b</sup>	1.1	1.3	1.1	3.4	6.6	86.6
Trade unions and other worker's organizations	0.1	0.1	0.3	1.1	2.1	96.2
Political parties	0.1	0.1	0.1	0.3	0.8	98.7
Professional and business organizations <sup>c</sup>	0.0	0.2	0.2	0.7	1.1	97.7
Cooperatives	0.0	0.1	0.1	0.4	1.4	98.0
Housing condominia	0.0	0.1	0.2	0.6	1.1	98.0
Initiatives that fall within the operation of public institutions (local-government or government) <sup>d</sup>	0.3	0.7	0.9	2.3	4.5	91.2
<b>At last one type of the above - mentioned secondary associations</b>	<b>2.0</b>	<b>3.1</b>	<b>3.6</b>	<b>8.9</b>	<b>11.5</b>	<b>71.0</b>
<b>including secular secondary associations</b>	<b>1.1</b>	<b>2.2</b>	<b>3.1</b>	<b>7.2</b>	<b>10.0</b>	<b>76.4</b>

<sup>a</sup> Such as: associations, foundations, sports clubs, volunteer fire brigades, hunting or fishing associations, parent's association, internet groups  
<sup>b</sup> Such as: parishes, parish councils, rosary associations, charity groups, Caritas, the Catholic Action, Orthodox brotherhoods, diaconies, Orthodox mercy centres  
<sup>c</sup> Such as: farmer's associations, country housewife's clubs, guilds and chambers of crafts, chambers of commerce, chambers of physicians and dentists, or chambers of nurses, bar councils, etc., trade, services and transport associations.  
<sup>d</sup> Such as: choirs, bands, clubs, hobbyists clubs operating at community centres, nursing centres, public libraries, local-authority auxiliary units, etc.

More popular than formal volunteering or event participation is the membership in or a sense of affiliation with a given organisational structure. When interpreting the data presented in Table 4.3., however, it must be kept in mind that a large number of declared memberships, it is only formal in nature<sup>11</sup>. In view of this, it is interesting to confront the number of declared members of a given organisation with the share of persons classified as socially active on the basis of satisfactory frequency of formal volunteering or participation in such secondary association's events (indicator compilation design for secondary-association involvement is presented in Note 4.1.).

<sup>11</sup> Membership which is only formal in nature dominates in organisations based on the concept of ownership or the need to manage common property (e.g. housing condominia) and in professional organisations. By virtue of the law, membership in the last type of organizations is mandatory for persons practising professions of public trust such as doctors, nurses, pharmacists, attorneys, public notaries, etc.

Note 4.1.

DIMENSIONS OF ASSOCIATION-BASED SOCIAL CAPITAL – INVOLVEMENT IN SECONDARY ASSOCIATIONS

**Involvement in a secondary association is** determined separately for each of the following eight types of secondary groups:

- 1) **secular NGOs** such as associations, foundations, sports clubs, volunteer fire brigades, hunting or fishing associations, parents' association, internet groups, as well as facilities and initiatives set up by such organisations (choirs, bands, support groups, care centres, kindergartens, workshops, hospices, etc.),
- 2) **churches, religious associations and organisations** such as parishes, parish councils, rosary associations, charity groups, Caritas, the Catholic Action, Orthodox brotherhoods, diaconies, Orthodox mercy centres, as well as facilities and initiatives run by them,
- 3) **trade unions and other workers' organisations**, including farmers' unions, workers' councils, workers' loans associations,
- 4) **political parties**,
- 5) **professional and business organisations**, e.g. farmer's associations, country housewives' clubs, guilds and chambers of crafts, chambers of commerce, chambers of physicians and dentists, or chambers of nurses, bar councils, etc., trade, services and transport associations,
- 6) **cooperatives**,
- 7) **housing condominia**,
- 8) **initiatives that fall within the operation of public institutions** (local-government or government), e.g. choirs, bands, clubs, hobbyists clubs operating at community centres, nursing centres, public libraries, local-authority auxiliary units, etc.

**In order to be classified as actively involved in a given secondary association, a respondent needs to satisfy at least one of the following conditions:**

- a. devotes his/her free time for unpaid work service for the benefit of a given organisation or group – at least once every six months,
- b. partakes in events organised by a given organisation– at least once every three months,
- c. partakes in events organised by a given organisation– at least once every six months, while also performing some volunteer work in such a secondary organisation – less frequently than once every six months,
- d. is a formal member or has a sense of affiliation with a given organisation or group, while also performing some volunteer work in a given secondary association – less frequently than once every six months,
- e. was a formal member or has a sense of affiliation with a given organisation or group, while also performing some volunteer work in a given secondary association – less frequently than once every six months.

**Note 4.1. (cont.)**

Possible combinations to meet the above are presented in the figure below as fields marked blue (fair blue). Applicable only for persons who declare themselves to be members of or have a sense of affiliation with a given secondary association (dark blue). Regardless of declaring membership of or sense of affiliation with a given secondary association.

Performs community service for the benefit of a secondary association	Takes part in events organised by secondary organisations					
	never	less frequently than once every six months	at least once every six months	at least once every three months	at least once a month	at least once a week
Never						
Less frequently than once every six						
At least once every six months						
At least once every three months						
At least once a month						
At least once a week						

The application of the above-mentioned method to determine the *involvement in a given type of secondary association*, measures indicators to facilitate a detailed assessment of association-based social capital and its constituents. Such indicators describe:

- **involvement in at least one secondary association**; the indicator is 1 – for participants in at least one type of secondary association, or 0 – for others who are not actively involved in any type of secondary associations;
- **involvement in at least one religious group**; the indicator is 1 – for participants in a religious association, group or organisation (item 2 on the above secondary association list by type), or 0 – for others who are not actively involved in any religious group;
- **involvement in at least one secular secondary association**; the indicator is 1 – for participants in one type of secondary associations for at least one type of secondary associations (items 1, 3, 4, 5, 6, 7, 8 on the above list of associations by type), or 0 – for others who are not actively involved in any secular secondary association;

**Note 4.1. (cont.)**

– **involvement in two or more types of secondary associations (bridging social capital in secondary associations)**; the indicator is 1 – for participants in at least two types of secondary associations, or 0 – for others who are either actively involved in one type of a secondary association only or are not actively involved in in any type of secondary associations.

In addition, a (synthetic) **association-based social capital indicator** and an **association-based social capital rating** were defined, mainly for the purpose of comparison with other social capital constituents (including informal capital). These indicators are an attempt to deliver a conventional estimate of a person's association-based capital capacity, regardless of its sources (organisation types). The capital capacity is measured by the number of organisation types a given person is involved in. Higher values of the indicator are associated with bridging capital.

The number of secondary associations in which a given person was involved is a **synthetic association-based social capital indicator**.

It served as the basis for defining an **association-based social capital rating**, which employs a descriptive scale, similarly to the other constituents of social capital described later in this chapter.

The classes of association-based social capital are as follows:

- high and very high – for persons actively involved in three or more types of secondary associations,
- medium – for persons actively involved in two types of secondary associations,
- low – for persons actively involved in one type of secondary associations,
- very low or zero – for the others whose involvement in any type of secondary associations is insignificant.

Having defined the nature of data on membership of/sense of affiliation with a given association, and the principles for the compilation of indicators measuring involvement in secondary participation, let us now proceed to the assessment of data obtained from the survey. The data show that nearly one adult Pole in five (18%) declares him/herself part of some religious association, group or organisation, while the number of persons in the surveyed population who can be considered actively involved in secondary religious groups proved to be almost half that amount (10%). A similar situation, with membership/sense of affiliation greatly outweighing the actual involvement in an organisation, is also found in trade unions and other workers' organisations (membership is declared by 7% of the persons, while active involvement is characteristic of only 3% of them), housing condominia (7% and 1%, respectively), and likely also in professional and business associations (2% and 1%). The largest, as nearly five-fold, superiority of formal membership over actual involvement was identified in cooperatives (8% of persons declared membership and only less than 2% - actual involvement).

A reverse situation, i.e. actual involvement dominating over sense of affiliation, was observed in initiatives and groups operating at public institutions and facilities. A sense of membership in such groups was reported by 2% of persons, while active involvement in such structures was found in nearly 4% of them.

A relatively high membership, corresponding, however, to actual involvement in terms of distribution, was found in secular NGOs, i.e. associations, foundations and similar organisations and groups. Membership of at least one secondary association of this kind was declared by 10% of persons, and nearly 11% proved to be actively involved in such organisations.

**Table 4.3.**

**MEMBERSHIP OF (SENSE OF AFFILIATION WITH) SECONDARY ASSOCIATIONS AND ACTIVE INVOLVMENT BY TYPE OF ASSOCIATION**

in % of persons aged 16 or more

	<i>Persons declaring membership of/sense of affiliation with the following secondary associations</i>	<i>Persons considered as actively involved members of secondary associations</i>
Secular NGOs <sup>a</sup>	10.1	10.6
Churches, religious associations and organizations <sup>b</sup>	18.4	10.4
Trade unions and other worker's organizations	6.6	3.1
Political parties	0.8	0.7
Professional and business organizations <sup>c</sup>	2.1	1.4
Cooperatives	8.2	1.5
Housing condominia	6.5	2.6
Initiatives that fall within the operation of public institutions (local-government or government) <sup>d</sup>	1.9	3.5
<b>At last one type of the above - mentioned secondary associations</b>	<b>30.7</b>	<b>23.7</b>
<b>including secular secondary associations</b>	<b>17.6</b>	<b>17.8</b>

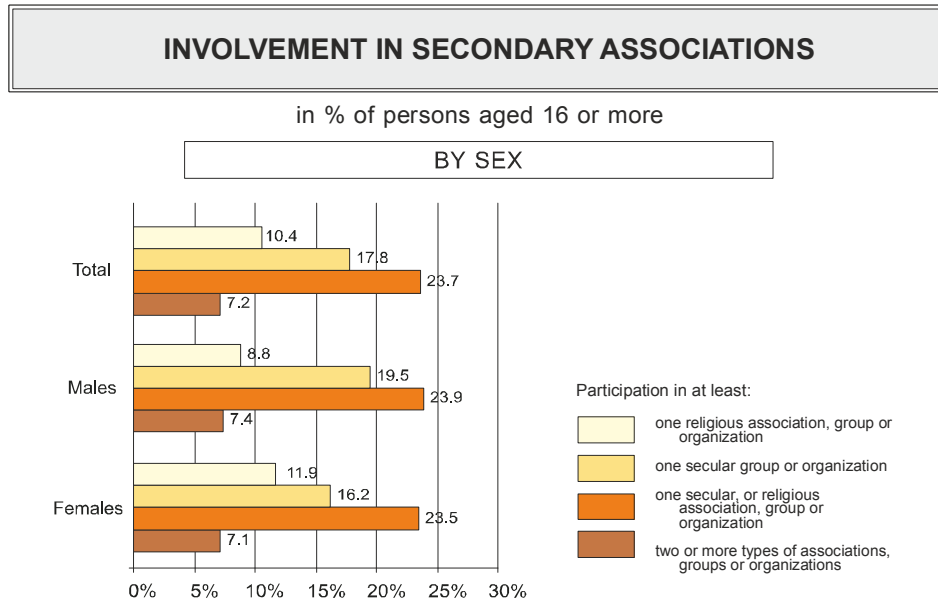
<sup>a</sup> Such as: associations, foundations, sports clubs, volunteer fire brigades, hunting or fishing associations, parent's association, internet groups. <sup>b</sup> Such as: parishes, parish councils, rosary associations, charity groups, Caritas, the Catholic Action, Orthodox brotherhoods, diaconies, Orthodox mercy centres. <sup>c</sup> Such as: farmer's associations, country housewife's clubs, guilds and chambers of crafts, chambers of commerce, chambers of physicians and dentists, or chambers of nurses, bar councils, etc., trade, services and transport associations. <sup>d</sup> Such as: choirs, bands, clubs, hobbyists clubs operating at community centres, nursing centres, public libraries, local-authority auxiliary units, etc.

**Association-based social capital by sex and place of residence**

When assuming a collective approach towards secondary associations, no differences are evident between males and females, nor between urban and rural areas. The share of persons involved in at least one secondary association remains at about 24%, and the percentage of persons actively involved in at least two types of secondary groups is 7%.

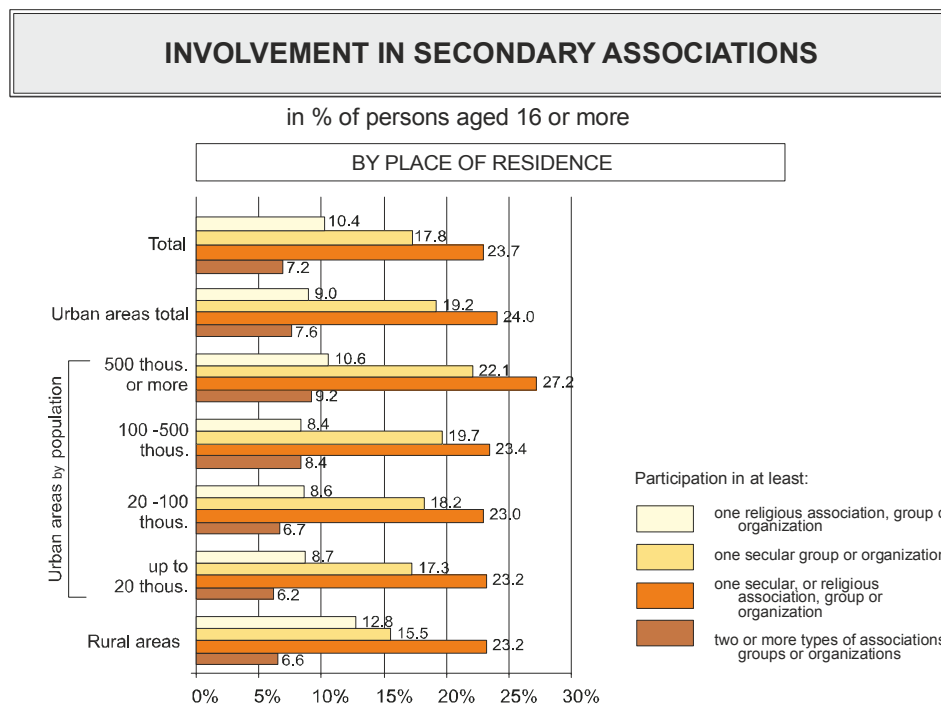
However, the confrontation of religious versus other secondary secular groups, reveals considerable discrepancies in association-based social capital, both between men and women, and between inhabitants of urban and rural areas (Figure 4.1. and 4.2.).

Figure 4.1.



Evidence shows that involvement in religious associations, groups and organisations was more popular among women (12%) than men (9%); active involvement was, in addition, more widespread among inhabitants of rural (13%), compared with urban (9%) areas. Other, secular types of secondary associations, in turn, proved to be dominated by men (20%, with 16% for women) and urban inhabitants (19%, with 16% actively involved persons from rural areas).

Figure 4.2.



When taking the size of urban areas into account, it becomes evident that among inhabitants of the largest cities (above 500 thous. inhabitants), the number of persons involved in secondary associations is not only the highest for secular organisations, but is also relatively high for religious associations, groups and organisations (11% against 9% in less populated areas). As a result, secondary-association network, measured in aggregate terms, is most built-up in cities with over 500 thous. inhabitants (with 27% of them involved in at least one secondary association).

Two largest urban thresholds also show a relatively high accumulation of association-based bridging capital, since they prove to have the largest shares of persons actively involved in at least two types of secondary groups (in cities with more than 500 thous. inhabitants, it was 9%, while in those between 100 thous. and 500 thous. inhabitants – 8%). On a side note, it is also worth mentioning that involvement in at least one secular secondary association is directly proportional to town size.

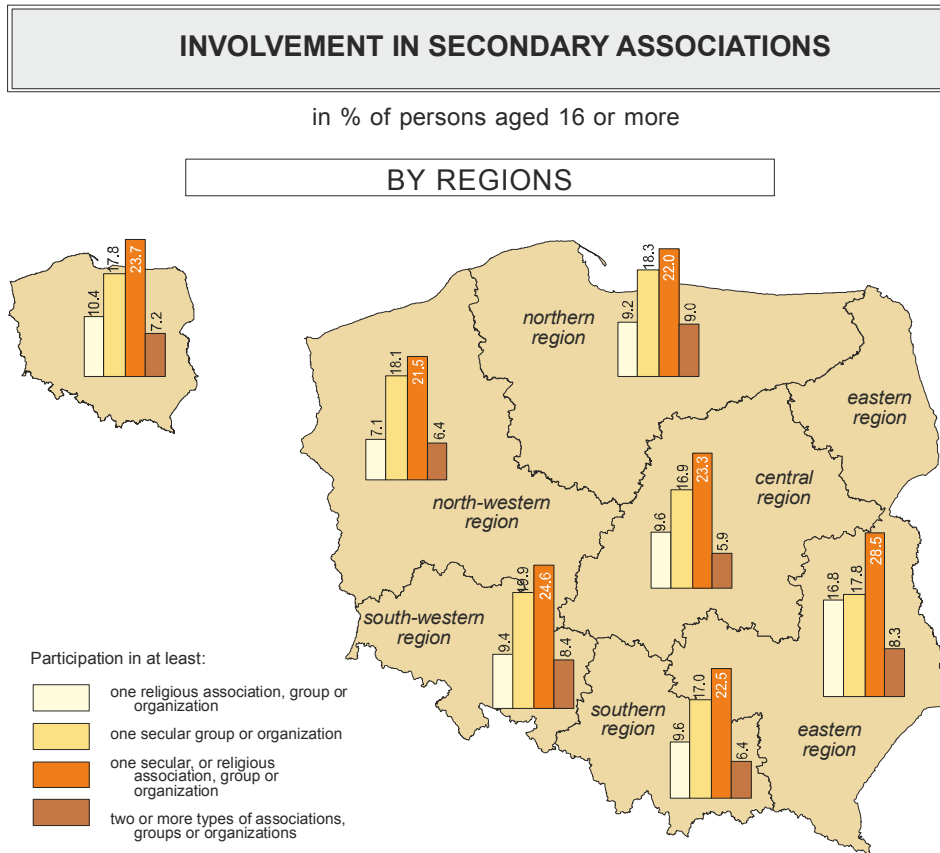
### **Association-based social capital by regions**

Individual regions (NTS1) show wide disparities in social capital levels. The lowest ratio for involvement in secondary associations (22%) and, at the same time, for involvement in religious groups (7%) was recorded in the north-western region (zachodniopomorskie, lubuskie and wielkopolskie voivodships). Conversely, the ratios reached their top values in the eastern region (podlaskie, lubelskie, podkarpackie and świętokrzyskie voivodships), with 29% involvement in secondary associations and 17% with religious groups. In respect of secular associations, ratios for individual regions were less diverse and equalled between 17% in the central (mazowieckie and łódzkie voivodships) and southern regions (małopolskie and śląskie voivodships) and 20% in the south-western region (dolnośląskie and opolskie voivodships), where the recorded result for participation in secondary associations, despite the lower level of involvement in religious groups, was higher than the average (25%).

The highest bridging-capital indicators were recorded in the northern, south-western and eastern regions (8-9%). The high bridging-capital ratio in the eastern region was the result of the region's most extensive network of participation in religious groups (17%) and average participation in secular groups (18%), as joint contributors. In the case of the south-western region, this was associated with the highest involvement in secular organisations and groups (20%) and second largest active involvement in at least one secondary association (25%). In the northern region, in turn, a high level of bridging capital was achieved despite it having one of the lowest indicators for the participation in a secondary association (22%). To put this situation in network terms, we could say that despite a relatively modest network of secondary associations among the population of this area, it was characterised by the largest number of multilateral connections (the largest share of persons belonging to more than one framework).



Map 4.1.



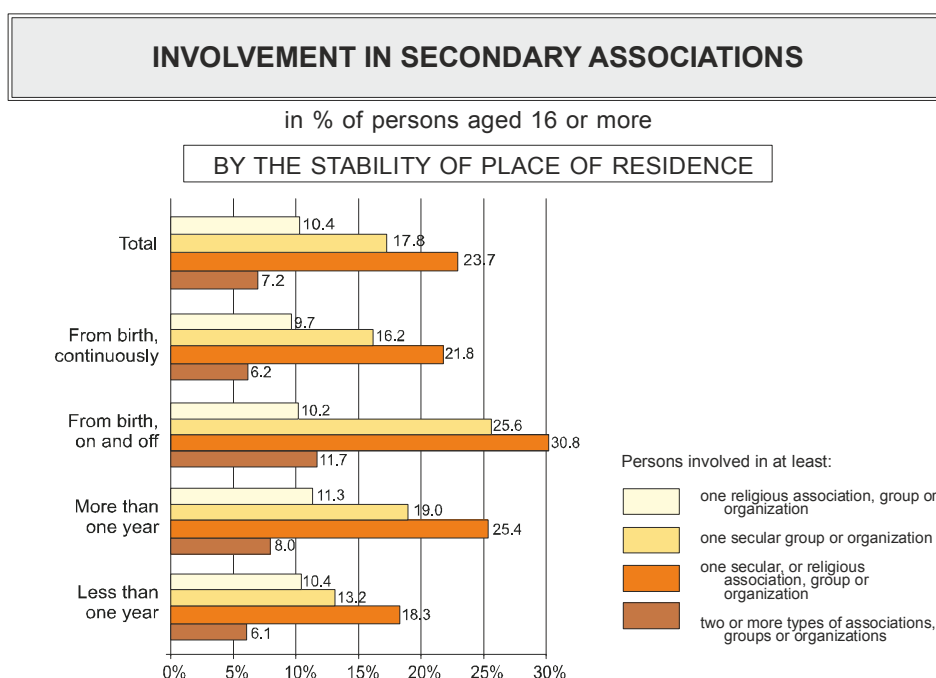
The lowest indicators for bridging capital (6%) were recorded in the central (mazowieckie and łódzkie voivodships), southern (śląskie and małopolskie voivodships) and north-western regions. Low bridging capital indicators in those regions were accompanied by a relatively low indicators describing active involvement in any secondary groups, and particularly in relation to religious groups. It is of note that in the central and southern regions the number of persons living in the country's largest cities is considerable.

#### Association-based social capital and stability of place of residence

In concluding the analysis of a territorial position's influence on the participation in secondary groups, the stability of place of residence should also be considered. As it turns out, the highest incidence of persons involved in at least one secular secondary association is reported by persons who have returned to a place of the childhood after a longer period (over a year) of living outside their place of origin (26%). Therefore, these are persons who could get involved in secondary associations during their absence and who maintain such connection after returning to their background, and at the same time, re-established, or had not lost touch with local secondary associations operating in such a background. It is also possible that the "returners" are persons who, in the meantime, had gained knowledge

or experience which motivated them to get involved in the associations operating in their present place of residence. In any case, the "returners" exhibit not only the largest association-based social-capital capacity (the share of participants in at least one secondary group is 31%), but also the highest bridging capital (12% of them are active in at least 2 secondary groups). Interestingly, above-average participation in secondary associations reported by the "returners" does not apply to their involvement in religious groups, where the level of participation is reported to be stable, regardless of persons' place of residence.

Figure 4.3.



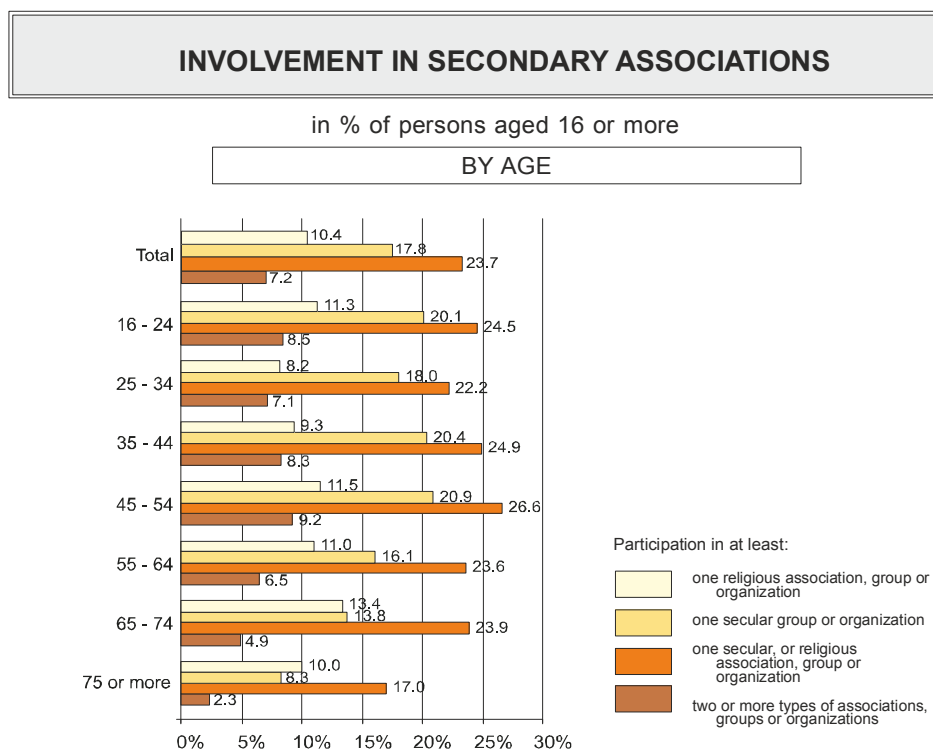
The second largest group in terms of above-average participation in secondary groups, are persons who have moved to another place and have live there for at least a year. Participation is slightly lower among persons who have not changed their place of residence, and it is the lowest among persons who have not yet become accustomed to the new place of residence, as their arrival there had occurred less than 12 months before.

### Association-based social and age

Next to place of residence, and to some extent also sex, the participation in various types of secondary associations is also largely determined by age. The highest involvement in at least one secondary association, including at least one secular organisation, as well as the highest bridging-capital capacity is recorded among persons who have found themselves halfway through their occupational time frame, as well as among the youngest persons. In the youngest analysed age group, i.e. persons aged

16-24, 25 participants reported to be involved in at least one secondary group, and 20% of them with at least one, and 9% with more than one, secular organisation. Further down the scale, i.e. among persons aged 25-34, active involvement in secondary associations drops by 2-3 percentage points across all indicators. This is probably associated with the focus on launching one's career and, in many cases, setting up one's own family at the same time. In the subsequent two decades of life, active involvement gradually increases to reach its maximum between 45-54 years of age, when the occupational and family situation allow deeper involvement in free-time activities (27% of such persons are involved in at least one secondary group, 21% in at least one secular organisation and 9% in more than one secondary organisation). Later on, there is a progressive decrease in involvement, with 75 years of age as a critical threshold when the decline becomes particularly significant (17% over 75 years of age are involved in at least one secondary group, 8% with at least one secular organisation and only 2% with more than one secondary association).

Figure 4.4.

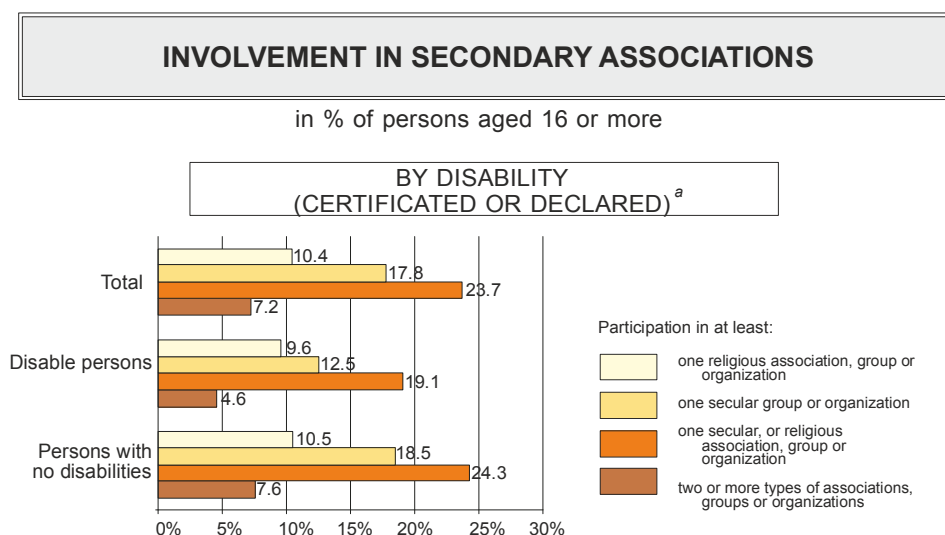


In terms of religious associations, groups and organisations, the most active involvement ensues with entering into retirement age (13% of persons aged 65-74 were involved) and the period referred to by economists as the non-mobility age (ca. 11% of persons aged 45-64 were involved), as well as when entering into adulthood, i.e. 16-24 (11%).

## Association-based social capital and disability

The issue of disability is generally viewed as a barrier to active participation in various areas of life, including active involvement in secondary associations. Indeed, persons with disabilities proved to exhibit lower association-based social capital, including bridging social capital, than their healthy peers. Differences between the group of persons with disabilities and the other persons were not high, but proved statistically significant. The only exception was involvement in religious associations, groups and organisations, where the involvement of persons with disabilities was found to be at the same level as in the case of able-bodied individuals.

Figure 4.5.



<sup>a</sup> Longer than 6 months health problems, confining every-day activities (appropriate to the age), such as: studying, working, keeping a household, self-service.

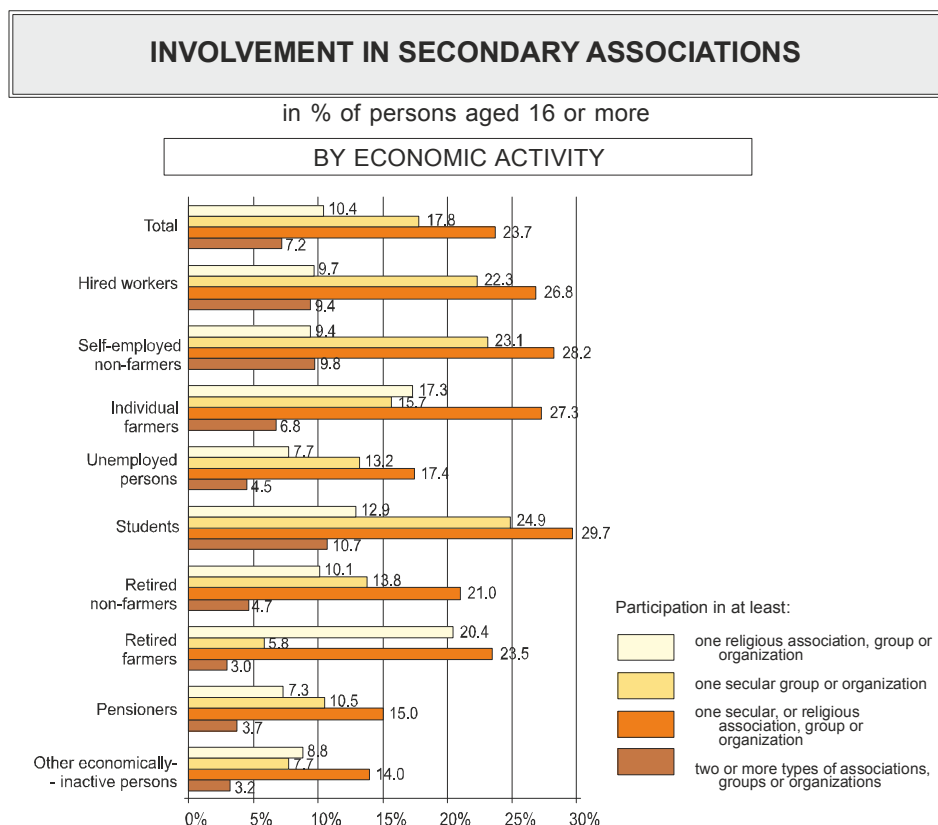
## Association-based social capital by socio-occupational status

The variable that was revealed to have more influence over involvement in secondary groups than all the previously analysed is the socio-occupational status, known also as the economic activity status<sup>12</sup>. The importance of this correspondence is largely due to the combined impact of the previously-defined factors such as age or place of residence on some categories of the socio-occupational status. Involvement in religious groups is closer in the socio-occupational categories connected with living in rural areas and being in post-working or early working age. Therefore, the involvement in religious groups is reported to be the most intense among retired farmers (20%) and individual farmers (17%)

<sup>12</sup> The causal relationship between the involvement in secondary groups and e.g. being employed or unemployed is debatable as the question of whether poor involvement in associations among unemployed persons is the consequence of the unemployment itself, or conversely - the difficulty in finding employment results, among others, from the lack of social interaction which facilitates employment, has been subject to controversy.

with students coming next (13%). Average involvement in religious groups is, in turn, recorded for categories of persons generally living in urban areas and being either retired non-farmers and non-family labour, as well as self-employed non-farmers (9-10%). The lowest involvement in religious associations, groups and organisation was identified among unemployed persons (8%) and pensioners (7%).

Figure 4.6.



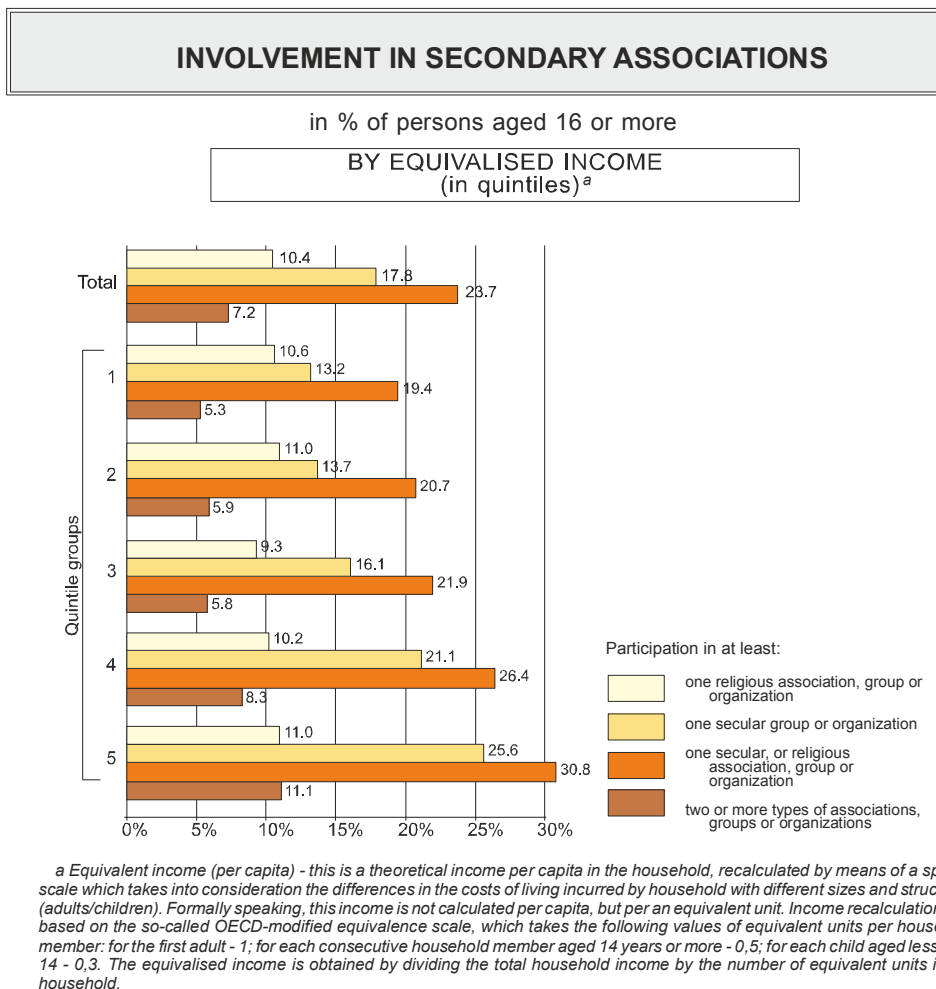
The lowest involvement in secular secondary associations was reported among retired farmers (6%), who, on the other hand, showed a very intense involvement in religious groups. A rather low involvement in secular secondary associations was also found among pensioners (11%), retired non-farmers (14%) and other economically-inactive persons (9%) as well as unemployed persons (13%). At the same time, these groups were characterised by the lowest participation in religious groups.

The largest share of persons involved in at least one secular organisation, at least one secondary group and at least two secondary associations was found among students (25%, 30% and 11% respectively), self-employed non-farmers (23%, 28% and 10%), and non-family labour (22%, 27% and 9%).

## Association-based social capital by income

The causal relationship between income and involvement in secondary associations is just as vague as in the case of such involvement and the employment status. Nevertheless, what goes without question is that there is a correlation between income and involvement in secondary group networks. Assuming that involvement in associations is a function of the income allows a claim that it is an increasing function, both when it comes to participation in at least one secondary association (association-based capital grows from 19% in the lowest-income group to 31% in the top-income group), and with at least two secondary groups (association-based bridging capital grows by between 5% in the first quintile to 11% in the fifth).

Figure 4.7.



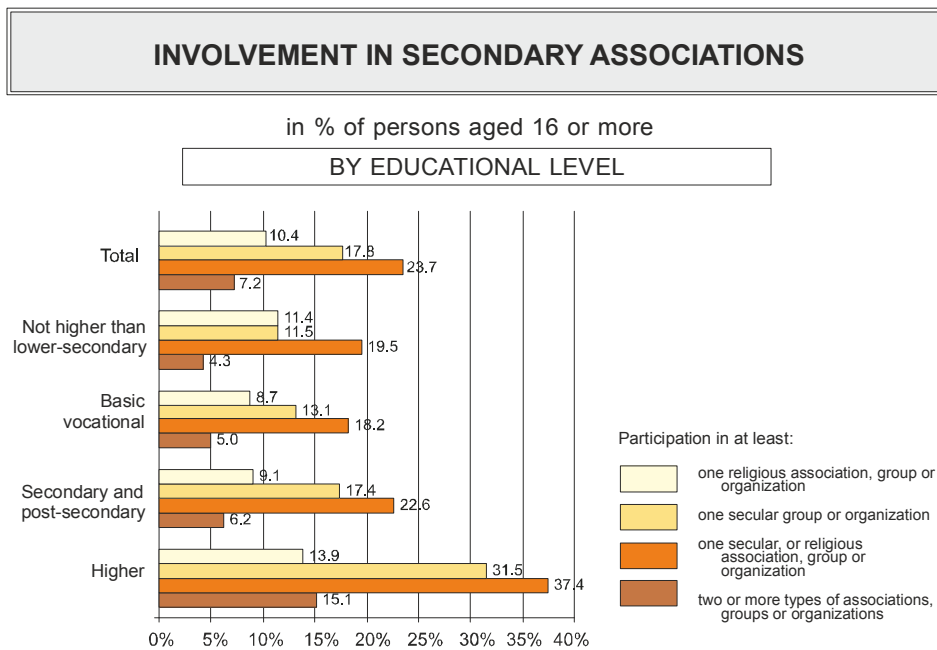
The above diagram also shows that the income situation is connected with the involvement in secular organisations and groups (the higher the equivalent income, the higher the participation),

while the involvement in religious associations, organisations and groups holds no particular relevance for income situation.

### Association-based social capital by education

The factor that mostly impacts participation in secondary associations is level of educational attainment. Involvement in secular secondary groups was reported by less than 12% of persons with education up to lower secondary school, while among the graduates of basic vocational and secondary schools, the share grew by nearly 2 and 4 percentage points respectively, to further increase for higher education by as much as 14 percentage points and hence, to reach over 31%.

Figure 4.8.



Active involvement in religious group was the highest among persons with the highest education (14%). It was also rather high among the people with lower secondary and primary educational levels(11%). In contrast, the lowest participation was identified among persons with basic vocational and secondary education (9%).

As a result, active participation in at least one secondary group was the highest among persons with higher education (37%) and much lower for those possessing the secondary educational level (23%) and up to lower secondary education (20%) categories, with those with the basic vocational education (18%) at the lowermost end.

Bridging social capital, measured by the share of persons participating in at least two types of secondary associations grew, similarly to participation in at least one secular association, along with

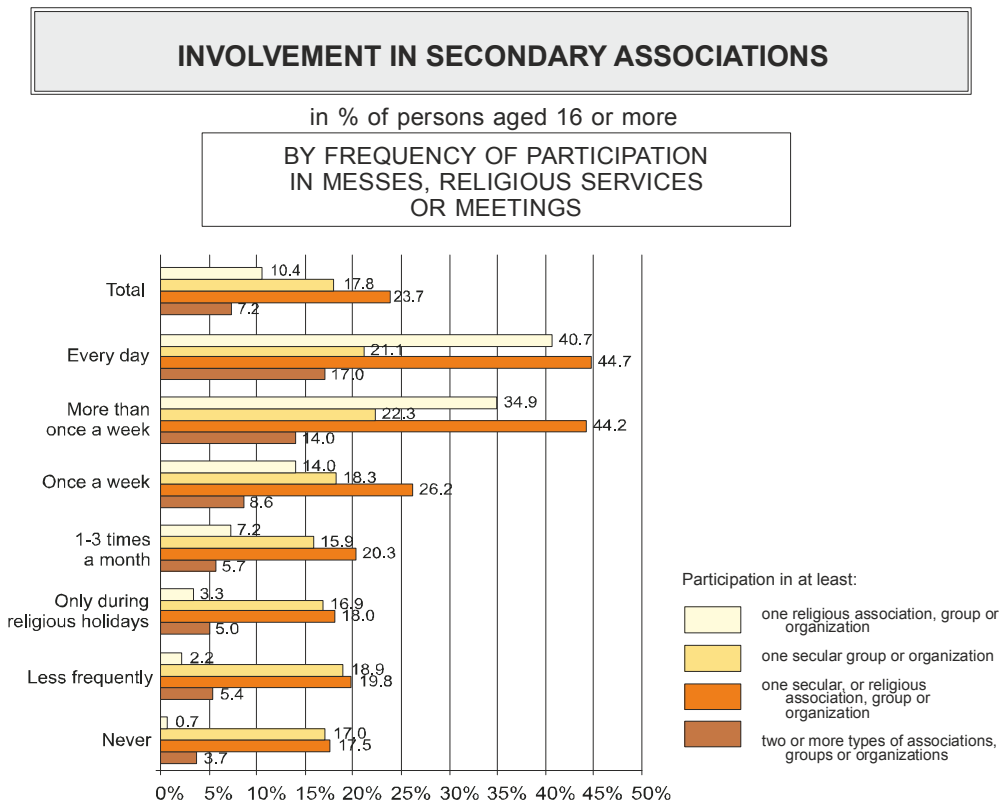
education levels. Growth dynamics for this indicator was very high, with active participation, which was 4% for the least educated, growing nearly fourfold for persons with higher education (15%).

**Association-based social capital and religious practices**

Another major factor to impact participation in secondary associations is engagement in religious practices. This impact is the strongest and the most regular in relation to participation in religious groups. Involvement in such groups grows from nearly 1% for persons who never participate in religious services, to 41% for persons who take part in group religious practices on a daily basis, and to 35% for persons who do so at least once a week.

The highest participation in secular organisations and groups is also connected with participation in religious rituals on a daily basis (21%) or slightly less often but still more than once a week (22%). Religious practices done less than once a week are connected with lower participation in secular secondary associations. However, the correspondence is not so regular any more (various figures for participation in secular associations, range from 16% to 19%, among persons participating in them less frequently than once a week).

Figure 4.9.



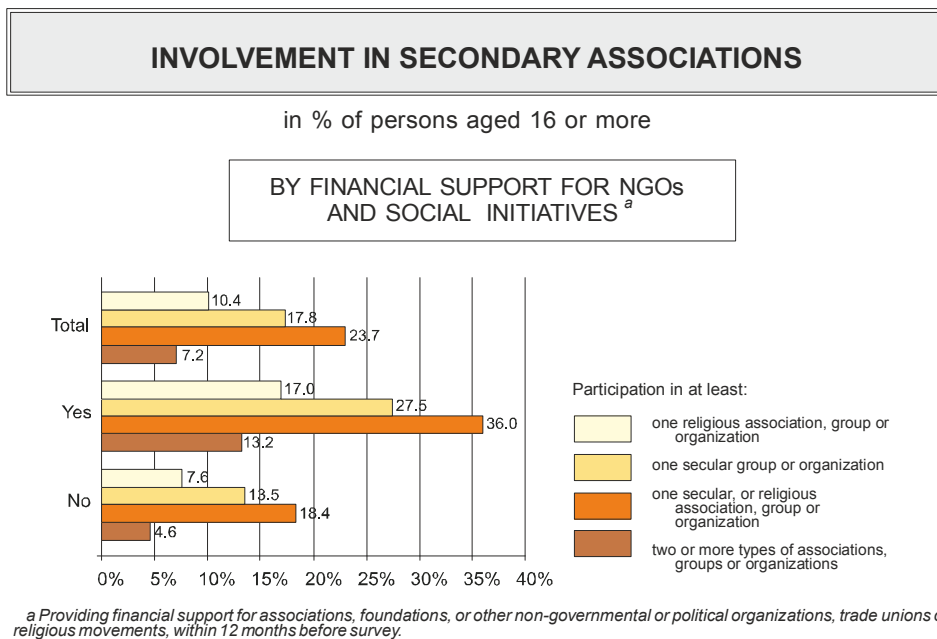


As a result of the above-mentioned linear and non-linear correspondences between the frequency of religious practices and participation in secondary religious groups and secular associations, explicit dependency has also been identified between the frequency of religious practices and the distribution of membership of at least one or at least two secondary associations. Therefore, the higher the participation in religious practices, the higher the level of overall association-based capital and bridging capital.

### Association-based social capital and financial support for NGO's and social initiatives

Participation in secondary groups, expressed by a fairly regular voluntary service or participation in events is also closely connected with financial generosity towards various types of secondary associations (including donations and contributions, but not 1% Personal Income Tax deduction). Compared to other groups, the participation doubled for persons who supported secondary groups with their money at least once a year. Such correlation was equally strong in respect of religious associations and organizations, as well as secular organizations and groups.

Figure 4.10.

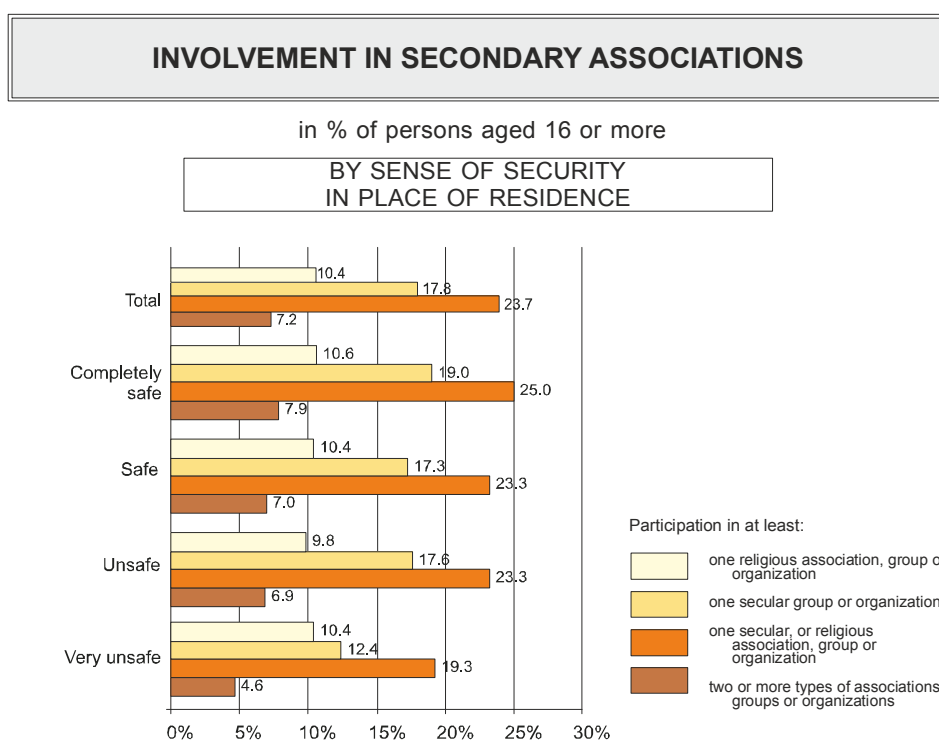


The correlations between the involvement in organizations and supporting them with donations or membership fees, as described above, are especially prominent in respect of bridging social capital. The share of active members of two or more types of secondary groups is as much as three times higher among persons who support such organizations financially (13%), compared to persons who do not support any organizations or associations throughout the year (5%).

## Association-based social capital and sense of security in place of residence

Relevant literature on social capital often suggests the existence of a correspondence between the sense of security and health and well-functioning of a local community. Crime statistics, on the other hand, serve as an indicator of social dysfunction and low level of social capital. Taking this into account, one of possible causal relationships is that the sense of security encourages people to get involved in social interaction, e.g. in secondary sports, cultural or leisure-oriented associations<sup>13</sup>.

Figure 4.11.



Data from the social cohesion survey confirms that there might be a relationship between the sense of security and membership of various organizations, associations or groups. It indicates that persons who feel completely safe walking alone around their neighbourhood, are more often involved in secular secondary associations (19%) than those who declare feeling very unsafe in such a situation (12%). A similar relationship is found between the sense of security and association-based bridging capital, with the share of persons involved in at least two secondary groups among the persons who felt completely safe (8%) markedly exceeding those that identified as being among persons who felt very unsafe (5%).

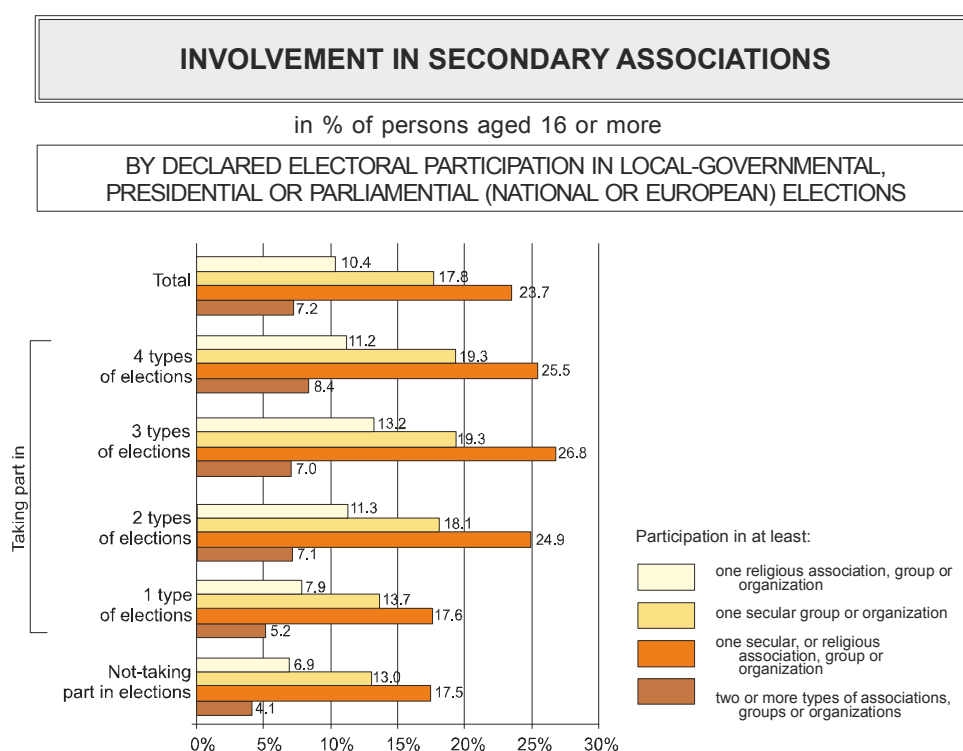
<sup>13</sup> *Social Capital and social well-being. Discussion paper*, Australian Bureau of Statistics, 2002, p. 24.

It is of note that the above-mentioned correspondence does not apply to the involvement in religious groups – where the involvement remains at a steady level, regardless of the sense of security in one's place of residence.

### Association-based social capital in terms of voting participation

From Alexis de Tocqueville, who called associations "the great schools of democracy", to modern Polish literature on political participation, the regularly recurring claim is that involvement in various social organisations impacts on the so-called civic behaviour<sup>14</sup>.

Figure 4.12.



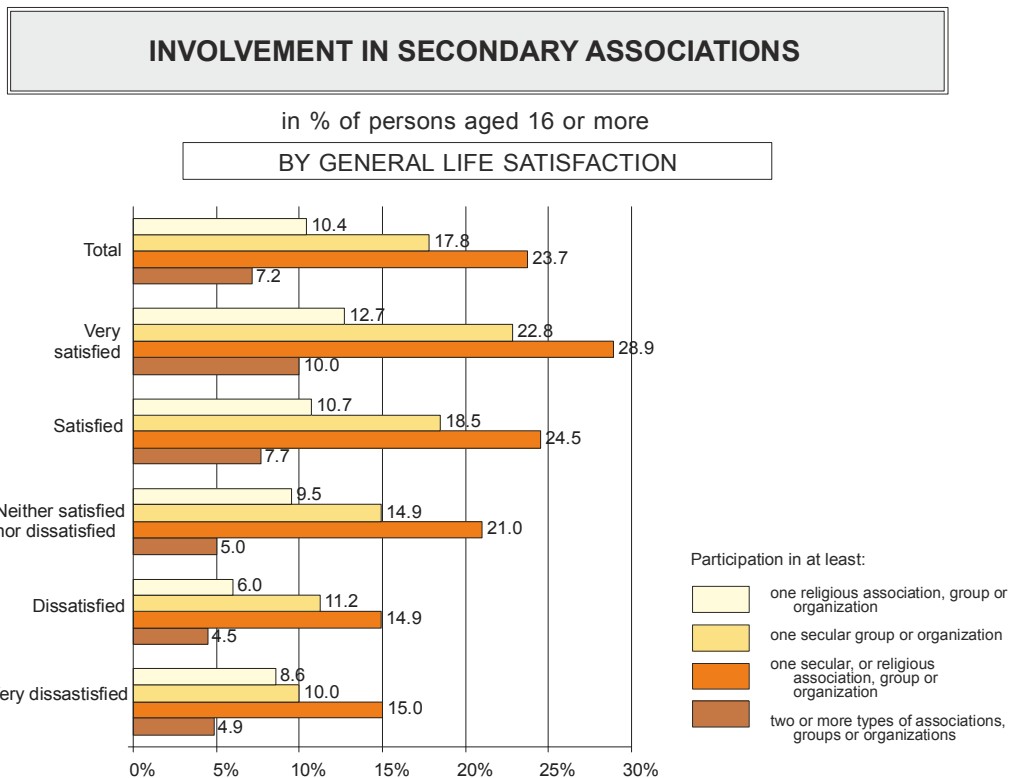
The social cohesion survey also shows a relationship between involvement in secondary associations and the (declared) number of various types of elections a person has taken part in. Persons who have not taken part in any elections show low involvement in religious groups and secular associations, as well as low bridging capital (7%, 13% and 4%, respectively). At the same time, among the persons who reported to have taken part in the last three of four elections, the number of those involved in secondary associations was markedly higher (11-13%, 19% and 7-8%, respectively).

<sup>14</sup> Alexis de Tocqueville, op.cit.; Tomasz Żukowski, Maria Theiss, op. cit.

## Association-based social capital and life satisfaction

Overall life satisfaction is also listed as a correlate of involvement in secondary associations. In light of the social cohesion survey findings, the relationship between the involvement in secondary groups and overall life satisfaction was even slightly stronger than the correlation between involvement in secondary associations and voting participation.

Figure 4.13.



Life satisfaction was generally positively correlated with association-based capital, including bridging capital. The most life-satisfied group showed the highest involvement in secondary groups (29%), both religious (13%) and secular (23%), and the highest number of persons involved in at least two types of secondary organisations, associations or groups (10%). This nearly direct correspondence broke off only for persons deeply dissatisfied with their lives, who showed higher involvement in religious groups than other persons (9% and 6% respectively). At the same time, in terms of secular secondary associations, positive relationship between life satisfaction and involvement in associations was maintained, with persons deeply dissatisfied with their lives showing the lowest involvement in secular associations (10%).

### **3. INFORMAL SOCIAL CAPITAL**

The social cohesion survey is an opportunity to analyse various constituents of social capital, not only in respect of association-based capital connected with involvement in formal groups and organisations (secondary associations), but also informal capital, as mentioned at the beginning. Let us be reminded that the characteristic feature of the latter is that it rests on close relationships between persons who interact personally within basic social structures, such as family, friends or neighbour communities. For the purpose of analysing informal social capital, there were established three aggregate indicators. These include the overall informal capital, and two specific indicators, namely the family-based capital and friends and neighbours-based capital. The indices of social capital included all of the contacts and relations, that involved the potential for obtaining spiritual or material support when the need of the support arise. The development of the indicators is described in detail in the Methodological note (see. Note 4.2). The analytical part refers to categorised indicators to describe the social capital level in a provisional four-level scale (from "high and very high", "medium", "low", to "very low or none").

#### **The diversification of informal social capital**

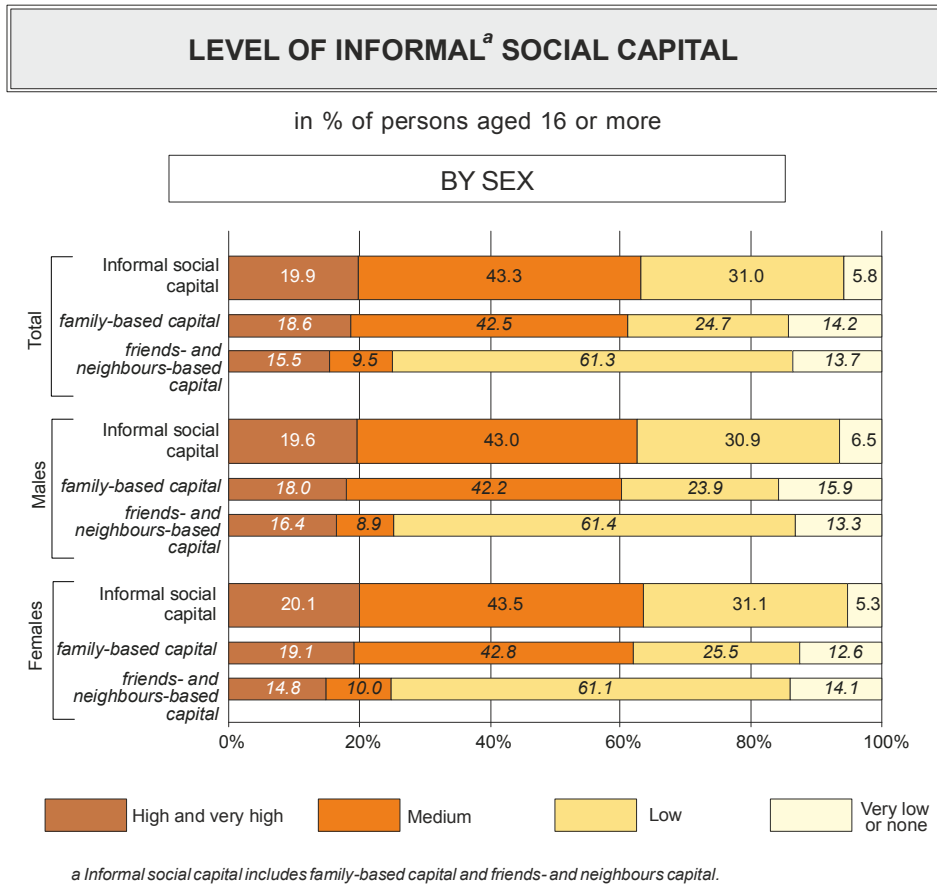
The social cohesion survey reveals that in view of the adopted criteria, approx. one fifth of persons aged 16 years or more show high or very high informal social capital. Very low or none social capital, measured as participation in informal networks, is characteristic of 6% of the persons. The largest group (43%) comprises persons with medium informal capital.

In Poland, considering two analysed forms of informal capital, it is assumed that the central role is played by family-based capital. At least medium level of such capital was recorded for more than 61% of persons aged 16 years or more, including 19% of persons characterised by high or very high levels. Very low or none family-based capital was identified among 14% of the population.

As regards friends and neighbours-based capital, the majority were persons with low social capital (61%), while medium or high levels were recorded for one fourth of persons (25%) aged 16 years or more. Similar to family-based capital, very low or none friends and family-based capital was identified among 14% of the population.

No serious discrepancies were identified between informal capital levels of men and women. High or very high capital applied to 20% of men and women. Most of males, as well as females (43%), presented a medium level of informal social capital. However, among men, there were a slightly higher share of persons with very low or none informal capital. Women, in turn, exhibited a little higher family-based and slightly lower friends and neighbours based capital than men.

Figure 4.14.



**Note 4.2.**

**THE ASSESSMENT OF INFORMAL SOCIAL CAPITAL**

The assessment of informal social capital involved the development of an aggregate indicator, created by the aggregation of intermediate variables expressing the occurrence or non-occurrence of specific capital-building relationships and bonds, and their quality.

In principle, the study considered the relationships and bonds where a person could count on material or spiritual support from a given person or group of persons. Regardless of the frequency, social contacts were not examined if they were not accompanied by a person's declaration that he or she can get a support from a given person/group of persons. In contrast to indicators of social contacts and social isolation, while measuring social capital a fact whether a person lives with a given person or not (only external contacts were taken into account for contact indicator) did not matter.

Each type of considered relationships could have assigned 2 points constituting (after adding up) the relevant indicator. In the majority of cases (except for relationships with neighbours), the adopted methodology was as follows:

**Note 4.2. (cont.)**

- 1 point if a person declared that he/she may receive a financial support from a given person/group (i.e. he/she would ask for such help if need be);
- 1 point if a person may receive a spiritual support (i.e. he/she would ask for such support).

Points were then added up, hence 2 points were given if both types of potential support were declared. For a given type of relationship to be taken into account, there had to be a declaration of the presence of any interaction with a given person (not necessarily personal, but also by phone or mail), even if very infrequent (only the "none or close to none" option was dismissed). In line with this principle, the following types of relationships were given points (each type separately):

1. with mother,
2. with father,
3. with siblings,
4. with children,
5. with other relatives/in-laws such as father/mother-in-law, (great)grandparents, (great)grandchildren,
6. with other family members,
7. with friends, colleagues or acquaintances.

If a given type of a relationship covered a group made up of several people, the assessment was, in practice, determined by the closest bonds (satisfactory relationship with any member of the group was sufficient to be "awarded" an appropriate number of points).

The last, 8th type of a relationship - neighbours-based - also employed a scale with a 2-point cap. In this case, however, the "awarded" number of points was conditional on the closeness of a relationship:

- 1 point signified a relatively casual neighbourly relationship, involving small favours for one another;
- 2 points were applied when a relationship was on more intimate terms, and involved spending free time together, taking part in family gatherings, etc.

The overall informal capital is the sum of all points associated with all the eight capital constituents (relationship types) described above. It can take values ranging from 0 to 16.

Its constituents (the relationships assessed) can be divided into two groups, i.e. elements connected either with family-based capital or friends and neighbours-based capital. The latter includes relationships with friends, colleagues, acquaintances and neighbours. The other constituents involve relationships with family in its broad sense (relatives and in-laws) and are considered part of family-based capital. Two specific indicators were established in view of the above classification, namely family-based capital (ranging from 0 to 12) and friends and neighbours-based capital (ranging from 0 to 4).

**Note 4.2. (cont.)**

Thus defined, the three indicators (overall informal capital and two specific indicators) expressed by way of the number of "points" were supplemented with categorised indicators so as to evaluate a given capital descriptively using one of the following four levels:

- high and very high,
- medium,
- low,
- very low or none.

In presenting the level of a given capital, this publication uses such categorised indicators. Contrary to the basic indicators which differ in their respective value ranges, these allow the comparison of different capital types. In order to ensure the highest level of comparability possible, standardised categorisation principles were adopted, where:

- high and very high levels correspond to basic indicators higher than half the theoretical maximum value,
- medium level corresponds to basic indicators higher than one-fourth of the theoretical maximum value,
- low-level classification applies to the presence of individual capital constituents. This corresponds to the basic indicator being higher than 1 or even different than 0 (for friends and neighbours-based capital - due to the small number of the indicator constituents).

In addition, a condition was imposed requiring that for a given capital to be classified as medium or high, a person would have to have a person/group whom they could ask both for material and spiritual support (it did not have to be the same person/group). Failure to satisfy this condition, even if the basic indicator confirmed eligibility for higher level, resulted in such person being classified as low capital level.

Moreover, with a view to ensuring the consistency of specific indicators with respect to the high-level indicator, it was assumed that the overall informal capital value can neither be higher than that of the more favourable of the specific indicators, nor lower than the less-favourable of them.

The tables below present information on the distribution of basic indicators and their individual categorised indicator levels. Actual categorised indicator distribution differs somewhat from those that could be produced on the basis of the following account due to the additional conditions adopted.

**Table 1. The distribution of friends and neighbours-based capital**

Indicator value	The share of persons	The aggregate share of persons with a given indicator value <sup>a</sup> and persons		Level (categorised capital)
		with a lower capital	with a higher capital	
0	13.7	13.7	100.0	very low or none
1	28.4	42.1	86.3	low
2	27.7	69.8	57.9	medium
3	21.8	91.6	30.2	high
4	8.4	100.0	8.4	

<sup>a</sup> Means indicator value equal to that identified next to the table.



Note 4.2. (cont.)

Table 2. The distribution of family-based capital

Indicator value	The share of persons	The aggregate share of persons with a given indicator value <sup>a</sup> and persons		Level (categorised capital)
		with a lower capital	with a higher capital	
0	8.4	8.4	100.0	very low or none
1	5.8	14.2	91.6	
2	15.0	29.1	85.8	low
3	9.0	38.1	70.9	
4	18.9	57.0	61.9	medium
5	8.2	65.2	43.0	
6	16.3	81.4	34.8	high and very high
7	4.7	86.1	18.6	
8	9.4	95.5	13.9	
9	1.4	96.9	4.5	
10	2.9	99.8	3.1	
11	0.1	99.9	0.2	
12	0.1	100.0	0.1	

<sup>a</sup> Means indicator value equal to that identified next to the table.

Table 3. The distribution of the overall informal capital

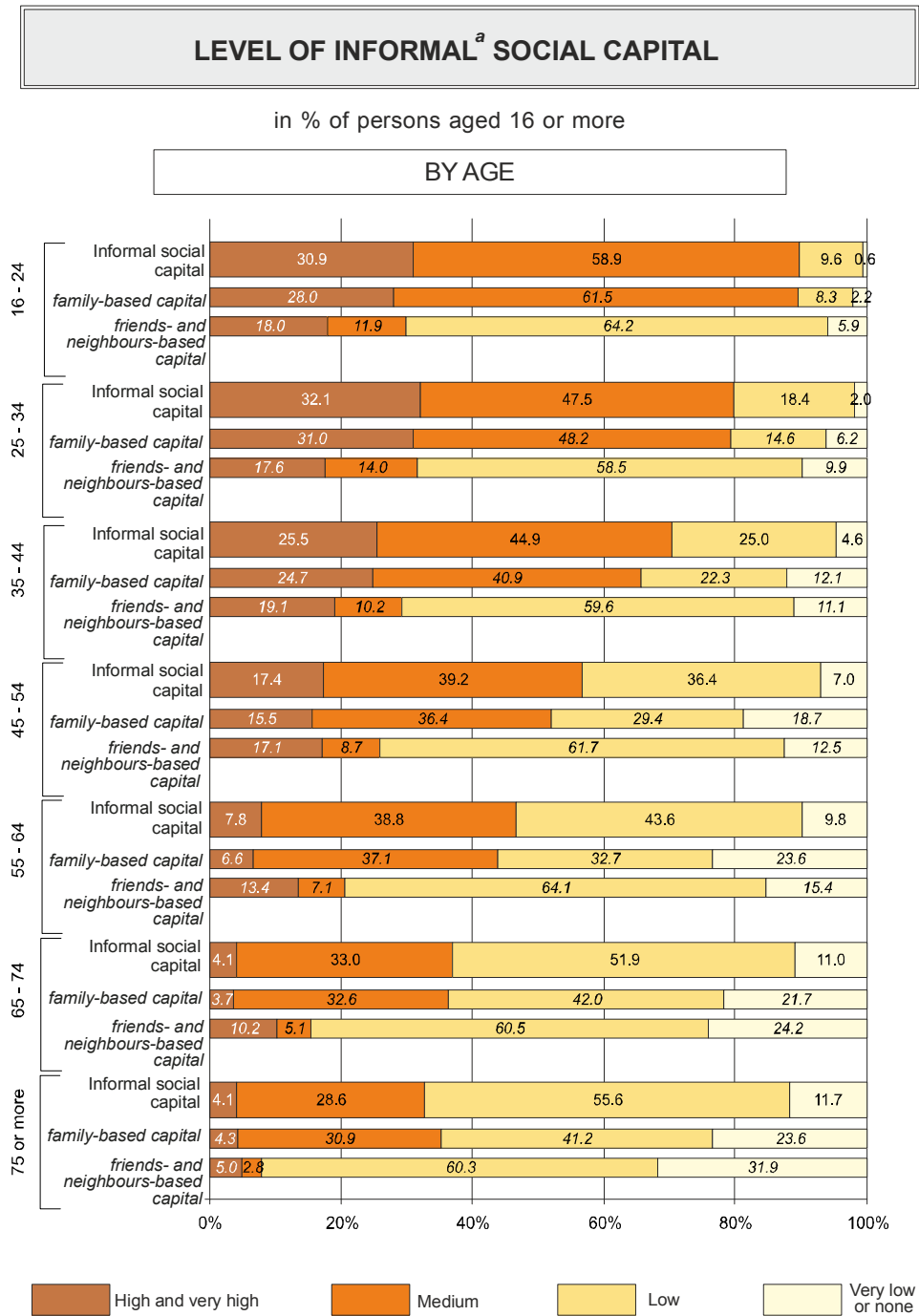
Indicator value	The share of persons	The aggregate share of persons with a given indicator value <sup>a</sup> and persons		Level (categorised capital)
		with a lower capital	with a higher capital	
0	2.1	2.1	100.0	very low or none
1	3.8	5.8	97.9	
2	6.8	12.7	94.2	low
3	8.2	20.9	87.3	
4	10.9	31.7	79.1	medium
5	11.8	43.6	68.3	
6	11.6	55.1	56.4	high and very high
7	12.4	67.5	44.9	
8	10.0	77.5	32.5	
9	8.4	85.9	22.5	
10	6.0	91.9	14.1	
11	4.3	96.2	8.1	
12	2.1	98.3	3.8	
13	1.3	99.7	1.7	
14	0.3	100.0	0.3	
15 – 16	< 0.05	100.0	0.0	

<sup>a</sup> Means indicator value equal to that identified next to the table.

The highest informal capital was identified within the group of young people, and this notion proved to be subject to a gradual decline with age. The number of persons with high and medium informal social capital decreases, while the share of those with low or none capital grows. Among persons aged 16-24, as much as 90% were characterised by having at least a medium level of informal social capital. The same level of capital among persons aged 25-44 was already down to 80% of the group, while

the last two age groups recorded further decreases - to 37% for the group of 65-74-year-olds, and to 33% for the group aged 74 or older. The share of persons with very low or none informal social capital varied between 1-2% for persons aged 16-34 and 11-12% for the group older than 65.

Figure 4.15.



<sup>a</sup> Informal social capital includes family-based capital and friends- and neighbours capital.

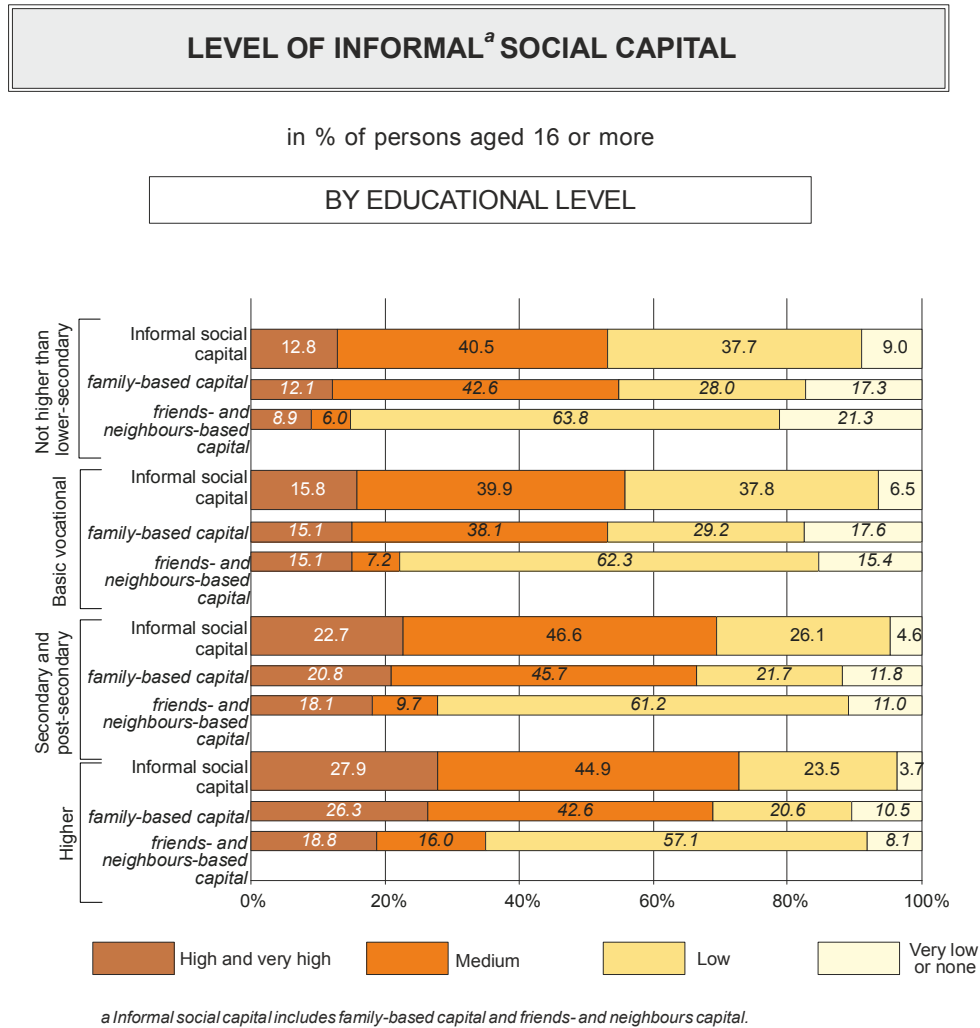
The survey shows that the analysed forms of informal capital, i.e. family-based and friends and neighbours-based capital reach their top values among persons in a relatively young age (between 16 and 44 years of age). In all age groups, family-based capital is higher than friends and neighbours-based capital. However, among persons aged 16-44, the share of persons with high or very high family-based capital is markedly higher than that with high friends and neighbours-based capital<sup>15</sup>. Conversely, older age groups exhibit a reverse trend. More persons show high friends and neighbours-based capital than family-based capital, although the shares of top values for both are lower than in the case of young people. Another factor to determine the level of informal capital is education. Generally, the higher the education, the higher the social capital. Significant discrepancies in social capital are visible between persons with higher education and those with up to basic vocational education, and, in particular, up to lower-secondary education. Differences in informal capital levels between persons with higher and secondary education are, in turn, relatively insignificant. The said correlations apply equally to family- and friends and neighbours-based capital. In the case of informal capital, the share of persons with at least medium capital level was between 53% for persons with lower-secondary education, and 73% for persons with higher education, including the shares of persons with very high or high capital equal to 13% and 28%, respectively. Very low or none informal capital was identified in less than 4% of the higher-education graduates, compared to 9% in persons educated up to lower-secondary school.

In terms of family-based capital, medium or high levels were recorded for 69% of persons with higher education, against 55% of those with up to lower-secondary education, while very low or none family-based capital was reported by 10.5% and slightly above 17% of persons, respectively. Moreover, at least a medium level of friends and neighbours-based capital was recorded for 35% of the university graduates and 15% of persons up to lower-secondary education. In addition, very low or none such capital was identified respectively in 8% and 21% of the population.

---

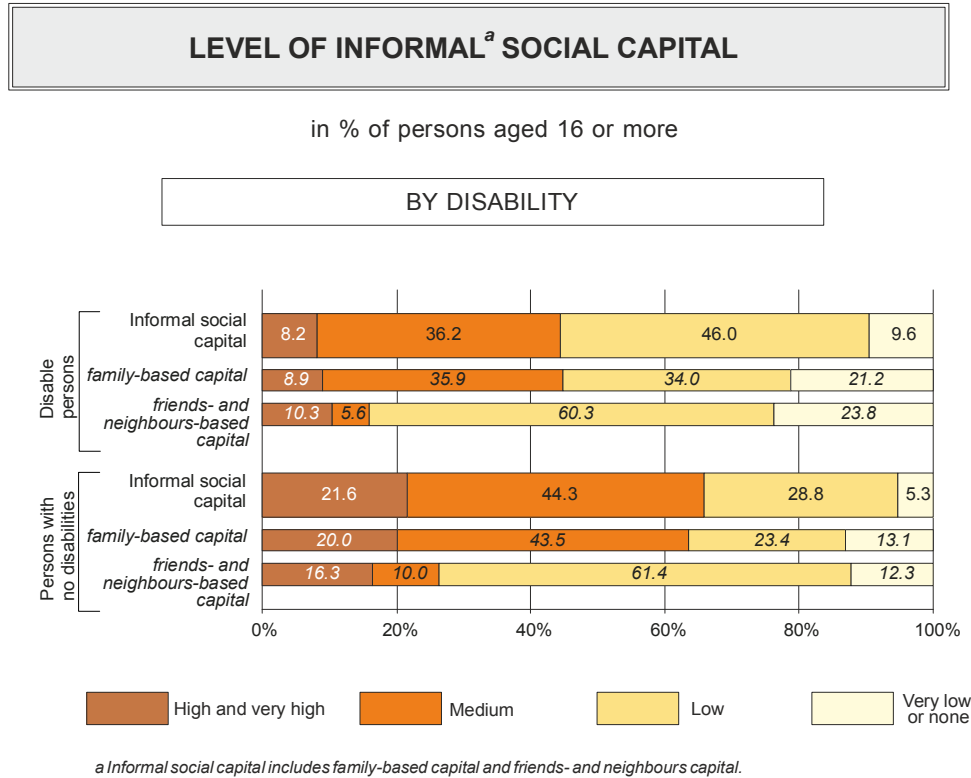
<sup>15</sup> From now on, throughout the descriptive analysis, high capital shall be understood as "high and very high".

Figure 4.16.



The social cohesion survey confirms the negative impact of disability on informal capital levels, both in terms of friends and neighbours-based and family-based capital. Disabled persons show a nearly two-fold increase in the number of persons with very low or none family-based (21%) and friends and neighbours-based (24%) capital. Conversely, the number of persons with high or medium capital levels is considerably lower. At least a medium level of informal capital was observed in 44% of persons with disabilities (against 66% for other persons). Glaring discrepancies against disabled persons are found especially in high capital levels.

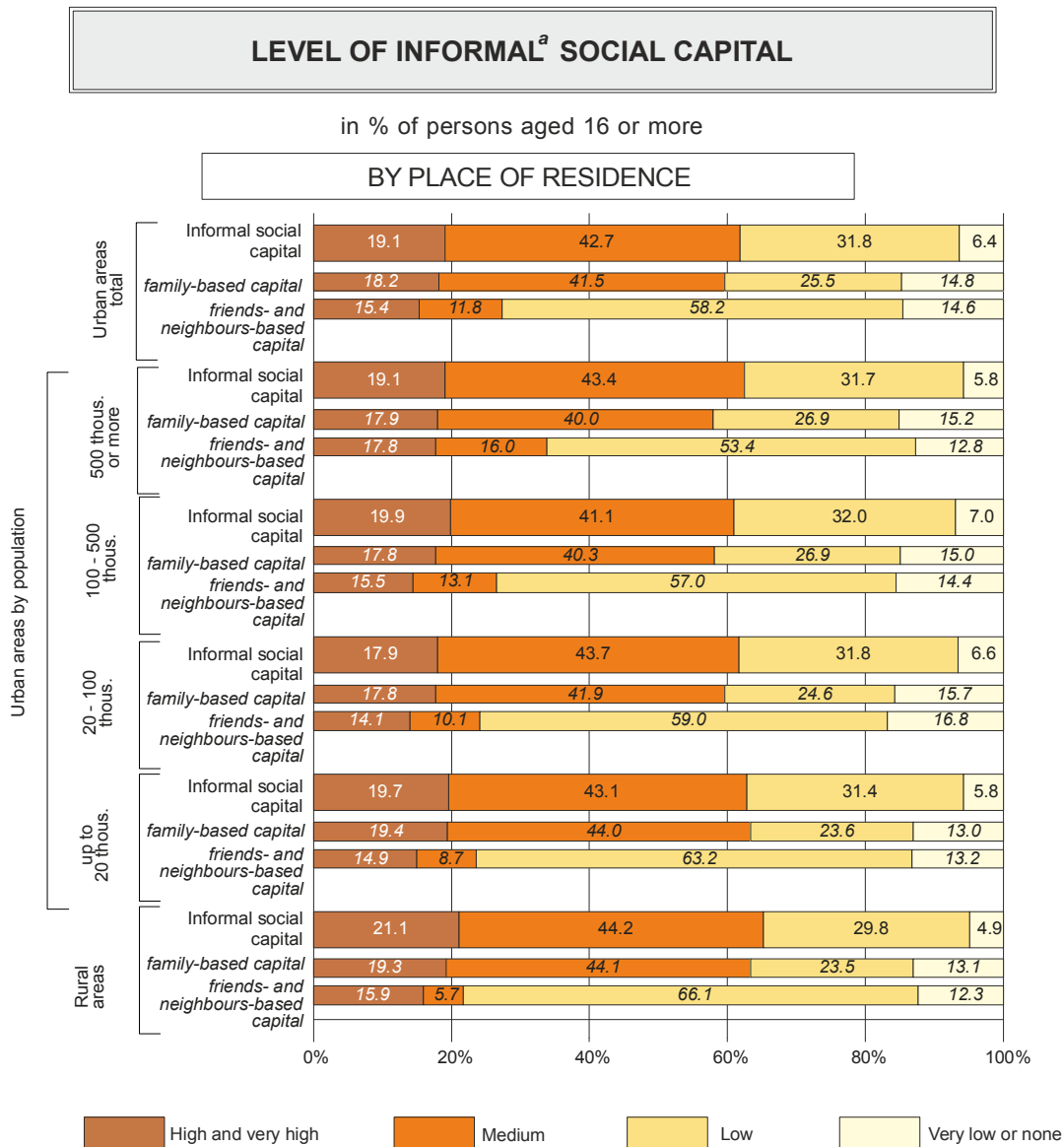
Figure 4.17.



No serious discrepancies were identified in the overall informal capital in terms of place of residence, neither in respect of the geographical location (region) and its type.

Rural areas proved slightly richer in the overall informal capital than did urban ones, even though friends and neighbours-based capital was more diverse and higher in cities (especially the largest), than was family-based capital. The slightly higher overall informal capital in rural areas was in part effected by their higher family-based capital compared to urban locations. High and medium levels of the overall informal capital was observed in 65% of rural, and in 62% of urban inhabitants. Rural areas also showed the lowest share of persons with very low or none such capital. Rural areas and towns show the highest share of persons with high and medium family-based capital (over 63% in rural areas and towns, against 58-60% in medium-sized and large urban centres). Friends and neighbours-based capital was also the highest in the largest urban areas. In cities with over 500 thous. inhabitants, at least a medium level of friends and neighbours-based capital was identified in 34% of the persons surveyed (including 18% with high or very high capital), while in the village, the figure was 22% (including 16% with high or very high capital). The superiority of large urban areas over towns and rural areas in terms of such capital stems from the greater importance of social relationship networks in large cities. Indeed, overall, the good neighbourly relationship ratio is higher in rural areas and in towns.

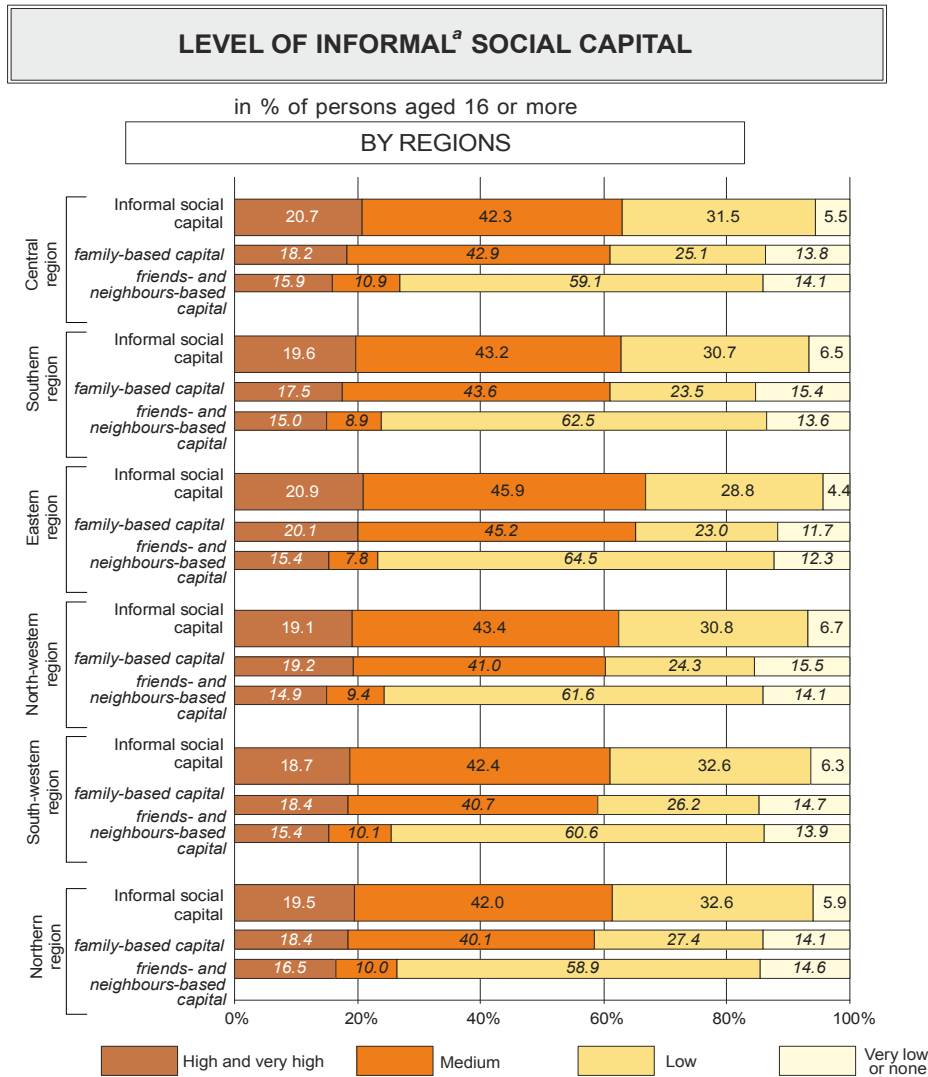
Figure 4.18.



<sup>a</sup> Informal social capital includes family-based capital and friends- and neighbours capital.

As regards the analysis of regional diversification, its low degree is largely determined by the definition of the regions themselves. These are internally-diverse entities, covering heterogeneous areas, whose individual qualities are often obscured at the general regional level. The only region to markedly stand out in terms of its informal social capital level is the eastern region. It is characterised by having the largest share of persons with at least a medium level of overall informal capital, namely 67%, while nearly 21% are persons with high capital. A very low or none level of formal capital was recorded for only over 4% of persons in this region (while other regions reported between 5.5% and 7%). Such relatively high informal capital in the eastern region is primarily due to its high family-based capital, with more than 20% of this region's inhabitants showed high levels of such capital. Friends and neighbours-based capital was similar or even slightly lower than in other regions.

Figure 4.19.

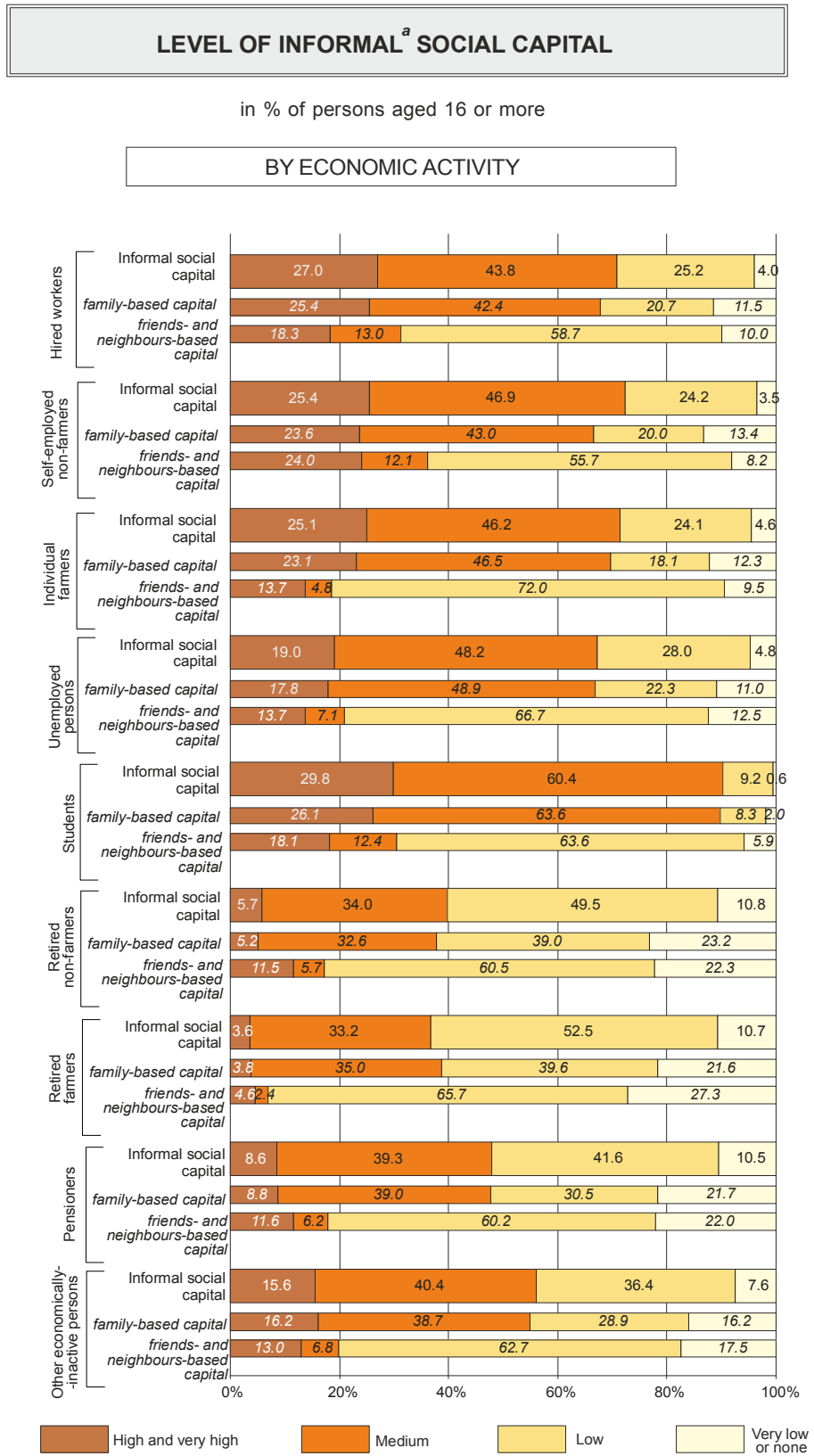


<sup>a</sup> Informal social capital includes family-based capital and friends- and neighbours capital.

Age, education, place of residence and health – these are the factors that largely determine the position of an individual on the labour market. The combined influence of these, and some other factors need to be taken into account when analysing the variation in social capital in terms of business activity. Students, as well as working persons, show a considerably higher informal social capital compared to retired persons, pensioners and other economically-inactive persons. A similar level of informal social capital is found in unemployed persons (this is due to their family-based capital), although the detailed distribution of this capital's values shows certain discrepancies (e.g. working persons show more representatives of high capital).

The share of persons with at least medium informal capital ranged from 37% for agricultural retired persons, to 71-72% for working persons and 90% for students. Students showed the highest family-based capital (26% of persons with high, and 64% with medium levels). The largest friends and neighbours-based capital was identified in the self-employed outside agriculture (24% of persons with high, and 12% with medium capital levels). The lowest family-based capital was, in turn, recorded for retired persons, both agricultural and non-agricultural. Also, the retired persons, and in particular, agricultural retired persons, and pensioners showed the lowest friends and neighbours-based capital.

Figure 4.20.



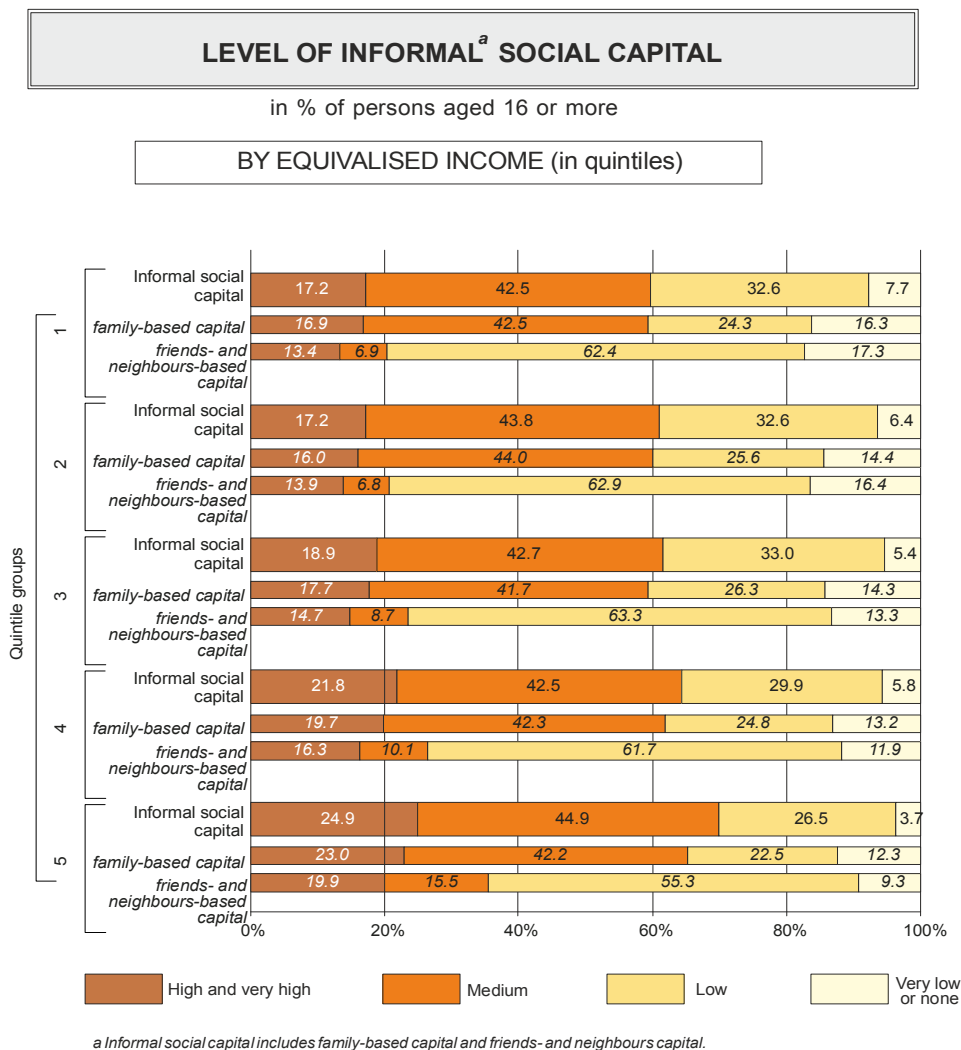
<sup>a</sup> Informal social capital includes family-based capital and friends- and neighbours capital.



In general, it can be concluded that an increase in income entails a rise in informal social capital. The connection between income and the extent and quality of family-based and friends and neighbours-based relationships is, however, not so close, especially among persons with moderate income. Clear discrepancies in informal social capital are, in turn, visible between the groups with the most and least favourable income situations. High or medium informal capital was recorded for 70% of the persons in the fifth quintile (one fifth of the population with the highest income) against 60% of the persons in the first quintile (one fifth of the population with the lowest income). In the second, third and fourth quintiles, it was 61-64%. Furthermore, very low or none capital was identified in 8% of the persons within the lowest income group and less than 4% of persons within the highest income group.

Income situation proved to have higher impact on friends and neighbours-based capital than on the family-based one. The share of persons with high or medium friends and neighbours-based capital was 20% in the first quintile and over 35% in the fifth. As regards family-based capital, high or medium capital levels were found in 59% of the persons in the lowest income group and 65% of the persons in the highest income group.

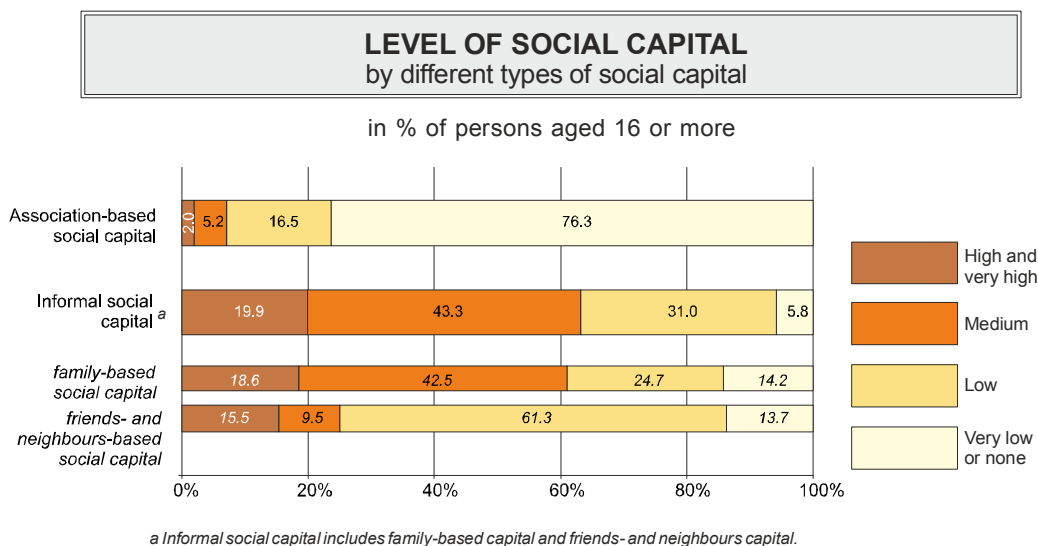
Figure 4.21.



## Association-based capital and informal capital

Debates concerning social capital recognize the need for both association-based and informal capital. It is also emphasised that from the perspective of creating a civil society, it is preferable to maintain a balance between the bridging association-based capital and informal bonding capital. The social cohesion survey indicates a low level of association-based capital in Poland. Indeed, high association-based capital (involvement in at least three types of secondary associations) is characteristic of only 2% of persons aged 16 years or more, while very low or none involvement in formal networks was identified in more than three in four persons in this age group. As regards informal social capital, a high level was recorded for 20% of the persons, while very low or none capital was reported by 6%. At the same time, this was accompanied, as mentioned before, by family-based capital markedly exceeding friends and neighbours-based capital.

Figure 4.22.



This compilation of data on the three components, and at the same time, the types of social capital, namely family-based capital, friends and neighbours-based capital (jointly forming informal capital) and association-based capital, produces a multidimensional overview of the phenomenon, which otherwise could be difficult to capture by way of a separate analysis of individual components. Therefore, radar charts have been prepared to deliver a more comprehensive depiction of how various factors influence social capital in network terms. Moreover, these charts serve as a synthetic differentiation of all three capital types and employ relative indicators to represent a given capital level in a given group in relation to the whole population's average (see Note 4.3.).

**Note 4.3.**

### SYNTHETIC PRESENTATION OF SOCIAL CAPITAL ON RADAR CHARTS

Radar charts in this survey serve as a synthetic representation of how various factors impact the formation of three types of social capital:

- association-based capital (formal),
- family-based capital (informal capital component),
- friends and neighbours-based capital (informal capital component).

For the purposes of chart presentation, each capital type was supplemented with additional indicators, known as normalised indicators.

The basis for each of these indicators is the categorised indicator of each capital type, and specifically the share of persons with medium or high capital levels. This share indicates the capital level for a given sub-population. However, the shares vary considerably between different capital types. In particular, formal capital is generally much lower than the informal one. This is the case both for the overall population of Poland and its various sub-populations.

This would result in radar charts, created on the basis of shares defined in such fashion, being unclear due to the presence of an axis with values completely differing from the others in terms of variability scale. As a result, the charts present indicators normalised via values of a given capital averaged for the whole population. Such a normalised indicator is produced by way of dividing the share of persons with a medium or higher capital level for a given sub-population (section category), by the corresponding share for the whole population.

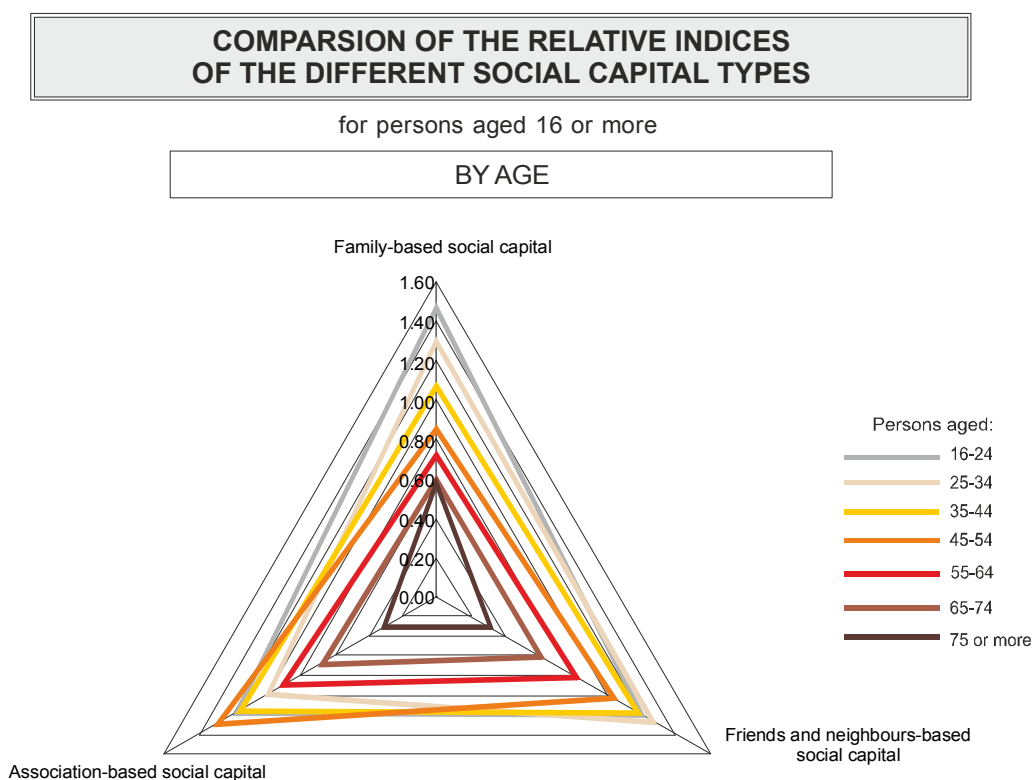
For each capital type, the normalised indicator value for the whole population is 1. Naturally, this means that these fail to allow the comparison of individual capital, but are well suited to demonstrate the influence of various factors on individual capital types (the possible confrontation of different section categories in terms of a given capital type), especially following the transfer to a radar chart, which gives a synthetic overview of the phenomenon.

The survey findings do not suggest any serious discrepancies in social capital in respect of sex, with relative indicators approx. 1, both for men and women, across all capital types. It is noticeable, however, that women slightly surpass men in terms of family-based capital, while men dominate in association-based capital.

The factor to markedly determine between network-related social capital is age, although - depending on capital type, its importance varies. This is due to the fact that age represents different stages in life (e.g. learning, establishing a family, work initiation, occupational- and family-life stabilisation, retirement) and the associated, sometimes even "competitive", involvement in relationships as well as participation in social life.

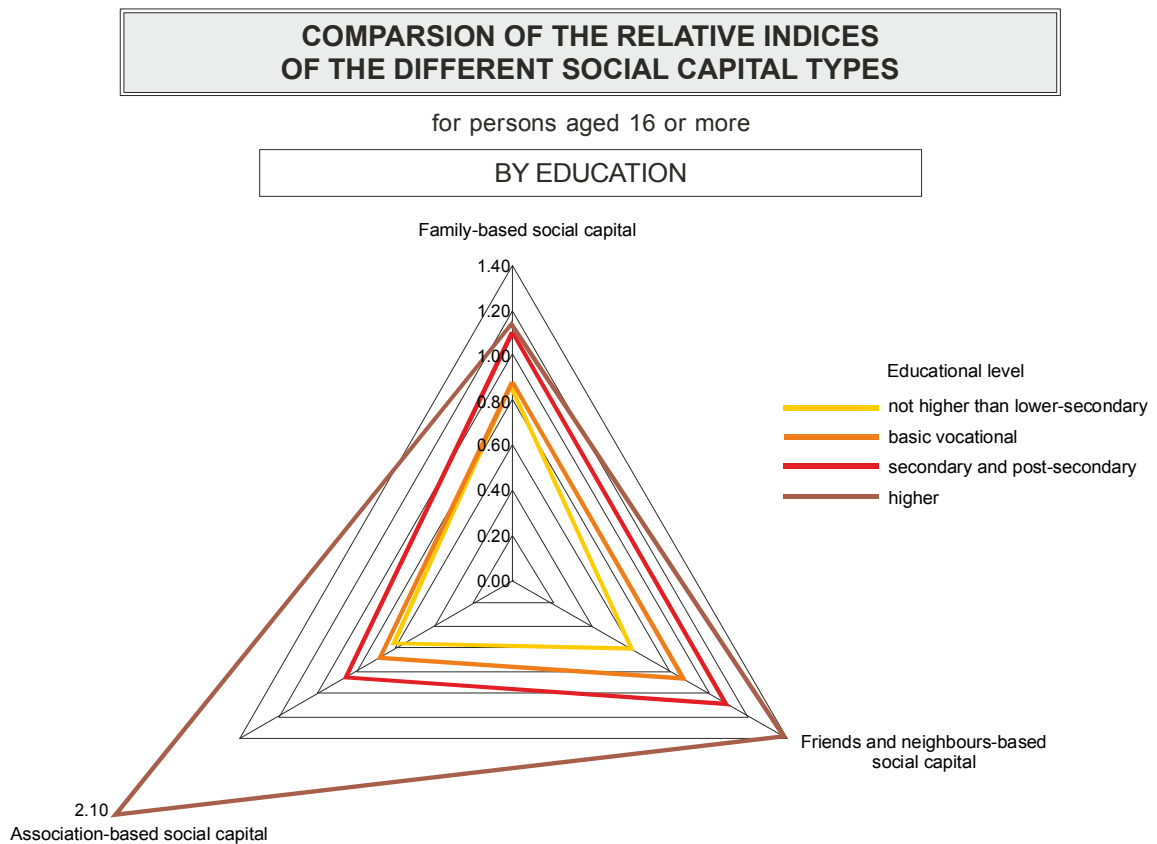
The highest association-based capital was found among persons aged 45-54, followed by the groups of persons aged 16-24 and 35-44. Older groups, starting with age of 55-64, show a dramatic drop in association-based capital. As regards friends and neighbours-based capital, the highest capital was identified among young persons, i.e. between 25-34 years of age, and those in the age groups of 16-24 and 35-44. Older age groups show a gradual decrease in this type of social capital. In terms of family-based capital, the highest level characterizes persons aged 16-24. The consecutive age groups exhibit a gradual decrease in the capital level, which, however, slows down for older persons, with the two last age groups being characterised by a similar level of family-based capital (while association- and friends and neighbours-based capital show considerable decreases in the oldest age group).

Figure 4.23.



The analysis of the differences in terms of educational attainment level shows a particularly strong correlation in association-based and friends and neighbours-based capital. The latter exhibits a substantial, gradual increase alongside the growing education level. The effect is, however, the most profound with association-based capital. It appears, above all, in one group – higher-education graduates, who markedly stand out from other groups in terms of this capital. The association-based capital for such persons is more than twice as that of the whole population, and it is, undoubtedly, the strongest effect of all the observed in this analysis. In the case of family-based capital, the differences are much more subtle.

Figure 4.24.



Generally, working persons and students show higher social capital than other groups distinguished by business activity (including retired persons, pensioners and unemployed persons). This discrepancy is the widest for association-based as well as friends and neighbours-based capital, and, minor for family-based capital (with unemployed persons also representing a relatively high level). Students excel especially in respect of family-based capital. They also represent the highest association-based capital, with working persons (except for farmers) being close behind them.

The group of working persons is highly diversified in terms of friends and neighbours-based, as well as association-based capital. Both of these social capital forms are the highest among the self-employed outside agriculture, while individual farmers are characterised by markedly lower levels than other employed persons<sup>16</sup>. In respect of family-based capital, working persons were found to be rather homogeneous.

Similarly to active individual farmers, working persons, as well as retired farmers, exhibit a considerably lower friends and neighbours-based and association-based capital than other retired persons and pensioners. What is more, disabled persons show lower social capital (in every respect) compared to people without any disabilities.

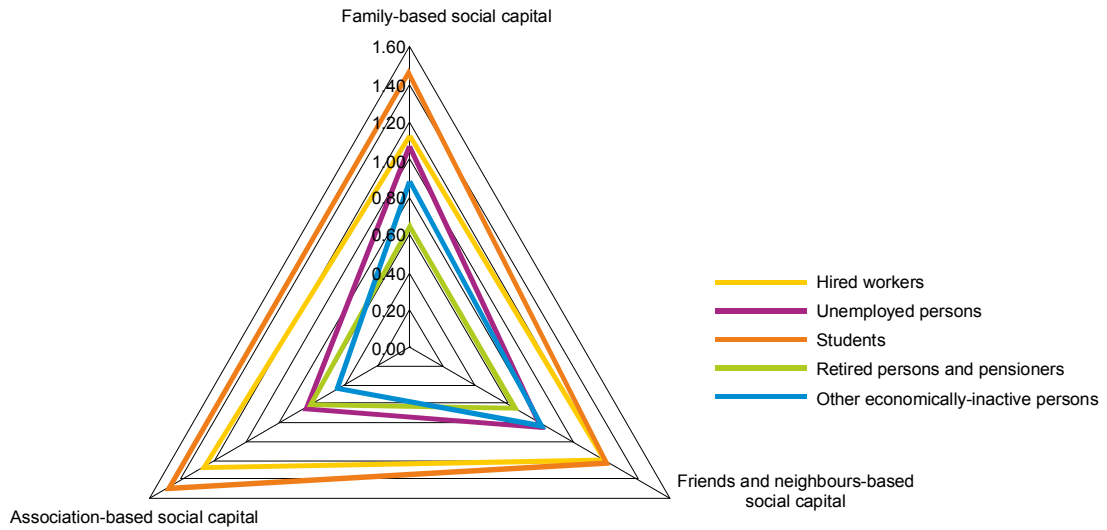
<sup>16</sup> I.e. own-account workers outside agriculture and employees.

Figure 4.25.

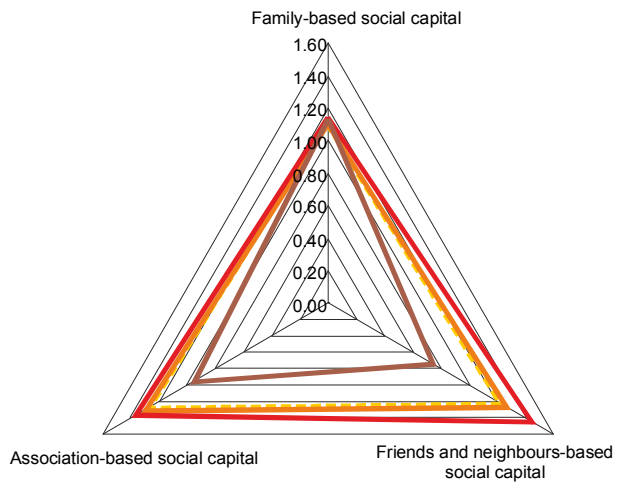
**COMPARISON OF THE RELATIVE INDICES OF THE DIFFERENT SOCIAL CAPITAL TYPES**

for persons aged 16 or more

**BY ECONOMIC ACTIVITY**

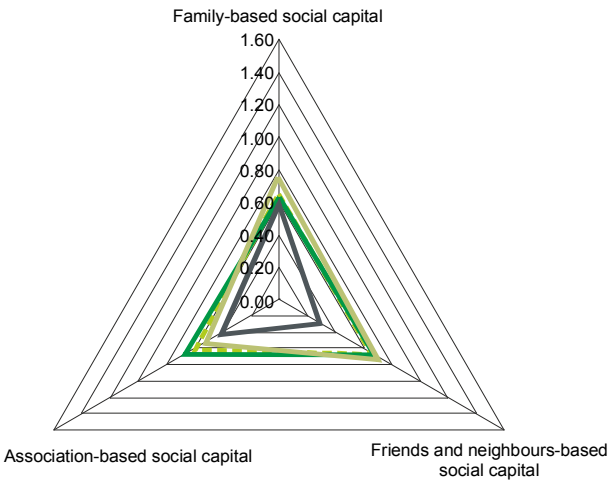


**Economically-active persons**



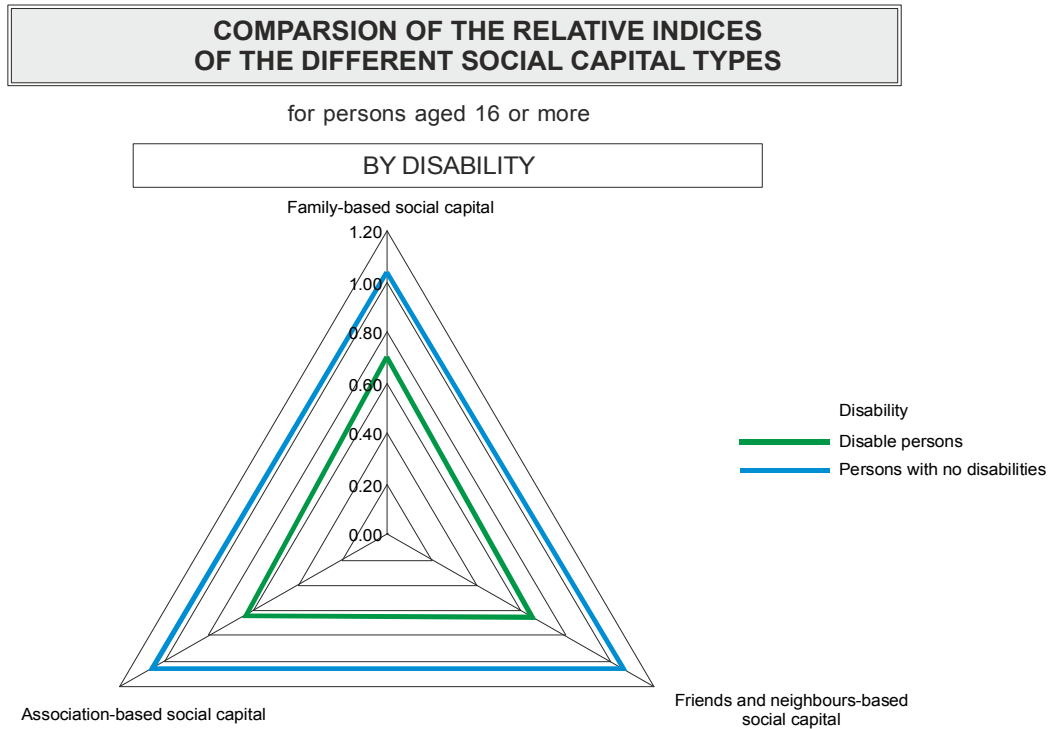
- Economically-active persons total
- Hired workers
- Self-employed non-farmers
- Individual farmers

**Retired persons and pensioners**



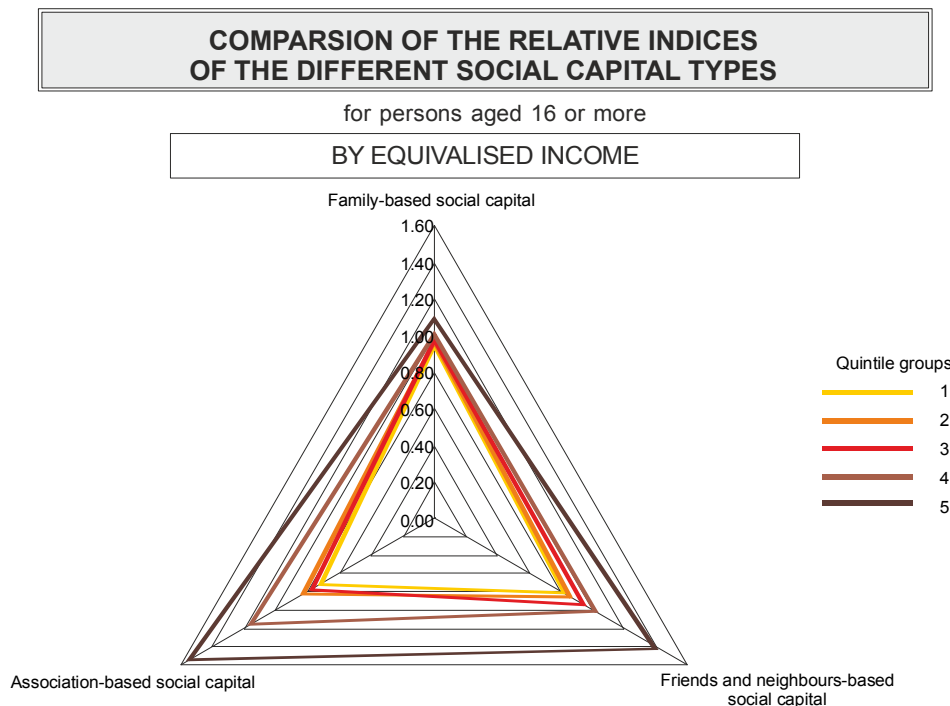
- Retired persons and pensioners total
- Retired non-farmers
- Retired farmers
- Pensioners

Figure 4.26.



Income levels are generally positively linked to each capital type, i.e. persons with higher income are characterised by higher social capital. However, while this difference is marginal for family-based capital, association-based capital is strongly related to the income parameter. This is also the case, although to a lesser degree, for friends and neighbours-based capital. These correspondences are found especially among persons with the highest income (5<sup>th</sup> quintile for friends and neighbours-based capital and 4<sup>th</sup> and 5<sup>th</sup> for association-based capital).

Figure 4.27.



Place of residence (locality) is a factor to determine mainly friends and neighbours-based and association-based capital. The highest level of this type of capital is found in the inhabitants of the largest cities. It starts to drop along with the decrease in city size (measured by way of the number of inhabitants). Indeed, friends and neighbours-based capital is the lowest in rural areas (mainly due to the lower importance of friendship-like relations compared to urban areas), and less populated but still urban areas dominate in terms of the lowest association-based capital (towns with up to 20 thous. inhabitants). Family-based capital shows no major differences according to town type, although it is slightly higher in rural than urban areas.

**Note 4.4.**

#### SOCIAL CAPITAL AND ISOLATION

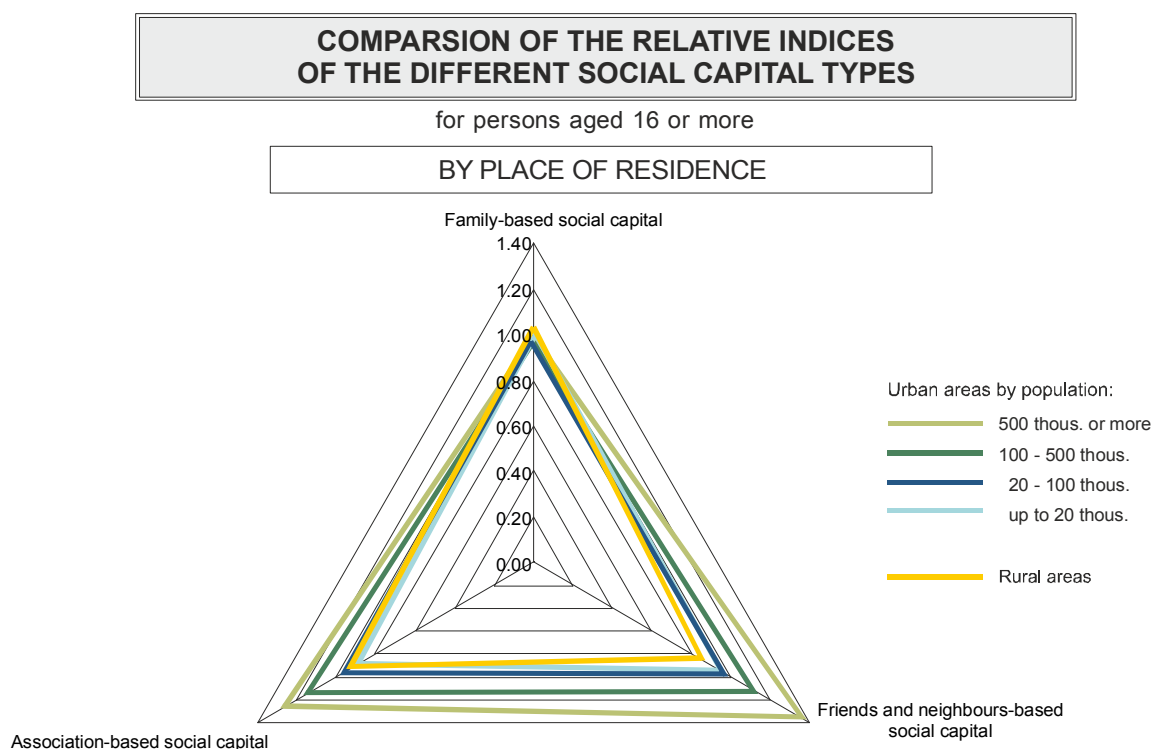
The analysis of differences in social capital across town classes, indicates an apparent contradiction between conclusions regarding the differences in social capital and those on social isolation (see *Figure 2.3*). The recapitulation of conclusions on all the three types of social capital reveals that higher levels of network-related capital is present in urban inhabitants (higher friends and neighbours-based and association-based capital, with family-based capital only slightly lower). In turn, isolation indicators, based on the relationship with the same groups of persons as capital indicators, show higher values also in urban areas, which suggests a worsening in the condition of such a relationship. Therefore, the question arises – why such a capital?

Differences in defining these two phenomena are connected with the quality of human interaction (the assessment of capital investigates the potential for providing assistance, while the evaluation of isolation probes only the fact of keeping in touch) and the treatment of persons who live together (they create social capital, but hold no importance in terms of isolation, thus only external relationships are taken into account). These factors, however, do not fully account for the discrepancies. What is the most important is the fact that isolation is defined as an extreme phenomenon - it pertains to persons with the poorest relationships. It is noticeable that, both in terms of human interaction and social capital, urban areas exhibit higher discrepancies between individuals than do rural areas. The former show a relatively large number of persons with very high social capital, who are primarily responsible for contributing to it, but there is also a fairly large group with very low capital (larger than in rural areas, similarly to persons who found themselves in the most favourable situation). Rural areas, in turn, more often exhibit medium levels.

Therefore, as a result of a generally higher level of capital in urban areas, the group of persons with its lowest levels is found in rural areas. Consequently, this seems to be the group from which the majority of isolated persons originate.



Figure 4.28.



### Social capital and material situation

Another stage of the study was to carry out an analysis of social capital in terms of the material situation. It considered the three aspects investigated in the publication (i.e. income, living conditions, budget) and the criteria adopted to distinguish the groups with the most and least favourable (impoverished) situations.

General conclusions show that good material standing is usually associated with high social capital, and, conversely – the lowest capital levels are characteristic of impoverished persons. Nevertheless, it is noteworthy that the strength of this relationship varies, both due to capital type analysed, and material aspect considered. Consequently, the strongest relationship with material situation is maintained by association-based capital, while the reverse is true for family-based capital.

As regards family-based capital, the factor to act as the primary determinant of its levels were living conditions. In the case of friends and neighbours-based and association-based capital, this was governed by income situation.

Figure 4.29.

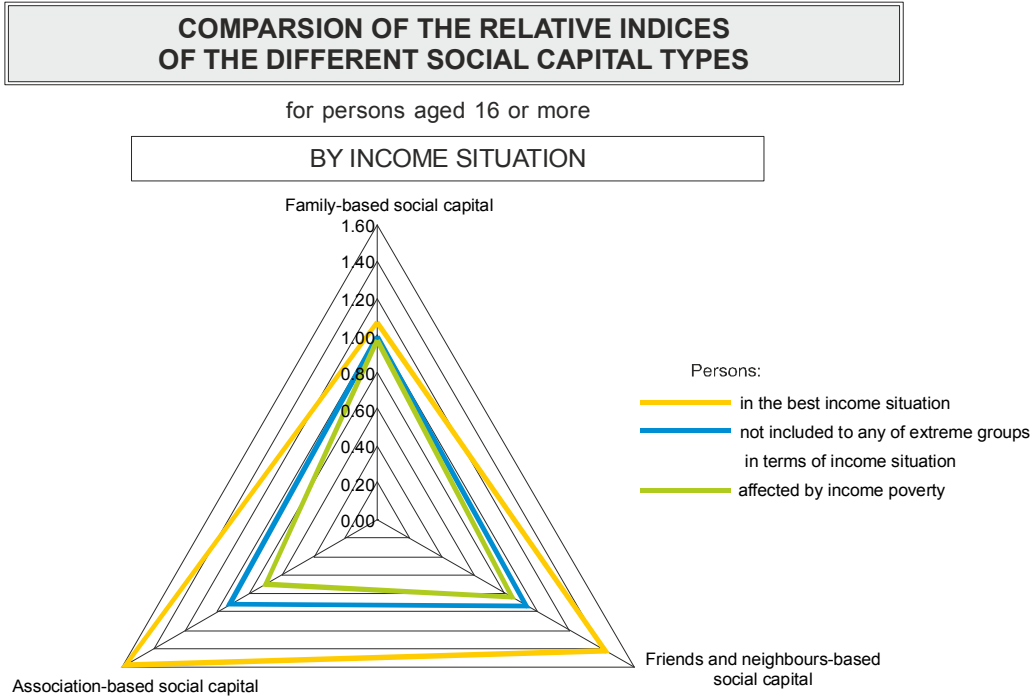


Figure 4.30.

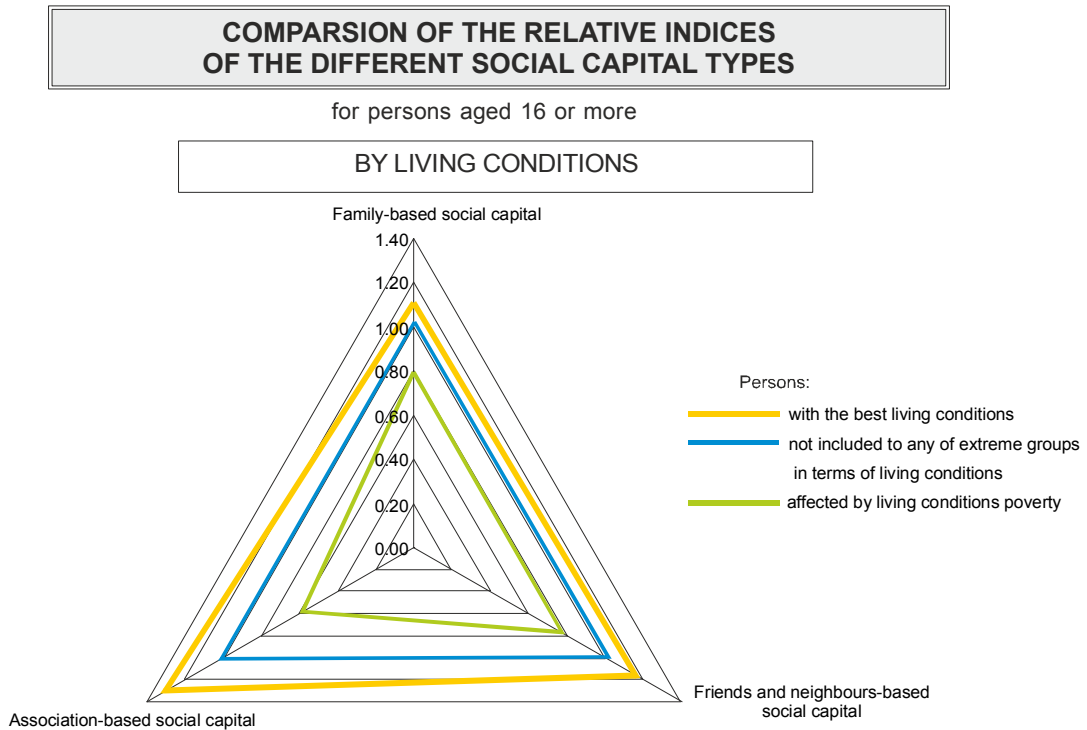
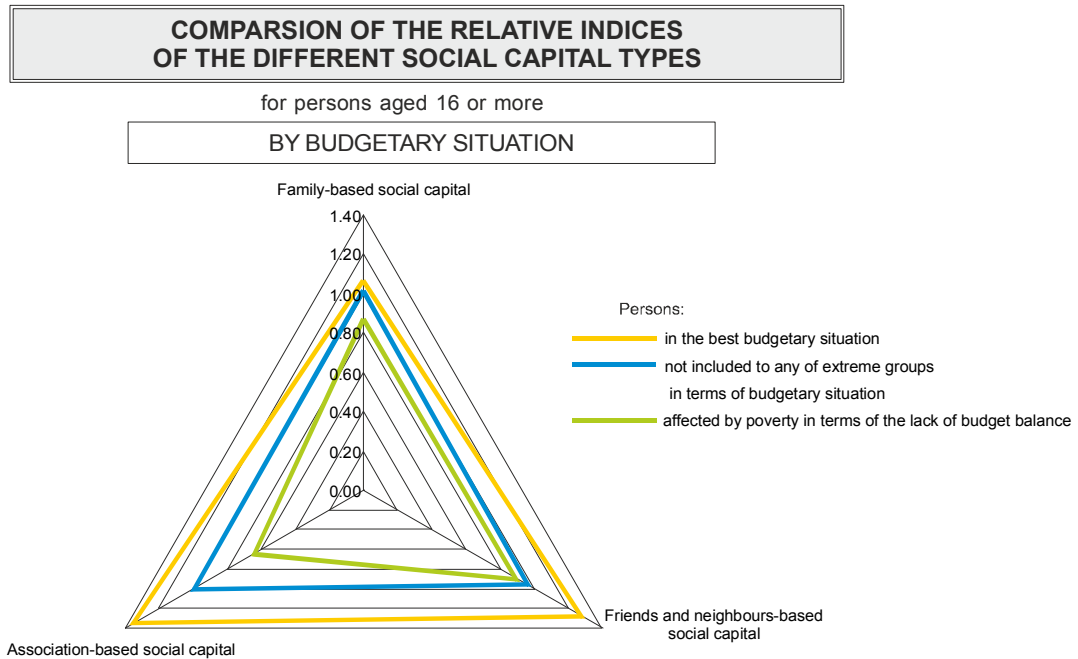


Figure 4.31.



#### 4. SUMMARY

To sum up, the analysis of the social capital variation in terms of different factors shows that the development of individual forms of such capital (whether formal/association based or informal) is generally interconnected, i.e. if one group is characterised with higher (or lower) social capital, it usually finds its reflection in all its aspects. Deviations from this general principle are infrequent and have been subject to separate presentation in the analysis of individual factors. What is subject to fluctuations, however, is the degree of variation (with association-based capital generally showing the highest variation). Individual capital types can also be distinguished in terms of their "distinctive" factors, which are associated more with one type of capital than with others. As regards family-based capital, the importance of age considerably outweighs the significance of economic considerations. For friends and neighbours-based and association-based capital, in turn, it is education, economic activity type and income that seem to be of special prominence in this respect.

Nevertheless, the calculated Pearson correlation coefficient values cannot be considered high. The strongest correlation is found in pairs: friends and neighbours-based capital - association-based capital, and between family-based capital - friends and neighbours-based capital (correlation between informal capital constituents). The coefficient for both pairs is ca. 0.13, whereas a weaker correlation is exhibited between family-based and association-based capital (a correlation coefficient of 0.09). The relatively low correlation coefficient, coupled with considerable resemblance of variation structure in respect of individual capital types across different factors, seem to prove that, in individual terms, there is a rather significant substitutability/competitiveness between respective capital types. Consequently, this would suggest that (at least to some extent) some types of relationships are developed at the expense of others, even though demographic, economic, and social determiners of different capital types are similar and operate in a parallel way. However, it needs to be noted that all correlation coefficients across different capital types are positive, hence the substitutability only results in lower correlation. This, in turn, indicates that outcomes associated with the mutual "reinforcement" of different capital types and the alleged resemblance of their determinants prove to outweigh the "competitiveness" effect between them.

## 1. INTRODUCTION

Membership of various kinds of associations and organisations, and the involvement in local community-oriented activity constitute indicators of social capital. Church-based religious institutions and other religious denominations, such as parishes, congregations, charities, charismatic church associations, and other religious organisations and groups, are certainly the domains in which such factors are found to occur. Apart from an institutional and religious dimension, such establishments also exhibit a community-related and local character. Relations between individuals and such organisations/associations constitute a crucial aspect of social bonds which are formed in local communities. A bond with a parish or with any other religious association falls within the scope of the (institutional and community-related) dimension of religiousness<sup>1</sup>. Therefore, the social cohesion survey also includes a religion module. Along with the issues related to self-declaration on religious affiliation, it provides insight into social and religious activity, and the intensity of involvement in the activity conducted by the church and other religious organisations. The associated questions were answered by persons aged at least 16.

## 2. VARIOUS FORMS OF PARTICIPATION IN THE SOCIAL AND RELIGIOUS LIFE OF THE CHURCH

The sense of affiliation with the church or other denomination can take various forms (including a subjective declaration based on feelings or culture), which assumes only a loose affiliation, or a conscious participation, faith and the sense of collective responsibility for the community of which one is a member. Such a broadly-defined affiliation constituted the basis for asking the following question: *Do you feel affiliated to any church or denomination, or do you consider yourself a follower of any religion?* Nearly 85% of all persons aged 16 years or more provided an affirmative response. Sex and the place of residence had only a minor impact on the response pattern. The largest number of affirmative responses was found among rural inhabitants, amounting to nearly 91%, whereas in urban areas this share was nearly 10 percentage points (pp) lower. Women were more likely (87.3%) to declare their affiliation with the church or other denomination than men (81.5%).

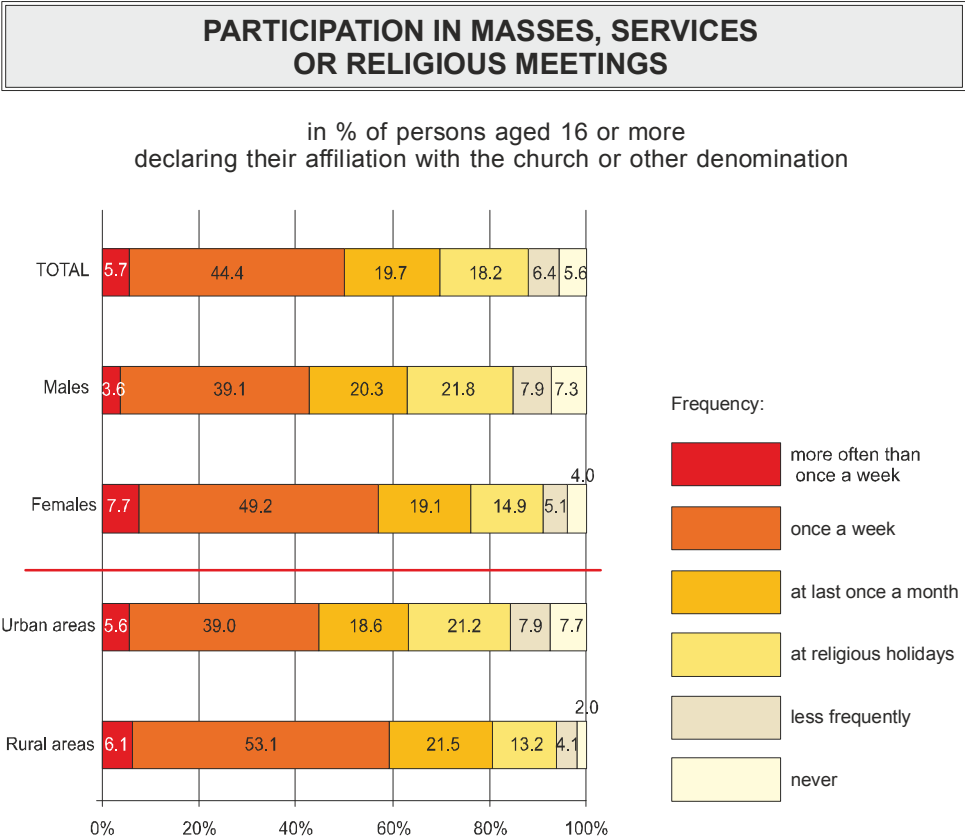
The participation in any community-oriented religious practices, such as holy masses, services and religious meetings, is a significant indicator of participation in the religious life. Based on person's self-declarations, every second person aged 16 years or more (50.1%) attends such practices at least once a week, nearly 20% at least once a month, 18.2% only at religious holidays, 6.4% less

---

<sup>1</sup> Cf. E. Firlit, *Więź z parafią (A bond with a parish)*, in: *Religijność Polaków (Religiousness of Poles) 1991*, ed. L. Adamczuk, rev. W. Zdaniewicz, Warszawa 1993, p. 96.

frequently, and 5.6% never. The level of participation in religious practices depends on both the place of residence and sex. Nearly 60% of rural inhabitants, and 57% of women, attend masses or services at least once a week. The same frequency of “church attendance” is much less common among urban inhabitants (nearly 45%) and among men (nearly 43%). Considerable differences in these categories also concerned non-attendance or rare participation in these practices. Such declarations were made by 12% of persons altogether. While among rural inhabitants and women, the share of such responses was relatively slight (6.1% and 9.1%, respectively), among urban inhabitants and men, these values were markedly higher (15.6% and 15.2%).

Figure 5.1.



Apart from inquiring about the broadly-defined sense of attachment to the Church or other denomination, the survey also included a question concerning the presence of a more formal affiliation with a religious organisation, group or association, as reflected in some form of membership or having the sense of collective responsibility for the community. This is usually connected with a true intent to belong to the community, with a conscious relation with the community, or with the attainment of the same objectives as the community. The survey results revealed that more than 18% of persons aged 16 years or more claimed to belong to various religious organisations. This percentage seems relatively low as compared to nearly 85% of persons who felt affiliated with the church or other

religious community<sup>2</sup>. However, it should be borne in mind that the sense of affiliation with the Church does not require participation in any formal religious group, but it is usually connected with religious practices and lifestyle. Declarations on the membership of religious groups were slightly more common among women (20.4%) and rural inhabitants (20.9%).

The measures of involvement in Church activity further include devoting time to social work within a religious organisation or association, and participating in various events which they organise. Nearly 90% of persons aged 16 years or more claimed to have never performed any unpaid work for such organisations or institutions, while involvement in such work was declared by only 10% of persons. Unpaid work was performed with various frequency, by 3.2% of persons at least once a month, by 3.0% less often than once a month, but at least once every six months, and by 3.8% even less frequently.

Participation in various events organised by religious institutions was declared by 13.4% of persons aged 16 years or more. This type of activity appeared to depend especially on the occasions on which such events were organised, which had a considerable impact on participation frequency as declared by persons. These findings are different from the ones concerning social work that proved independent of event incidence. The latter was attended at least once a month by 2.4% of the persons surveyed, less often than once a month, but at least once every six months by 4.5%, and less frequently by 6.6%. Both volunteer activity and attendance of events organised by religious institutions differed only slightly in terms of sex and the place of residence. Higher shares recorded among women and rural inhabitants reflect their higher involvement in religious activity.

### **3. INVOLVEMENT IN SOCIAL AND RELIGIOUS ACTIVITY BY SELECTED SOCIO-DEMOGRAPHIC FACTORS**

The questions included served the purpose of constructing the indicator that reflects the level of involvement in the social and religious activity of the church or a religious association<sup>3</sup>. Its aim is to collect, compile and synthetically present some information on the selected and briefly discussed forms of social and religious activity. This indicator was used in a detailed discussion on social and religious activity, based on the analyses of average values for selected (mainly socio-demographic) variables, and by four major indicator categories, illustrating the level of involvement for the benefit of the church/religious association (ranging from passive attitude, to a high level of involvement).

The survey results on involvement in the social life of the church/religious association have revealed that uninvolved persons and persons with a marginal level of activity (jointly included inside a category referred to as passive involvement) constitute the most numerous group with a share

---

<sup>2</sup> This data corresponds to the results of the survey on unpaid work performed outside household, cf. *Wolontariat w organizacjach i inne formy pracy niezarobkowej poza gospodarstwem domowym (Voluntary work in organisations and other forms of voluntary work performed outside household) – 2011*, CSO Warszawa 2012, p. 40.

<sup>3</sup> The indicator structure and construction stages are presented in Note No. 2 at the end of the chapter.

of 44.1%. The second major group, in terms of the number, is formed by persons with a low level of activity (36.5%), followed by persons with a medium level of activity 11.3%. The most involved group proves the smallest, accounting for only 8.1% of the population. An average value of the indicator of involvement for the benefit of the church/religious association for the entire population amounts to 2.68.

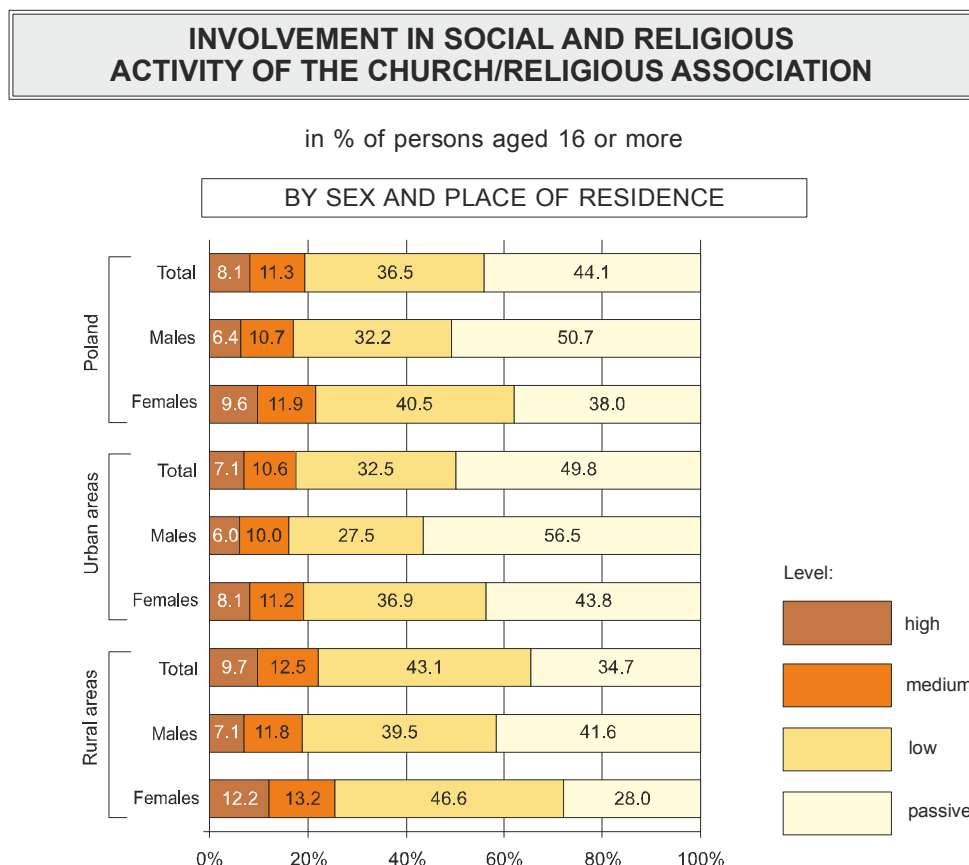
The level of involvement in the social and religious activity of the church/association is diversified, depending on socio-demographic variables. The survey results have revealed that sex strongly affects involvement. Women prevail in all categories of activity, including at the *high* level – 9.6%, at the *medium* level – 11.9%, and at the *low* level of involvement – 40.5%. The preponderance of women over men is significant in the category of “high involvement”, exceeding 3 pp (men – 6.4%), and for the all three categories of passive attitude presented above, where it reaches nearly 13 pp. Men are characterised by having a lower level of activity, and more than half of them (50.7%) take a passive attitude. This sex-dependent diversification of attitude towards the church, and towards social and religious life, has also been confirmed in a number of other surveys devoted to these issues<sup>4</sup>. The difference in the level of involvement is accurately reflected in the average value of the indicator for sex, which amounts to 2.94 for women and to 2.39 for men.

The place of residence is an additional factor influencing the level of involvement. Persons residing in rural areas were more involved in church activity - with only less than 35% of persons not indicating any activity in this field. This share was considerably higher among urban inhabitants, reaching approx. 50%. An average value of the indicator for these categories provides a confirmation for the considerable differences in the level of involvement. In rural areas, it reached 3.01, as compared to 2.47 in urban areas. While analysing various levels of involvement, it should be noted that the participation of rural inhabitants in all categories of activity is considerable, including at the *high* level – 9.7%, at the *medium* level – 12.5%, and at the *low* level of involvement – 43.1%. The difference in comparison to urban inhabitants amounts to nearly 11 pp at the low level, to nearly 2 pp at the medium level, and to nearly 3 pp at the high level of involvement. Persons' sex additionally strengthens the significant differences in terms of activity in rural and urban areas. Women residing in rural areas (only 28% of whom take a passive attitude) and men residing in urban areas, are at the two extremes. More than a half of the latter (56.5%) indicate no involvement in the field of social activity of the church or association, while only 6.0% are strongly involved. In contrast, women residing in rural areas constitute the most active group, 72% of whom declared at least a low involvement. Relatively high shares were especially recorded in the groups indicating stronger involvement (13.2% at the medium level and 12.2% at the high level).

---

<sup>4</sup> Sociological and statistical surveys indicate a higher activity of women in the church, as reflected in higher indicators of religiousness (e.g., *dominicanes* and *communicantes* surveys, and surveys on religiousness), and also a more frequent participation in social initiatives pursued by the church and other religious denominations (e.g. the survey on unpaid work performed outside the household).

Figure 5.2.



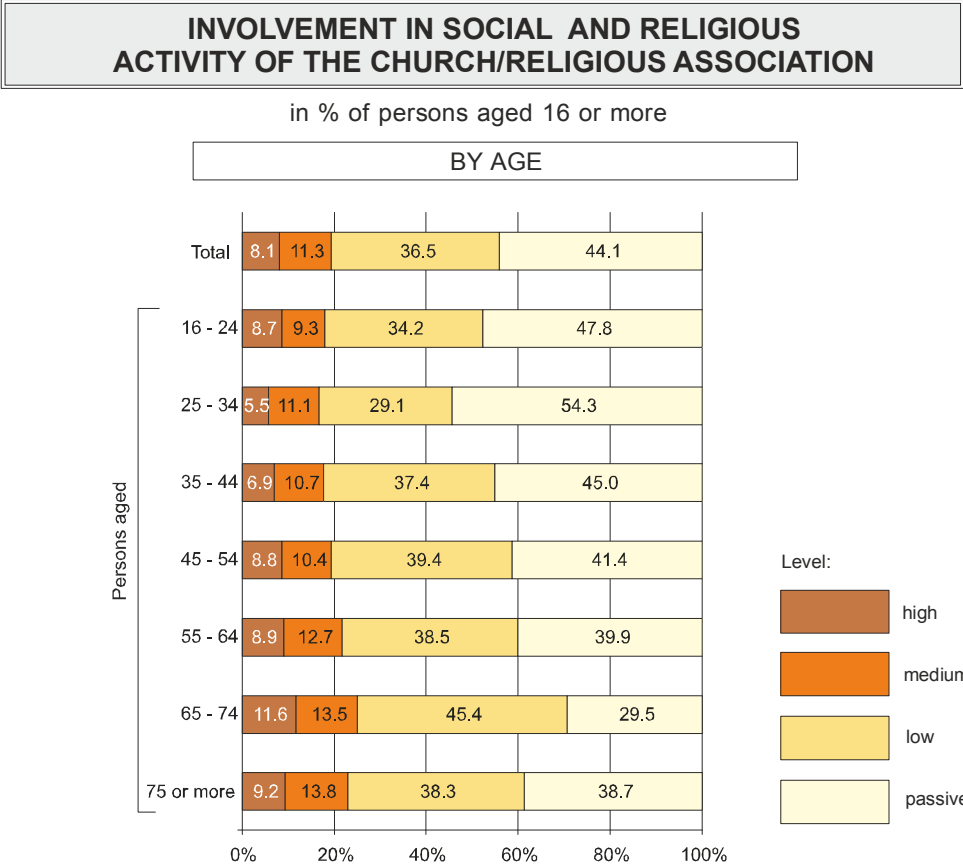
The level of involvement in church activity is also diversified in terms of age. A passive attitude prevails among young people (aged up to 34). Such declarations were made by nearly 48% of persons aged 16-24, and by more than 54% of the persons aged 25-34 (though it is worth noting that the share of inactive men in the reference age groups is exceptionally high, amounting to 53.9% and 62.7%, respectively). In the 25-34 age group, the number of active people is definitely the lowest, including 29.1% at the low level of involvement and only 5.5% at the high level (merely 4.2% for men). Persons at the age of high economic or family-related activity usually show small involvement in church activity. This finding was also confirmed by the survey on voluntary activity and other forms of unpaid work performed outside the household. Unpaid work within religious organisations and institutions was the most infrequent among persons aged 25-34, only 2.3% of whom (3.8% in total)<sup>5</sup> performed such work. The level of involvement in the social and religious activity of the church seems to increase with age. Not only the population of passive persons decreases from over 54% among persons aged 25-34, to less than 30% among persons aged 65-74, but also the share of the most active persons indicates an over two-fold increase (from 5.5% to 11.6%). Older persons, especially aged 65-74, are the most inclined to get involved in church-based initiatives (11.6% in total, including nearly 14% of all women in the reference age group). However, after

<sup>5</sup> Cf. the results of the survey on unpaid work performed outside the household, cf. *Wolontariat w organizacjach i inne formy pracy niezarobkowej poza gospodarstwem domowym (Voluntary work in organisations and other forms of voluntary work performed outside the household) – 2011*, CSO Warszawa 2012, p. 39.



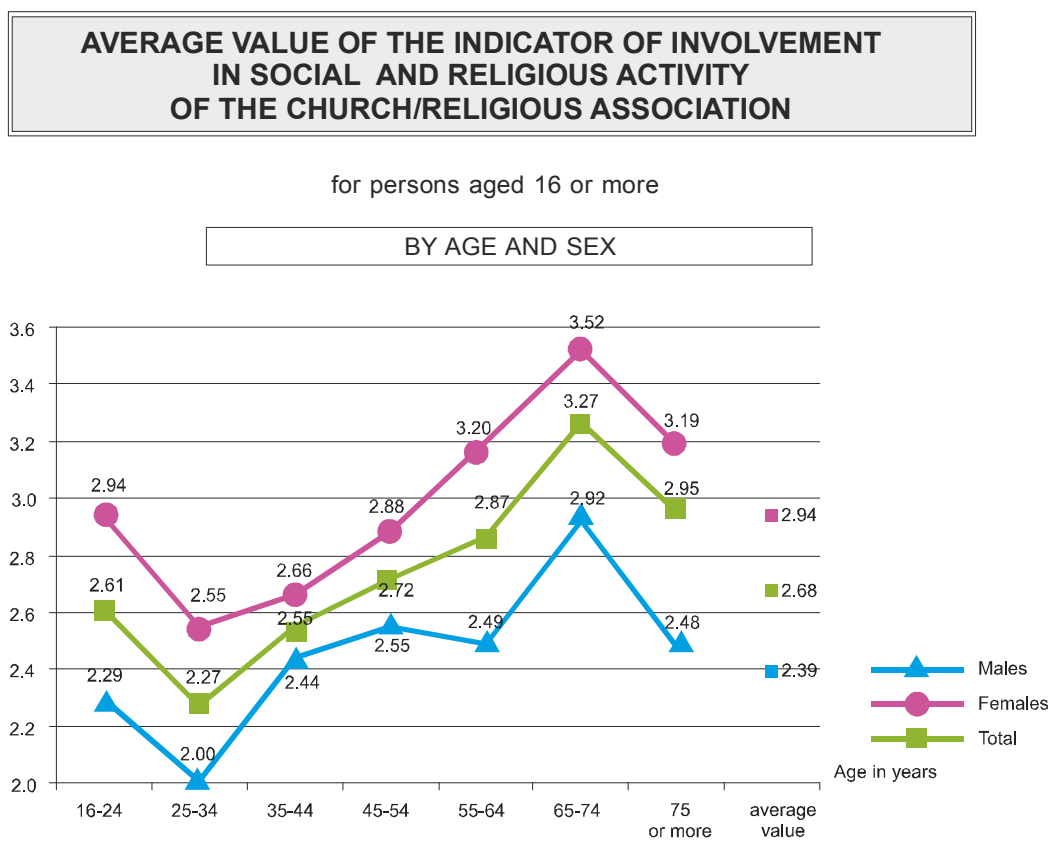
75 years of age, this involvement gets weaker, though it is still relatively significant, amounting to 9.2% at the high level, and to 13.2% at the medium level of involvement among persons in this age group.

Figure 5.3.



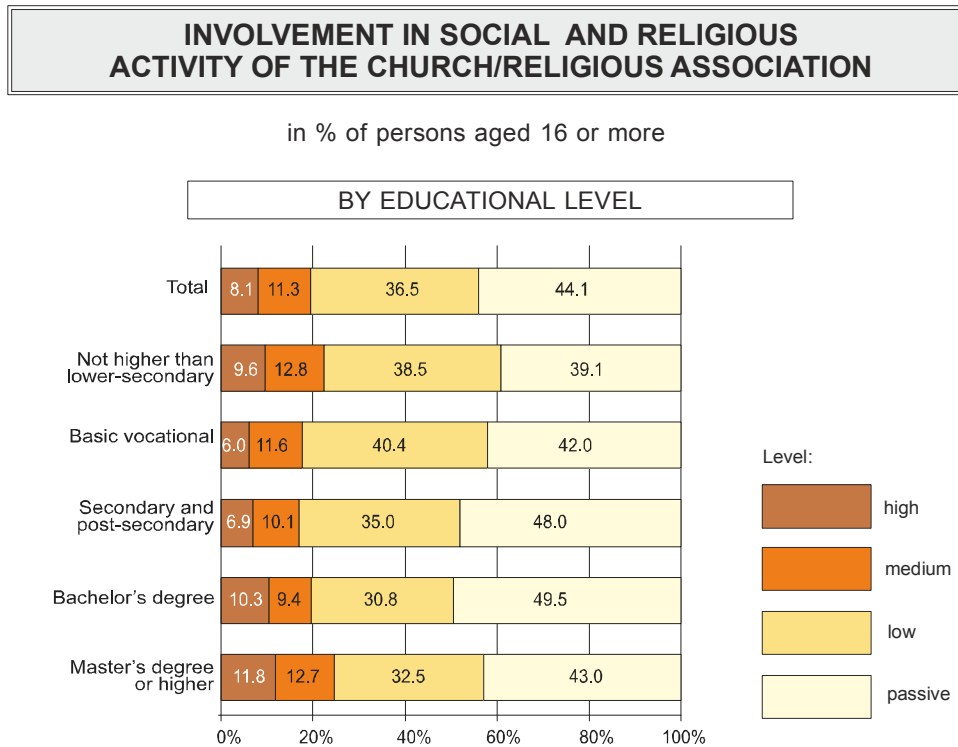
The analysis of average non-categorised values of the indicator of involvement in social activity of the church/religious association by age and sex emphasises the correlations presented. An average value for sex amounts to 2.94 for women, and to 2.39 for men, reaching 2.68 for the entire population. This indicator reaches the highest values among persons aged 65-74 (who are usually inactive economically) – 3.27, including for women – 3.52, and for men – 2.92. High indicator values were also recorded for persons falling within the 55-64 age group (2.87) and for the youngest persons, aged 16-24 (2.61). The results indicate a considerably higher activity of women, as compared to men, in all age categories. These disparities are especially noticeable among persons aged 55-64, in which case the difference between the activity of women and men is the largest, which may partly result from the fact that men retire at a later age than women. The activity of men aged 35-64 remains at a virtually the same level.

Figure 5.4.



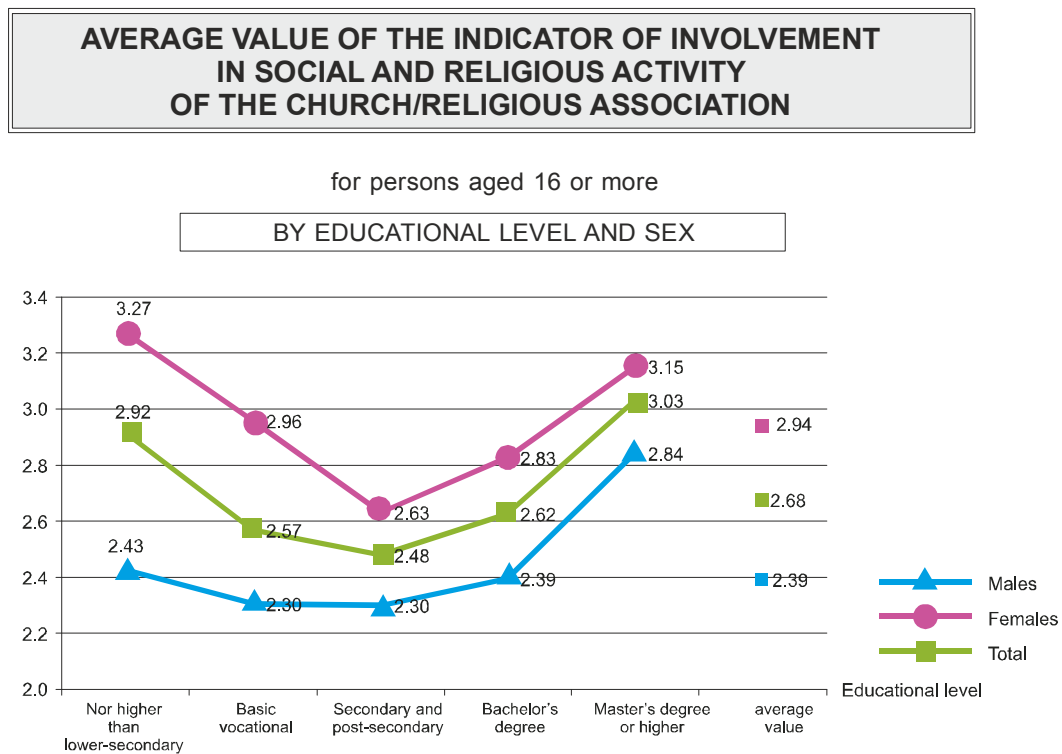
The involvement in the social and religious life of the church is strongly diversified in terms of education. The highest activity is observed among persons with higher education (24.5% at the high and medium level of involvement, altogether) and with education up to lower-secondary school (22.4% at the high and medium level of involvement, altogether). In other groups, the share of persons involved at least at the medium level was lower and did not reach 20%. Relatively significant differences between educational groups, occurring at the high level of involvement, are also worth noting. Among persons with Bachelor, Master or higher degrees this share exceeds 10%, while in the case of persons with basic vocational education, it is only 6%, and among persons with secondary or post-secondary education - nearly 7%. The highest shares of persons with the passive social and religious attitude were recorded among persons with secondary education (48.0%) and with Bachelor degrees (49.5%).

Figure 5.5.



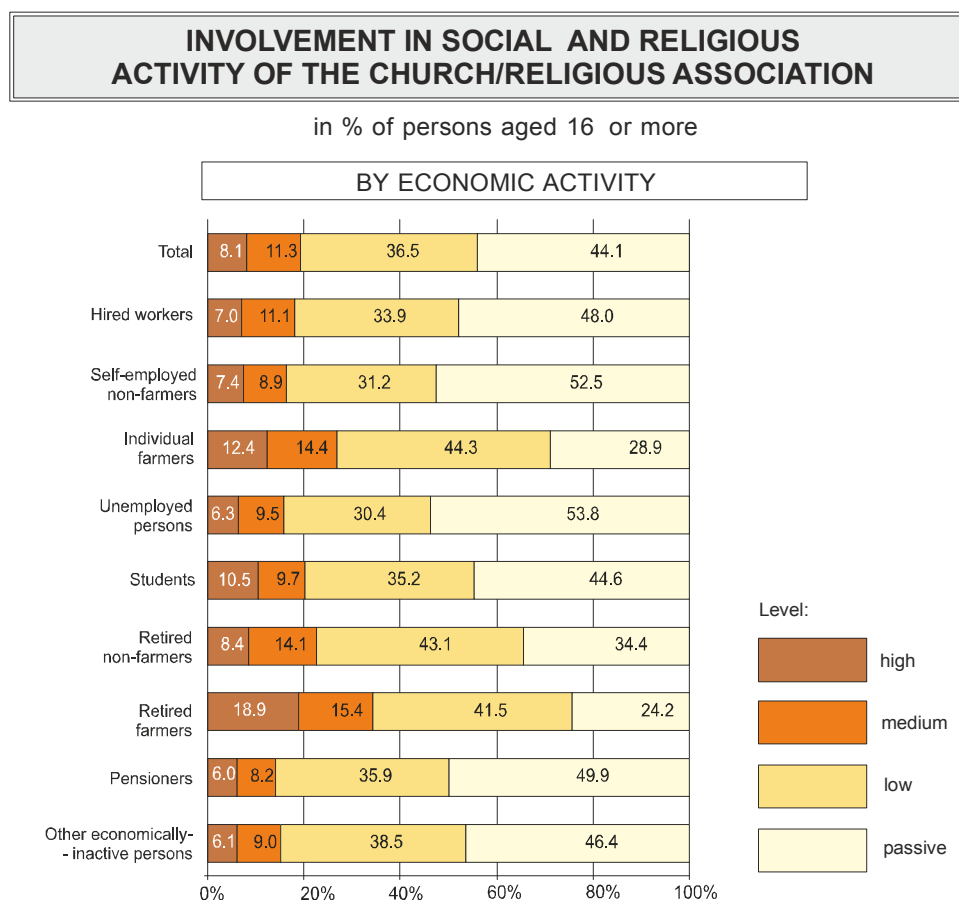
Average values of the indicator by educational level and sex, and the average value of the indicator of involvement for the entire population properly reflect the actual correlations. Persons with the extreme levels of education seem the most involved in the social and religious life of the church/association, with the reference values exceeding the average levels. An additional age-dependent correlation can also be noted in this area. Women show higher involvement than men, and the differences in the level of involvement are, to a large extent, conditioned on the educational level attained. The most considerable differences were recorded in the group of persons with the lowest educational level. Among women, this was the group with the highest level of involvement (3.27), while men with this educational level indicate a level of activity which is barely close to the average (2.43). However, as the educational level becomes higher, the distance between women and men becomes less pronounced. The smallest differences were recorded among persons with at least a Master's degree, where the result for men was the closest to the one obtained for women (2.84 against 3.15).

Figure 5.6.



The analysis of social and religious attitude by economic activity indicates a strong involvement of the rural community in the social life of the church. Among retired farmers, persons with a high level of involvement constitute nearly 19%, and with a medium level - over 15%, which gives a total of over 34% of persons participating in the social activity of the church at two levels of involvement in the reference socioeconomic group. This group is also characterised by the smallest share of persons showing a passive attitude (amounting to slightly more than 24%). Moreover, an average value of the indicator of involvement in the social and religious activity of the church for this group is very high, reaching 3.94. The indicator value for the group of individual farmers is also relatively high (3.28) and the share of the uninvolved population in this group is small as it amounts to less than 29%. At the other extreme of involvement, the following two groups are found: one group in which the share of passive persons exceeds 50% (including unemployed persons and own-account workers outside agriculture), and another group in which the share of passive persons is close to 50% (including pensioners, employees and other economically inactive persons). Taking into consideration the remaining levels of involvement, it can be inferred that these two groups indicate a considerably lower involvement in church activity, as the high level does not exceed 7.5%, and the medium and high level altogether fall within the range from 14% to 18%. In these groups, a passive attitude is prevalent, oscillating around 50% (from 46.4% to 53.8%), while the average value of the indicator of involvement does not exceed 2.45.

Figure 5.7.

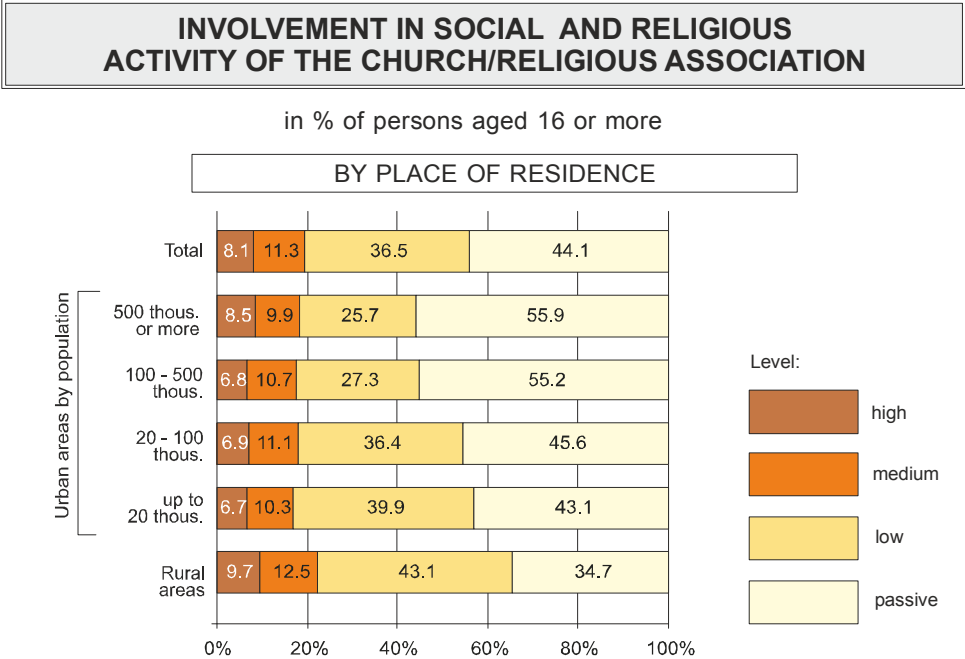


As revealed by the survey, rural inhabitants show higher involvement in the social and religious activity of the church or religious associations. This is reflected in both the average value of the indicator of involvement, and in various levels of activity. The attitude oriented towards social and religious activity also depends on the size of locality. Significant differences can be noted especially as regards the lowest levels of activity, i.e. low and passive. The bigger the locality size, the higher the percentage of passive persons. Among over 55% of the inhabitants of the cities (with 100 thous. inhabitants or more), not even the low level of involvement in the social life of the church was recorded. In contrast, the share of passive persons in rural areas amounted to less than 35%. A reverse trend can be observed with respect to the low level of involvement, where the highest share is recorded in rural areas (43.1%), and the lowest in cities with over 500 thous. inhabitants (25.7%). A lower interest in participating in the social and religious initiatives of the church among city inhabitants has been confirmed by a number of other surveys devoted to this subject matter<sup>6</sup>. This is caused, among others, by the more dynamic lifestyle of urban inhabitants, by higher anonymity which often results in the aversion to participate in local and parish-based initiatives,

<sup>6</sup> This is confirmed by the analysis of the Sunday practice indicators (dominicantes and communicantes), which reveals a strong correlation between the parish size (the number of followers) and participation – cf. *Religijność mieszkańców Warszawy (Religiousness of Warsaw inhabitants)*, Warszawa 2007, pp. 218-227, and also by parish surveys – cf. *Kościół katolicki na początku trzeciego tysiąclecia w opinii Polaków (The Catholic Church at the outset of the third millennium, as viewed by Poles)*, Warszawa 2004, pp. 143-175.

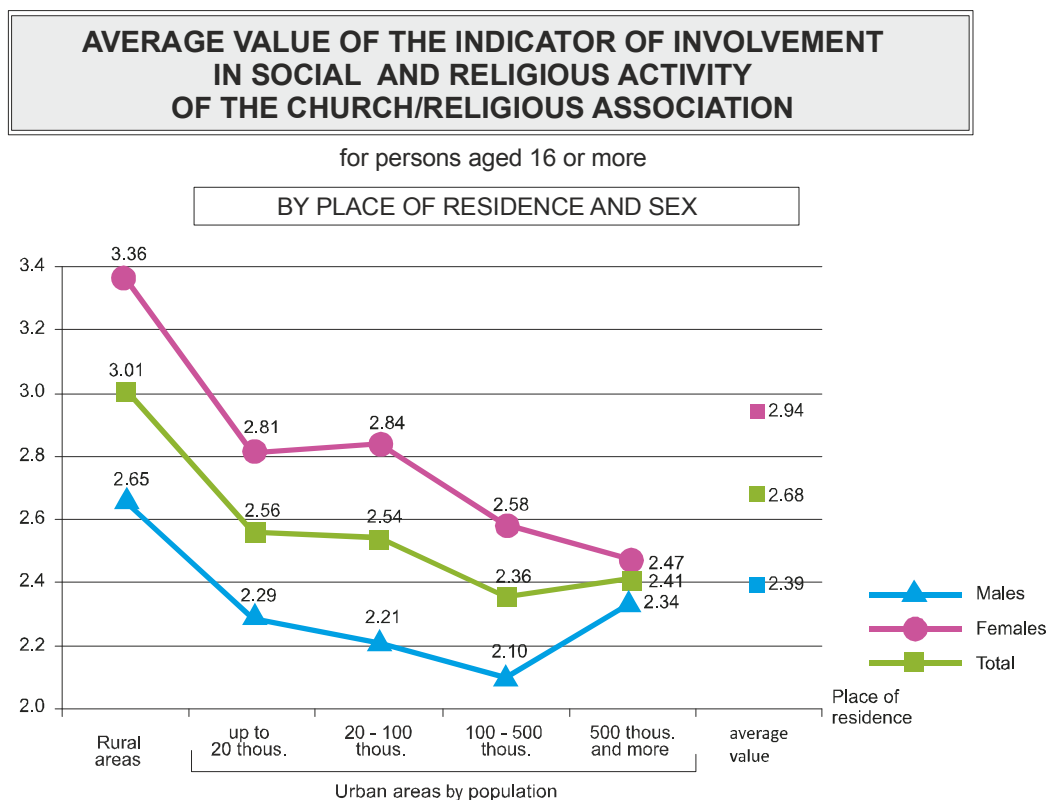
and by the broader range of social, cultural and entertainment-related opportunities that are available to urban inhabitants. These factors frequently contribute to a lower interest in the initiatives organised locally, by the parish or local religious community.

Figure 5.8.



It seems worth taking a closer look at the analysis of the average values of the indicator of involvement in the social and religious activity of the church by the size of locality and by sex, as it confirms the previous findings, and provides a more vivid illustration of the trends discussed. Data indicates that the involvement in social and religious activity declines along with the growth in the locality size. The highest value of the indicator concerned rural areas (3.01), while the lowest value was recorded in cities with 100 to 500 thous. inhabitants (2.36). The indicator value is strongly affected by sex. Differences in this respect could be noted in rural areas and in cities with less than 500 thous. inhabitants. The highest values of the indicator were recorded among women residing in rural areas (3.36). Among men, the indicator was much lower, amounting to 2.65. The lowest level of involvement concerned men residing in cities with 100 to 500 thous. inhabitants (2.10). This figure exerts a considerable impact on the indicator value for the entire population in cities of this type (2.36). A slightly higher involvement in the social activity of the church/religious association occurs among inhabitants of the largest agglomerations (with more than 500 thous. inhabitants), amounting to 2.41. The combined result of the higher involvement of men (2.34) and the lowest activity recorded among women (2.47) manifests itself in the total level of social and religious activity in the largest cities in Poland, exceeding the one recorded in cities with 100 to 500 thous. inhabitants.

Figure 5.9.



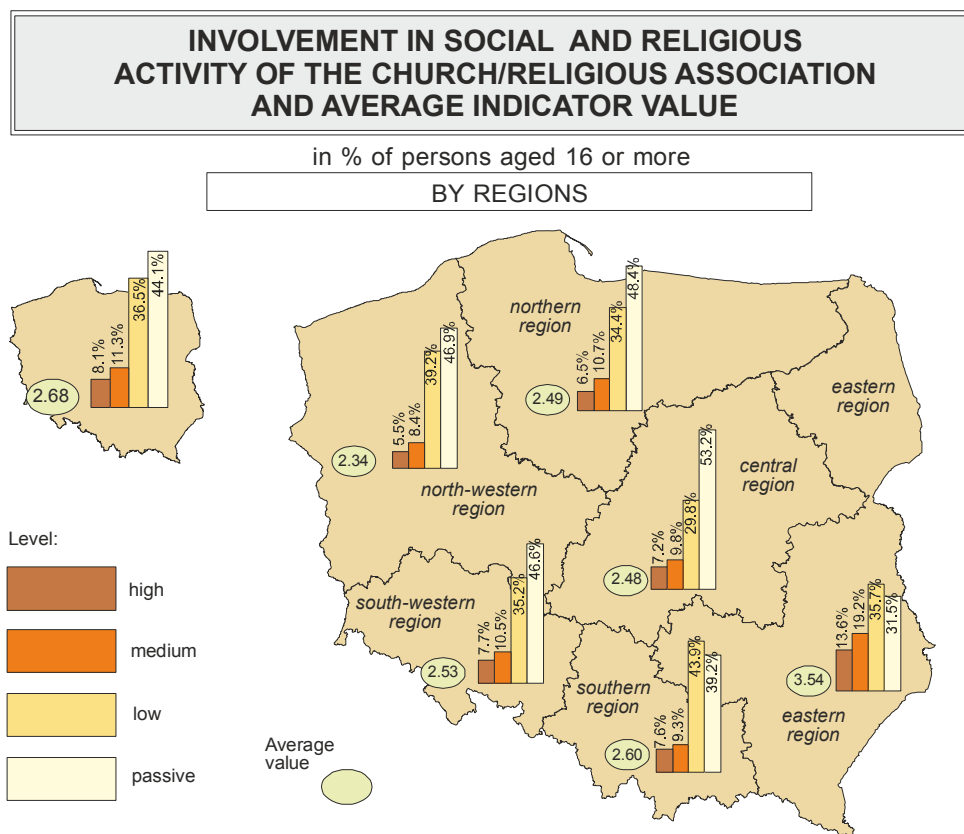
#### 4. REGIONAL AND TERRITORIAL CONDITIONS OF INVOLVEMENT IN THE SOCIAL AND RELIGIOUS ACTIVITY OF THE CHURCH

A relatively strong regional diversification has been revealed while analysing the measurements of involvement in the social and religious life of the church. The eastern, and typically rural, region of Poland seems to prevail in terms of the reference kind of activity. Among inhabitants of this region, persons with high (13.6%) and medium activity (19.2%) formed a numerous group, which translated itself into a high average value of the indicator (3.54). In the eastern and southern region, the share of passive persons was the lowest (below 40%). In turn, the central region was the one where the share of persons showing passive attitude towards the social and religious activity proved the highest (53.2%), while the lowest value of the indicator of involvement was recorded in the north-western region, amounting to 2.34. Such a low value was connected with a very small share of persons showing social and religious involvement, reaching 5.5% at the high level and 8.4% at the medium level of involvement. Low involvement in the activity of church-based organisations in the reference area was also confirmed by the results of the voluntary activity survey, in which only 3.0% of persons<sup>7</sup> declared that they had performed any social work within the four weeks

<sup>7</sup> This share was higher in other regions, e.g. in the eastern region – 4.8%, central – 4.2%, and southern – 3.8%.

preceding the survey. Low religious activity in the region was also revealed by other statistical and sociological studies<sup>8</sup>.

Map 5.1.

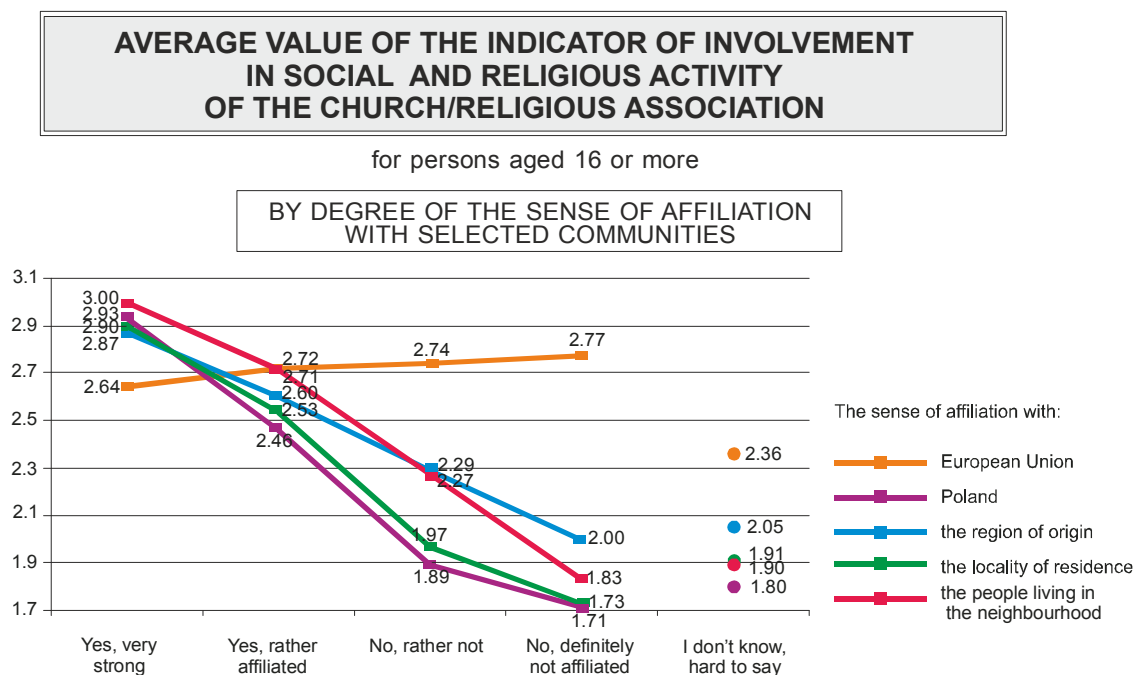


The socio-cultural aspects indicating strong connections with social and religious activity, which fell within the thematic scope of the survey, included questions about the sense of affiliation with selected communities. Based on the data collected, an attempt was made to answer the following question: *Does the level of involvement in the church/religious association's activity influence the strength and sense of relationship with selected groups, communities or places where we stay or live?*

<sup>8</sup> Apart from wielkopolskie voivodship, the north-western region comprises zachodniopomorskie and lubuskie voivodships. These areas are characterised by having low indicators of religiousness, a less developed parish network, and a relatively low number of priests and alumni – cf. *Statystyka diecezji Kościoła Katolickiego w Polsce 1992-2004 (Statistics of the Catholic Church dioceses in Poland in 1992-2004)*, Warszawa ISKK 2006; *Postawy społeczno-religijne mieszkańców Archidiecezji Szczecińsko-Kamieńskiej (Social and religious attitude of inhabitants of the Szczecińsko-Kamieńska Archdiocese)*, Szczecin 2006.



Figure 5.10.



The average non-categorised indicator of involvement was employed with a view to capturing the correlations between the level of involvement in the social and religious activity of the church/association, and the sense of attachment to the European Union, Poland, the region of origin, the locality of residence, and the people living in the neighbourhood. Data reveals a strong correlation between these variables. Strictly speaking, the high level of involvement in the social life of the church translates itself into a strong sense of attachment to Poland, the region of origin, the locality of residence and the people living in the neighbourhood. The indicator value is high in such cases, ranging from 2.87 to 3.00. The strength of attachment becomes considerably weaker along with a drop in the social and religious involvement. Among persons who declare to be *definitely not affiliated*, it takes significantly lower values (from 1.71 to 2.00). This pattern does not hold true only as regards the attachment to the European Union, where the church involvement remains at a similar level, with a slightly upward trend (from 2.64 to 2.77) for persons declaring an increasingly weaker attachment to the European Union.

## 5. SUMMARY

The analysis of results has revealed that around 20% of Poland's population is actually involved (at a high or medium level) in the social and religious activity of the church. In average terms, over 44% of the population remains passive, indicating rare or no involvement. The remaining part of the population (a low level of involvement) gets involved in the activity of a religious community on a regular basis, though to a lower extent. The level of involvement is closely connected with two factors, i.e. sex and the place of residence. Women and rural inhabitants are more likely to engage in the social and religious life. A particularly high indicator of involvement is recorded in the eastern region. Age is another crucial factor, with older persons (above 65 year of age) being more willing to engage in the reference kind of activity. In terms of economic groups, the most involved persons include retired farmers and other retirees, as well as individual farmers, and students. Persons with

extreme educational levels (i.e. a up to lower-secondary, and Master or higher) are characterised by having higher social and religious activity than do persons with other educational levels.

**Note 5.1.**

**STRUCTURE OF THE INDICATOR OF INVOLVEMENT IN THE SOCIAL AND RELIGIOUS ACTIVITY OF THE CHURCH/RELIGIOUS ASSOCIATION**

The indicator of involvement in the social and religious activity of the church/religious association illustrates the level (degree) of personal involvement in the social activity of the church, religious association or organisation, also taking into account the religious dimension. It was constructed using the following dimensions of social and religious activity:

- 1 – the sense of affiliation with the church, religious community or organisation, reflected in membership and the sense of collective responsibility,
- 2 – time devoted to social work within the church, religious association or organisation and the frequency of this kind of work,
- 3 – participation in the events held by a given organisation or association, and participation frequency,
- 4 – religious practices reflected in the frequency of participating in holy masses, services or religious meetings,
- 5 – the sense of attachment to the church or religious association.

The indicator value depends on the responses provided to five questions corresponding to the activity types listed. Appropriate values were assigned to different variables in order to reflect the significance of involvement within the indicator structure:

- 1 – the membership of, or the sense of attachment to, a religious organisation – values 0 or 4;
- 2 – time devoted to social work within the organisation and the frequency of this kind of work – values 0, 1, 2, 3, 4, 5;
- 3 – participation in the events held by religious organisations, and participation frequency – values 0, 1, 1.5, 2, 2.5, 3;
- 4 – religious practices reflected in the frequency of participating in holy masses, services or religious meetings – values 0, 0.5, 1, 1.5, 2;
- 5 – the sense of attachment to the church or religious association – values 0 or 1.

The sum of values from the aforementioned five variables constitutes the indicator value. It can range from 0 to 15, where 0 indicates the lack of any involvement, and 15 – the maximum involvement.

In the publication, the indicator of involvement was presented in two ways:

- as an average value calculated for a given population (the average non-categorised indicator value), and
- as a categorised variable which can take four values; This was established with a view to practically using the indicator, and is based on the sum of the variable values, and on an additional assumption that the high level of involvement excludes persons who did not declare any affiliation with the church or religious association.

The categories of involvement are:

- 1 – passive involvement**
- 2 – low level of involvement**
- 3 – medium level of involvement**
- 4 – high level of involvement**

**Note 5.2.**

**STRUCTURE OF THE INDICATOR OF INVOLVEMENT IN THE SOCIAL AND RELIGIOUS ACTIVITY OF THE CHURCH/RELIGIOUS ASSOCIATION – STAGES.**

**1<sup>st</sup> stage** – ranking and recoding the responses provided to five questions concerning the participation in the life of the church/religious association, and establishing new analytical variables on this basis.

**2<sup>nd</sup> stage** – establishing a summary variable, reflecting the indicator value, based on the analytical variables established during the 1<sup>st</sup> stage. The summary variable illustrates the level of involvement through the total number of points obtained in the observations rating, thereby constituting the actual indicator value. It is used to calculate the average level of involvement in the church/association's activity in the analysis, by selected socio-demographic variables.

**3<sup>rd</sup> stage** – determining the levels of involvement.

The categorisation is performed on the basis of the total number of points, taking into consideration the binding requirements grouping the reference values in the following way:

**0–1.5 ► passive**

**2–4 ► low**

**4.5–7 ► medium**

**7.5–15 ► high**

Determining the (four) levels of involvement within the indicator additionally complies with the following requirements:

- having the sense of relationship with the church or religious denomination, and participation in holy mass or a service *once a month or less frequently*, without indicating any other kind of involvement, puts the person in the *passive* category;
- having the sense of relationship with the church or religious denomination, and participation in holy mass, a service, or a religious meeting more often than once a week, without indicating any other kind of involvement, puts the person in the *low* category;
- having the sense of relationship with the church or religious denomination, and having a high frequency of participation in holy masses, services or religious meetings, and membership of, or the sense of affiliation to, a religious organisation, without indicating any other kind of involvement, puts the person in the *medium* category;

**4<sup>th</sup> stage** – In order to determine the highest level of involvement, an additional criterion (apart from points) has been adopted, according to which this category may only include persons declaring their relationship with the church or religious association.

Establishing *the indicator of involvement in the church/religious association's activity* which takes the following values:

**1 – passive**

**2 – low**

**3 – medium**

**4 – high**

## 1. INTRODUCTION

The aim of the social cohesion survey was to expand the information resources of official statistics so as to enable more comprehensive assessments of the social situation in Poland. This also involved increasing the number of measures illustrating the spatial diversification of the quality of life. The sample size which determines accuracy, along with the ability to present the results obtained, allows for presenting selected measures at the voivodship level. The voivodship compilations presented in this part of the study touch upon several important thematic areas, including the material situation of households, poverty, social relations and satisfaction with various aspects of life. We hope that this information will significantly complement “the statistical portraits of voivodships”. It will allow, among other notions, for determining the extent, to which the assessments of the territorial diversification of the perceived quality of life, reflected in “what people think about how they lead their lives”, correspond to the actual diversification arising from the analysis of the so-called hard data on socio-economic development.

The major part of the annex comprises graphics, figures and tables, illustrating the situation in individual voivodships in terms of the issues under analysis. The following descriptive part has been limited to short methodological and analytical notes concerning the data presented in this annex.

### Definitions of indicators presented in this annex

Thematic area/indicator	Definition
<b>MATERIAL SITUATION OF HOUSEHOLDS</b>	
Middle (median) income	<p>The <u>median (middle) income</u> is such a value that one half of the population surveyed has lower income, and the other half higher. Income assigned to individuals corresponds to an equivalised monetary income per month, calculated (as described below) for the entire household of a given person.</p> <p>The <u>equivalised income</u> is a theoretical income per capita in the household, recalculated by means of a special scale which takes into consideration the differences in the costs of living incurred by households with different sizes and structures (adults/children). Formally speaking, this income is not calculated per capita, but per an equivalent unit.</p> <p><u>Income recalculation</u> was based on the so-called OECD-modified equivalence scale, which takes the following values of equivalent units per household member: for the first adult – 1; for each consecutive household member aged 14 years or more – 0.5; for each child aged less than 14 – 0.3. The equivalised income is obtained by dividing the total household income by the number of equivalent units in the household.</p>
Indicator of quintile income inequality	The ratio of the sum of equivalised income earned by 20% of persons with the highest level of income, to the sum of income earned by 20% of persons with the lowest level of income within the population.

**Definitions of indicators presented (cont.)**

Thematic area/indicator	Definition
<b>MATERIAL SITUATION OF HOUSEHOLDS cont.</b>	
Indicator of income poverty	% of households in which the monthly equivalised income at household's disposal (within 12 months preceding the survey) was lower than the value regarded as the poverty threshold. The poverty threshold was assumed at 60% of the median equivalised income, i.e. income comparable between households with different demographic structures.
Indicator of living conditions poverty	% of households in which at least 10 indications of poor living conditions were observed, based on the list of 30 symptoms concerning the dwelling quality, the provision of durable consumer goods, and the deprivation of various types of consumer needs (financial and non-financial).
Indicator of poverty in terms of the lack of budget balance	% of households which were considered poor in terms of "inability to deal with their budget", i.e. in which at least 4 out of 7 symptoms were identified, including both the subjective opinions of households on their material status, and the facts testifying to budget difficulties faced by the household (including payment arrears).
Indicator of high income	% of households with the highest income (i.e. those in which the monthly equivalised income exceeded 5/3 (approx. 167%) of the median equivalised income, i.e. approx. 2.8 times higher than the average relative poverty threshold).
Indicator of good living conditions	% of households in which no indication of poor living conditions, included in the list of 30 symptoms, was identified.
Indicator of good budget standing	% of households with the highest budget freedom, i.e. those which positively assessed their ability to use their income, and in which none of the 7 symptoms of "inability to deal with their budget" was identified.
Indicator of net income situation	The indicator of net income situation corresponds to the difference between the indicator of high income and the indicator of income poverty. Positive values indicate the prevalence (expressed as a percent of the entire number of households in a given population) of households with the highest income, over households affected by income poverty, whereas negative values reflect the preponderance of households affected by poverty.
Indicator of net living conditions	The indicator of net living conditions corresponds to the difference between the indicator of good living conditions income and the indicator of living conditions poverty. Positive values indicate the prevalence (expressed as a percent of the entire number of households in a given population) of households with the best living conditions, over households affected by living conditions poverty, whereas negative values reflect the preponderance of households affected by poverty.
Indicator of net budget standing	The indicator of net budget standing corresponds to the difference between the indicator of good budget standing and the indicator of poverty in terms of the lack of budget balance. Positive values indicate the prevalence (expressed as a percent of the entire number of households in a given population) of households with the highest budget freedom, over households affected by poverty in terms of the lack of budget balance, whereas negative values reflect the preponderance of households affected by poverty.
Indicator of net material situation	The indicator of net material situation is the resultant of three indicators describing various aspects of the material situation, i.e. income situation, living conditions and budget standing. It is calculated as the sum of three constituents (i.e. partial indicators defined above): the indicator of net income situation, the indicator of net living conditions, and the indicator of net budget standing.

**Definitions of indicators presented (cont.)**

<b>Thematic area/indicator</b>	<b>Definition</b>
<b>ASSISTANCE</b>	
<b><i>Households in need of assistance:</i></b>	
financial	% of households which were in need of financial assistance within 12 months preceding the survey.
in kind	% of households which were in need of assistance in kind, e.g. clothing, food, fuel, course books, or free meals (also for children at school), within 12 months preceding the survey.
in the form of services	% households which were in need of assistance in the form of services, e.g. free child care, legal or psychological counselling, day-care activities, or free private lessons, within 12 months preceding the survey.
<b><i>Households receiving assistance:</i></b>	
financial	% of households which received financial assistance within 12 months preceding the survey.
in kind	% of households which received assistance in kind within 12 months preceding the survey.
in the form of services	% of households which received assistance in the form of services within 12 months preceding the survey.
<b>ELEMENTS OF HUMAN CAPITAL</b>	
General health assessment	Declarations made by persons aged 16 years or more related to health self-assessment.
Computer literacy	% of persons aged 16 years or more who have ever used a computer for work, school or entertainment.
Internet use	% of persons aged 16 years or more who have ever used the internet (at home, at work or elsewhere).
Personal skills indicator	An aggregate indicator which includes holding a driving licence and having the ability to drive a car, the number of foreign languages spoken and the level of command exhibited, as well as computer and internet literacy. This indicator may take five different values, starting with "very low or none" to "very high". It indicates the % of persons aged 16 years or more with a given level of personal skills.
<b>LOCAL COMMUNITY AND SOCIAL CONTACTS</b>	
<b><i>The sense of attachment to the place of residence</i></b>	
Persons experiencing the sense of attachment to their locality	% of persons aged 16 years or more who declared the sense of attachment to the locality they lived in.
Persons experiencing the sense of attachment to the people living in the neighbourhood	% of persons aged 16 years or more who declared the sense of attachment to the people living in their neighbourhood.
<b><i>Social contacts</i></b>	
Indicator of involvement in a formal social network	% of persons aged 16 years or more who declared their involvement in at least one organisation, association or formal group. The organisations, communities and formal groups considered are referred to as secondary associations (in contrast to primary associations which include, e.g., families and groups of friends). Therefore, this indicator may be called the indicator of membership of secondary associations.
Indicator of good relations with neighbours	% of persons aged 16 years or more who declared visiting their neighbours, spending time together or doing various favours for each other.

## Definitions of indicators presented (cont.)

Thematic area/indicator	Definition
<b>LOCAL COMMUNITY AND SOCIAL CONTACTS cont.</b>	
Indicator of social isolation	% of persons aged 16 years or more for whom low (or zero) intensity of social contacts with persons from outside their household was observed, which was treated as a symptom of isolation. Persons for whom no more than 3 types of contacts/relations were identified were considered affected by isolation. While constructing the indicator, there were taken into consideration contacts with family members from outside the household, contacts with friends and neighbours, participation in religious practices requiring a contact with other people, having close friends and participation in organisations, communities and formal groups.
Sense of physical safety	Declarations made by persons aged 16 years or more related to the sense of physical safety in their place of residence.
<b>SUBJECTIVE ASSESSMENT OF THE QUALITY OF LIFE</b>	
<b>Level of satisfaction:</b>	
with current occupational status	% of persons aged 16 years or more, declaring that they were satisfied with their current occupational status, taking into account the kind of work, working time, and salary/income.
with educational level	% of persons aged 16 years or more, declaring that they were satisfied with their educational level, taking into account the level and field of education.
with current family situation	% of persons aged 16 years or more, declaring that they were satisfied with their current family situation.
with relations with other people, including acquaintances and friends	% of persons aged 16 years or more, declaring that they were satisfied with their relations with other people, including acquaintances and friends.
with financial situation	% of persons aged 16 years or more, declaring that they were satisfied with their financial situation (including income).
with material living conditions	% of persons aged 16 years or more, declaring that they were satisfied with their material living conditions (excluding income).
with the amount of free time	% of persons aged 16 years or more, declaring that they were satisfied with the amount of free time at their disposal.
with leisure activities	% of persons aged 16 years or more, declaring that they were satisfied with their leisure activities.
with health status	% of persons aged 16 years or more, declaring that they were satisfied with their health status.
with life in general	% of persons aged 16 years or more, declaring that they were satisfied with their life in general.

## 2. METHODOLOGICAL AND ANALYTICAL NOTES

### The GDP level vs. the income situation of households

The analysis of GDP (Gross Domestic Product), traditionally viewed as a synthetic measure of economic development, has revealed considerable differences between voivodships. Mazowieckie voivodship was distinguished among other voivodships, with the average GDP value per capita in 2010 by approx. 63% higher than the national average. Dolnośląskie voivodship was rated second, with the GDP value per capita by approx. 13% higher than the national average.

The GDP level per capita exceeding the average national level was also recorded in śląskie (by approx. 7% higher) and wielkopolskie voivodships (by approx. 4%). The lowest value of gross domestic product per capita was recorded in podkarpackie and lubelskie voivodships (by approx. 32-33% lower than the national average). The GDP level per capita was also much lower (by approx. 20-27%) than the national average in podlaskie, warmińsko-mazurskie, świętokrzyskie and opolskie voivodships.

The results of the social cohesion survey, similar to other surveys, have confirmed that voivodships with the highest GDP are characterised with having relatively the most favourable income situation of households<sup>1</sup>. Indeed, the highest level of the median monetary income (recalculated into equivalent units) was found in the following voivodships: mazowieckie, dolnośląskie and śląskie (by approx. 13%, 11% and 8% higher than the national median income for Poland). In turn, the lowest value of median income was recorded in lubelskie, podkarpackie and świętokrzyskie voivodships (by approx. 19%, 16% and 12% lower than the national median income), which are also characterised by having the lowest GDP per capita. However, the correlations between the income situation of households and GDP are not so obvious for all voivodships. For instance, the GDP value in opolskie voivodship belongs to the lowest values on the national scale, while the household income is close to the national average. This may stem, among other reasons, from income transferred from abroad. As shown by the recent census, opolskie voivodship indicated the most intense population outflow to other countries, and the results of the household budget survey has revealed a relatively high share of income from abroad in the total income of households residing in this voivodship.

Economic migration, both international and domestic, and related income transfer, constitutes one of the reasons why the voivodship diversification in the case of household income is lower<sup>2</sup> than the one concerning GDP per capita. More dynamic and economically-developed voivodships are chosen as a place of work, and not necessarily as a permanent place of residence for inhabitants of poorer regions.

### **Diversification of the indicator of good living conditions**

A slightly different illustration of the diversification by voivodship, as compared to the income situation, will be obtained while analysing the indicator of good living conditions which determines the share of households whose living conditions were considered very good, based on a specially-constructed measure. The reference measure takes into account dwelling conditions, the provision of durable consumer goods, and the ability to satisfy a number of material and non-material needs. The value of the indicator of good living conditions ranged from 11% to 20%. The highest share of households identified as living in very good conditions occurred in opolskie and wielkopolskie voivodships. The share of such households was also higher than the national average in kujawsko-pomorskie, podkarpackie, podlaskie and mazowieckie. Therefore, the group of voivodships with high values of the indicator of good living conditions also included voivodships at a low level of economic

---

<sup>1</sup> It should be borne in mind that the differences occurring between the values of published indicators on the income situation of households, derived from various surveys, is a natural phenomenon. It may stem both from different definitions, e.g. of the income categories analysed (whether it is monetary income, taking into consideration the value of natural consumption; converted per natural persons, or the so-called equivalised income, taking into account the differences in the size and demographic structure of households; and whether we focus on the average income or on median income), or from the sampling error as each survey is conducted using a different sample.

<sup>2</sup> This concerns the comparison of both the median and average income (the arithmetic mean).



development, with a relatively high level of income poverty. The lowest share of households living in good conditions (based on the criteria adopted) was recorded in lubelskie, lubuskie, małopolskie, świętokrzyskie and warmińsko–mazurskie voivodships.

The value of the indicator of diversification of good living conditions for various voivodships, with reference to the average indicator value for Poland (Poland in total = 100%), ranged from 73% to 133%. To compare, the voivodship indicators of diversification of the level of median income fell within the range from 81% to 113%, and the GDP value per capita did so from 67% to 163% of the national average. Voivodships with the highest values of the indicator of good living conditions, i.e. opolskie and wielkopolskie voivodships, were rated 11. and 4., respectively, according to GDP per capita.

## **Poverty**

The analysis of different poverty forms, conducted on the basis of the results of the social cohesion survey, has revealed that the territorial diversification of this phenomenon looks slightly different, depending on the poverty form considered (income poverty, living conditions poverty, and poverty in terms of the lack of budget balance). However, we can identify a group of voivodships in which a relatively high share of households affected by more than one of the three poverty forms can be observed. Such a phenomenon is referred to as multi-dimensional poverty. This concerned, to the highest extent, families living in warmińsko-mazurskie, zachodniopomorskie, świętokrzyskie and lubelskie voivodships, approx. 14% to 19% of whom were affected by at least two poverty forms at the same time.

## **The sense of attachment to the people living in the neighbourhood, and the sense of security in the place of residence**

Quality of life is determined not only by typically-material factors, interpersonal relations also play a crucial role. This concerns both a relationship with nuclear family members and friends, as well as involvement in various types of organisations. The relationship with closer and farther neighbours also matters – especially in the context of building local social capital. A sense of attachment to the people living in the neighbourhood was declared, in national terms, by 79% of persons aged 16 years or more. Definitely the smallest share (as compared to other voivodships) occurred in zachodniopomorskie voivodship (69%), and the highest in lubelskie, świętokrzyskie and podkarpackie voivodships (84-87%), i.e. where the share of rural inhabitants is the highest.

Having a good relationship with neighbours may also constitute one of the many factors contributing to a higher sense of security in the place of residence. Generally speaking, voivodships whose inhabitants indicate better relationships with neighbours are characterised by having higher indicators of the sense of security in the place of residence. However, any conclusions regarding this correlation should be drawn with caution. For example, in zachodniopomorskie voivodship, characterised with the lowest values of both the indicator of attachment to the people living in the neighbourhood and the indicator of good relationships with neighbours, the declared level of security was the same as in świętokrzyskie voivodship, whose inhabitants indicated very good relationships with neighbours. The lowest threat to security in the place of residence was experienced by inhabitants of the following voivodships: podkarpackie, warmińsko-mazurskie, wielkopolskie, podlaskie and małopolskie (8-10%). In turn, the highest sense of threat to security was recorded in dolnośląskie, śląskie and łódzkie voivodships (17-18%).

## **Life satisfaction**

The subjective life satisfaction, as perceived by persons themselves, is measured on the basis of declared satisfaction with various aspects of life, and with overall life satisfaction. For each of those measures, different territorial diversification patterns are observed.

Basically speaking, the partial measures (concerning various aspects) indicate stronger territorial diversification than the indicator of overall life satisfaction. The level of satisfaction with health status, which is, to a large extent, biologically-conditioned, constitutes an exception, as it indicates the lowest territorial diversification.

The largest differences were recorded in the level of the perceived satisfaction with material living conditions and the current occupational status. In this case, the differences reached 26 percentage points. Inhabitants of opolskie voivodship were the most satisfied with their occupational status, living conditions and financial situation.

The voivodship diversification in terms of the level of overall life satisfaction amounted to 11 percentage points. Most of Poland's inhabitants aged 16 years or more (74%) were satisfied with their lives. The lowest shares of satisfied persons concerned warmińsko-mazurskie, lubelskie and zachodniopomorskie voivodships (67-68%). In the remaining voivodships, this share exceeded 70%, including eight voivodships where it reached 76-78%. Inhabitants of pomorskie, śląskie and lubuskie voivodships were the most inclined to assess their lives in a positive way.

## **Other territorial profiles**

### Internal voivodship diversification

When analysing the indicators calculated for various voivodships, it should be borne in mind that they provide only "a generalised picture" of a region, without bearing any information on its internal diversification. Mazowieckie voivodship may serve as an excellent example of a voivodship exhibiting a large diversification in terms of the socio-economic situation, which translates itself into the measures of the quality of life. Excluding Warsaw from the administrative borders of mazowieckie voivodship would result in a considerable change of the voivodship's position in relation to other voivodships. For instance, upon excluding Warsaw, the share of households in mazowieckie voivodship with relatively the highest income would drop from 28% to 16% (i.e. below the national average). The indicator of income poverty would grow from 12% to 17%, and the indicator of living conditions poverty would increase from 14% to 17%. The exclusion of Warsaw has, however, a rather lower impact on the assessment of the perceived quality of life. The share of persons aged 16 years or more, who were satisfied with their lives, amounted to 72% in mazowieckie voivodship, and to 71% upon excluding Warsaw.

As in the case of the national scale, the intraregional diversification in terms of the level and quality of life develops along the urban-rural line, while in urban areas it is correlated with their size. Due to the sample size used in the social cohesion survey, it was impossible to present voivodship results in consideration of such a division. However, it can be assumed with high probability that the general conclusions regarding the differences in the quality of life between urban and rural inhabitants, drawn on the basis of the national data, are also true of regions<sup>3</sup>.

---

<sup>3</sup> The impact of the place of residence on various aspects of the quality of life was discussed in the analytical part of the publication. This section features a tabular compilation of selected indicators of the quality of life by locality class, as it was previously done by voivodship. However, it should be borne in mind that, in principle, a traditional classification based on

## Locality class vs. the quality of life

### *Income, living conditions and poverty*

Our social cohesion survey has confirmed, among other issues, the occurrence of considerable differences in the level of income of inhabitants of cities, towns and villages. Large cities are characterised by having the highest level of median income, and having higher shares of households with relatively high income and good budget standing. The share of households with high income ranged from approx. 38% of in cities with 500 thous. inhabitants or more, through 25% in cities with 100 to 500 thous. inhabitants, and 13% in towns with less than 20 thous. inhabitants, to 10% in villages. In addition, the indicator of good budget standing ranged from 22% in the cities with the largest number of inhabitants, to 11-13% in villages and towns. Less significant differences between various locality classes were recorded as regards the indicator of good living conditions, which amounted to 15-17% in urban areas and to 13% in the rural ones.

At the same time, the share of households affected by living conditions poverty as recorded in rural areas was higher than in the urban ones (18% and 12%, respectively). The level of threat with this poverty form declines with a growth in the locality size. Hence, higher disproportions between urban and rural areas, and between urban localities of different sizes, were recorded in terms of income poverty (ranging from 5% of poor households in cities, through 17% in towns with less than 20 thous. inhabitants, to 24% in rural areas). However, difficulties with balancing the household budget concerned urban and rural inhabitants to the same extent (approx. 16% of households affected by this poverty form in both locality types), and the urban locality class proved to be of minor significance. Slightly lower shares (as compared to other urban localities) were observed in the largest cities with 500 thous. inhabitants or more.

### *The sense of attachment to the people living in the neighbourhood, and the sense of security in the place of residence*

The results of this survey show that the lower the locality size, the higher the group of persons declaring the sense of attachment to their neighbours. This share was the highest in rural areas, amounting to 88%, whereas among inhabitants of the largest cities (500 thous. inhabitants or more), 63% of persons aged 16 years or more felt attached to their neighbours. In addition, rural inhabitants felt much safer in their place of residence than the urban ones. However, the highest sense of insecurity at night concerned persons living in cities with 100 to 500 thous. inhabitants (23%). In large agglomerations, less than every fifth person (19%) felt insecure, and in rural areas – every twentieth.

---

administrative criteria, making a distinction into rural areas (as one class) and urban areas divided into several classes, based on the number of inhabitants, while neglecting such factors as the functional type of localities, limits the conclusion-drawing possibilities. This concerns, among others, the illustration of an increasingly more noticeable diversification in terms of the level, style and quality of life in rural areas, which stems, among others, from de-agrarisation processes that lead to a decreasing significance of agriculture, both in the economic and socio-cultural sphere.

### *Life satisfaction*

Similar assessments were observed, irrespective of the locality type and size, as regards the level of satisfaction with one's own family situation, one's relationship with other people, one's health situation. The most considerable differences between urban and rural areas, and between urban localities of various sizes, were recorded in terms of the educational level. Inhabitants of the largest cities were the most satisfied with their educational level (61% of satisfied persons), while the lowest level of satisfaction concerned inhabitants of towns and villages (53% and 49%, respectively). Satisfaction with income and living conditions was drawn more frequently in cities than in towns and villages. In cities with 500 thous. inhabitants or more, 39% of persons were satisfied with their financial situation (including income), as compared to 33% in towns and 31% in villages. The level of satisfaction with material living conditions (excluding income) ranged from 53% in the smallest towns and villages, to 59% in cities with more than 500 thous. inhabitants. However, the level of overall life satisfaction did not differ considerably in terms of the locality class. Both in urban and rural areas, approx. 74% of persons were satisfied with their lives, among whom inhabitants of the largest cities prevailed (77%).

### **Material situation vs. life satisfaction**

Even a brief analysis of the measures illustrating various aspects of life reveals that the scale of diversification and the voivodship rating both depend on the thematic area and the quality-of-life symptom considered. There is no voivodship that would be rated first (or last) in terms of all aspects analysed. However, an attempt can be made at distinguishing certain groups of voivodships in which an accumulation of either negative or positive symptoms of the quality of life could be observed, especially for some specific dimensions. This concerns, for example, the broadly-defined material living conditions.

An indicator of the net material situation was constructed with a view to comparing the diversification of the overall material situation on the basis of the social cohesion survey. It describes the situation for a given population, such as a situation of voivodship, through a single figure, allowing for very synthetic and fast, yet obviously simplified, comparisons. Generally speaking, a positive value of the indicator would reveal that the number of households in the best situation exceeds the number of households in the least favourable position, while the reverse observation would be reflected in a negative value.

The indicator of the net material situation is based on three indicators describing various aspects of the material situation, i.e. income, living conditions and budget standing. It is calculated as the sum of three constituents, i.e. the indicator of the net income situation, the indicator of net living conditions, and the indicator of net budget standing. The total indicator value for Poland amounts to 4, which would provide a point of reference if we wished to compare the material situation of inhabitants of a given voivodship with the national average.

**Note 6.1.**

**INTERPRETATION OF THE INDICATOR OF THE NET MATERIAL SITUATION  
AND ITS CONSTITUENTS**

The indicator of the net material situation is calculated on the basis of the indicators of poverty and good material situation, analysed in terms of its three aspects, namely - income, living conditions and budget standing. The structure of both this indicator and source indicators was described in the list of indicator definitions at the beginning of this chapter.

Poverty definitions and criteria identifying households in the best situation as regards living conditions and budget standing were constructed so as to ensure a relative balance, i.e. so that the general number (share) of households in Poland, both affected by poverty and included in the group of the most favourable situation, would be similar (in terms of these two aspects). In consequence, the reference net indicators are close to zero. This means that the indicators for various populations (e.g. voivodships) may be viewed, to some extent, as deviations from the national average.

As regards the income situation, the idea behind constructing the reference indicators was slightly different. The income poverty and high income thresholds were determined symmetrically, though the symmetry concerned the income value (threshold) rather than the distribution (of the shares of households or persons included in the extreme groups). The threshold values are symmetrical in relation to the median in the logarithmic scale: the poverty threshold constitutes 3/5th (60%) of the median (according to the equivalised income), and the high income threshold, 5/3rd of the median (the reverse of 3/5th). The indicator structure itself does not determine the general neutral (close to zero) value of the indicator of the net income situation for Poland.

This indicator for Poland would amount to zero if income exhibited, e.g., a log-normal distribution or a distribution with comparable asymmetry (i.e. if the income logarithm was symmetrically distributed), and if the average size of households with high and low income did not significantly differ. In reality, this condition was not satisfied.

The indicator of the net income situation for Poland amounts to 4, which stems from both the differences in the size of households with different income, and the actual income distribution. The indicator of the net material situation for Poland also equals 4, resulting from the income situation constituent. When conducting a relative assessment of the reference indicators for individual voivodships (i.e. in relation to the national average), they should be referred to the aforementioned indicator value.

The highest value of the indicator of the net material situation was recorded in mazowieckie voivodship (21), followed by wielkopolskie voivodship (16), then by śląskie voivodship (13), and then by opolskie voivodship (11). As regards mazowieckie and śląskie voivodships, the values of all three partial indicators were positive, though the indicator of the net income situation exerted the highest influence on the general indicator value. In mazowieckie voivodship, the share of households earning a high income was by 16 percentage points, and in śląskie voivodship, by 8 percentage points, higher than the share of households living in income poverty. In wielkopolskie and opolskie voivodship, positive values were recorded for two constituents. It is worth noting that the following voivodships also

indicated definitely positive values of the indicator of the net income situation (6-8): podlaskie, pomorskie and dolnośląskie. These are located at the opposite ends of Poland and bear different socio-economic features.

Based on the criteria adopted, the following voivodships were considered to experience the worst material situation: lubelskie, warmińsko-mazurskie and świętokrzyskie (the indicator of the net material situation ranging from -16 to -18), as well as lubuskie and zachodniopomorskie (from -12 to -13). In these voivodships, virtually all partial indicators were negative, except for the indicator of the net income situation in warmińsko-mazurskie voivodship (amounting to 1).

In three out of five voivodships characterised by having the worst living conditions, the lowest values of the indicator of life satisfaction were also recorded. These included warmińsko-mazurskie, lubelskie and zachodniopomorskie voivodships. However, in świętokrzyskie voivodship, (which is included in the group of voivodships having an unfavourable material situation), 74% of the surveyed persons were satisfied with their lives, i.e. only slightly less than in śląskie, dolnośląskie and opolskie voivodships (which are considered to experience the best material situation), and slightly more than in mazowieckie voivodship. The level of life satisfaction was even higher in lubuskie voivodship (77%).

Attention should also be drawn to the values of the indicator of the net material situation for individual locality classes. The higher the urbanisation degree (i.e. the number of inhabitants), the higher the indicator value. For rural areas, it reaches -24, and for the largest cities with at least 500 thous. inhabitants – 49. The diversification in terms of the material situation is therefore higher in relation to locality classes (the spread of the indicator values of the net material situation equals 73) than in relation to voivodships (the spread of 39). A considerable diversification of the material situation by locality class is not reflected in the assessments of the degree of life satisfaction. As has already been mentioned, in both urban and rural areas, approx. 74% of the population assessed were satisfied with their lives, and the difference between the satisfaction among urban inhabitants, depending on the number of inhabitants, amounted to as few as 5 percentage points. Inhabitants of the largest cities were the most satisfied with their lives (77%).

The differences observed between the territorial diversification of material living conditions and the indicator of overall life satisfaction (with a simultaneous occurrence of fairly strong similarities) are fully justified. In principle, the level of life satisfaction comprises the assessment of all aspects of human life, though a significant impact is exerted by material aspects. Apart from such aspects, the perceived quality of life not only depends on the so-called objective factors. An important role is also played, e.g., by cultural or psychological factors, by the system of values and the relativisation of one's own situation. Therefore, the subjective measures are not used instead of, but rather along with, objective indicators. Such an approach increases the analytical possibilities, thereby expanding the practical usage of the analysis results, both to shape the socio-economic policies and to monitor changes in the socio-economic well-being.

Map 6.1.

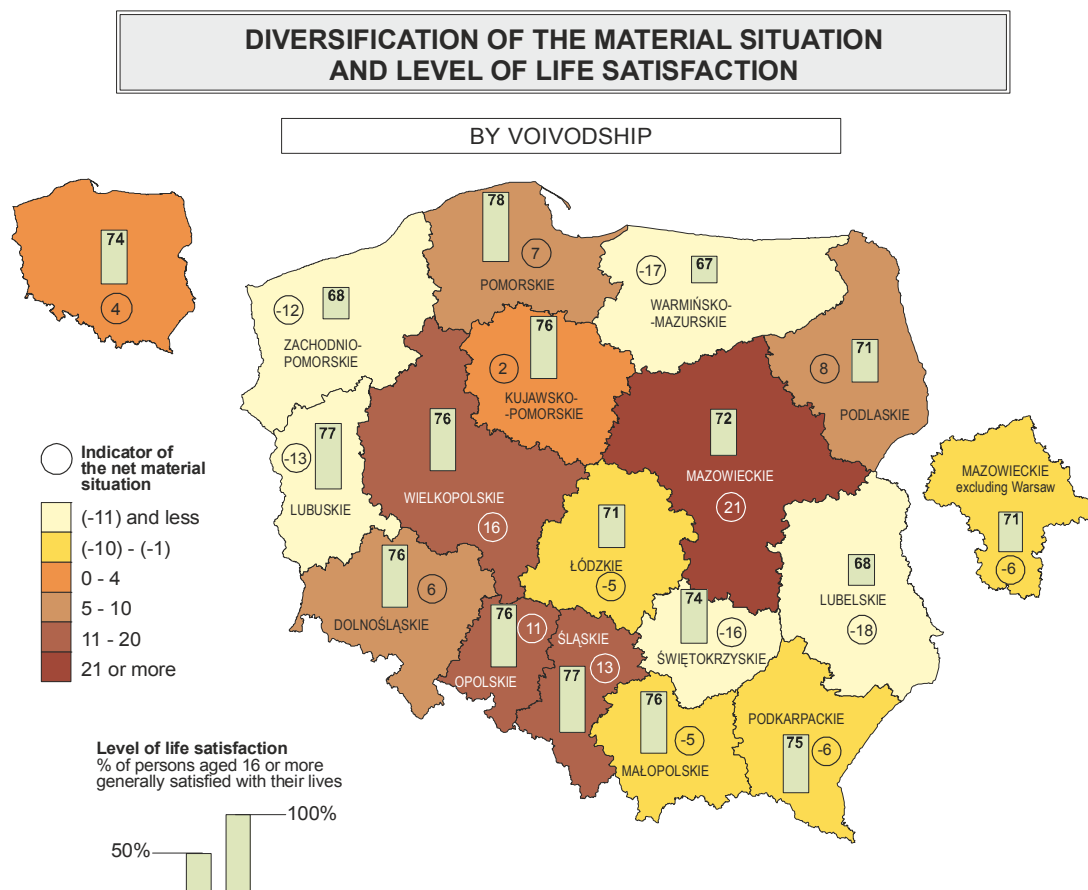


Table 6.1.

**INDICATOR OF THE NET MATERIAL SITUATION  
OF HOUSEHOLDS AND ITS CONSTITUENTS**

	Indicator of the net income situation	Indicator of the net living conditions	Indicator of the net budget standing	Indicator of the net material situation
Total	4	1	-1	4
<b>by voivodship</b>				
Dolnośląskie	8	0	-2	6
Kujawsko-pomorskie	0	4	-2	2
Lubelskie	-11	-5	-2	-18
Lubuskie	-1	-4	-8	-13
Łódzkie	5	-4	-6	-5
Małopolskie	-2	0	-3	-5
Mazowieckie	16	2	3	21
Mazowieckie (excluding Warsaw)	-1	-2	-3	-6
Opolskie	-2	10	3	11
Podkarpackie	-10	4	0	-6
Podlaskie	-4	8	4	8
Pomorskie	7	3	-3	7
Śląskie	8	3	2	13
Świętokrzyskie	-8	-7	-1	-16
Warmińsko-mazurskie	1	-8	-10	-17
Wielkopolskie	7	11	-2	16
Zachodniopomorskie	-1	-4	-7	-12
<b>by locality class</b>				
Urban areas total	12	5	0	17
Cities with over 500 thous. inhabitants	33	7	9	49
Cities with 100 to 500 thous. inhabitants	15	6	2	23
Towns with 20 to 100 thous. inhabitants	6	4	-3	7
Towns with less than 20 thous. inhabitants	-4	1	-4	-7
Rural areas total	-14	-5	-5	-24

Figure 6.1.

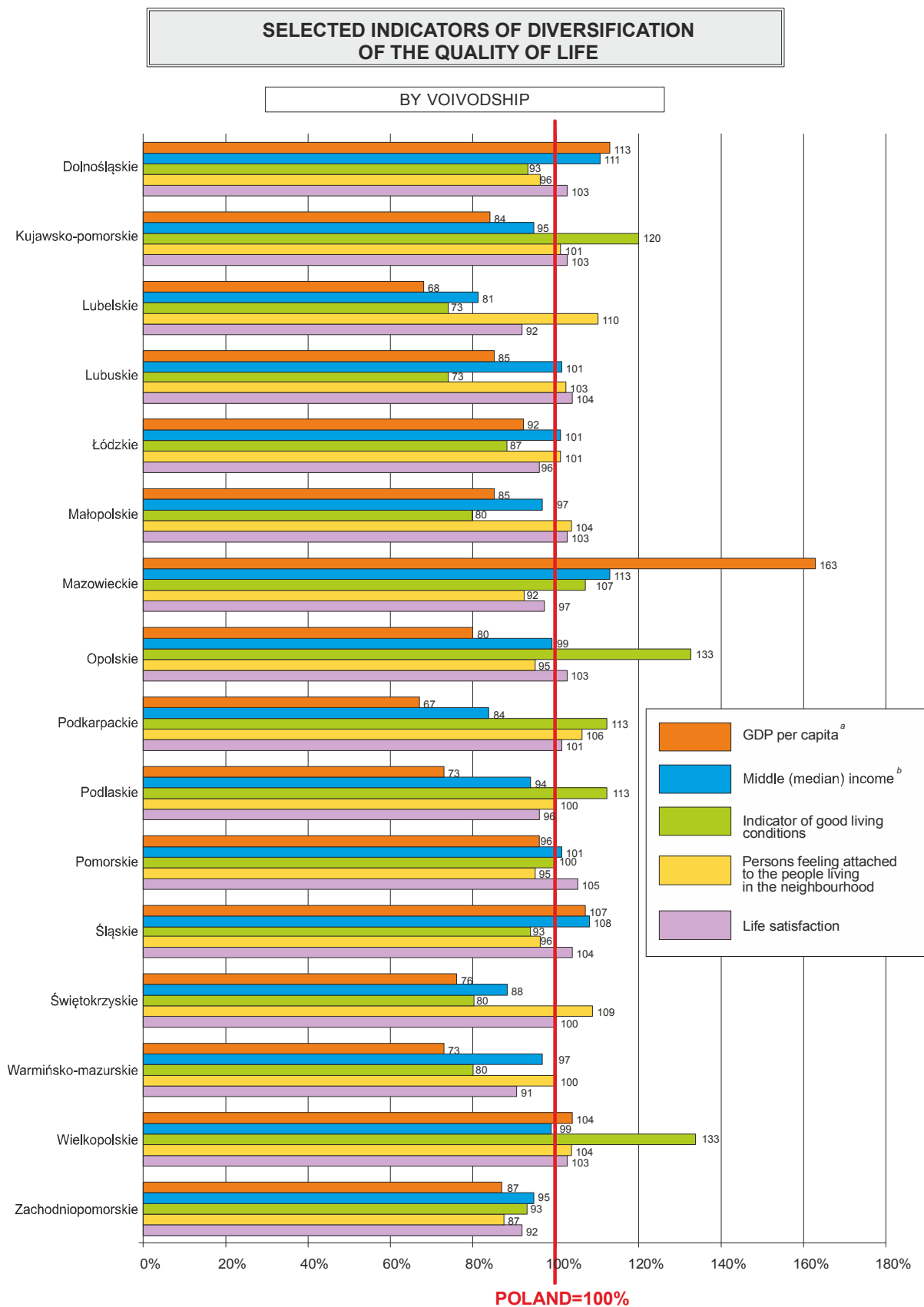
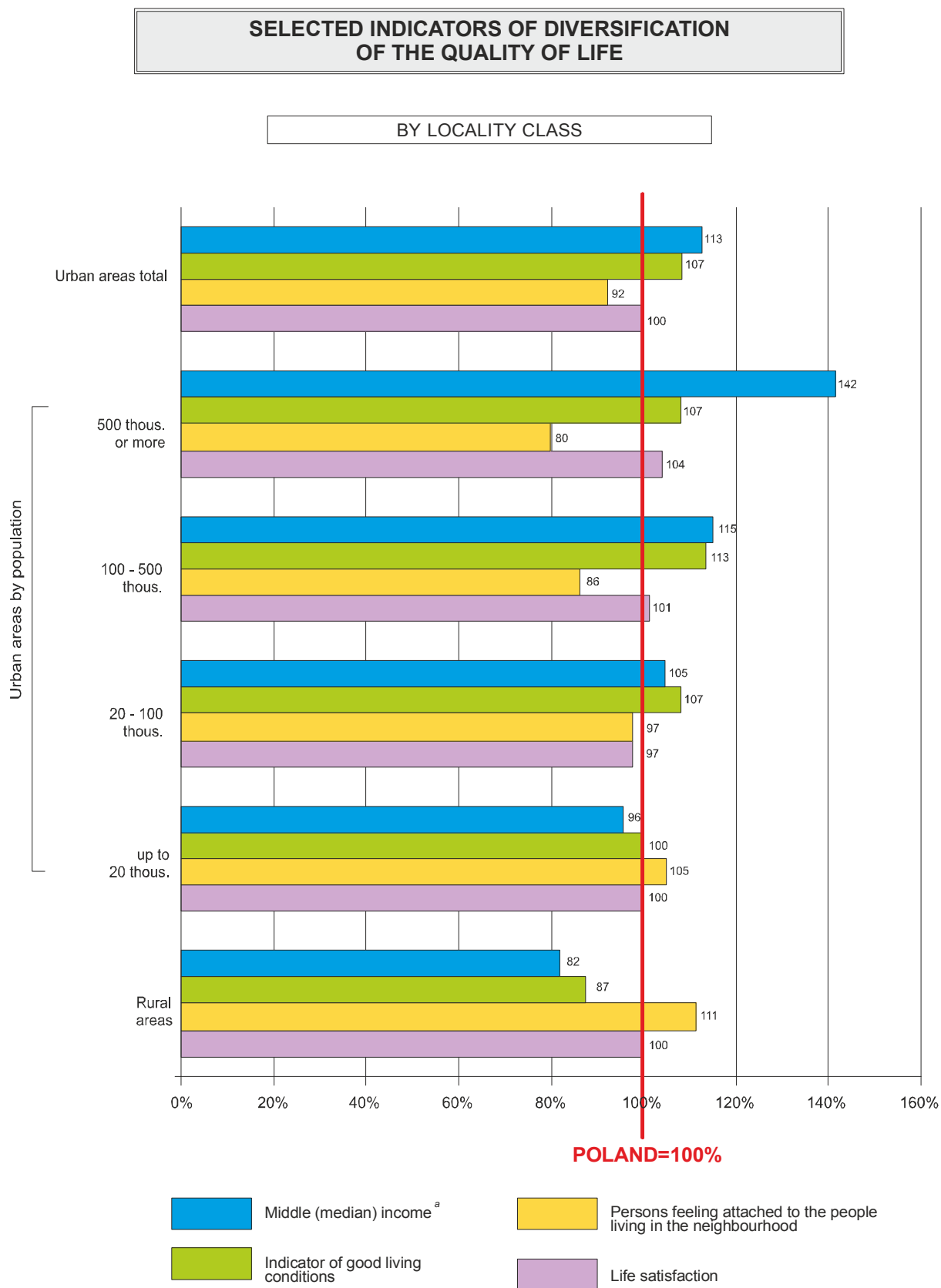




Figure 6.2.



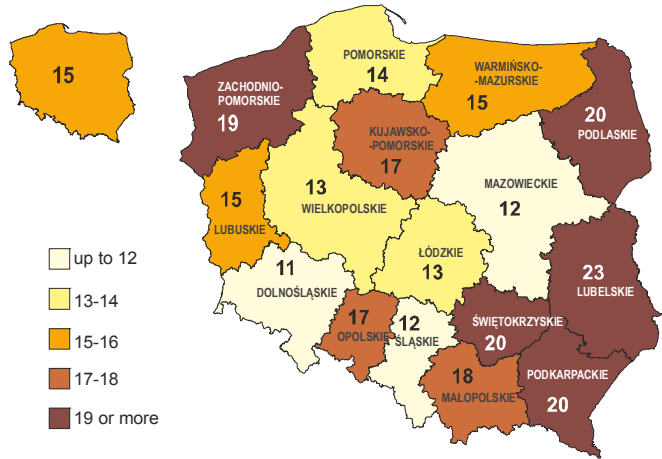
<sup>a</sup> Monthly monetary income converted into equivalent units.

Map 6.2.

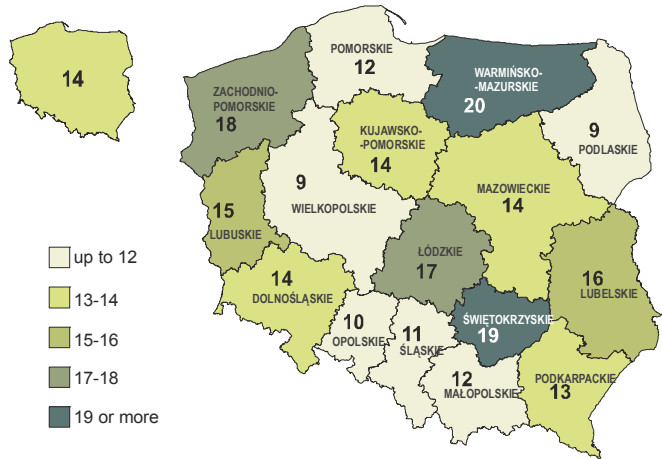
## DIFFERENT POVERTY FORMS

% of households

### INCOME POVERTY



### LIVING CONDITIONS POVERTY



### POVERTY IN TERMS OF THE LACK OF BUDGET BALANCE

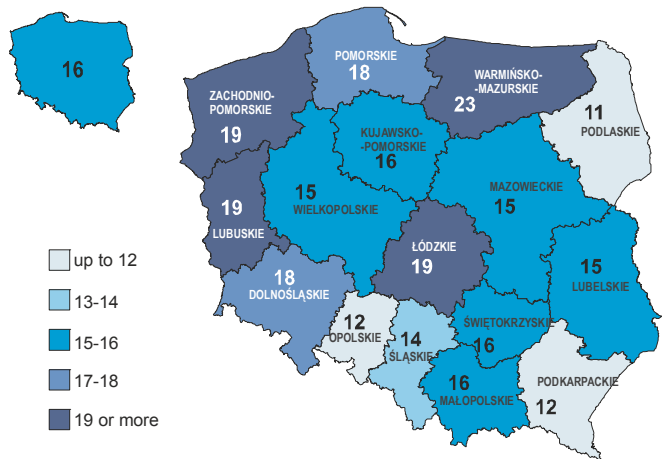


Figure 6.3.

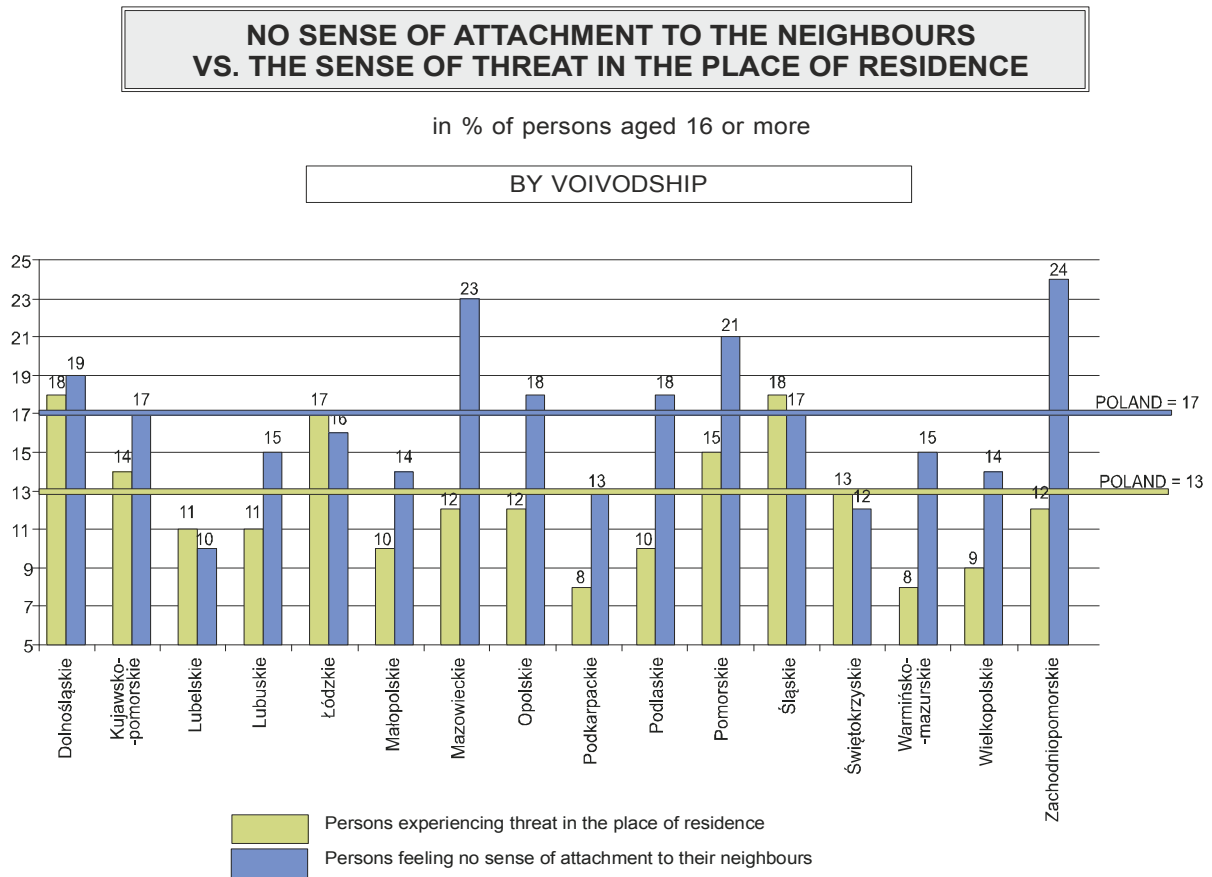
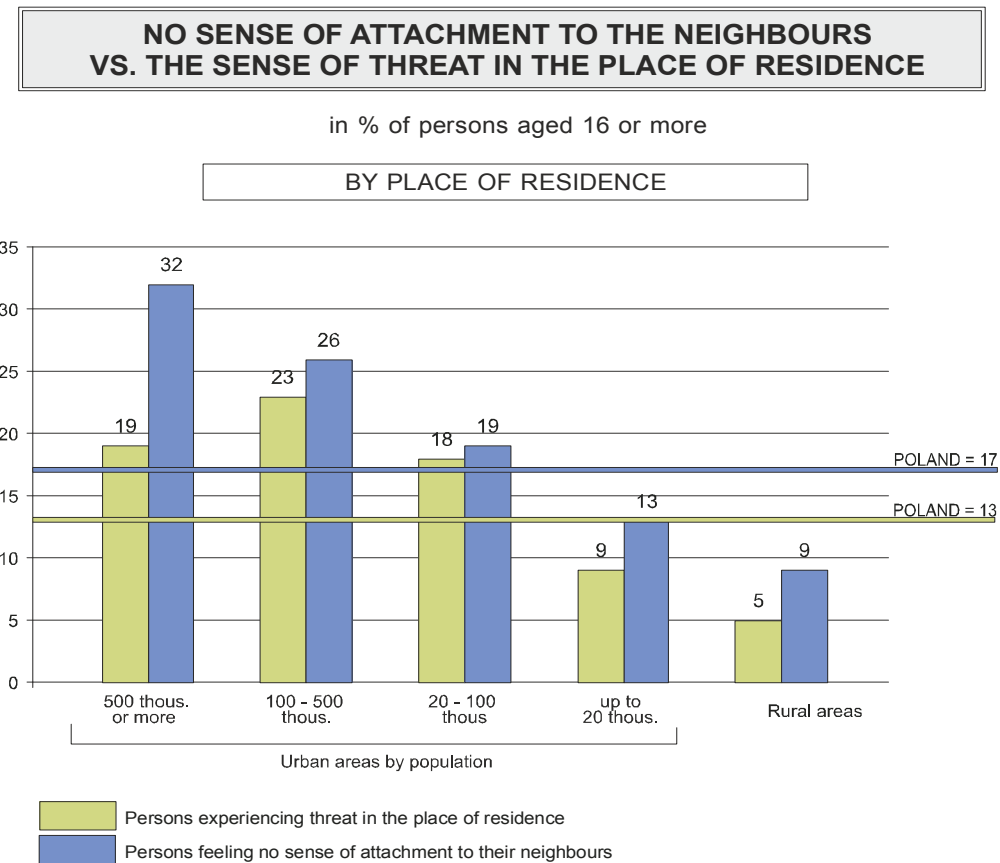


Figure 6.4.



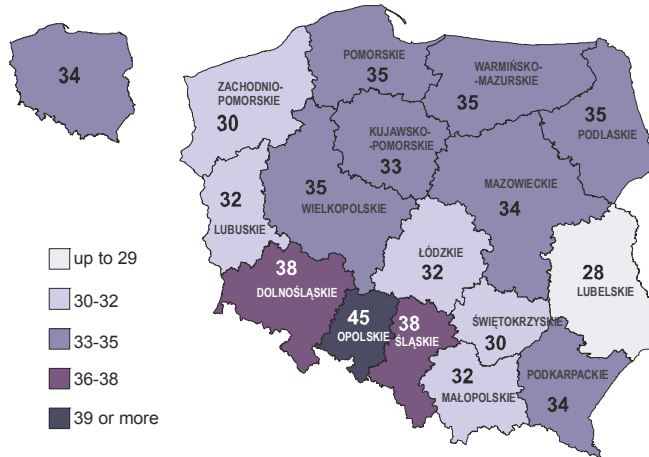
Map 6.3.

### SATISFACTION WITH VARIOUS ASPECTS OF LIFE

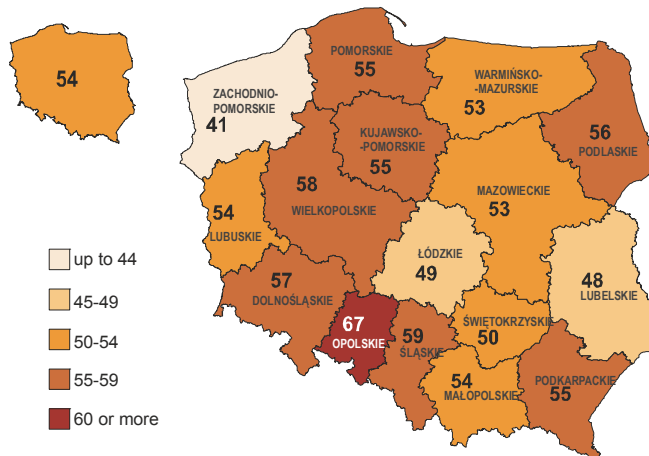
(satisfied and very satisfied persons)

in % of persons aged 16 or more

#### FINANCIAL SITUATION (INCLUDING INCOME)



#### MATERIAL LIVING CONDITIONS (EXCLUDING INCOME)



#### OVERALL LIFE SATISFACTION

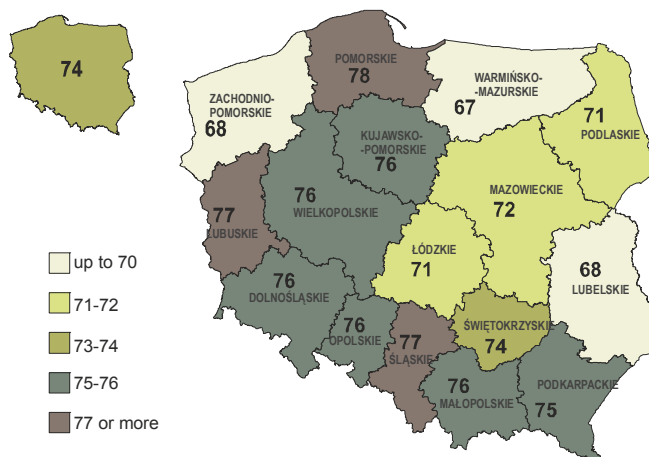


Table 6.2.

HUMAN CAPITAL							
in % of persons aged 16 or more							
BY LOCALITY CLASS							
	TOTAL	URBAN AREAS					RURAL AREAS
		total	500 thous. inhabitants or more	from 100 to 500 thous. inhabitants	from 20 to 100 thous inhabitants	below 20 thous. inhabitants	
<b>General health assessment</b>							
Good and very good	55	56	59	56	54	57	54
Neither good nor bad	32	31	29	32	33	30	32
Very poor and poor	13	13	12	12	13	13	14
<b>Computer literacy</b>							
Yes	67	72	80	74	69	66	58
of which often	53	60	70	63	56	53	42
<b>Internet use</b>							
Yes	62	67	75	70	64	62	53
<b>Personal skills indicator</b>							
Very low or none	30	27	21	26	31	30	34
Low	12	10	6	9	11	14	15
Medium	25	24	20	24	25	25	27
High	24	27	32	29	25	23	18
Very high	9	12	21	12	8	8	6

Table 6.3.a.

LOCAL COMMUNITY AND SOCIAL CONTACTS							
THE SENSE OF AFFILIATION AND SOCIAL CONTACTS							
in % of persons aged 16 or more							
BY LOCALITY CLASS							
	TOTAL	URBAN AREAS					RURAL AREAS
		total	500 thous. inhabitants or more	from 100 to 500 thous. inhabitants	from 20 to 100 thous inhabitants	below 20 thous. inhabitants	
<b>The sense of attachment to the place of residence</b>							
Persons having the sense of attachment to their locality	92	91	90	91	92	93	93
Persons having the sense of attachment to their neighbours	79	73	63	68	77	83	88
<b>Social contacts</b>							
Indicator of involvement in a formal network <sup>a</sup>	24	24	27	23	23	23	23
Indicator of good relations with neighbours	57	51	48	48	51	56	68
Indicator of social isolation	9	10	9	11	11	9	7
<b>Participation in the events organized in the place of residence</b>							
At least once every 6 months	15	14	10	9	16	21	16
Less frequently	10	9	11	10	9	8	12
Never	75	77	79	81	75	71	72

<sup>a</sup> Also referred to as the indicator of participation in secondary associations.

Table 6.3.b.

**THE SENSE OF PHYSICAL SECURITY**  
in % of households

BY LOCALITY CLASS

	TOTAL	URBAN AREAS					RURAL AREAS
		in total	500 thous. inhabitants or more	from 100 to 500 thous. inhabitants	from 20 to 100 thous. inhabitants	below 20 thous. inhabitants	
<b>The sense of security in the area of living</b>							
Fully secure	27	19	17	17	18	26	40
Secure	60	63	64	60	64	65	55
The sense of threat or high threat	13	18	19	23	18	9	5
<b>The fear of having one's house or flat broken into</b>							
Never	50	45	40	42	46	52	58
Only sometimes	42	46	51	47	46	40	36
All the time or most of the time	8	9	9	11	8	8	6

Table 6.4.

**SATISFACTION WITH VARIOUS ASPECTS OF LIFE**  
(satisfied or very satisfied persons)

in % of persons aged 16 years or more

BY LOCALITY CLASS

	TOTAL	URBAN AREAS					RURAL AREAS
		in total	500 thous. inhabitants or more	from 100 to 500 thous. inhabitants	from 20 to 100 thous. inhabitants	below 20 thous. inhabitants	
Occupational status <sup>a</sup>	60	63	65	62	62	63	57
Educational level (level and field)	54	57	61	58	57	53	49
Family situation	75	75	77	75	75	73	74
Relationship with other people	85	85	85	84	85	85	85
Financial situation (including income)	34	36	39	38	34	33	31
Material living conditions (excluding income)	54	55	59	56	54	53	53
Amount of free time	62	61	55	61	62	67	62
Leisure activities	60	62	60	62	63	64	57
Health	58	58	59	58	58	59	58
<b>LIFE SATISFACTION IN GENERAL</b>	<b>74</b>	<b>74</b>	<b>77</b>	<b>75</b>	<b>72</b>	<b>74</b>	<b>74</b>

<sup>a</sup> Concerns working persons

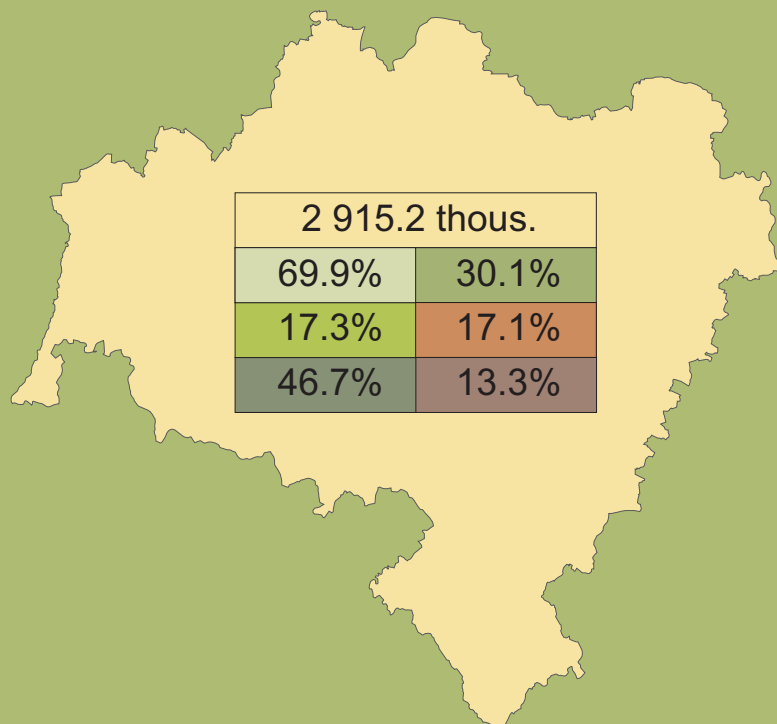
### **3. VOIVODSHIPS PORTRAITS**

# DOLNOŚLĄSKIE VOIVODSHIP

POLAND	
38 511.8 thous.	
60.8%	39.2%
18.7%	16.9%
46.4%	13.0%



Total population	
Population in urban areas	Population in rural areas
Pre-working age population	Post-working age population
Employment rate	Unemployment rate

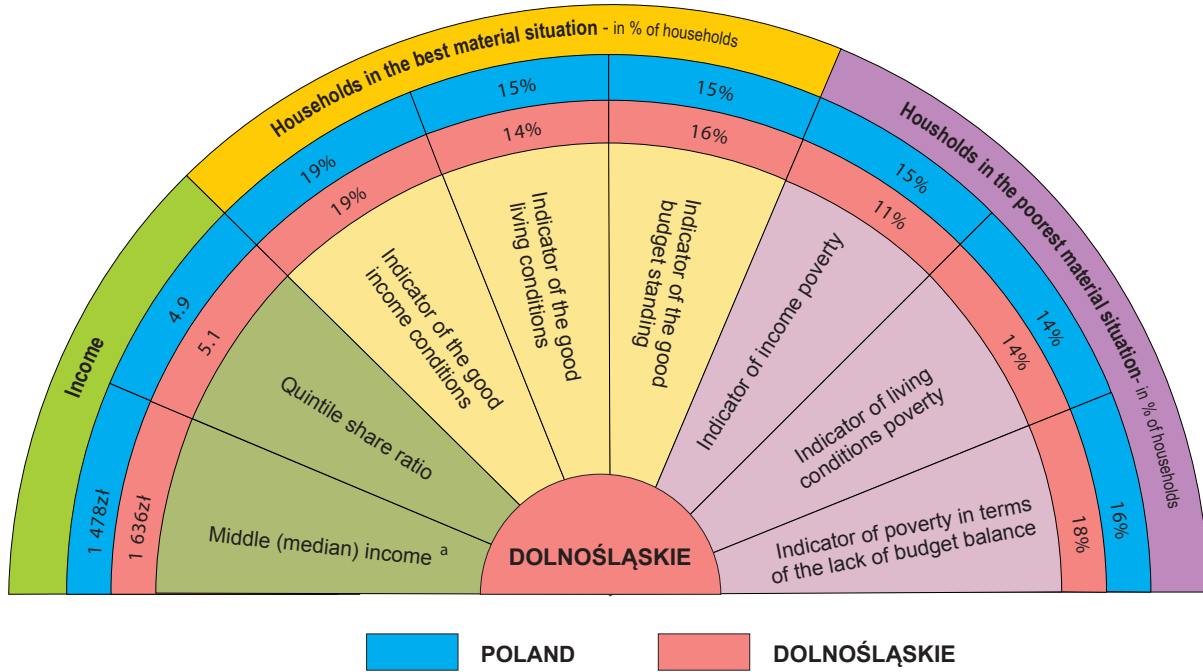


According to the results of the Population and Housing Census 2011 (as 31.03.2011).



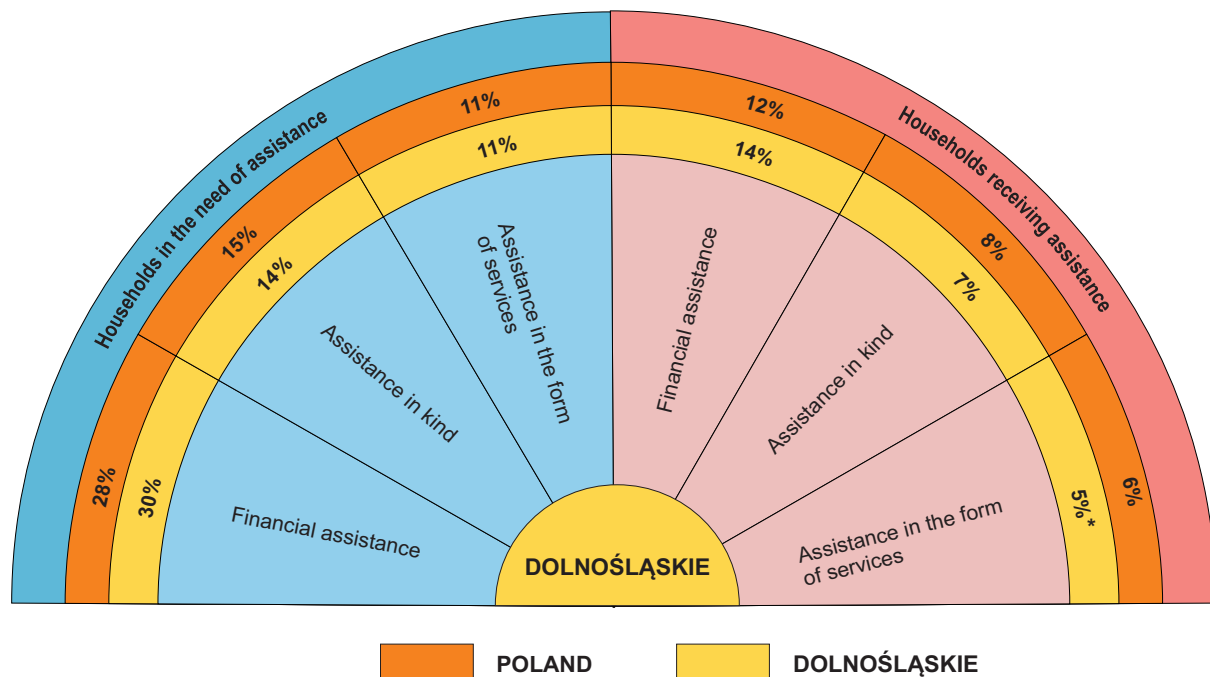
## MATERIAL SITUATION OF HOUSEHOLDS

### DIVERSIFICATION OF HOUSEHOLDS' MATERIAL SITUATION



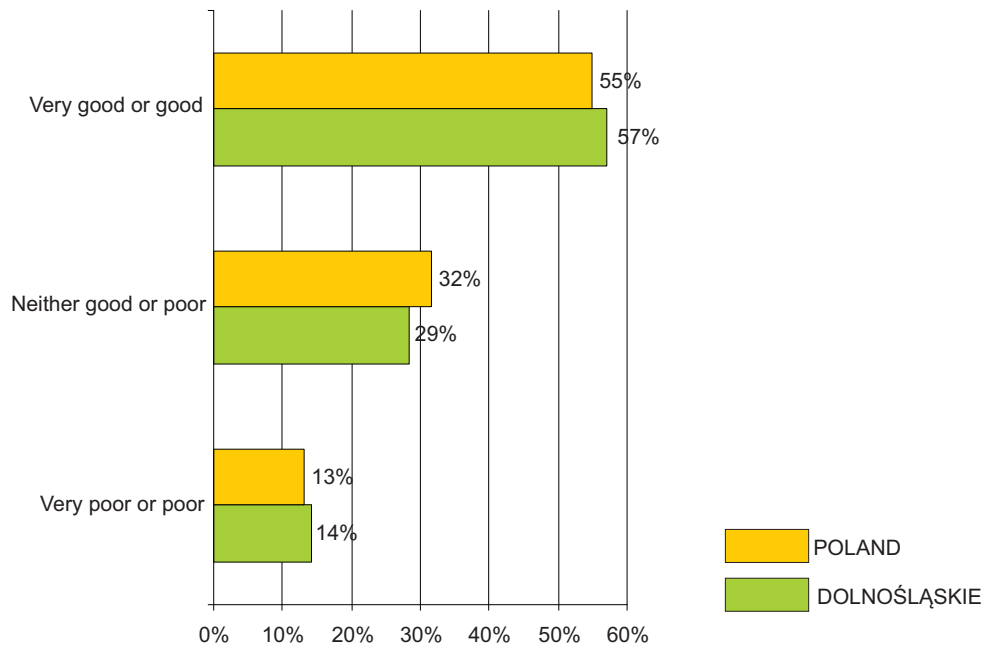
<sup>a</sup> Monthly monetary income per equivalent unit

### RECEIVING THE EXTERNAL ASSISTANCE in % of households

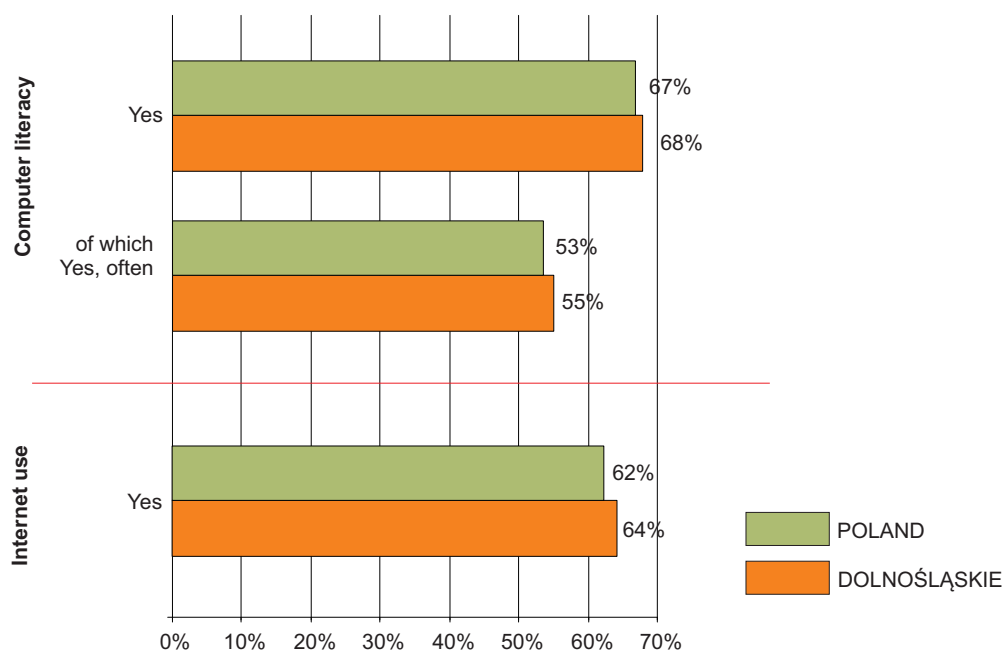


## ELEMENTS OF HUMAN CAPITAL

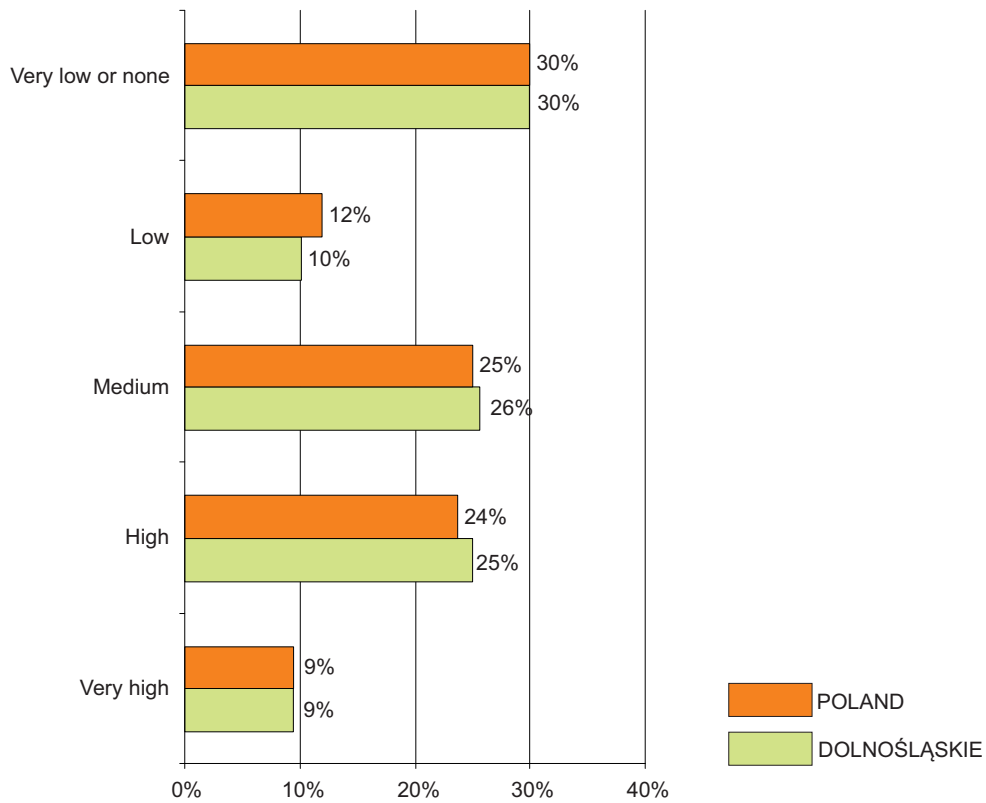
### GENERAL HEALTH ASSESSMENT in % of persons aged 16 or more



### COMPUTER LITERACY AND INTERNET USE in % of persons aged 16 or more

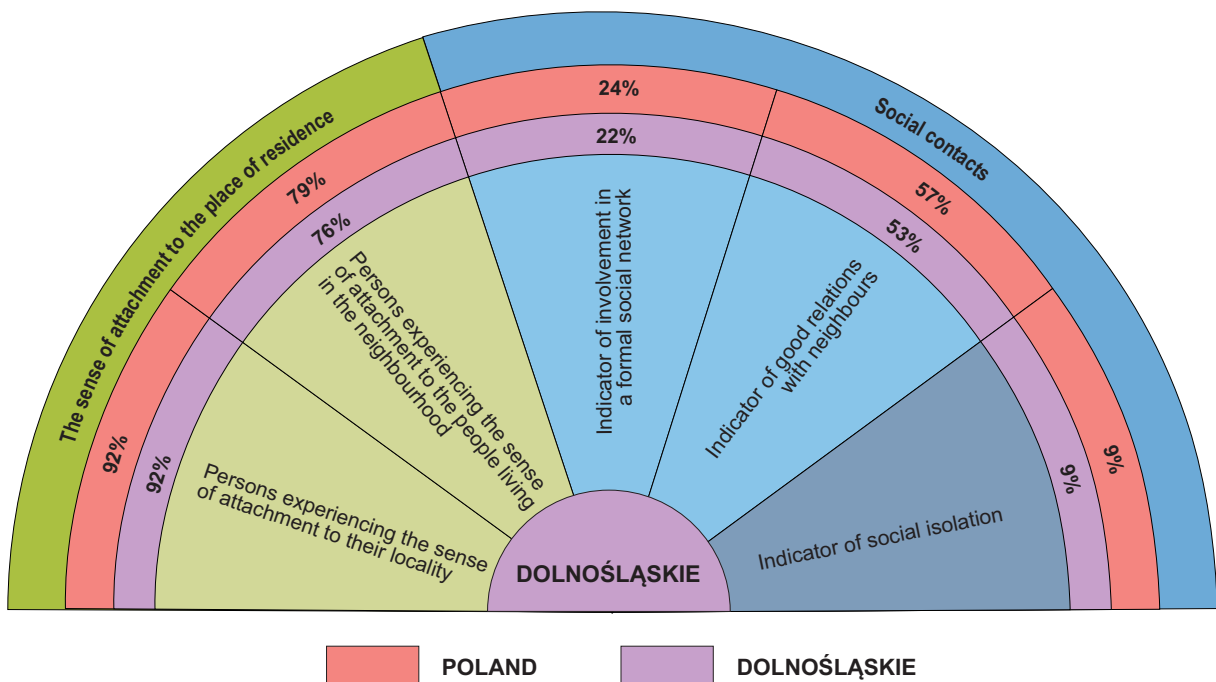


**PERSONAL SKILLS INDICATOR**  
in % of persons aged 16 or more



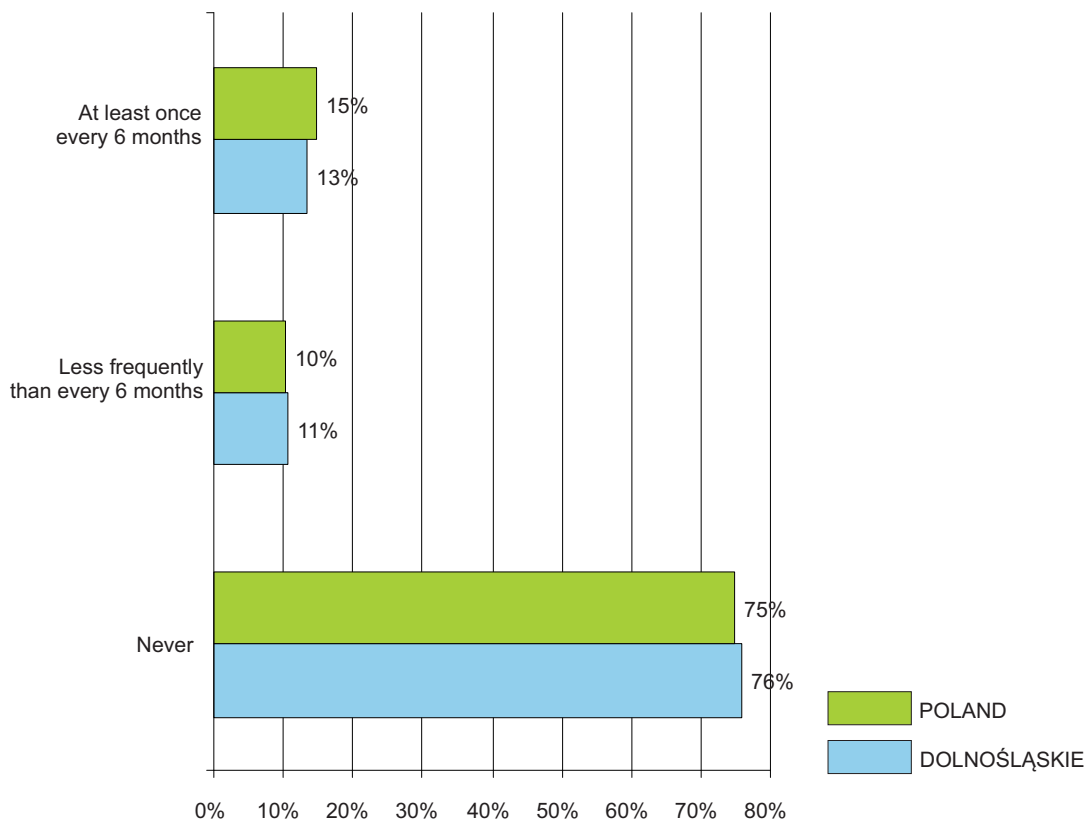
**LOCAL COMMUNITY AND SOCIAL CONTACTS**

**THE SENSE OF ATTACHMENT AND SOCIAL CONTACTS**  
in % of persons aged 16 or more



## PARTICIPATION IN EVENTS ORGANIZED IN THE PLACE OF RESIDENCE

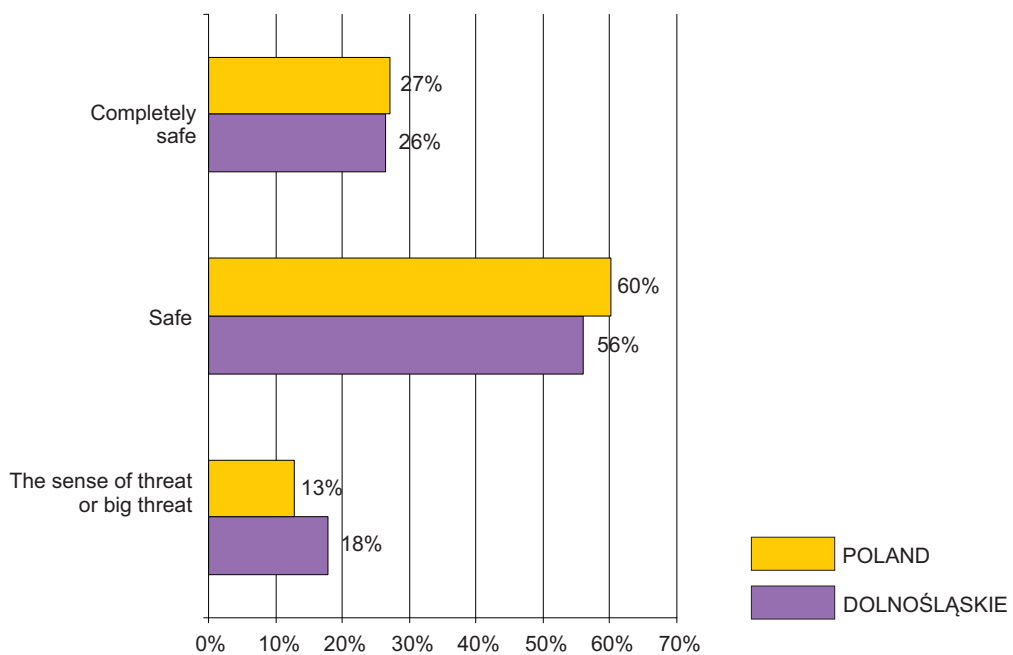
in % of persons aged 16 or more



## SENSE OF PHYSICAL SAFETY

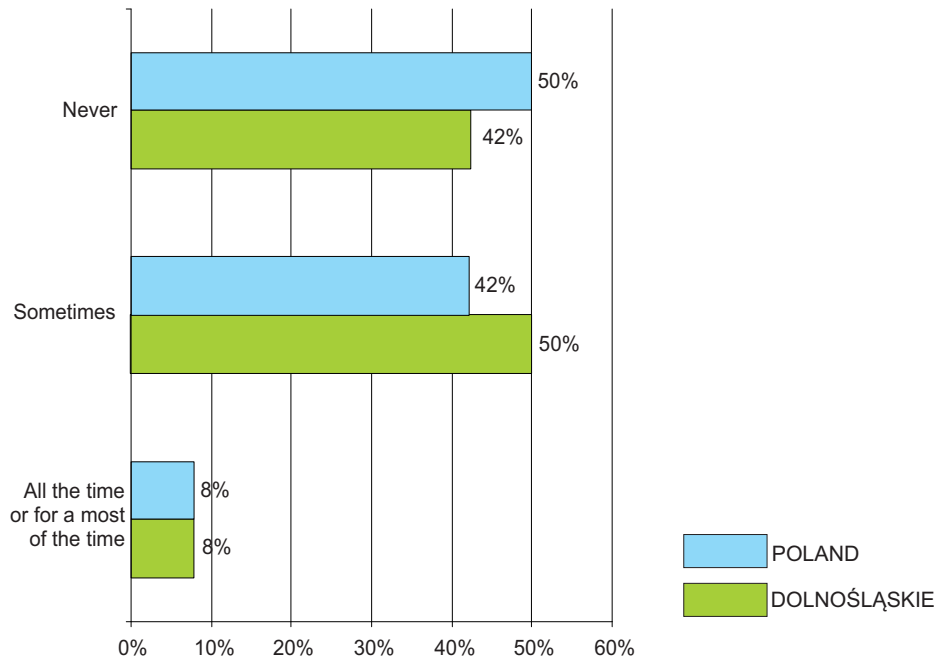
SENSE OF SAFETY IN THE CLOSEST NEIGHBOURHOOD

in % of persons aged 16 or more



THE SENSE OF THREAT OF HOUSEBREAKING

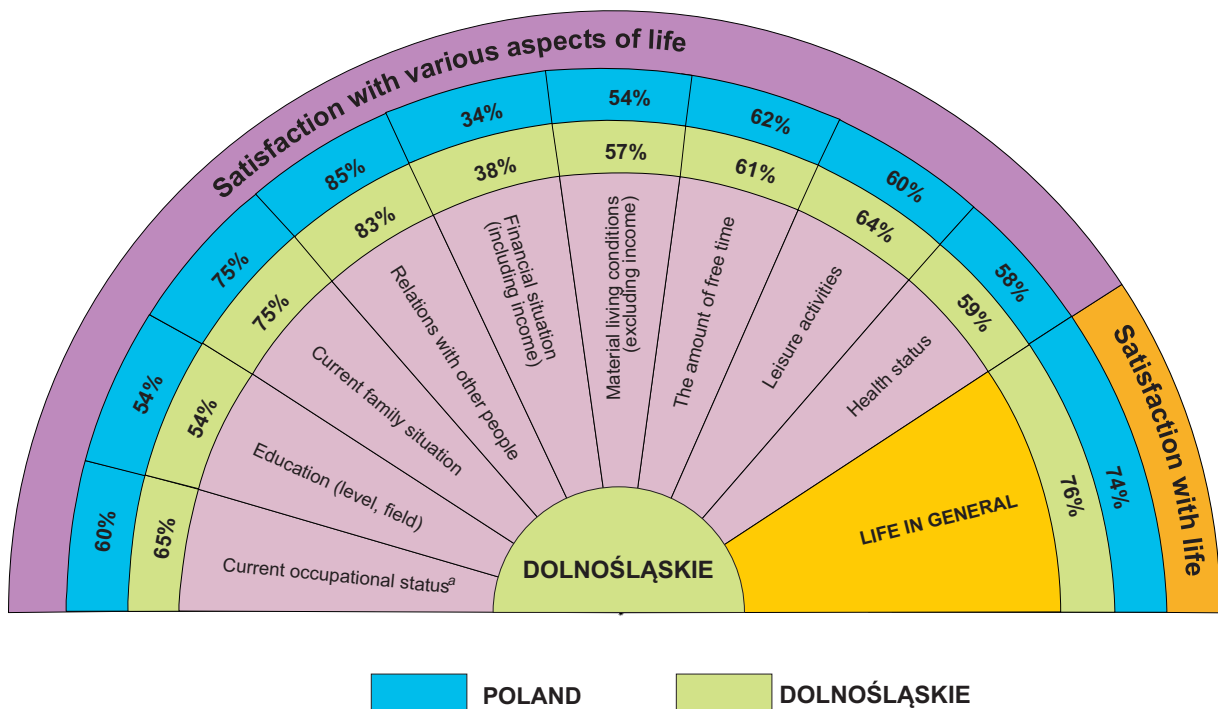
in % of persons aged 16 or more



SATISFACTION WITH VARIOUS ASPECTS OF LIFE

(satisfied and very satisfied persons)

in % of persons aged 16 or more

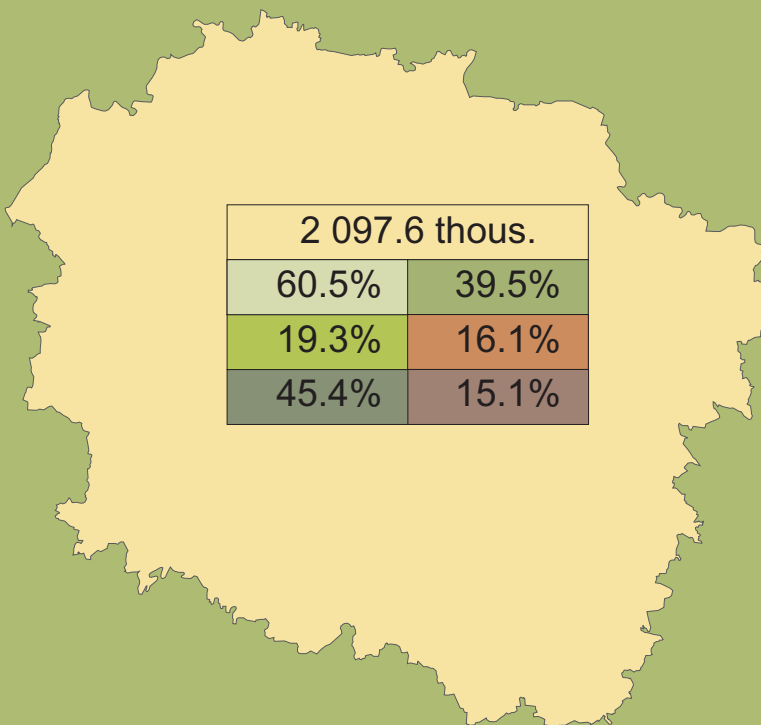


# KUJAWSKO-POMORSKIE VOIVODSHIP

POLAND	
38 511.8 thous.	
60.8%	39.2%
18.7%	16.9%
46.4%	13.0%



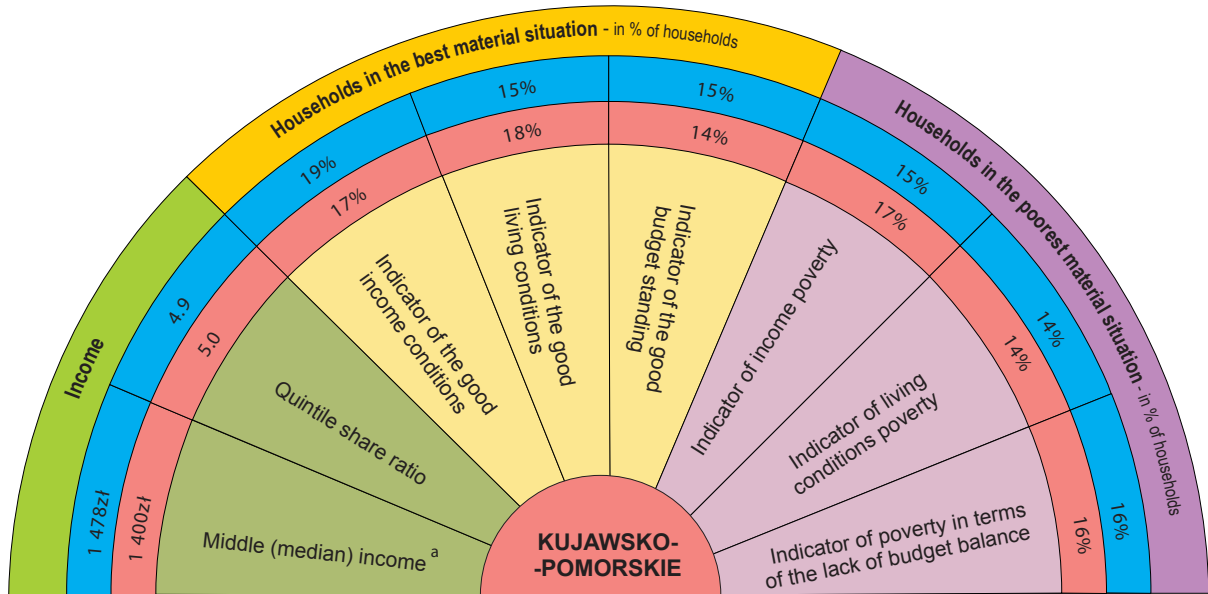
Total population	
Population in urban areas	Population in rural areas
Pre-working age population	Post-working age population
Employment rate	Unemployment rate



*According to the results of the Population and Housing Census 2011 (as 31.03.2011).*

## MATERIAL SITUATION OF HOUSEHOLDS

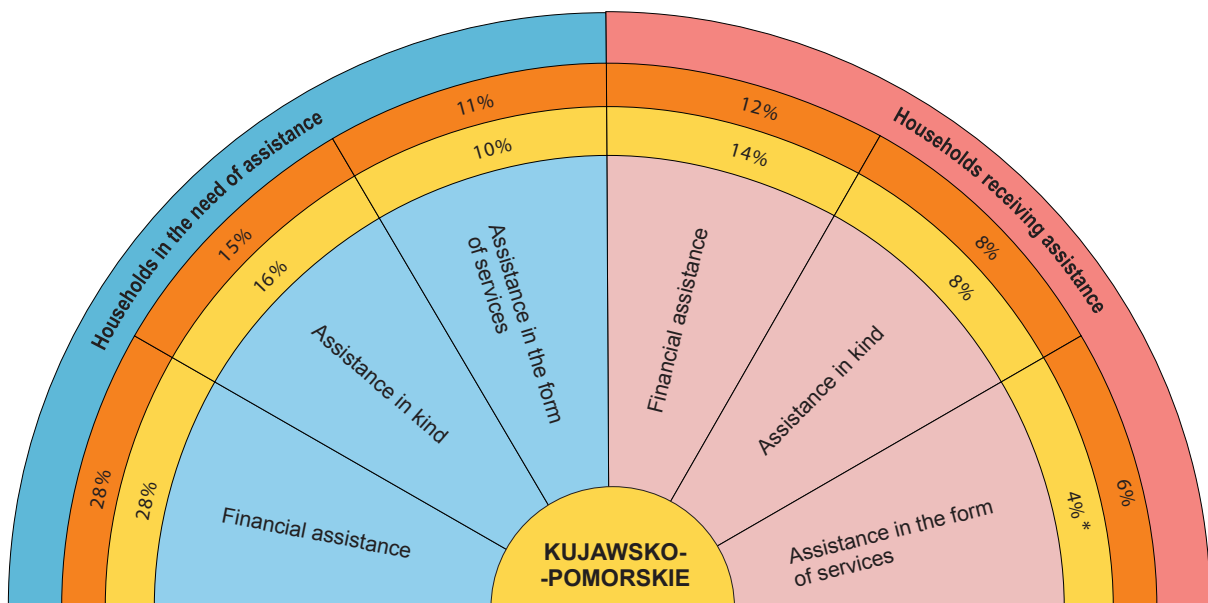
### DIVERSIFICATION OF HOUSEHOLDS' MATERIAL SITUATION



POLAND
  KUJAWSKO-POMORSKIE

a Monthly monetary income per equivalent unit

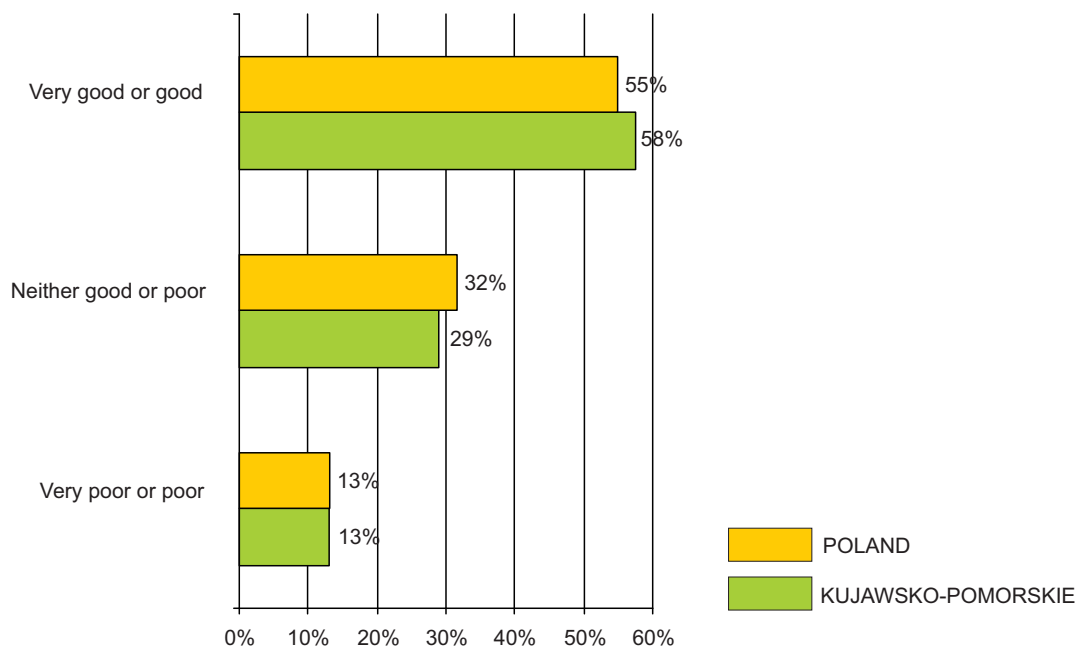
### RECEIVING THE EXTERNAL ASSISTANCE in % of households



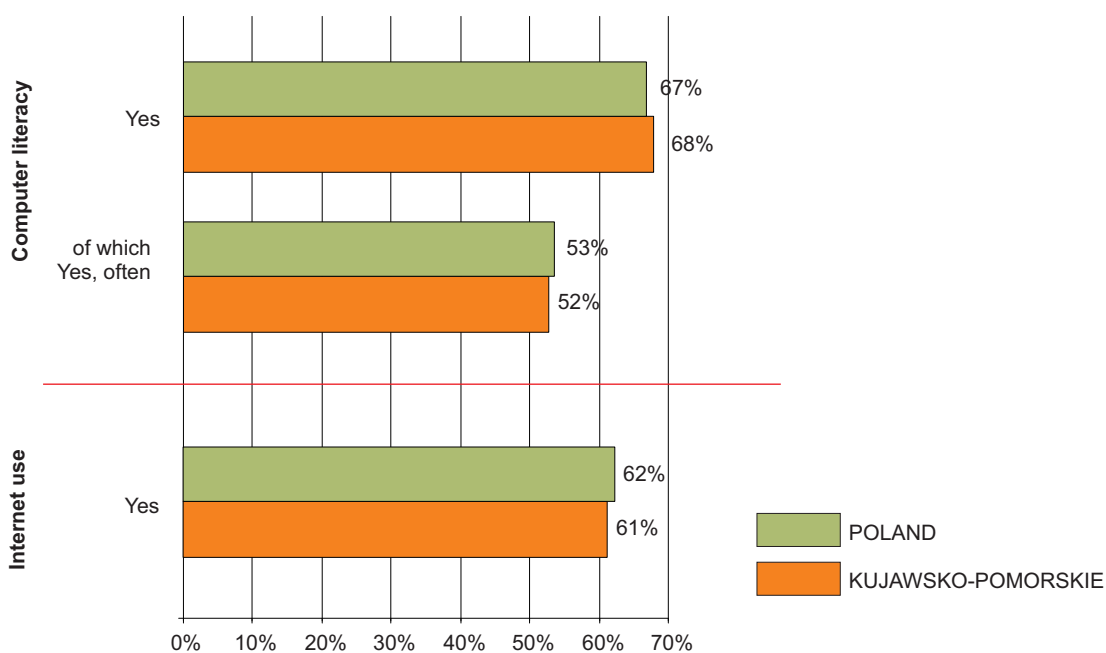
POLAND
  KUJAWSKO-POMORSKIE

## ELEMENTS OF HUMAN CAPITAL

### GENERAL HEALTH ASSESSMENT in % of persons aged 16 or more

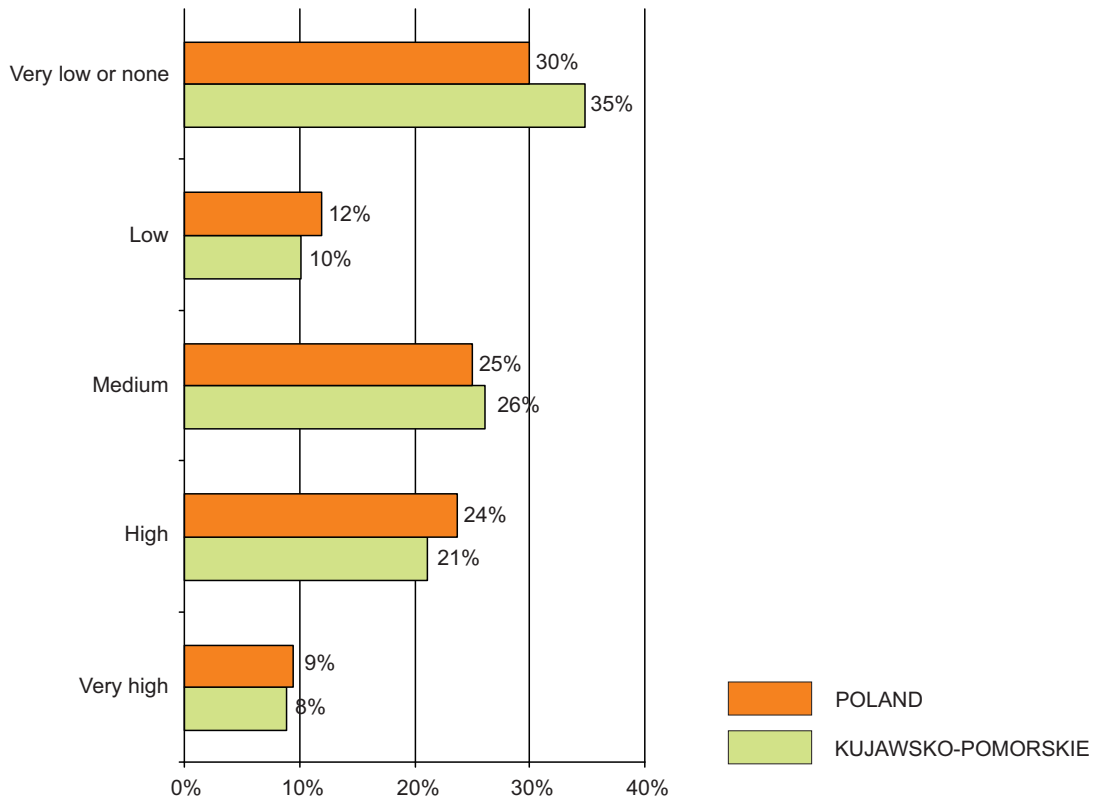


### COMPUTER LITERACY AND INTERNET USE in % of persons aged 16 or more



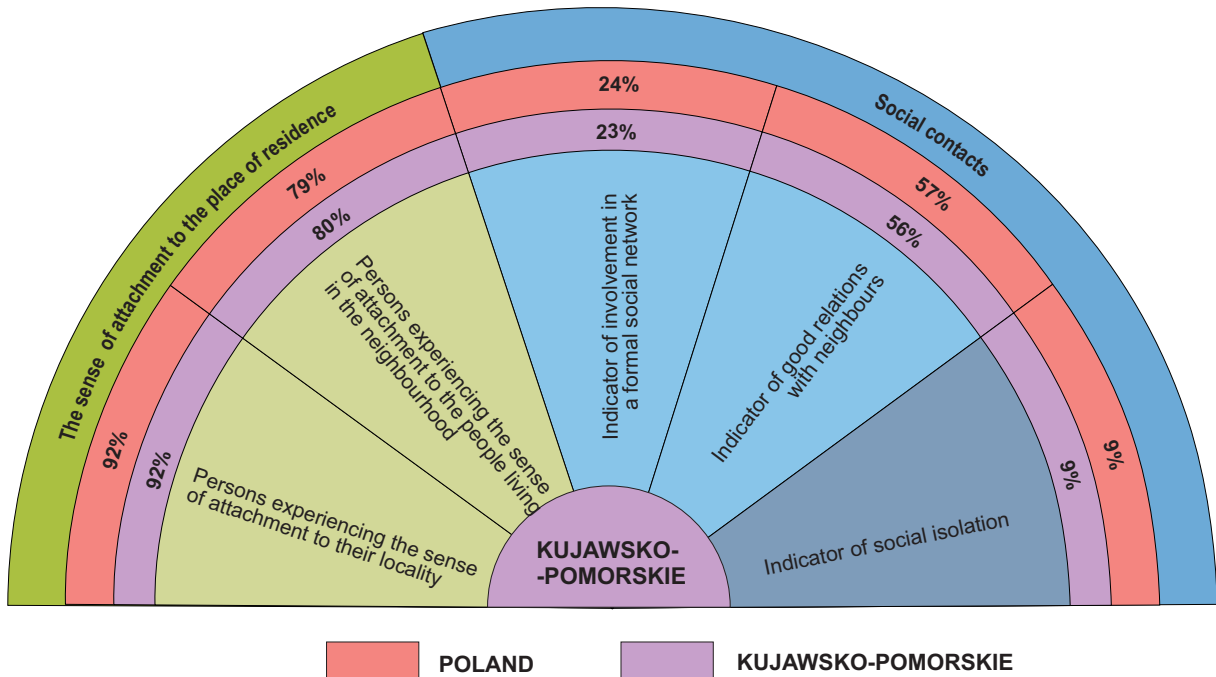


**PERSONAL SKILLS INDICATOR**  
in % of persons aged 16 or more

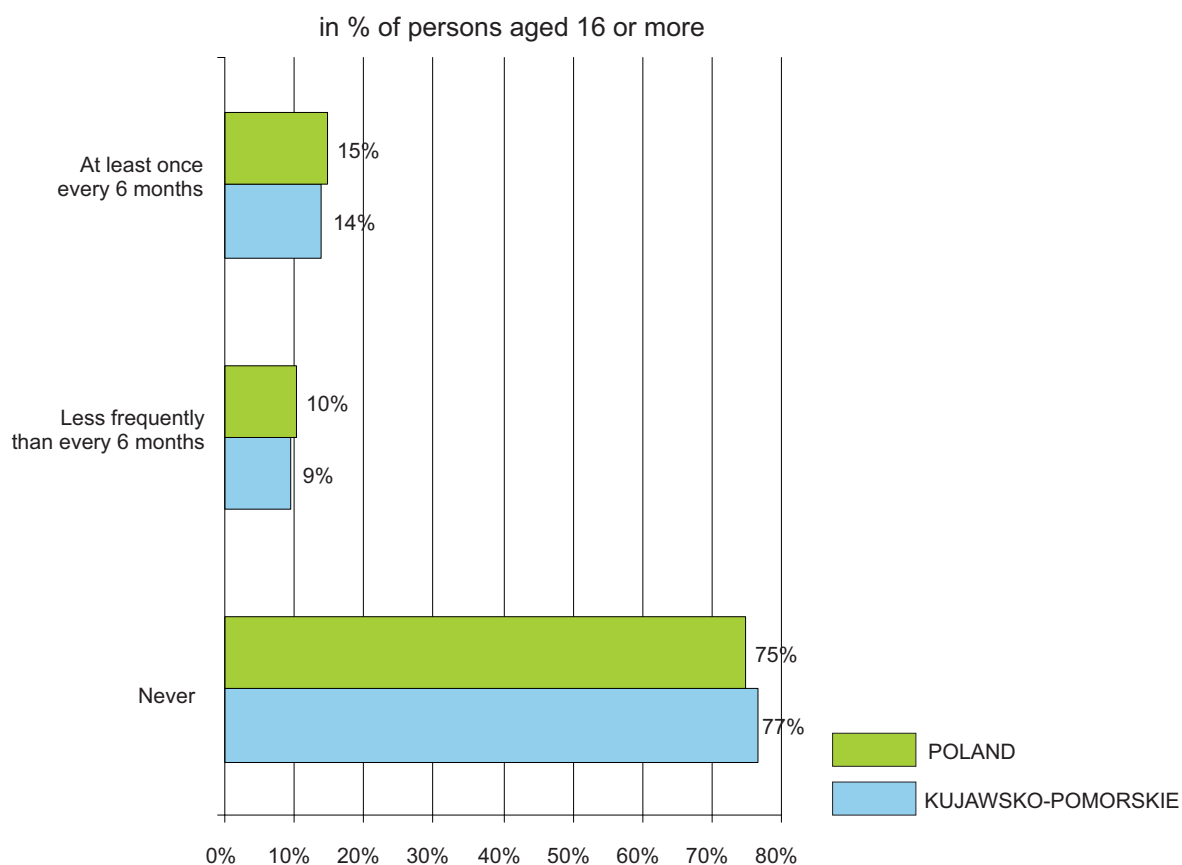


**LOCAL COMMUNITY AND SOCIAL CONTACTS**

**THE SENSE OF ATTACHMENT AND SOCIAL CONTACTS**  
in % of persons aged 16 or more

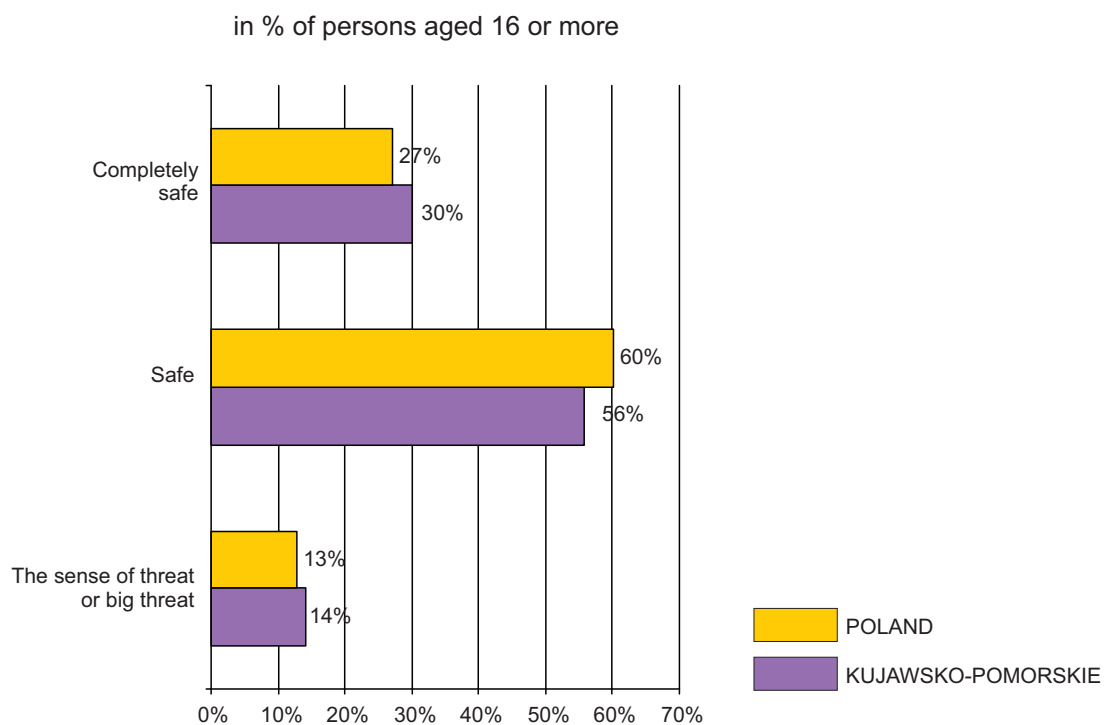


## PARTICIPATION IN EVENTS ORGANIZED IN THE PLACE OF RESIDENCE



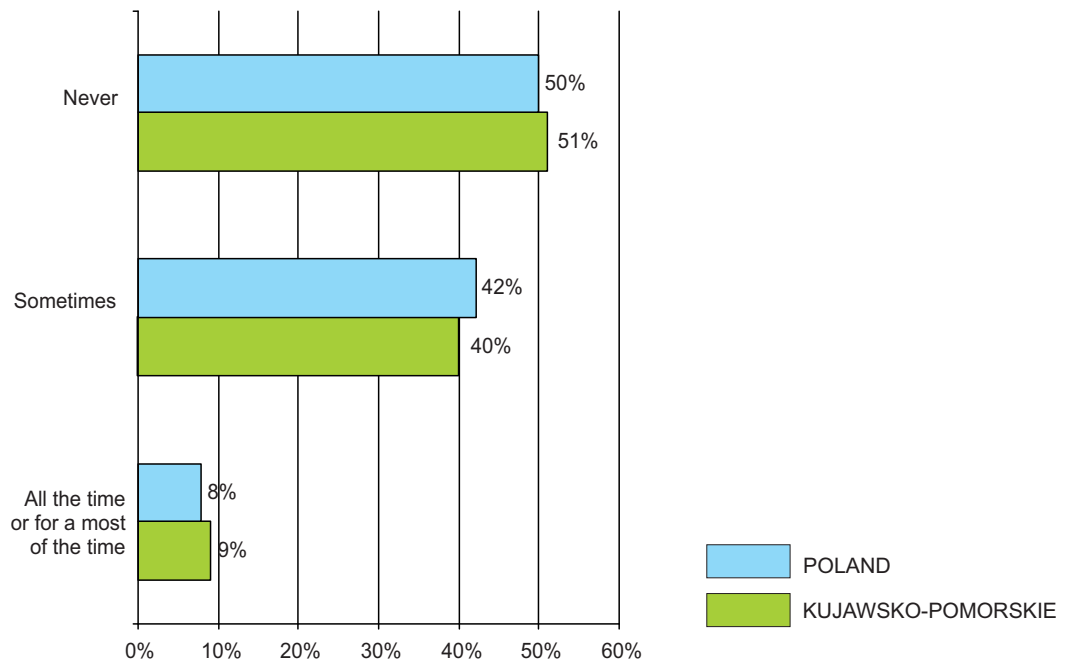
## SENSE OF PHYSICAL SAFETY

### SENSE OF SAFETY IN THE CLOSEST NEIGHBOURHOOD



THE SENSE OF THREAT OF HOUSEBREAKING

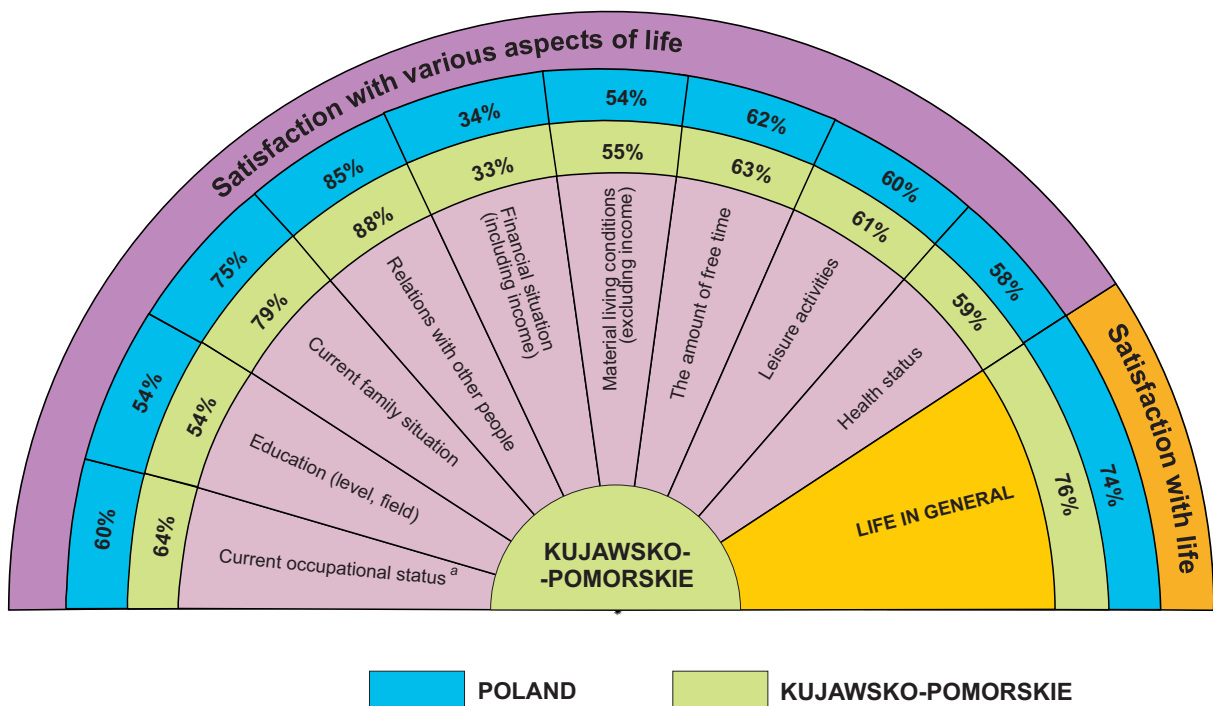
in % of persons aged 16 or more



SATISFACTION WITH VARIOUS ASPECTS OF LIFE

(satisfied and very satisfied persons)

in % of persons aged 16 or more



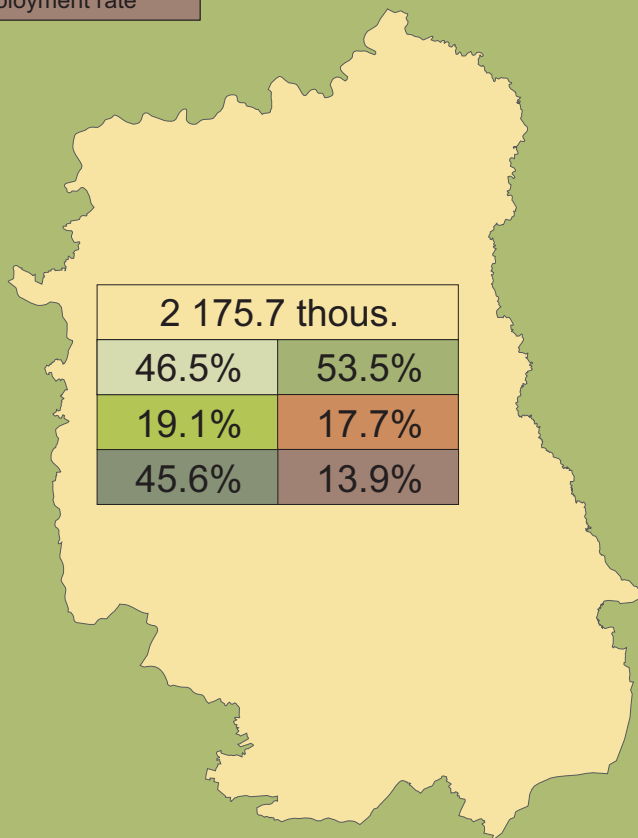
<sup>a</sup> Concerning working people

# LUBELSKIE VOIVODSHIP

POLAND	
38 511.8 thous.	
60.8%	39.2%
18.7%	16.9%
46.4%	13.0%



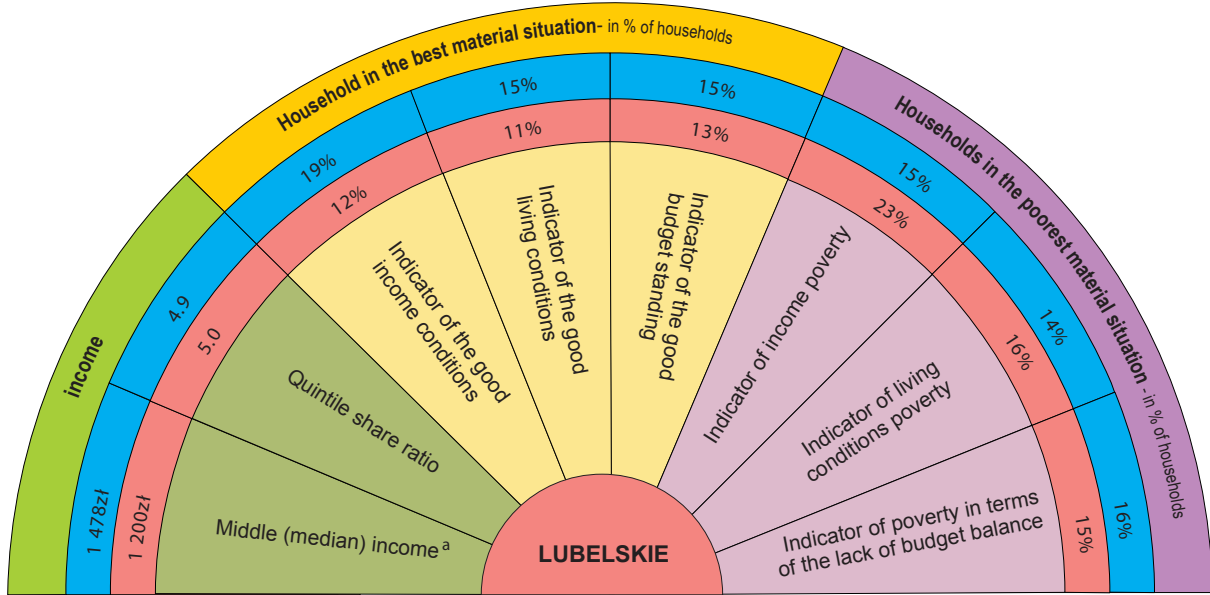
Total population	
Population in urban areas	Population in rural areas
Pre-working age population	Post-working age population
Employment rate	Unemployment rate



According to the results of the Population and Housing Census 2011 (as 31.03.2011).

# MATERIAL SITUATION OF HOUSEHOLDS

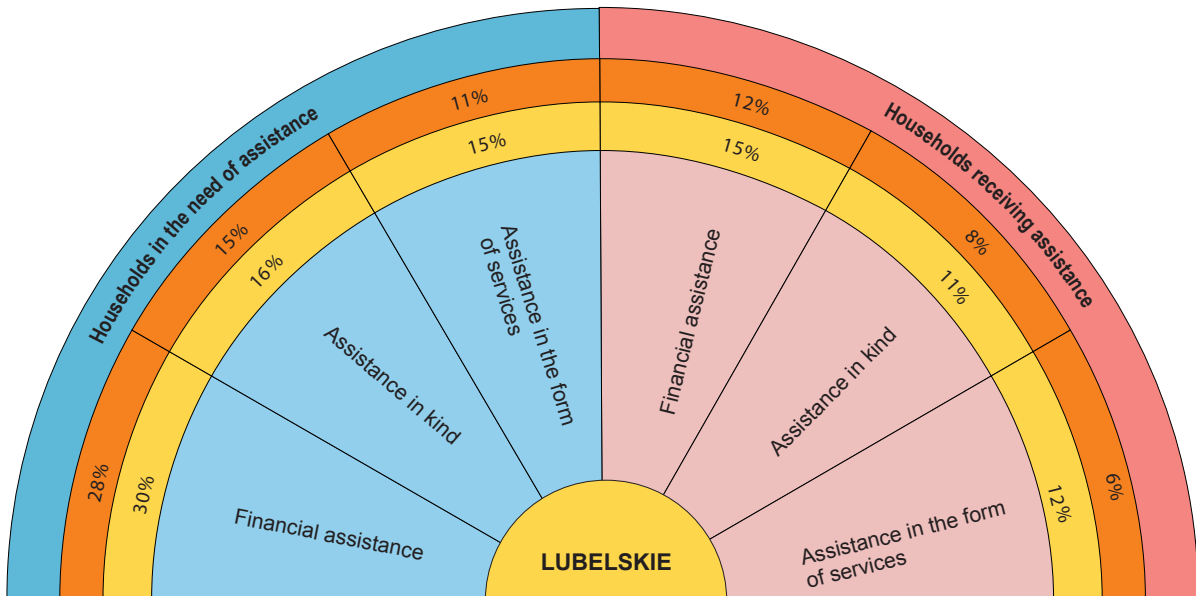
## DIVERSIFICATION OF HOUSEHOLDS' MATERIAL SITUATION



■ POLAND      ■ LUBELSKIE

a Monthly monetary income per equivalent unit

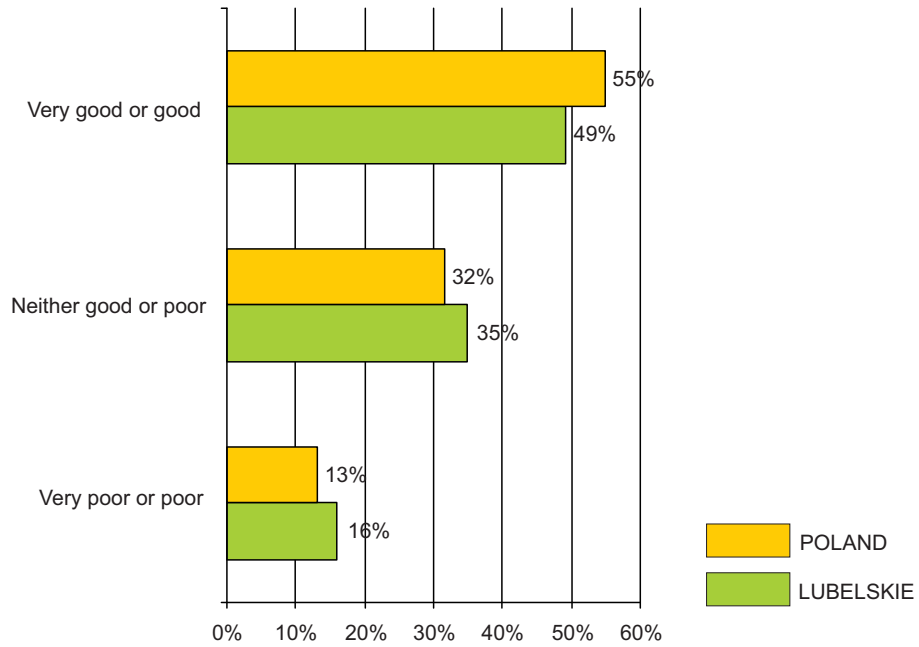
## RECEIVING THE EXTERNAL ASSISTANCE in % of households



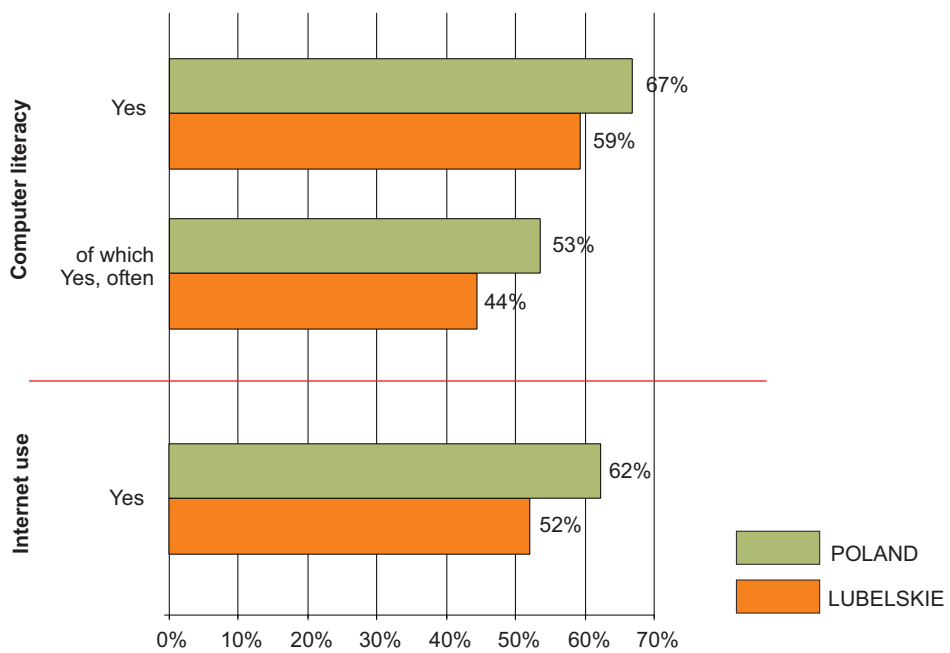
■ POLAND      ■ LUBELSKIE

## ELEMENTS OF HUMAN CAPITAL

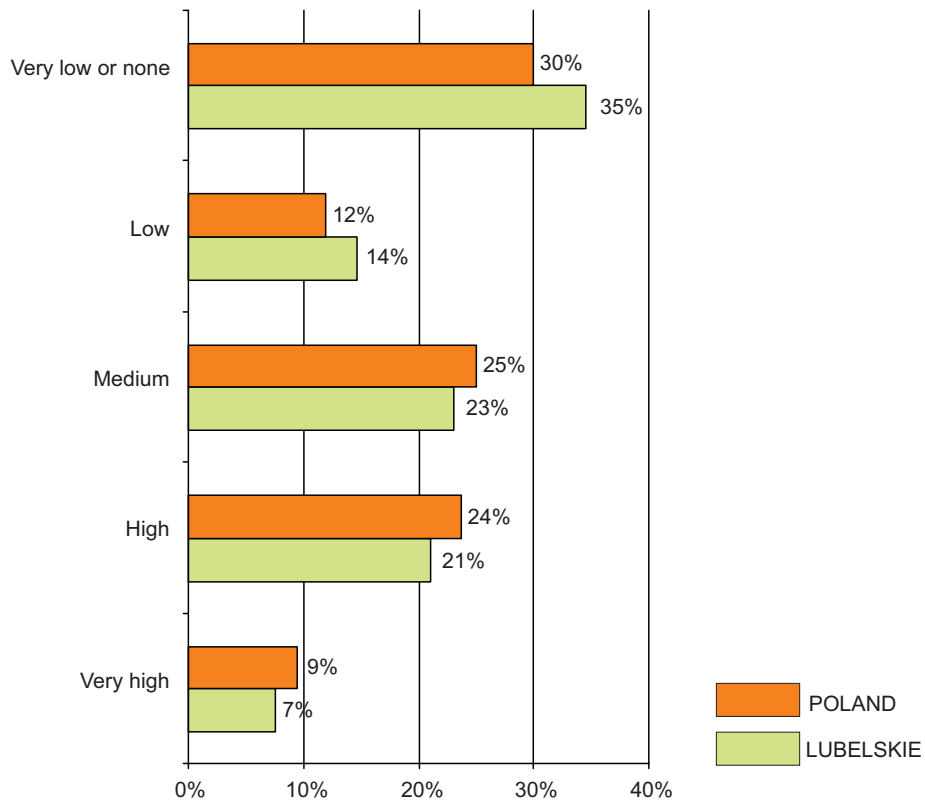
### GENERAL HEALTH ASSESSMENT in % of persons aged 16 or more



### COMPUTER LITERACY AND INTERNET USE in % of persons aged 16 or more

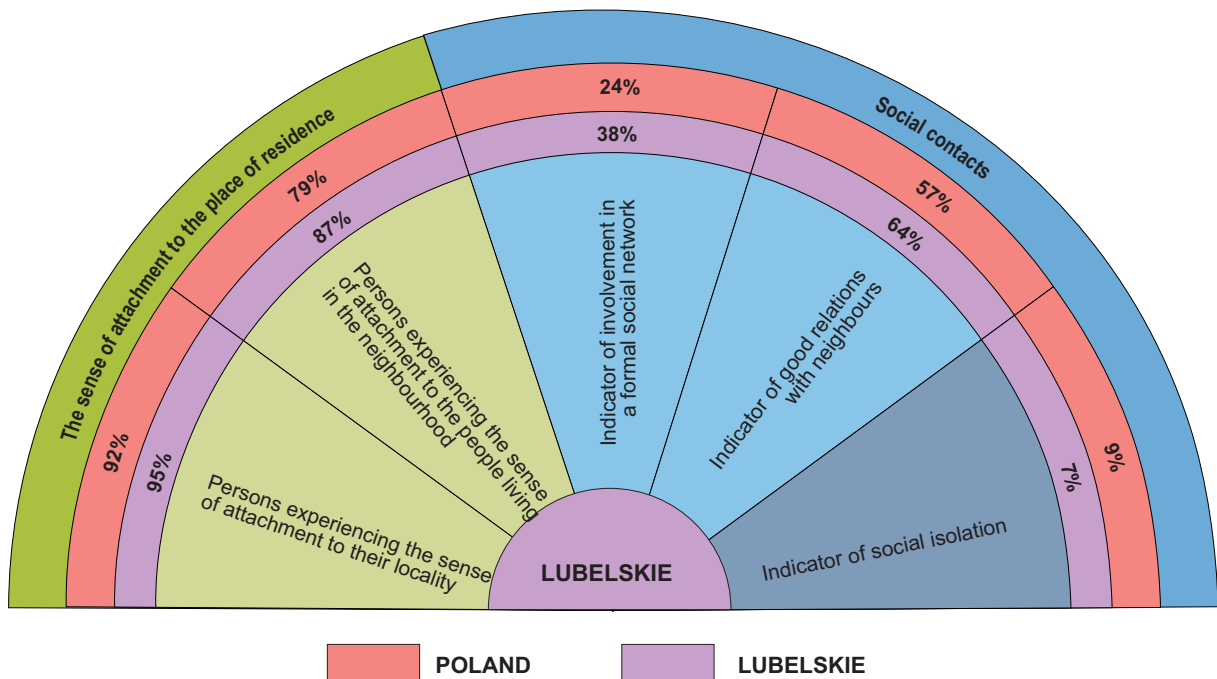


**PERSONAL SKILLS INDICATOR**  
in % of persons aged 16 or more



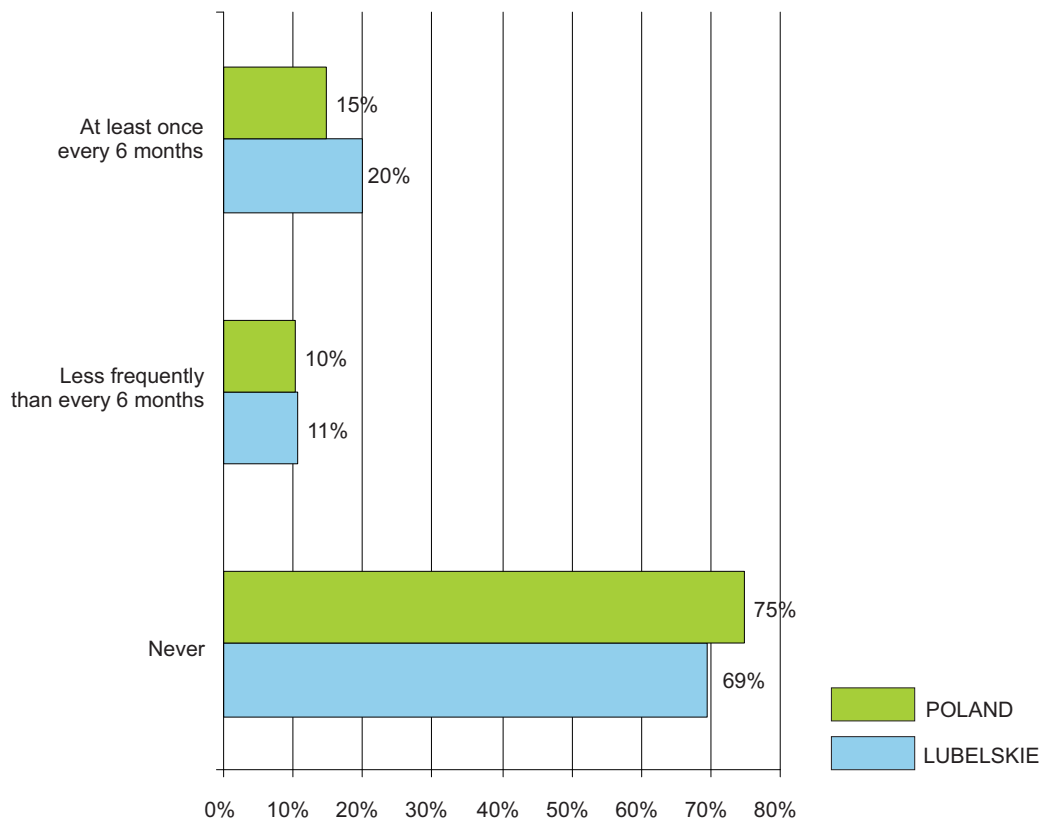
**LOCAL COMMUNITY AND SOCIAL CONTACTS**

**THE SENSE OF ATTACHMENT AND SOCIAL CONTACTS**  
in % of persons aged 16 or more



## PARTICIPATION IN EVENTS ORGANIZED IN THE PLACE OF RESIDENCE

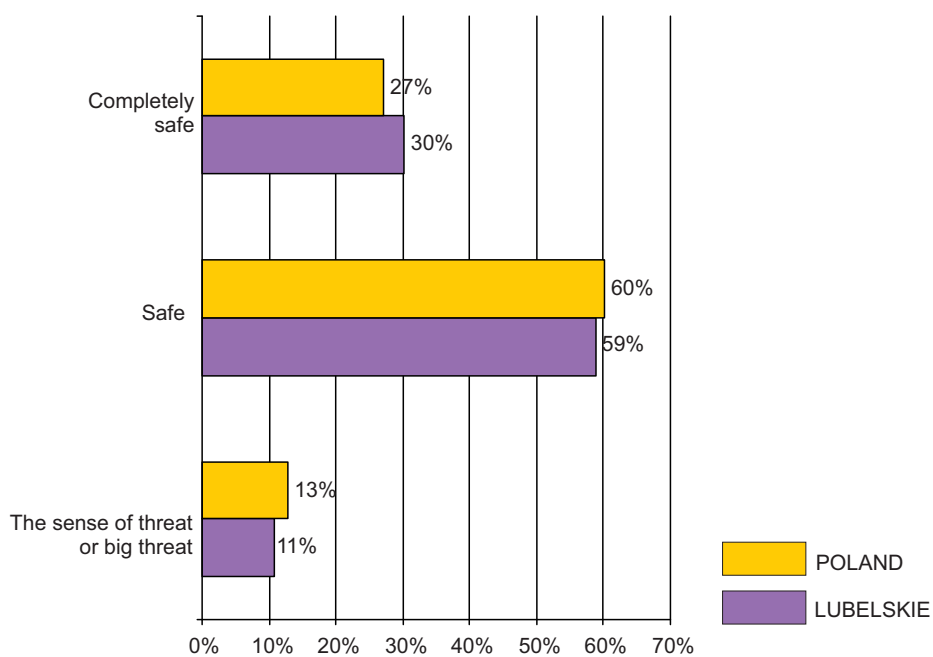
in % of persons aged 16 or more



## SENSE OF PHYSICAL SAFETY

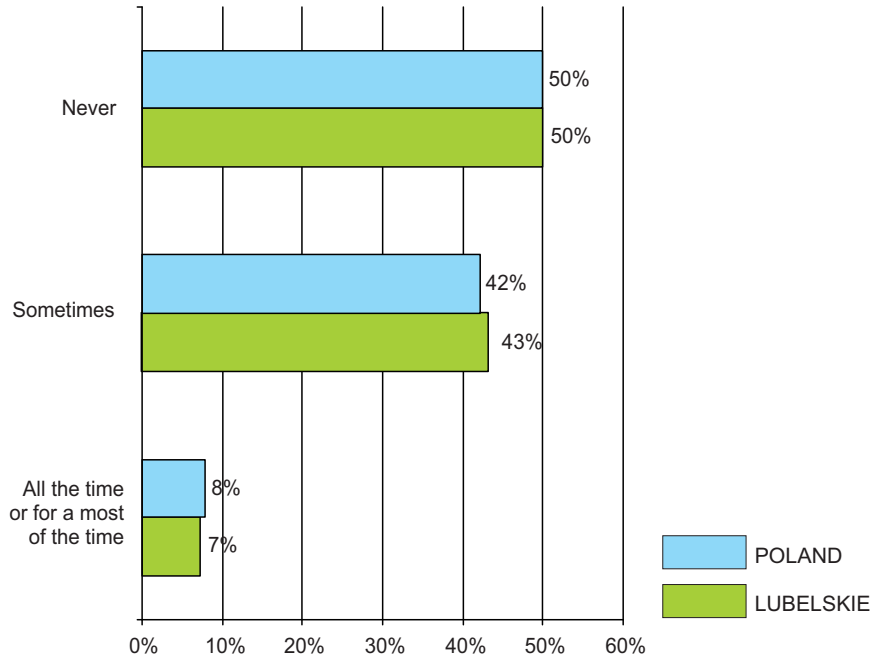
SENSE OF SAFETY IN THE CLOSEST NEIGHBOURHOOD

in % of persons aged 16 or more



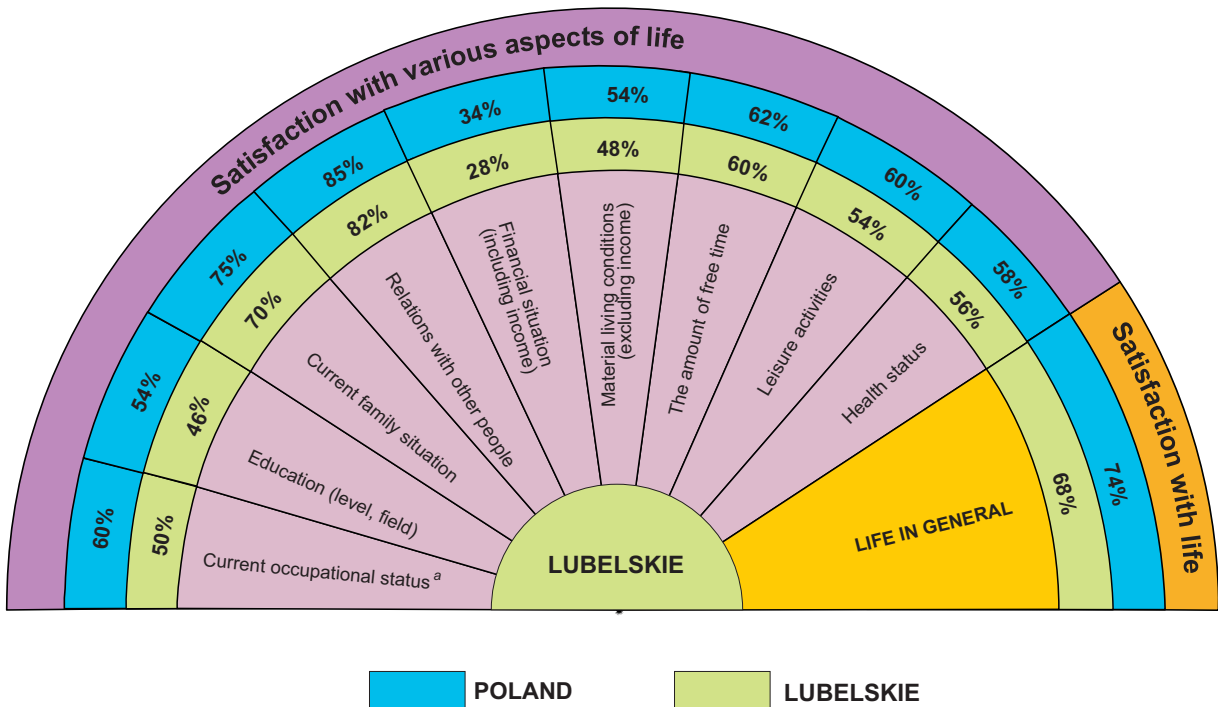


THE SENSE OF THREAT OF HOUSEBREAKING  
in % of persons aged 16 or more



**SATISFACTION WITH VARIOUS ASPECTS OF LIFE**  
(satisfied and very satisfied persons)

in % of persons aged 16 or more



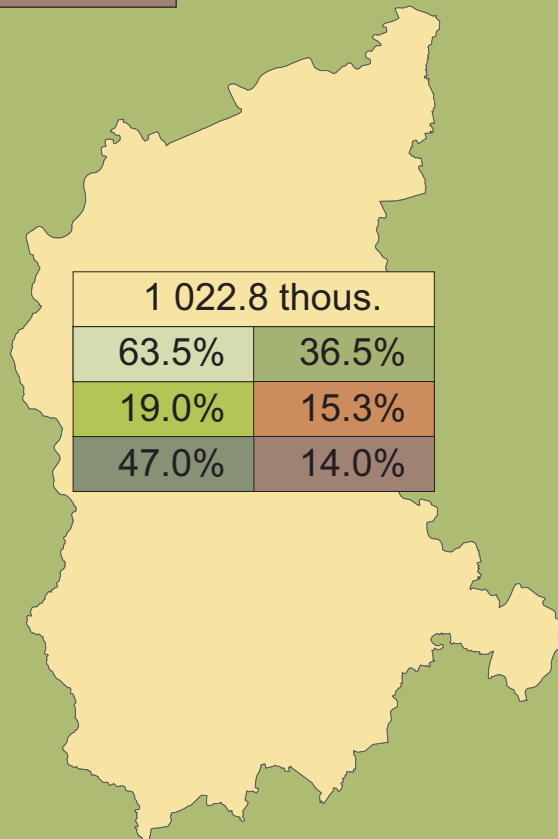
<sup>a</sup> Concerning working people

# LUBUSKIE VOIVODSHIP

POLAND	
38 511.8 thous.	
60.8%	39.2%
18.7%	16.9%
46.4%	13.0%



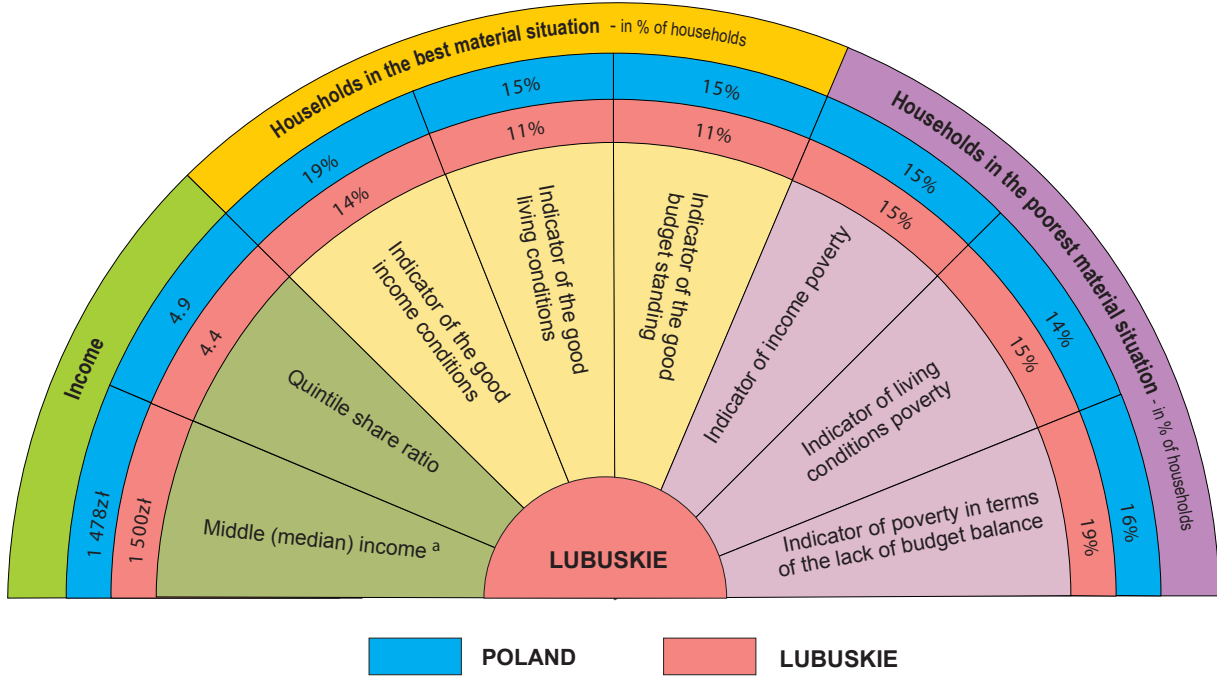
Total population	
Population in urban areas	Population in rural areas
Pre-working age population	Post-working age population
Employment rate	Unemployment rate



*According to the results of the Population and Housing Census 2011 (as 31.03.2011).*

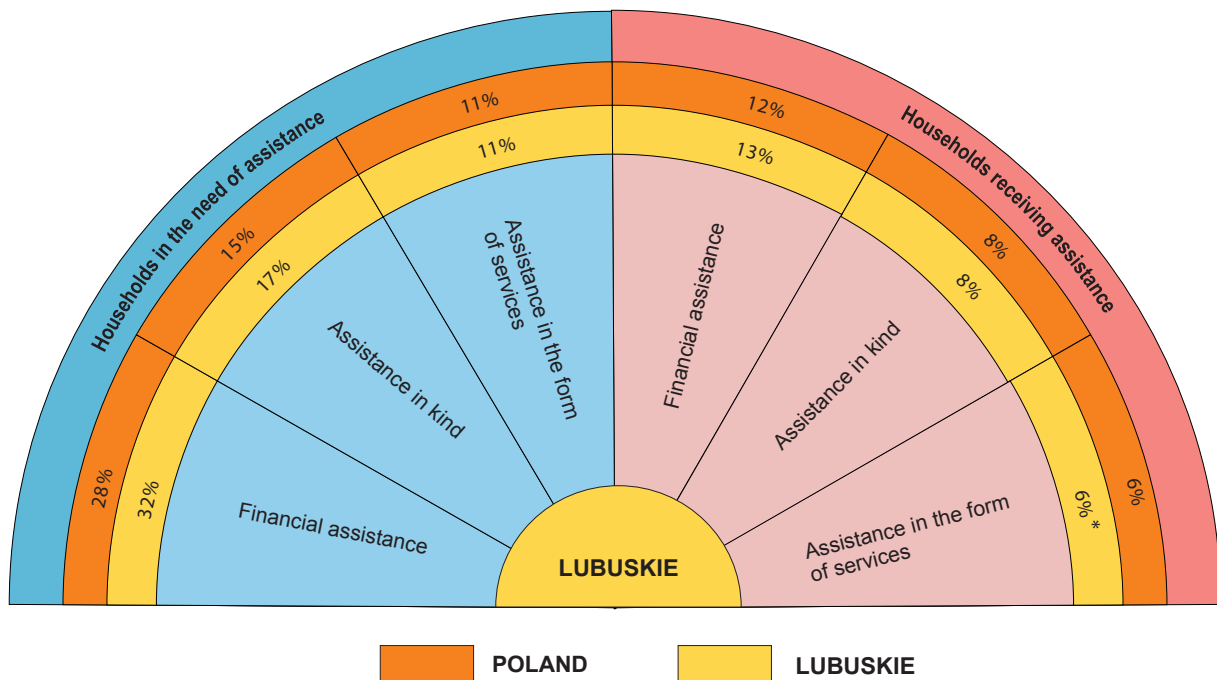
# MATERIAL SITUATION OF HOUSEHOLDS

## DIVERSIFICATION OF HOUSEHOLDS' MATERIAL SITUATION



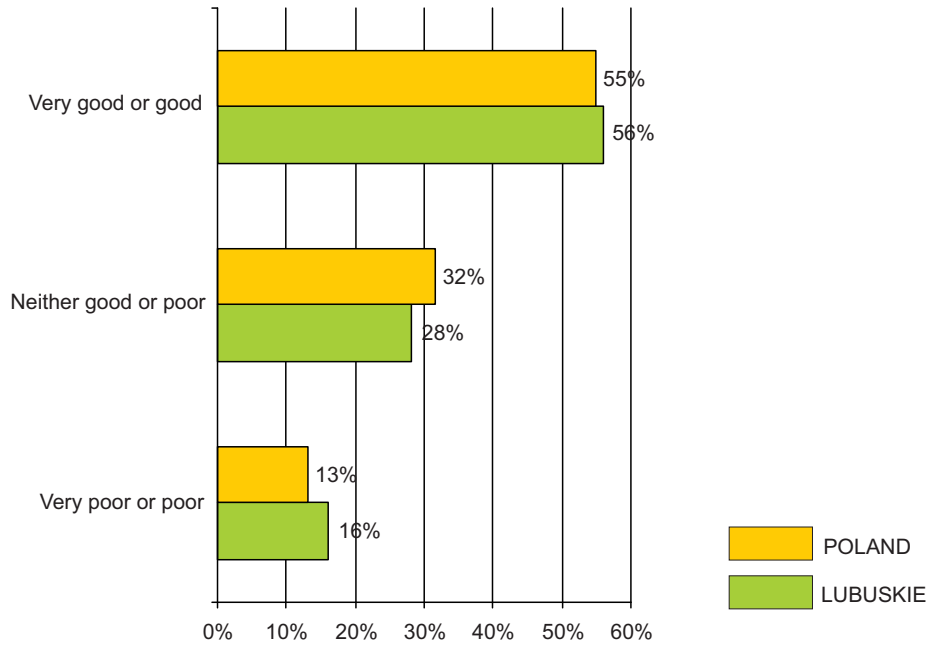
a Monthly monetary income per equivalent unit

## RECEIVING THE EXTERNAL ASSISTANCE in % of households

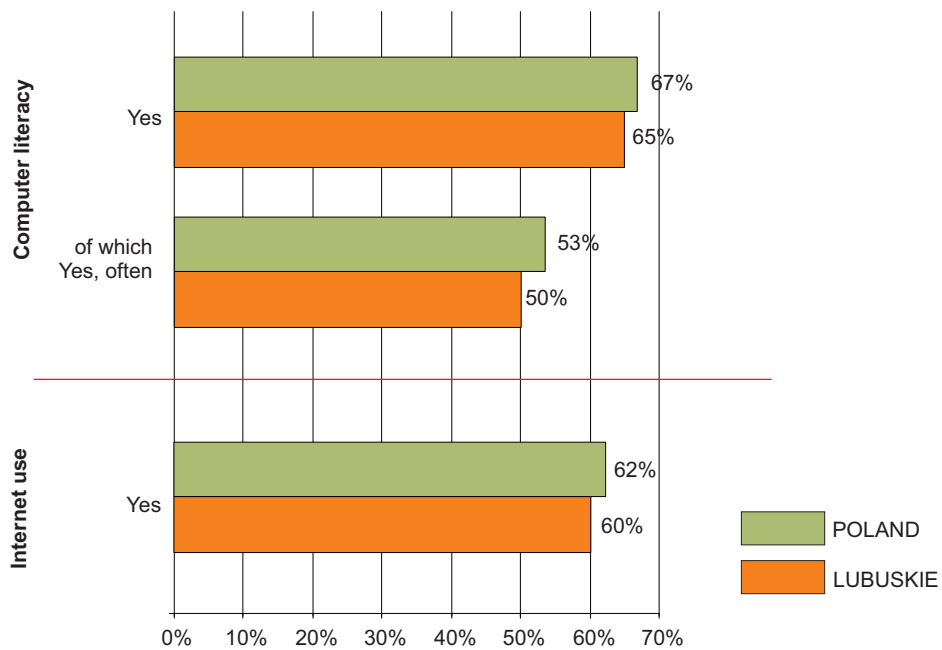


## ELEMENTS OF HUMAN CAPITAL

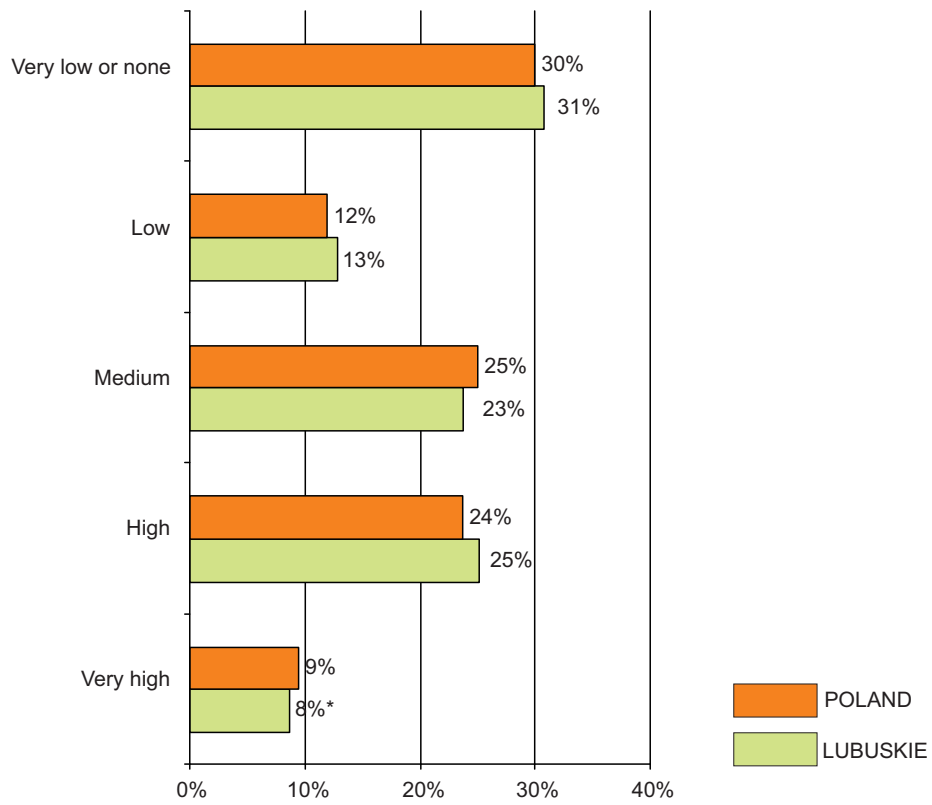
### GENERAL HEALTH ASSESSMENT in % of persons aged 16 or more



### COMPUTER LITERACY AND INTERNET USE in % of persons aged 16 or more

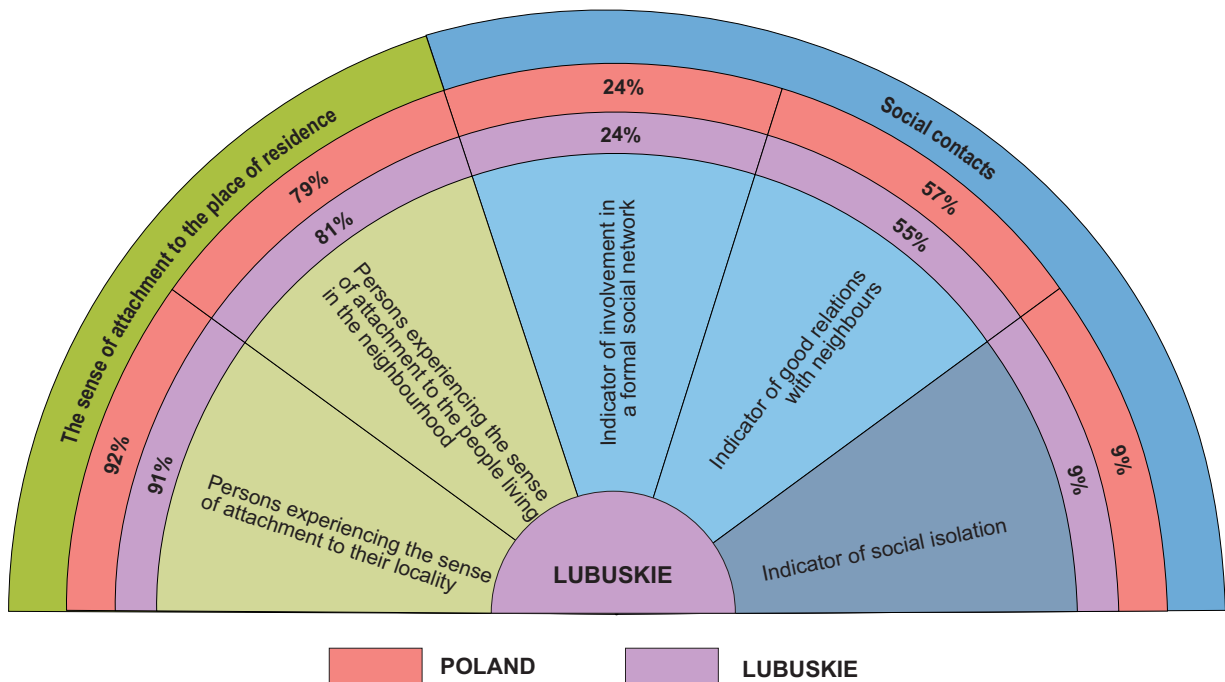


**PERSONAL SKILLS INDICATOR**  
in % of persons aged 16 or more



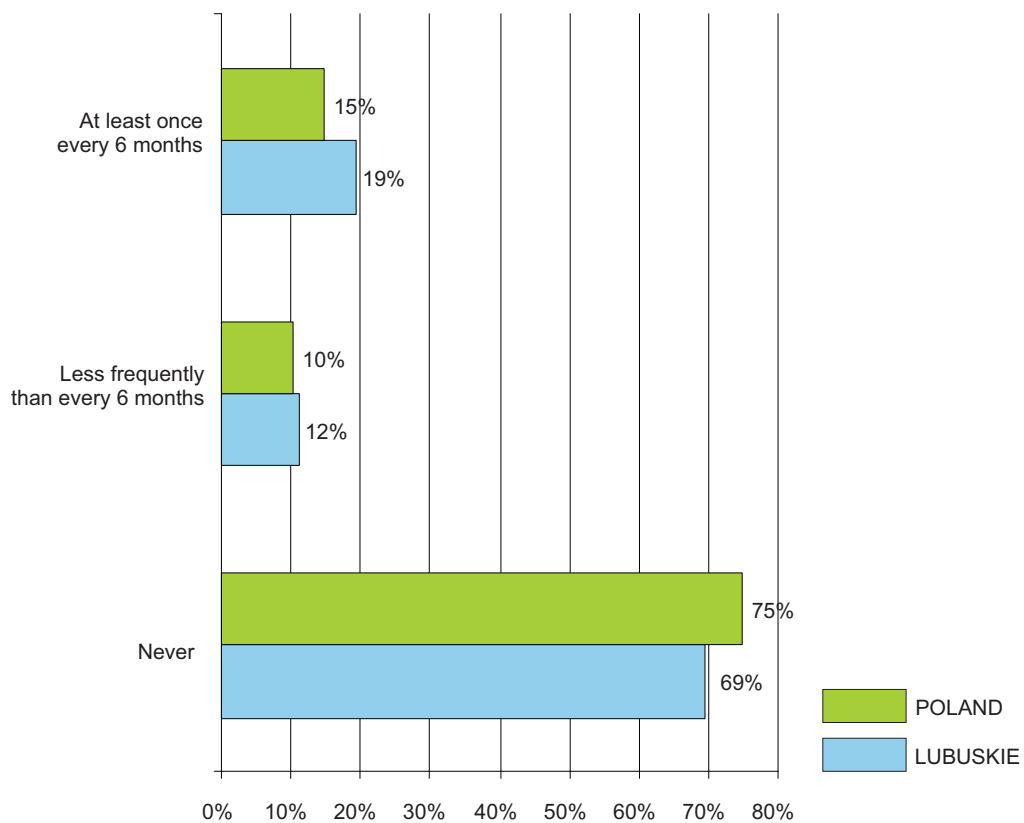
**LOCAL COMMUNITY AND SOCIAL CONTACTS**

**THE SENSE OF ATTACHMENT AND SOCIAL CONTACTS**  
in % of persons aged 16 or more



## PARTICIPATION IN EVENTS ORGANIZED IN THE PLACE OF RESIDENCE

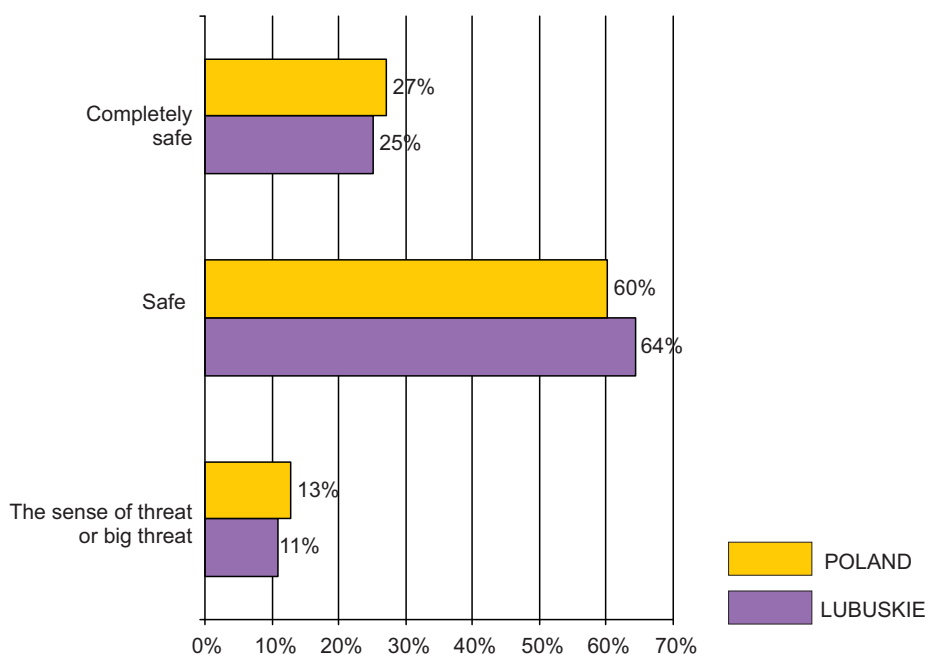
in % of persons aged 16 or more



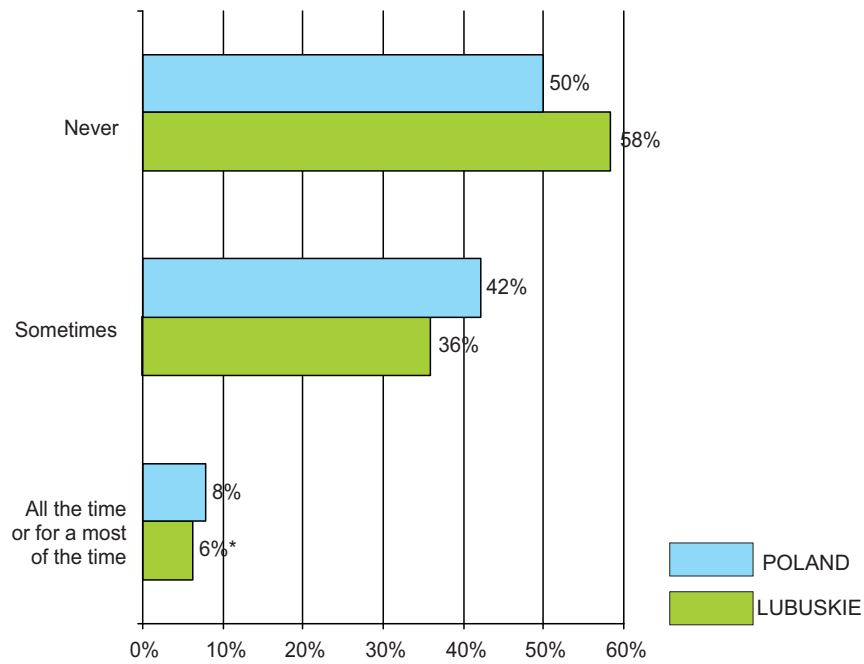
## SENSE OF PHYSICAL SAFETY

SENSE OF SAFETY IN THE CLOSEST NEIGHBOURHOOD

in % of persons aged 16 or more

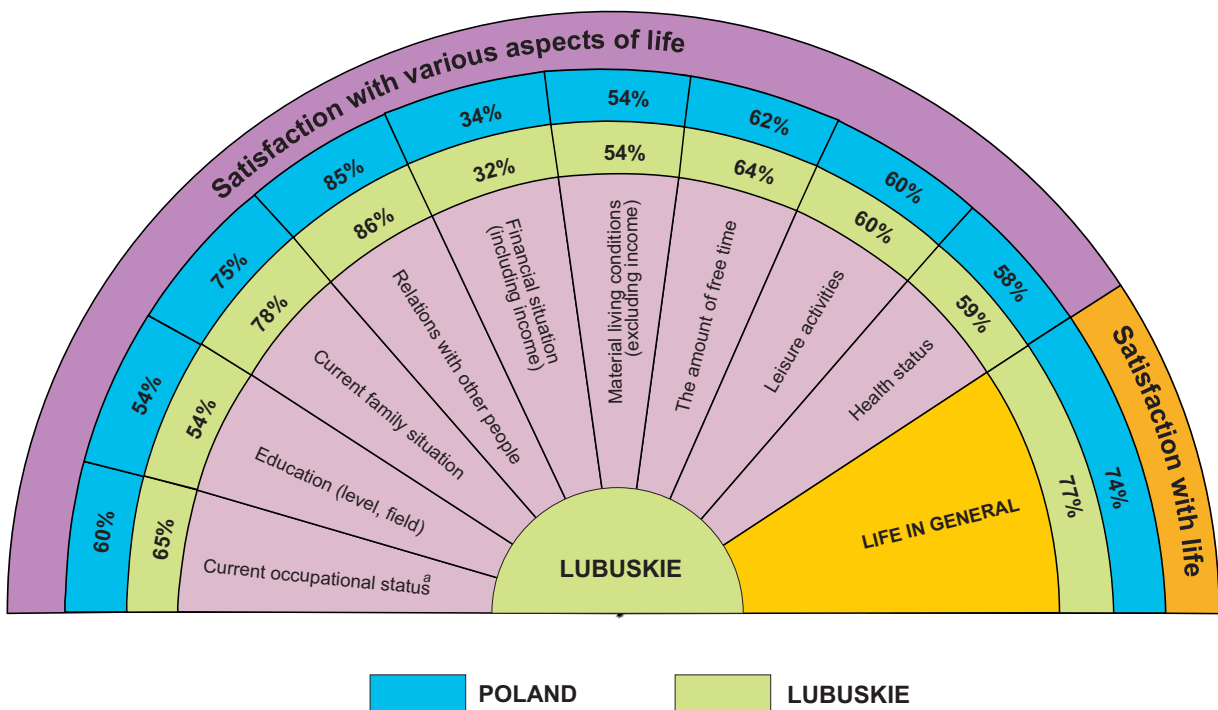


THE SENSE OF THREAT OF HOUSEBREAKING  
in % of persons aged 16 or more



**SATISFACTION WITH VARIOUS ASPECTS OF LIFE**  
(satisfied and very satisfied persons)

in % of persons aged 16 or more



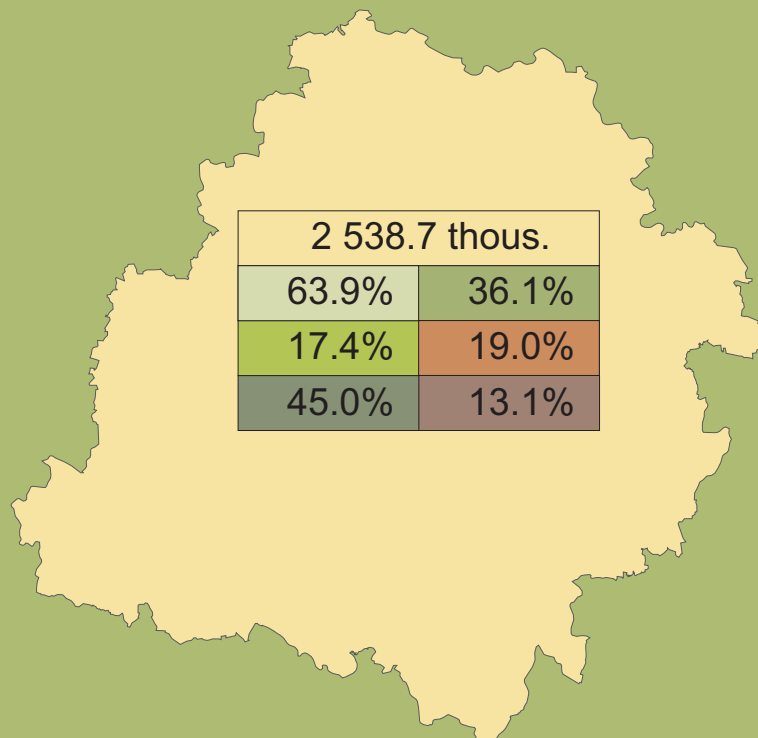
<sup>a</sup> Concerning working people

# ŁÓDZKIE VOIVODSHIP

POLAND	
38 511.8 thous.	
60.8%	39.2%
18.7%	16.9%
46.4%	13.0%



Total population	
Population in urban areas	Population in rural areas
Pre-working age population	Post-working age population
Employment rate	Unemployment rate

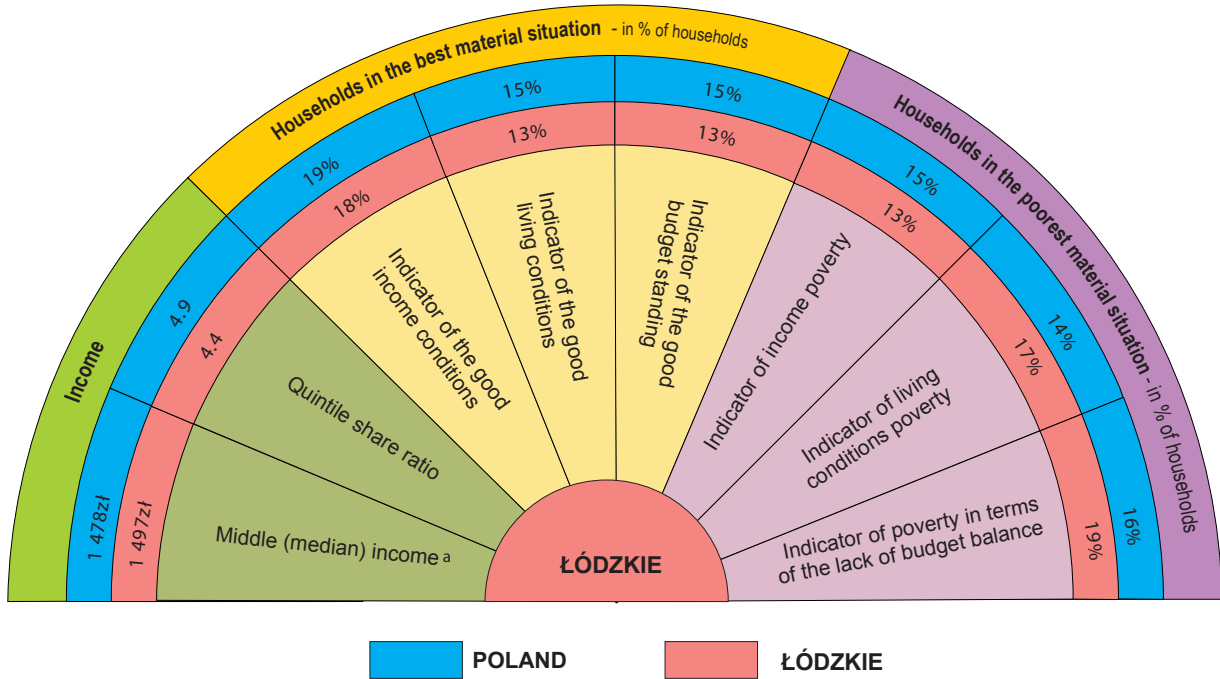


*According to the results of the Population and Housing Census 2011 (as 31.03.2011).*



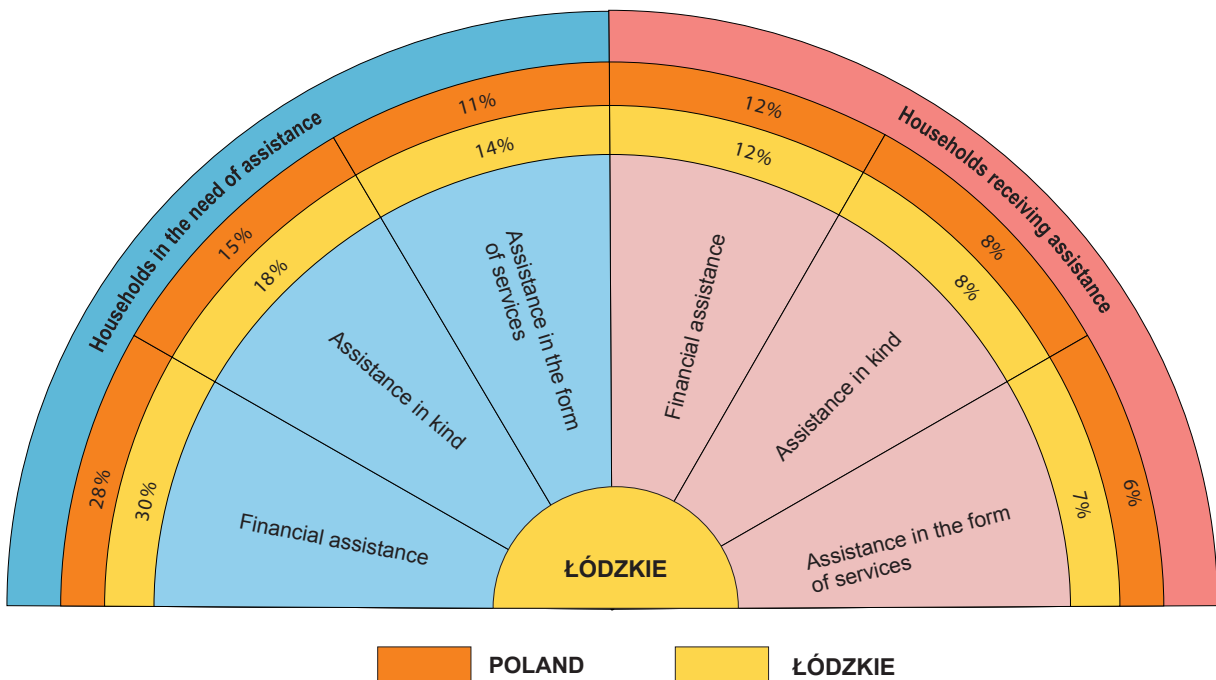
## MATERIAL SITUATION OF HOUSEHOLDS

### DIVERSIFICATION OF HOUSEHOLDS' MATERIAL SITUATION



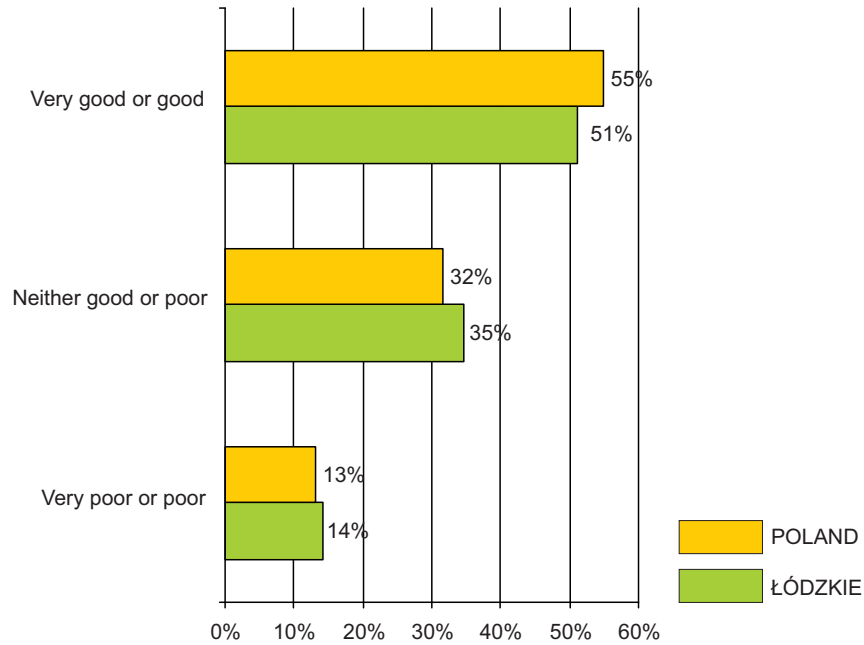
a Monthly monetary income per equivalent unit

### RECEIVING THE EXTERNAL ASSISTANCE in % of households

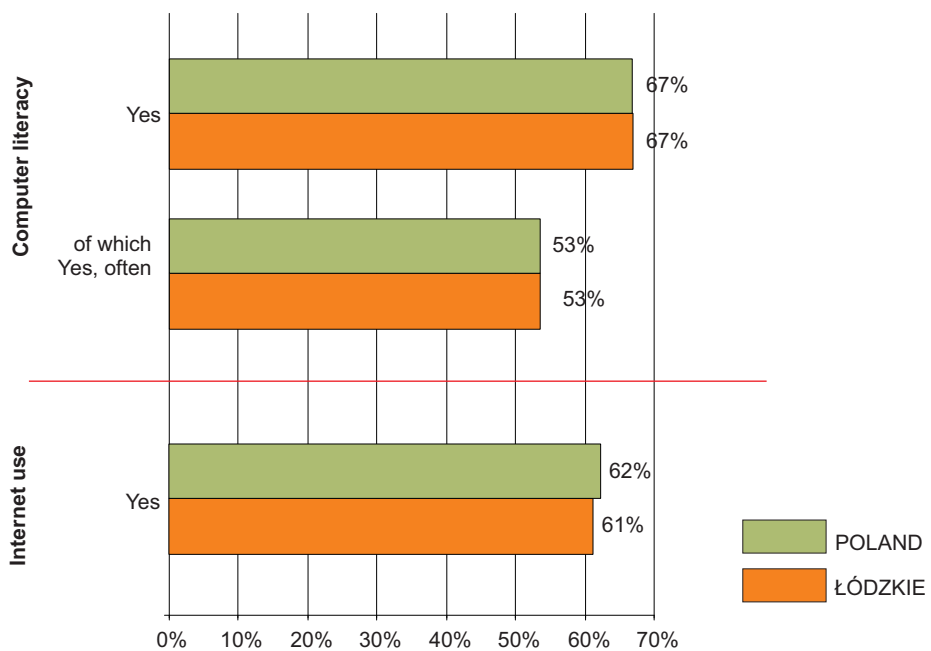


## ELEMENTS OF HUMAN CAPITAL

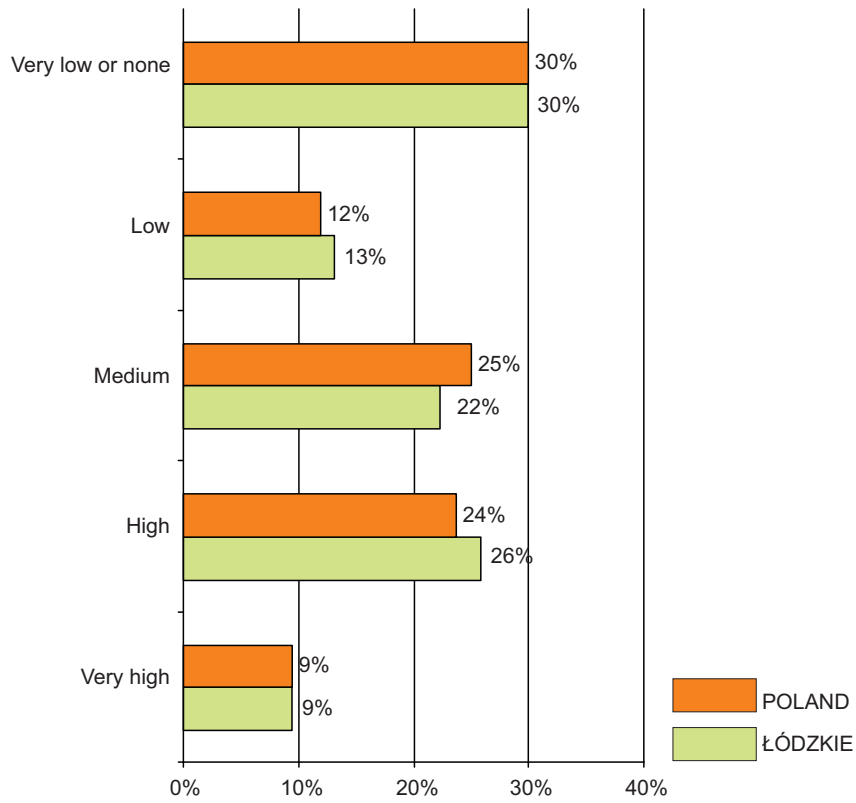
### GENERAL HEALTH ASSESSMENT in % of persons aged 16 or more



### COMPUTER LITERACY AND INTERNET USE in % of persons aged 16 or more

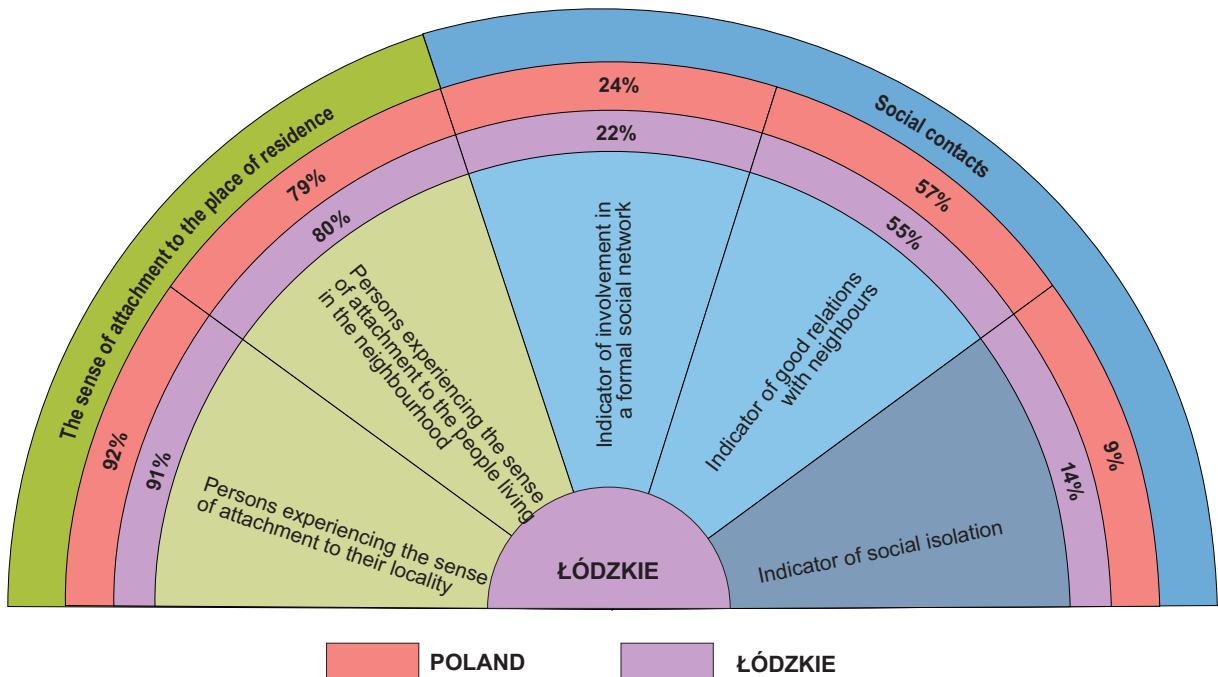


**PERSONAL SKILLS INDICATOR**  
in % of persons aged 16 or more



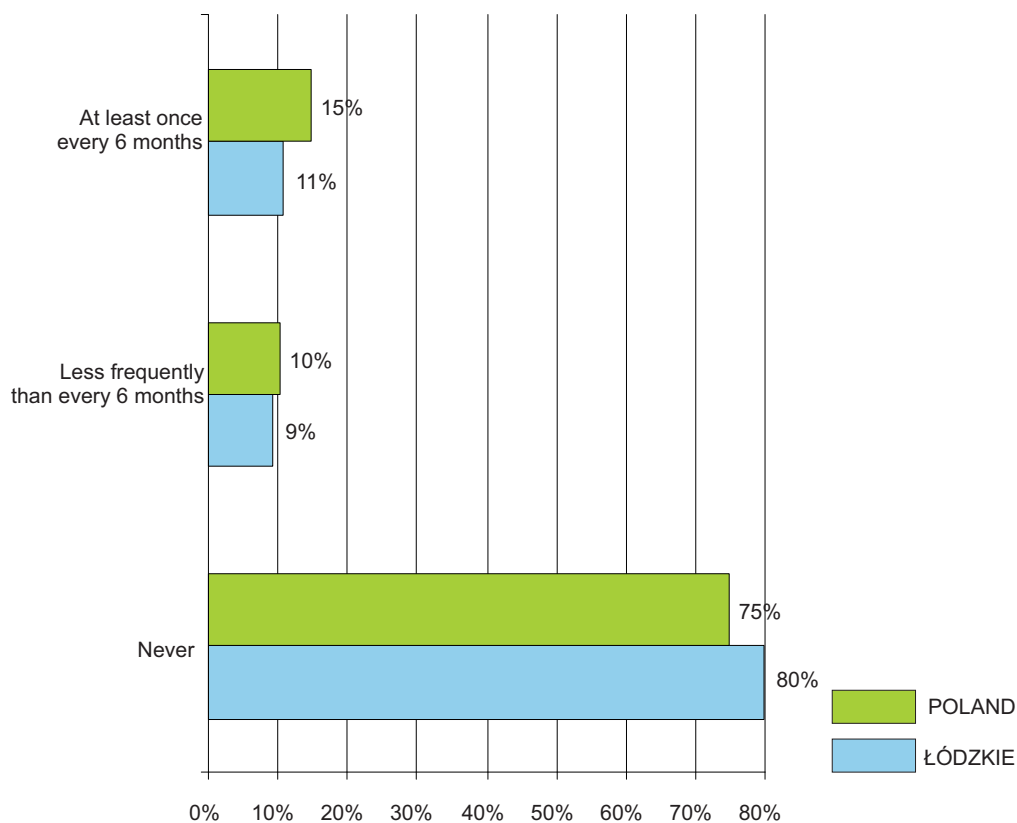
**LOCAL COMMUNITY AND SOCIAL CONTACTS**

**THE SENSE OF ATTACHMENT AND SOCIAL CONTACTS**  
in % of persons aged 16 or more



## PARTICIPATION IN EVENTS ORGANIZED IN THE PLACE OF RESIDENCE

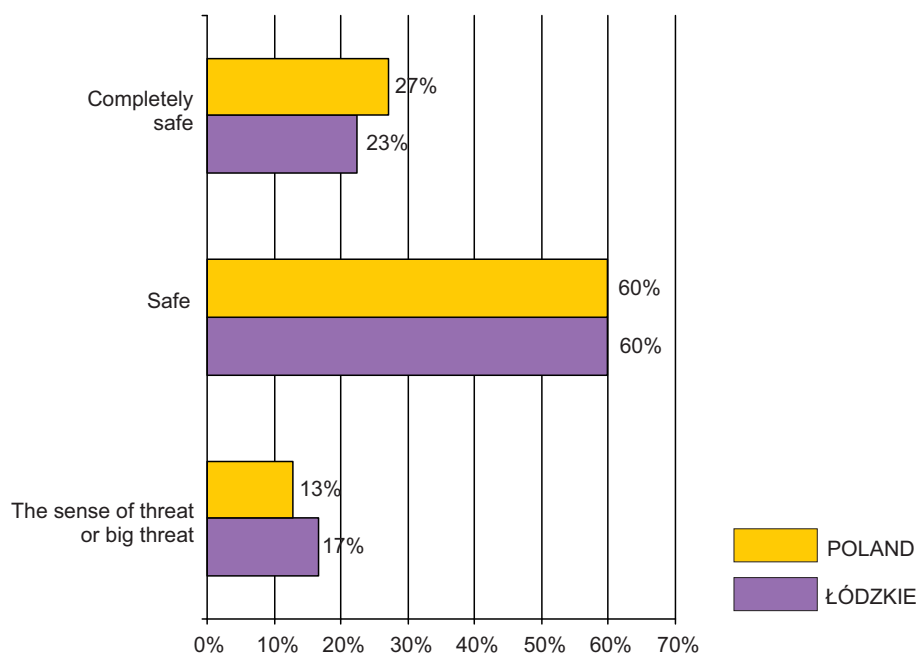
in % of persons aged 16 or more



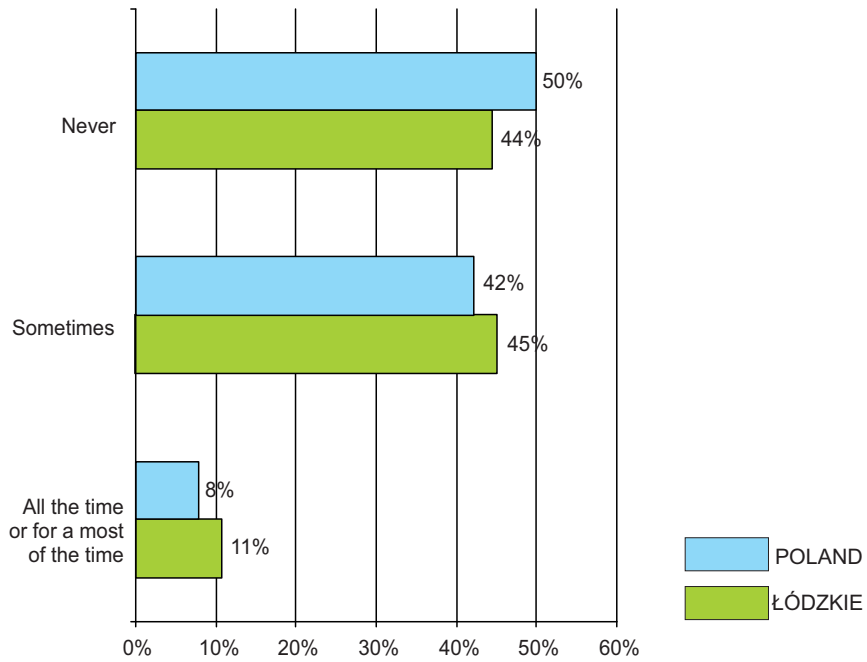
## SENSE OF PHYSICAL SAFETY

SENSE OF SAFETY IN THE CLOSEST NEIGHBOURHOOD

in % of persons aged 16 or more

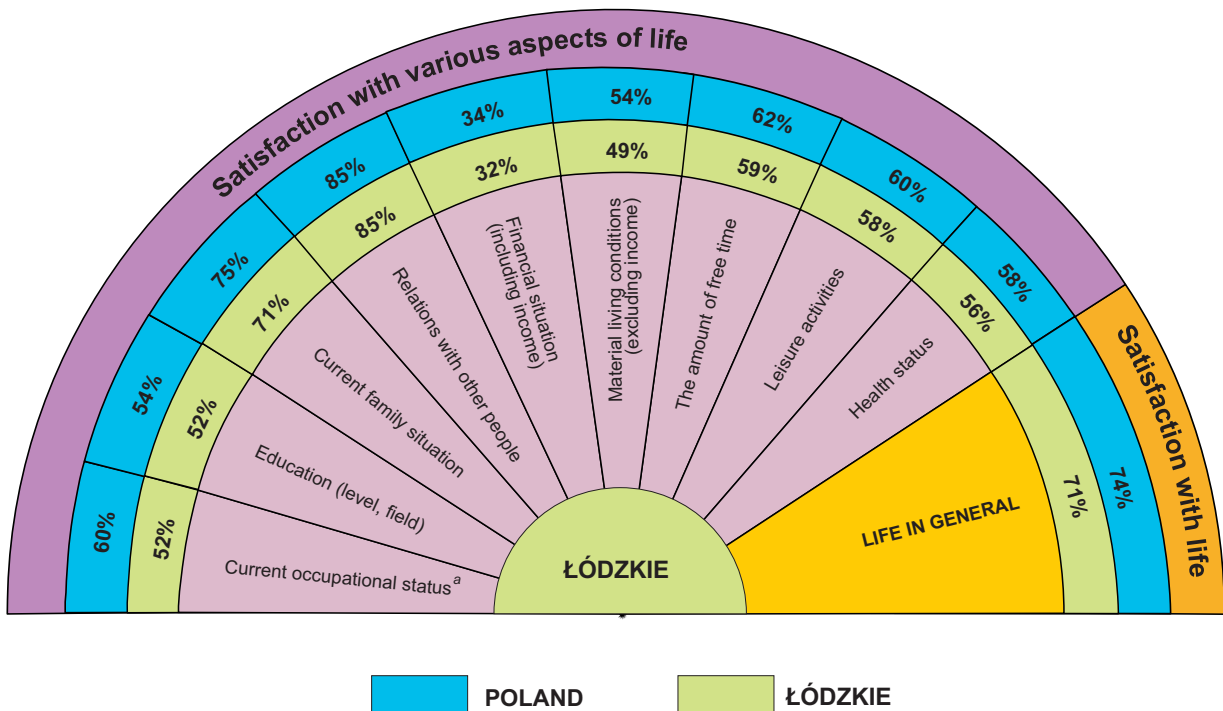


THE SENSE OF THREAT OF HOUSEBREAKING  
in % of persons aged 16 or more



**SATISFACTION WITH VARIOUS ASPECTS OF LIFE**  
(satisfied and very satisfied persons)

in % of persons aged 16 or more



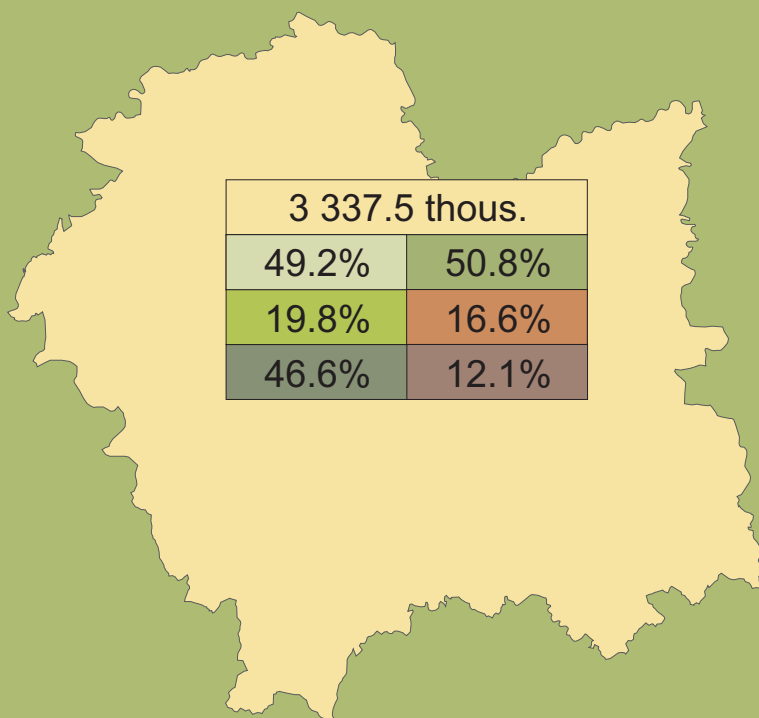
<sup>a</sup> Concerning working people

# MAŁOPOLSKIE VOIVODSHIP

POLAND	
38 511.8 thous.	
60.8%	39.2%
18.7%	16.9%
46.4%	13.0%



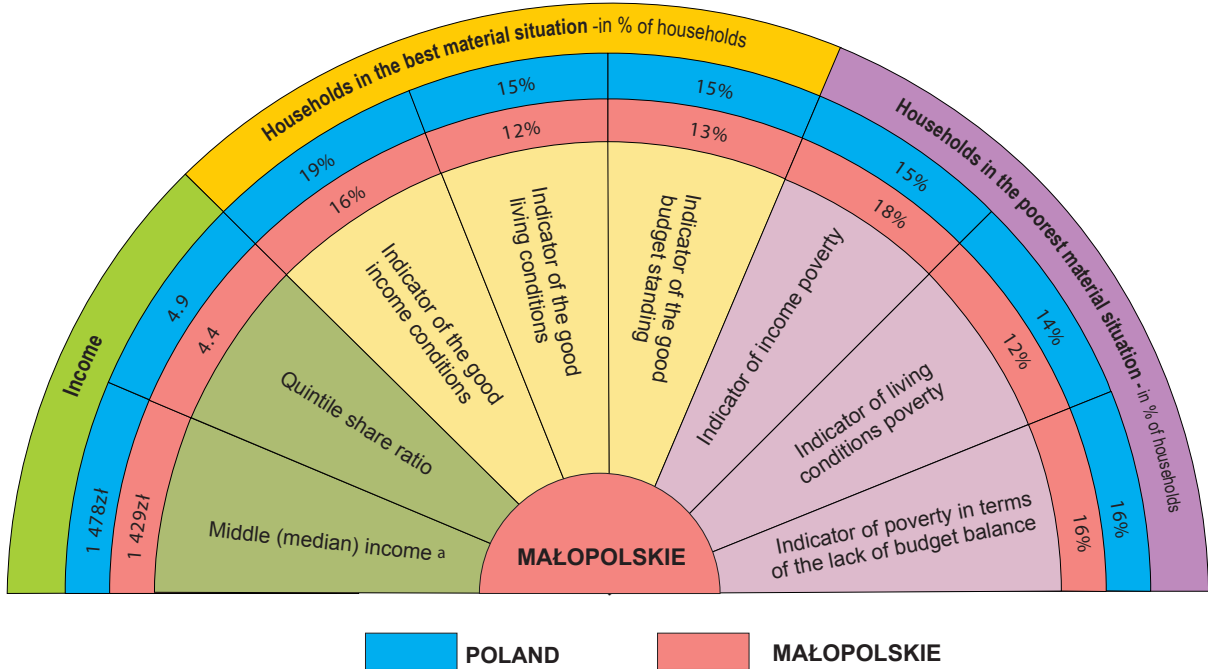
Total population	
Population in urban areas	Population in rural areas
Pre-working age population	Post-working age population
Employment rate	Unemployment rate



*According to the results of the Population and Housing Census 2011 (as 31.03.2011).*

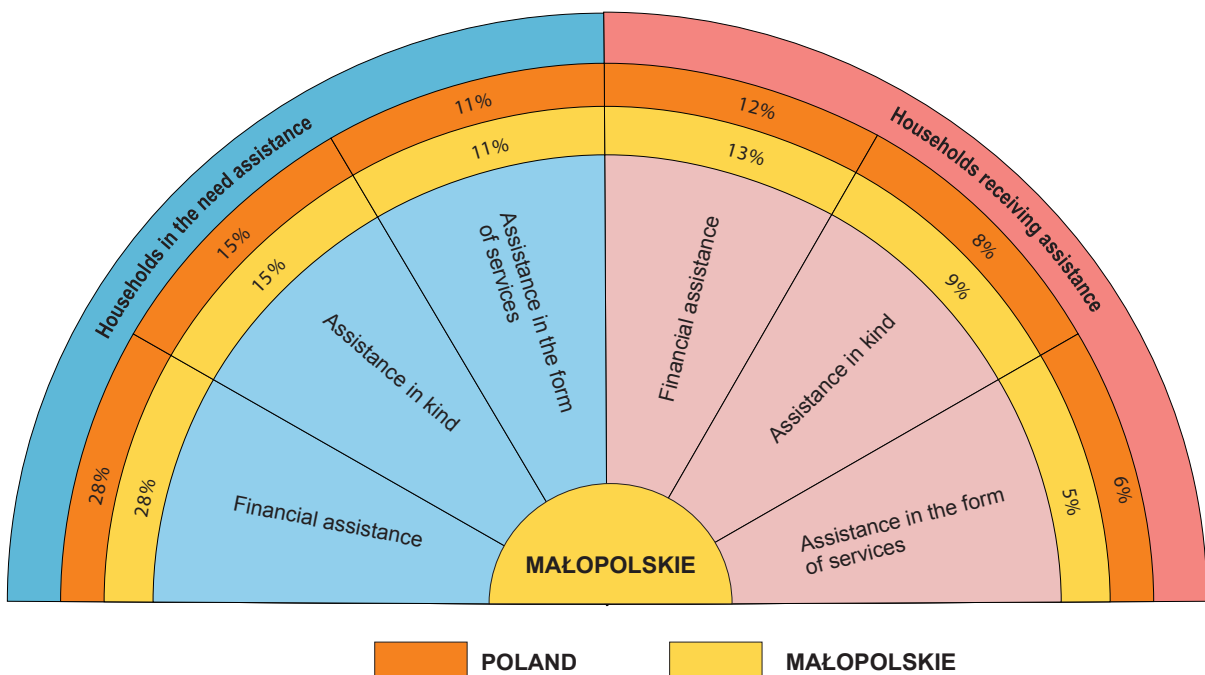
## MATERIAL SITUATION OF HOUSEHOLDS

### DIVERSIFICATION OF HOUSEHOLDS' MATERIAL SITUATION



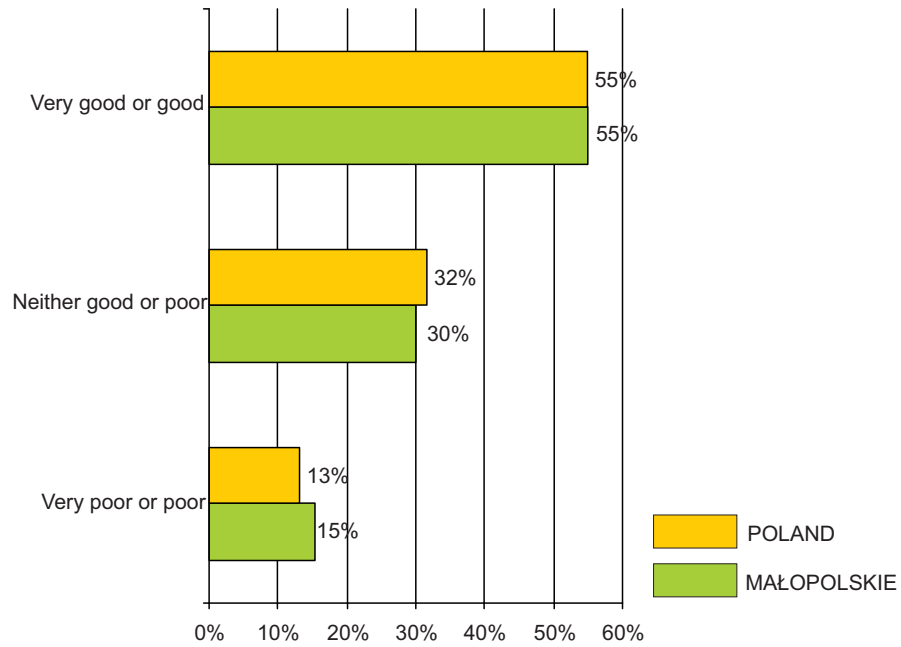
a Monthly monetary income per equivalent unit

### RECEIVING THE EXTERNAL ASSISTANCE in % of households

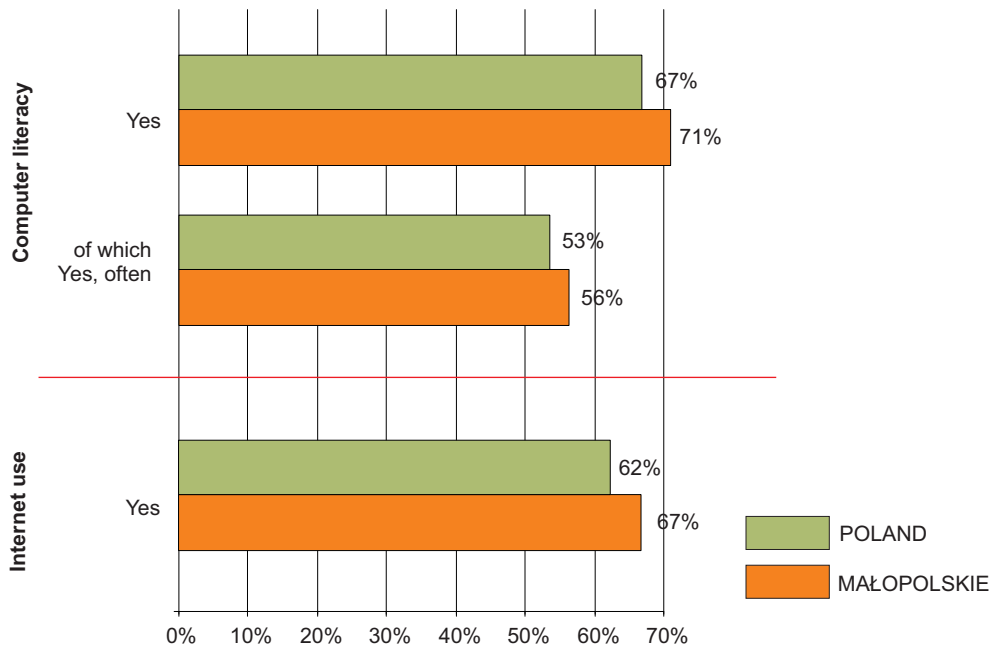


## ELEMENTS OF HUMAN CAPITAL

### GENERAL HEALTH ASSESSMENT in % of persons aged 16 or more

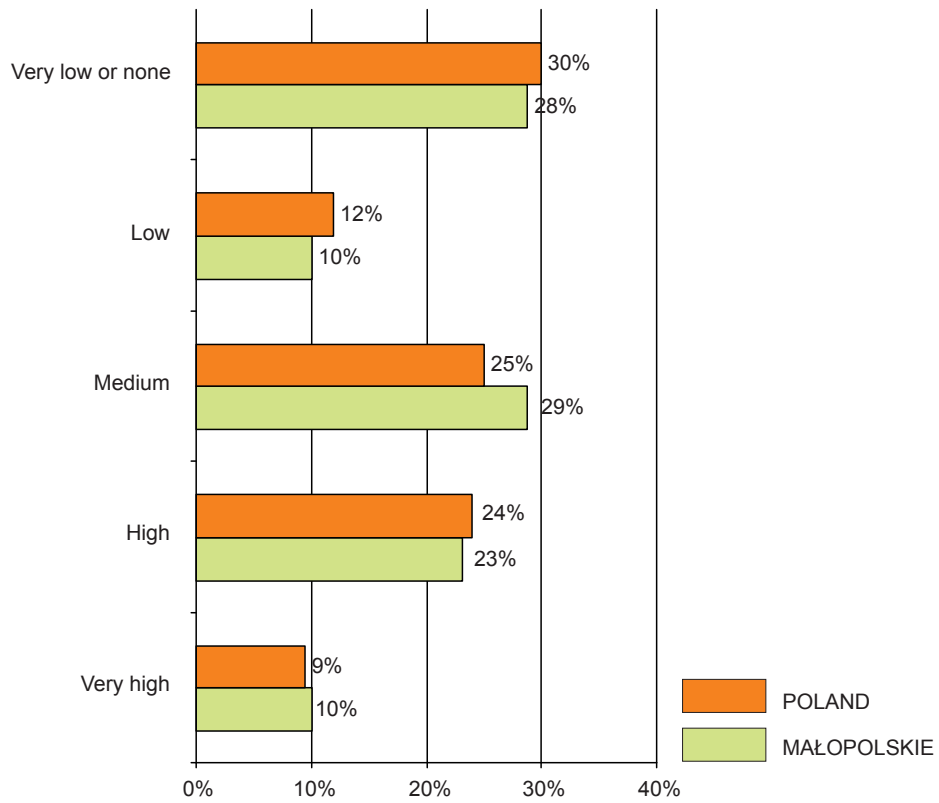


### COMPUTER LITERACY AND INTERNET USE in % of persons aged 16 or more



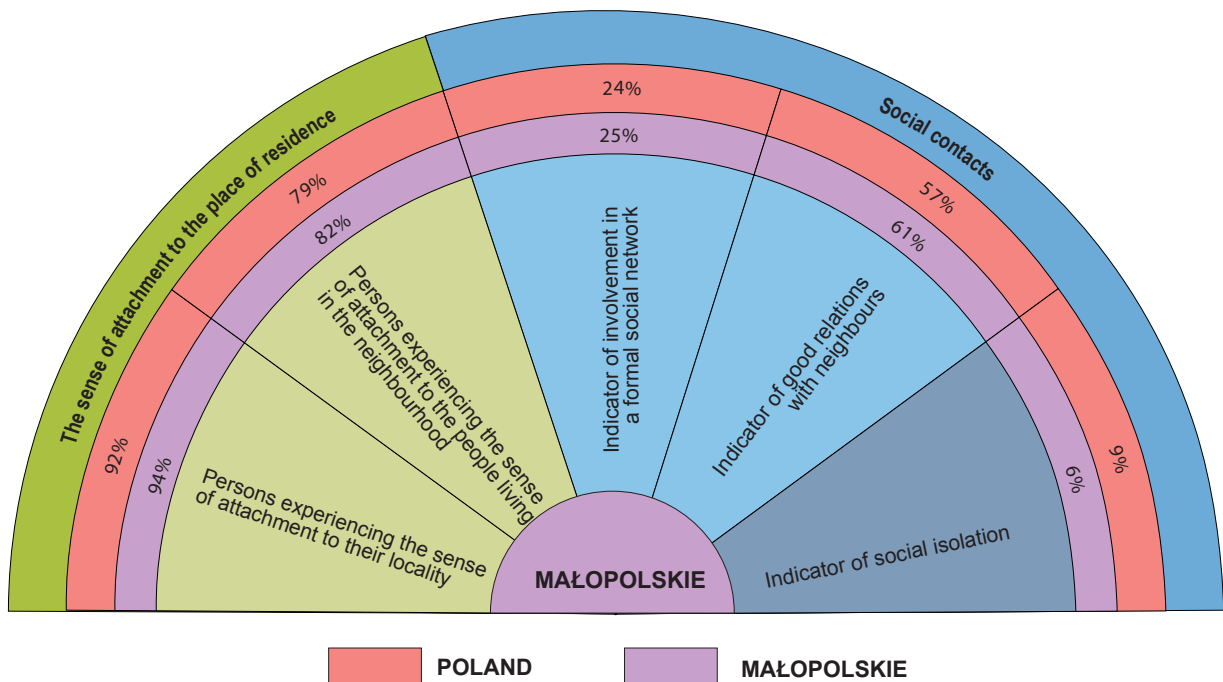


**PERSONAL SKILLS INDICATOR**  
in % of persons aged 16 or more



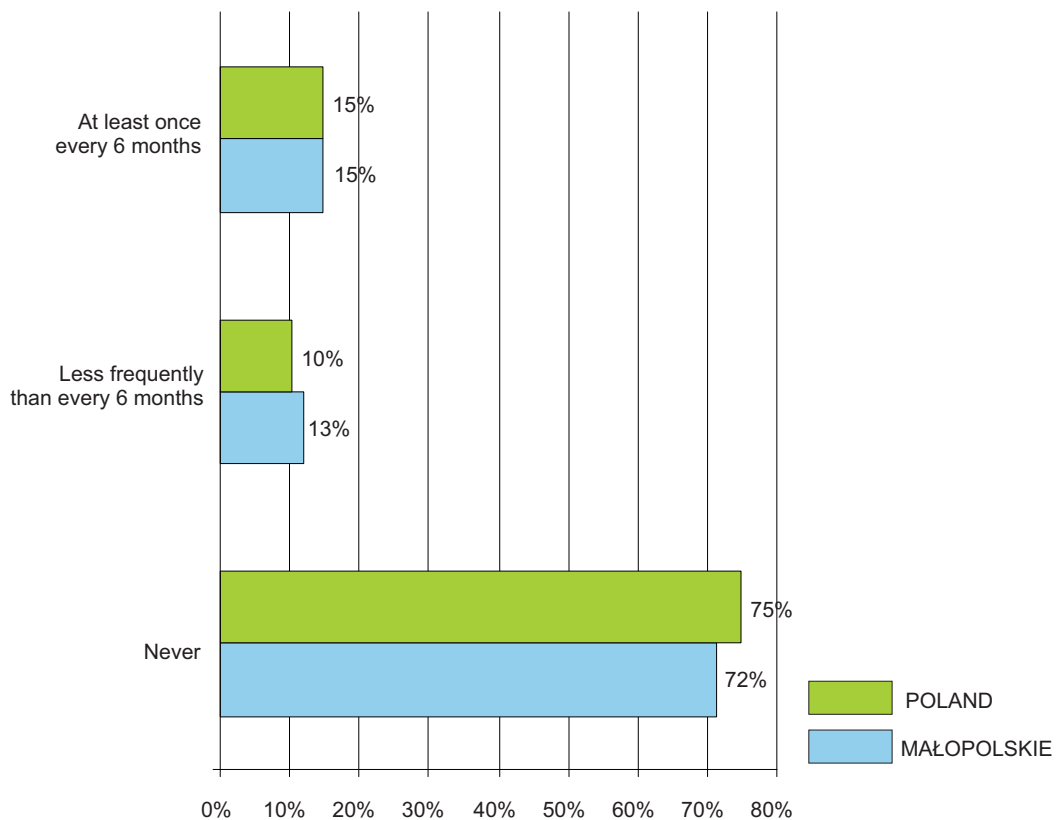
**LOCAL COMMUNITY AND SOCIAL CONTACTS**

**THE SENSE OF ATTACHMENT AND SOCIAL CONTACTS**  
in % of persons aged 16 or more



## PARTICIPATION IN EVENTS ORGANIZED IN THE PLACE OF RESIDENCE

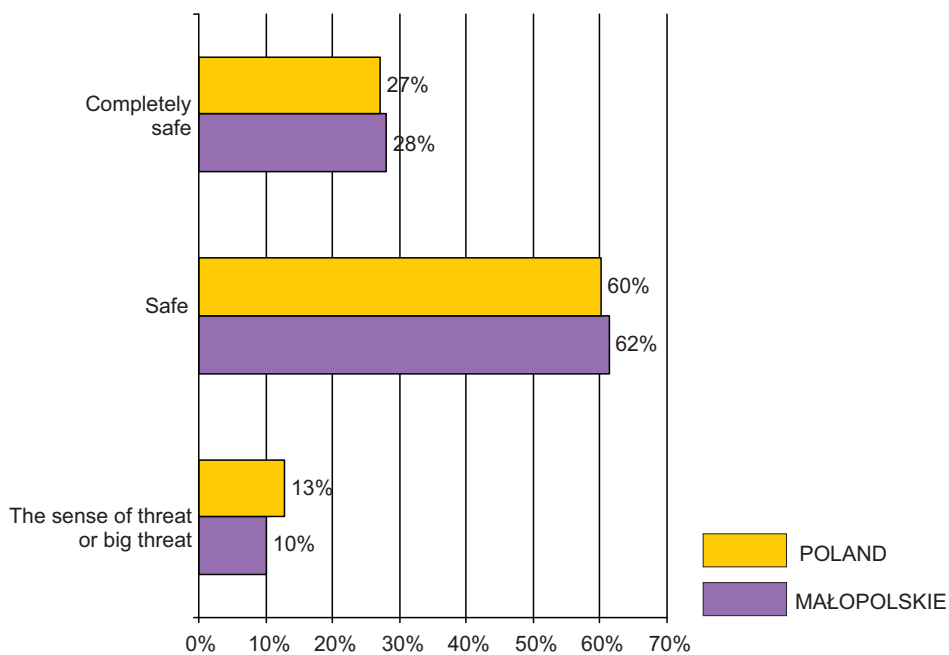
in % of persons aged 16 or more



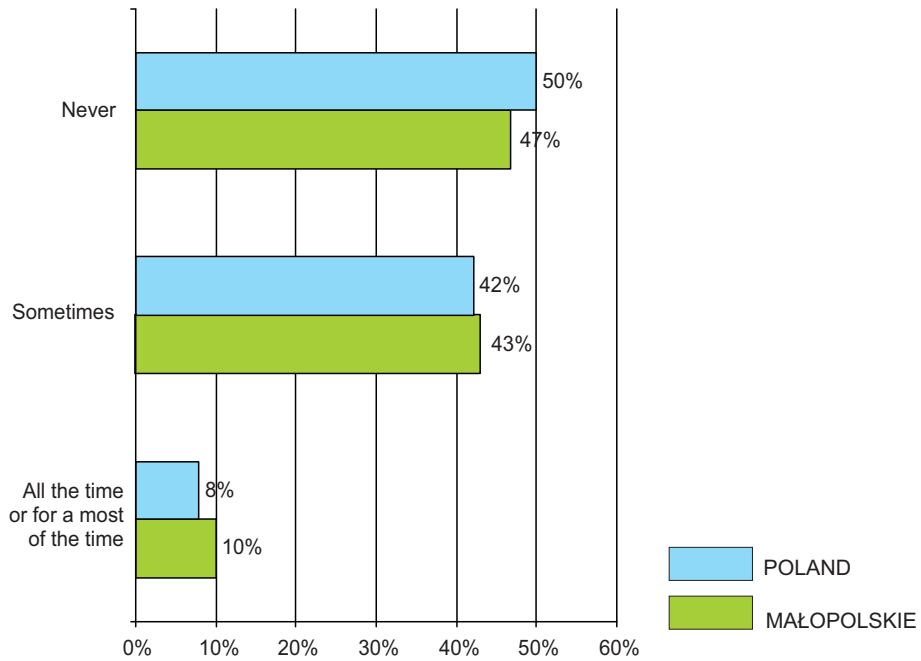
## SENSE OF PHYSICAL SAFETY

SENSE OF SAFETY IN THE CLOSEST NEIGHBOURHOOD

in % of persons aged 16 or more

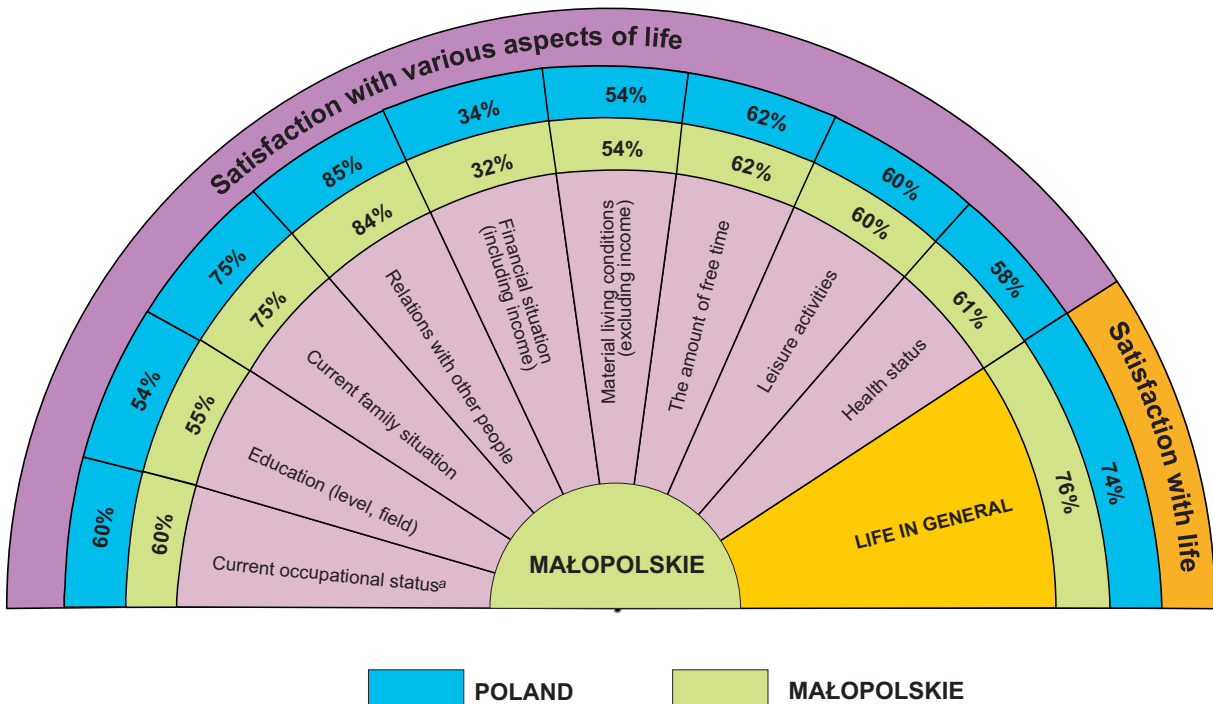


THE SENSE OF THREAT OF HOUSEBREAKING  
in % of persons aged 16 or more



**SATISFACTION WITH VARIOUS ASPECTS OF LIFE**  
(satisfied and very satisfied persons)

in % of persons aged 16 or more



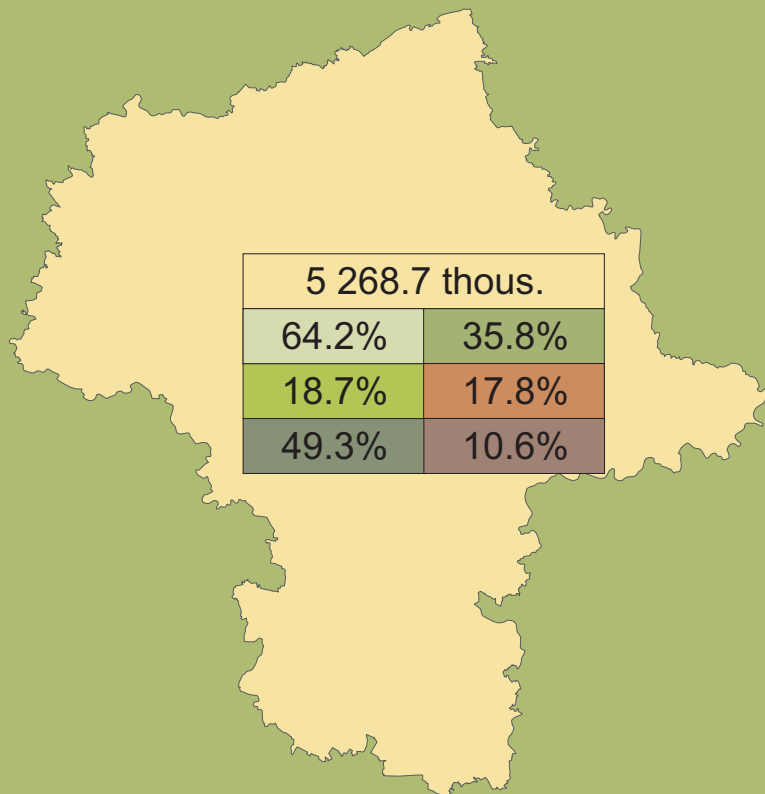
<sup>a</sup> Concerning working people

# MAZOWIECKIE VOIVODSHIP

POLAND	
38 511.8 thous.	
60.8%	39.2%
18.7%	16.9%
46.4%	13.0%



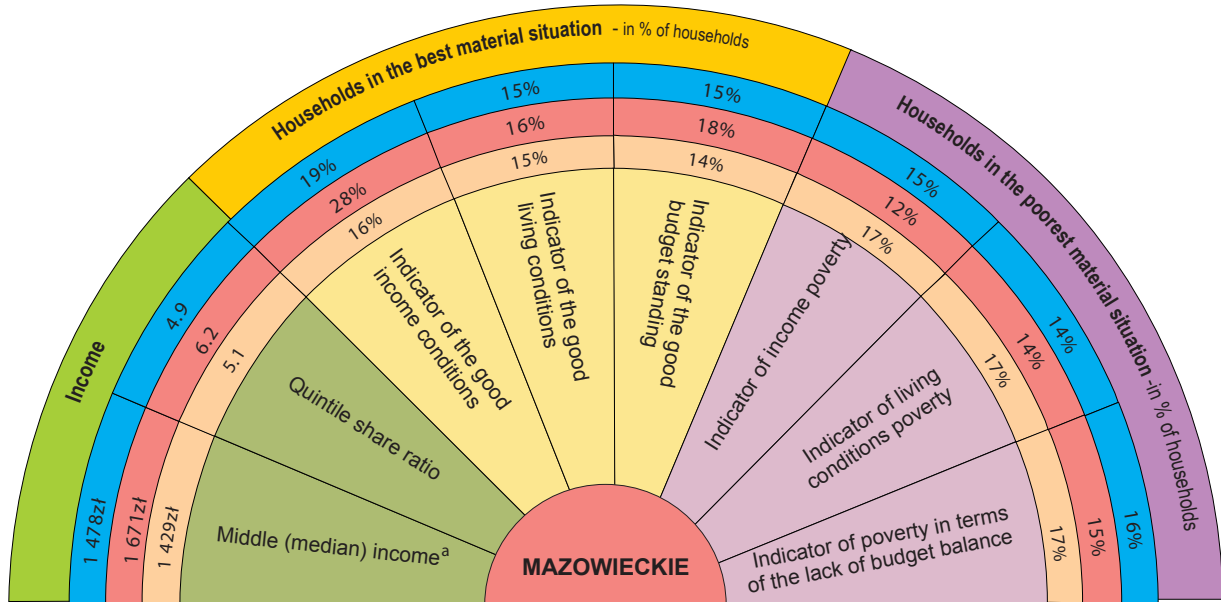
Total population	
Population in urban areas	Population in rural areas
Pre-working age population	Post-working age population
Employment rate	Unemployment rate



*According to the results of the Population and Housing Census 2011 (as 31.03.2011).*

## MATERIAL SITUATION OF HOUSEHOLDS

### DIVERSIFICATION OF HOUSEHOLDS' MATERIAL SITUATION



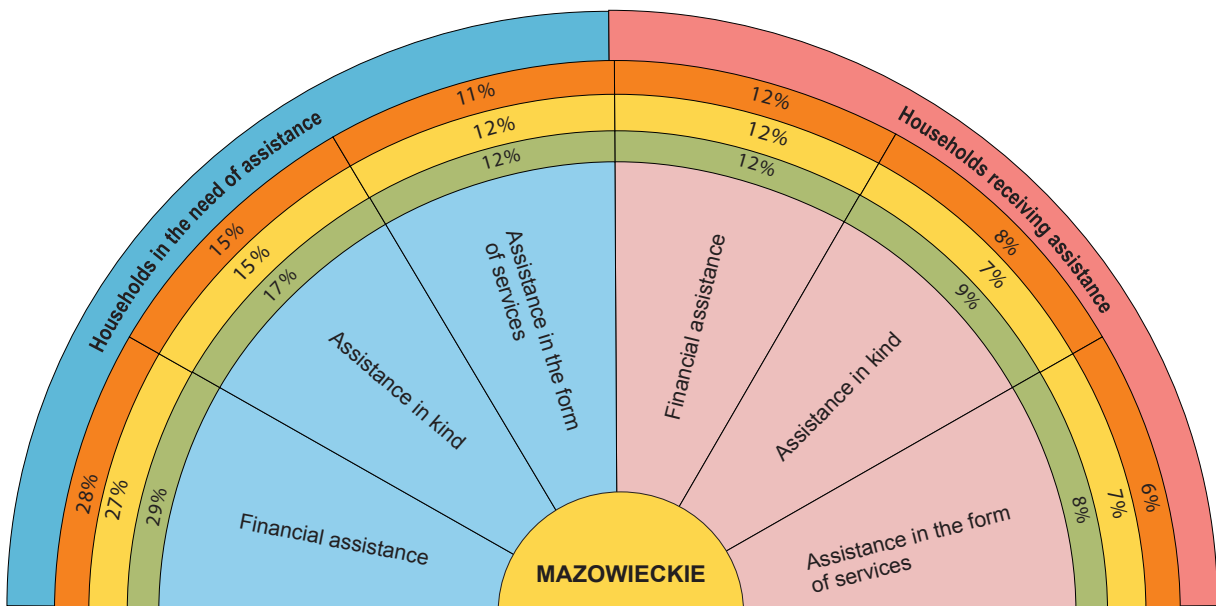
■ POLAND

■ MAZOWIECKIE

■ MAZOWIECKIE excluding Warsaw

<sup>a</sup> Monthly monetary income per equivalent unit

### RECEIVING THE EXTERNAL ASSISTANCE in % of households



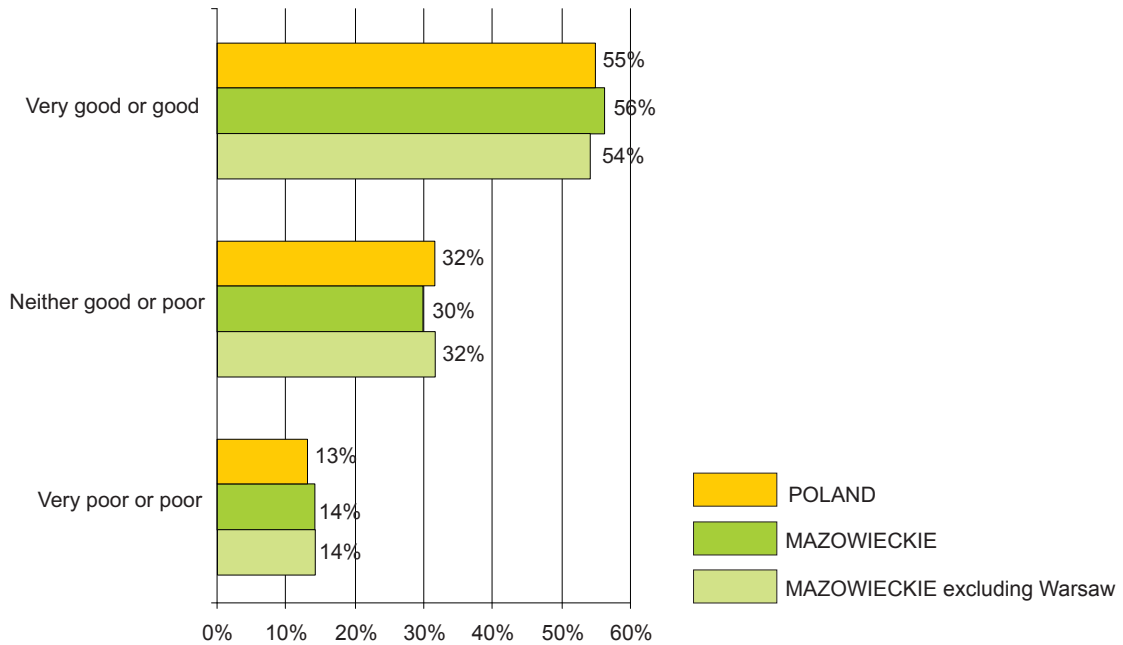
■ POLAND

■ MAZOWIECKIE

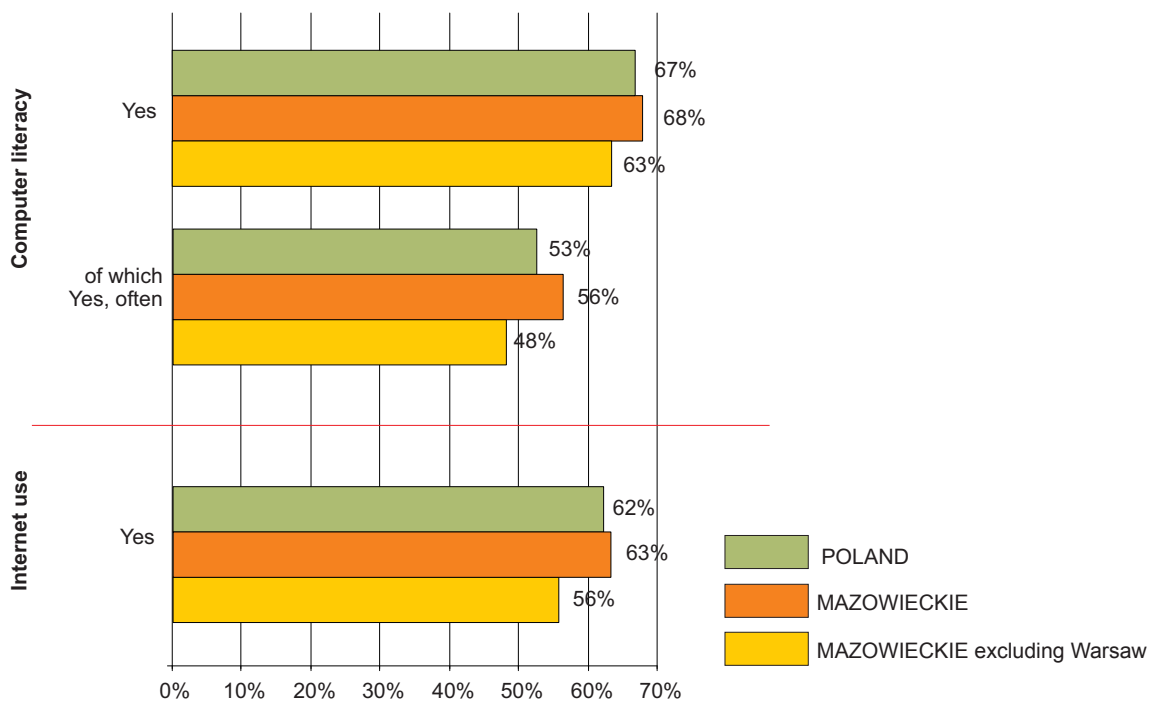
■ MAZOWIECKIE excluding Warsaw

## ELEMENTS OF HUMAN CAPITAL

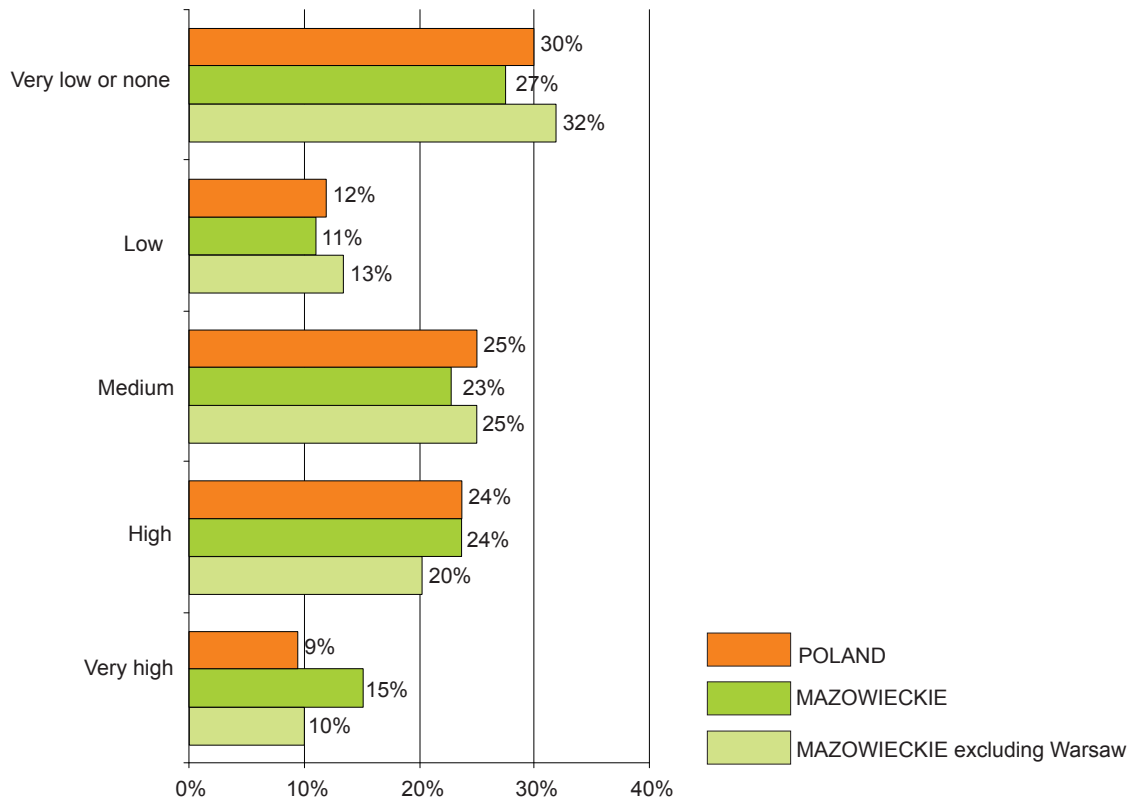
### GENERAL HEALTH ASSESSMENT in % of persons aged 16 or more



### COMPUTER LITERACY AND INTERNET USE in % of persons aged 16 or more

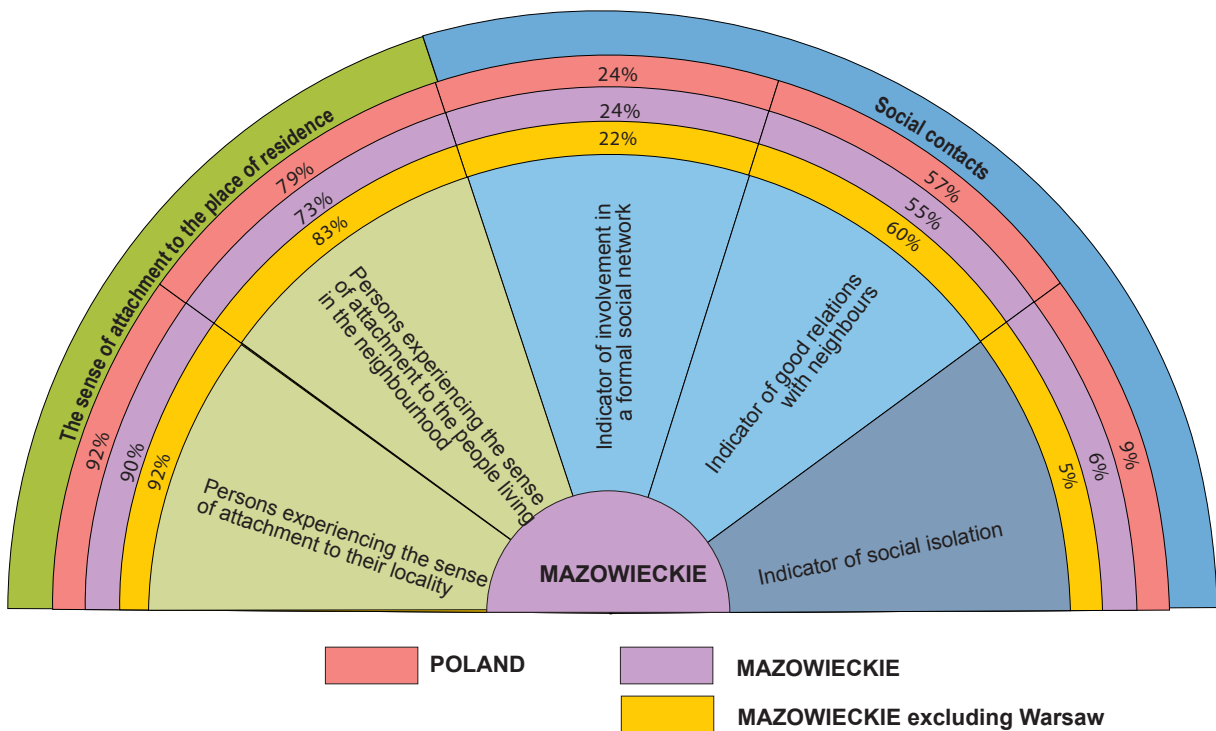


**PERSONAL SKILLS INDICATOR**  
in % of persons aged 16 or more



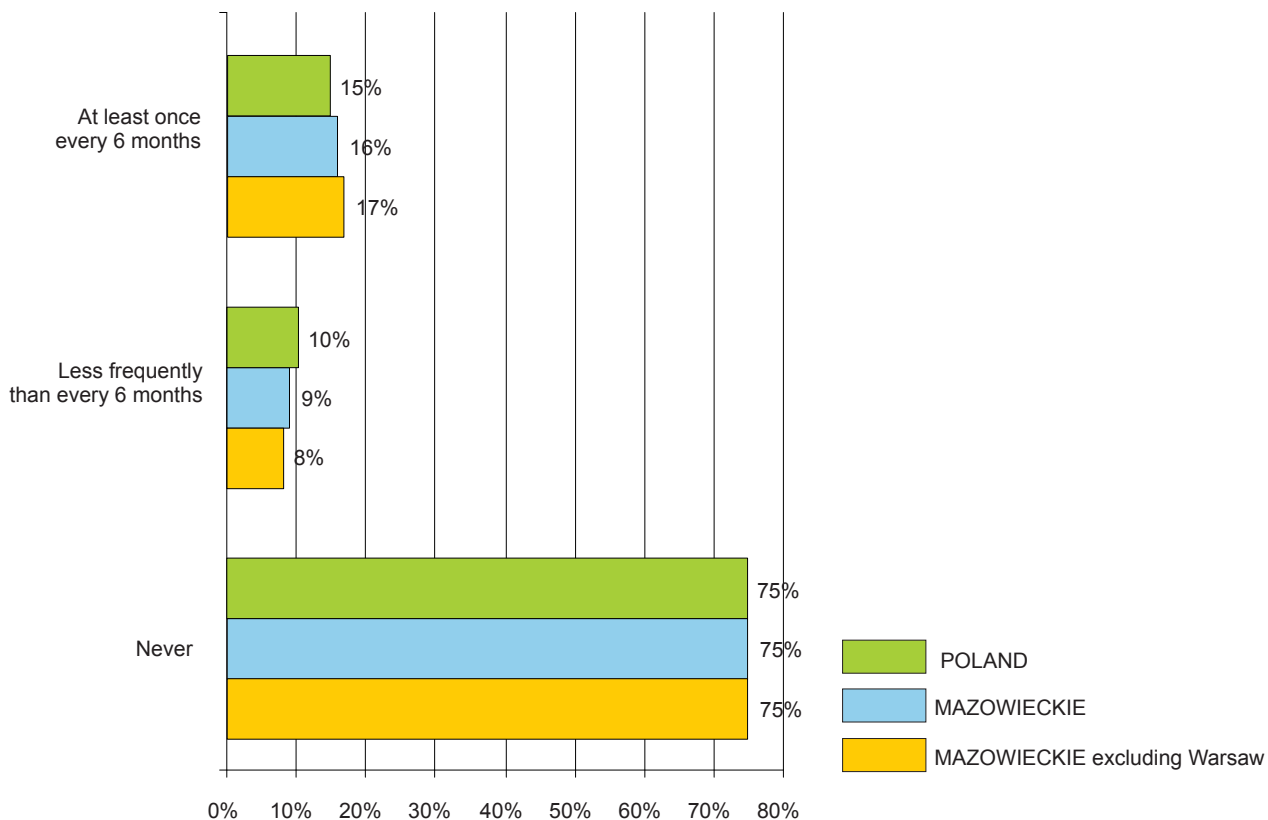
**LOCAL COMMUNITY AND SOCIAL CONTACTS**

**THE SENSE OF ATTACHMENT AND SOCIAL CONTACTS**  
in % of persons aged 16 or more



## PARTICIPATION IN EVENTS ORGANIZED IN THE PLACE OF RESIDENCE

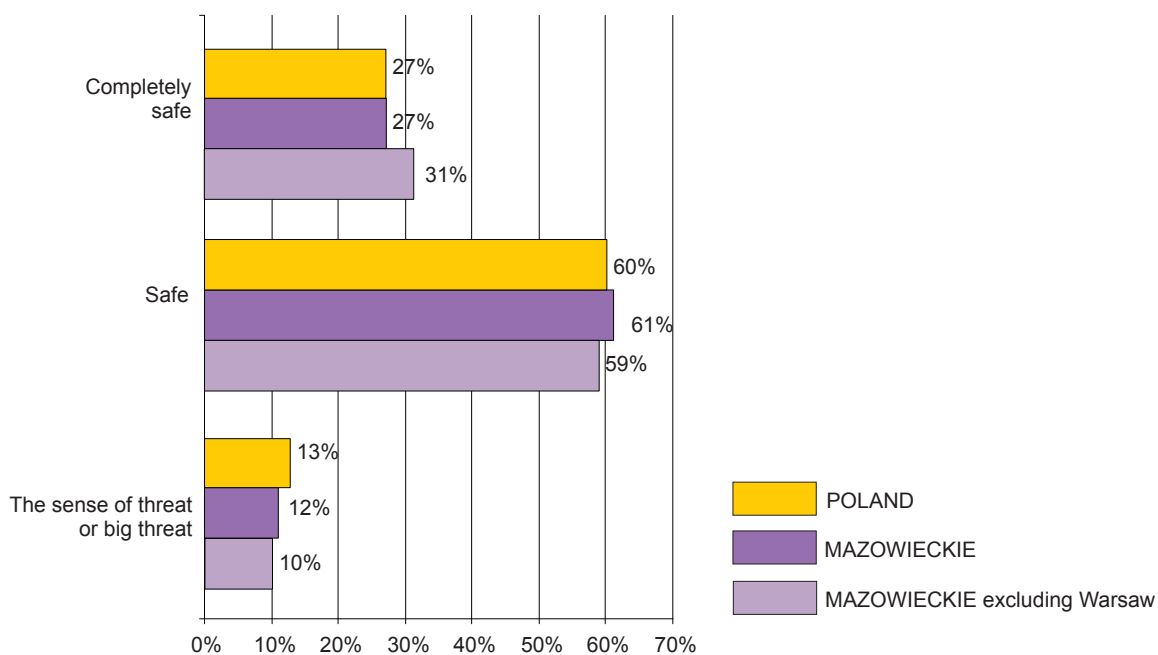
in % of persons aged 16 or more



## SENSE OF PHYSICAL SAFETY

SENSE OF SAFETY IN THE CLOSEST NEIGHBOURHOOD

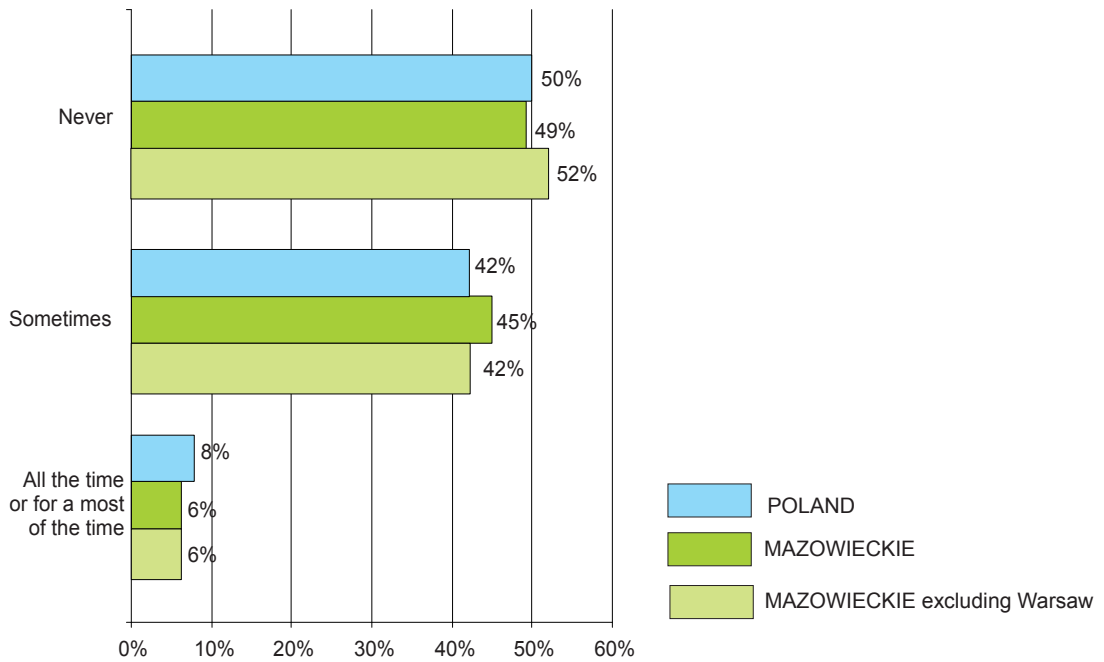
in % of persons aged 16 or more





## THE SENSE OF THREAT OF HOUSEBREAKING

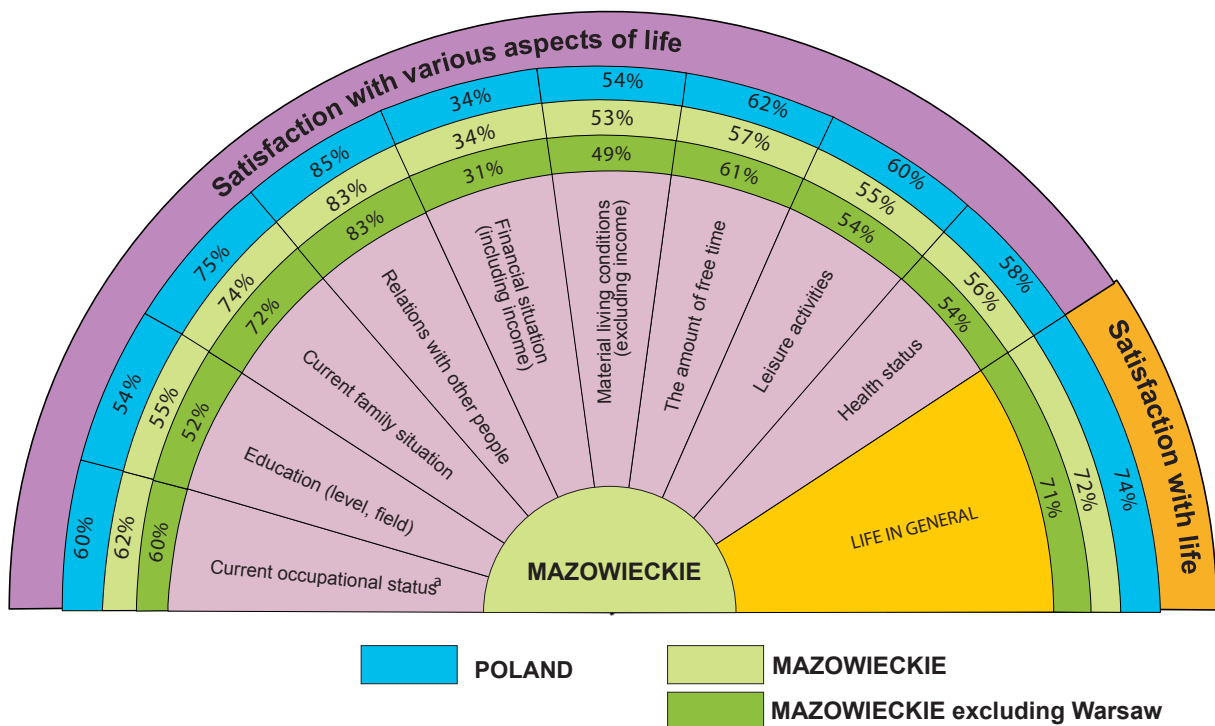
in % of persons aged 16 or more



## SATISFACTION WITH VARIOUS ASPECTS OF LIFE

(satisfied and very satisfied persons)

in % of persons aged 16 or more

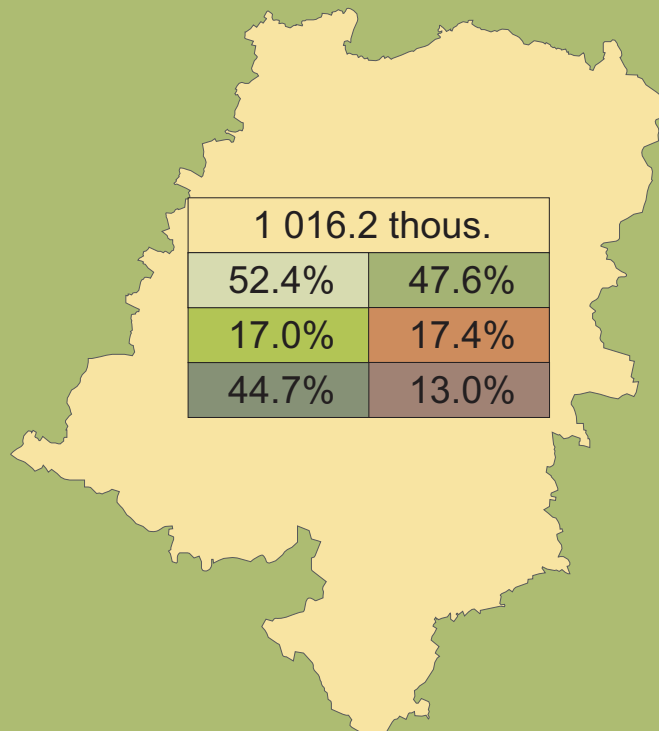


# OPOLSKIE VOIVODSHIP

POLAND	
38 511.8 thous.	
60.8%	39.2%
18.7%	16.9%
46.4%	13.0%



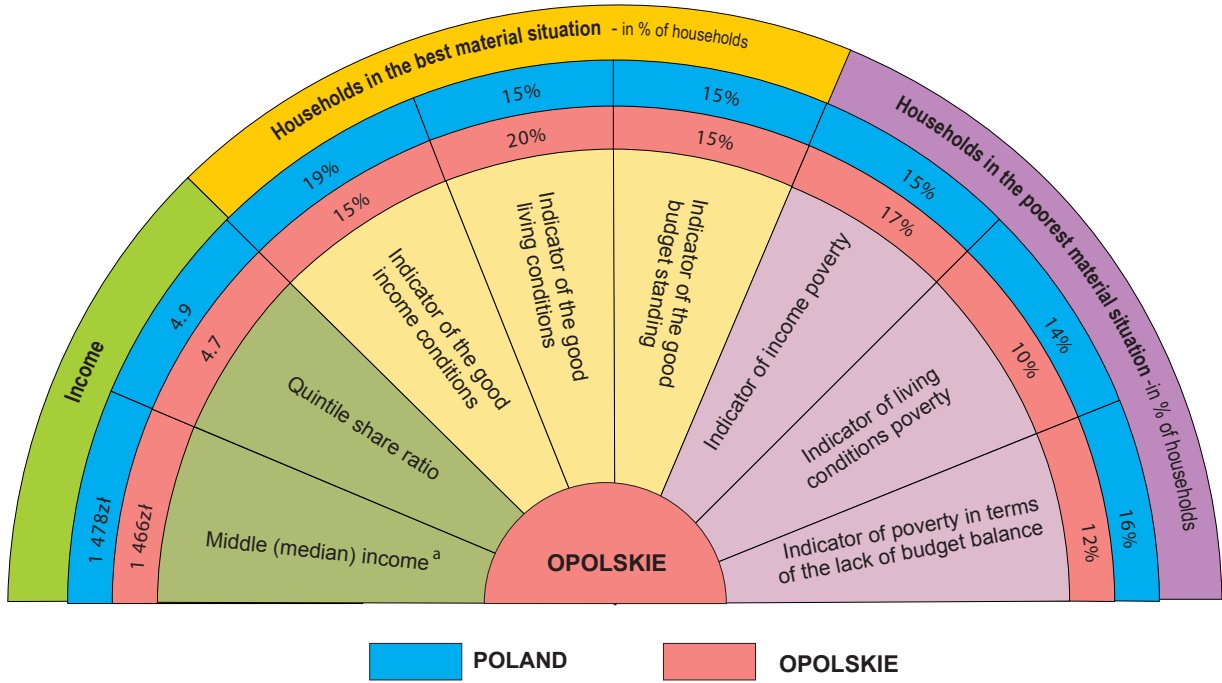
Total population	
Population in urban areas	Population in rural areas
Pre-working age population	Post-working age population
Employment rate	Unemployment rate



*According to the results of the Population and Housing Census 2011 (as 31.03.2011).*

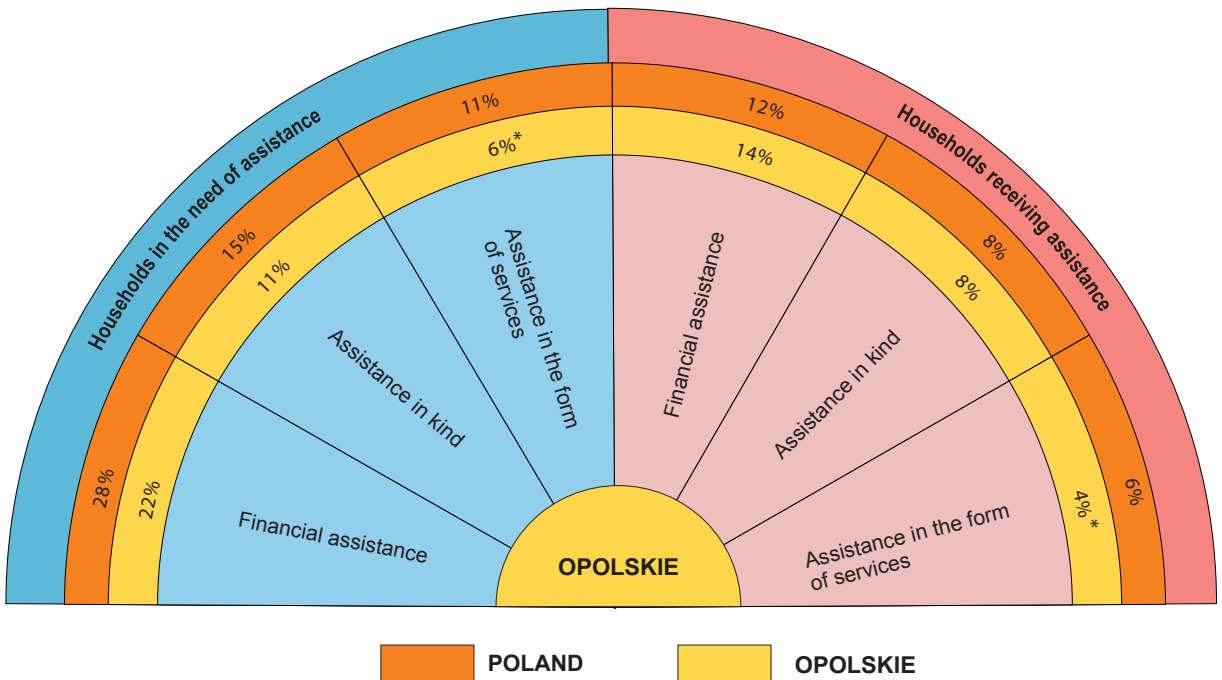
# MATERIAL SITUATION OF HOUSEHOLDS

## DIVERSIFICATION OF HOUSEHOLDS' MATERIAL SITUATION



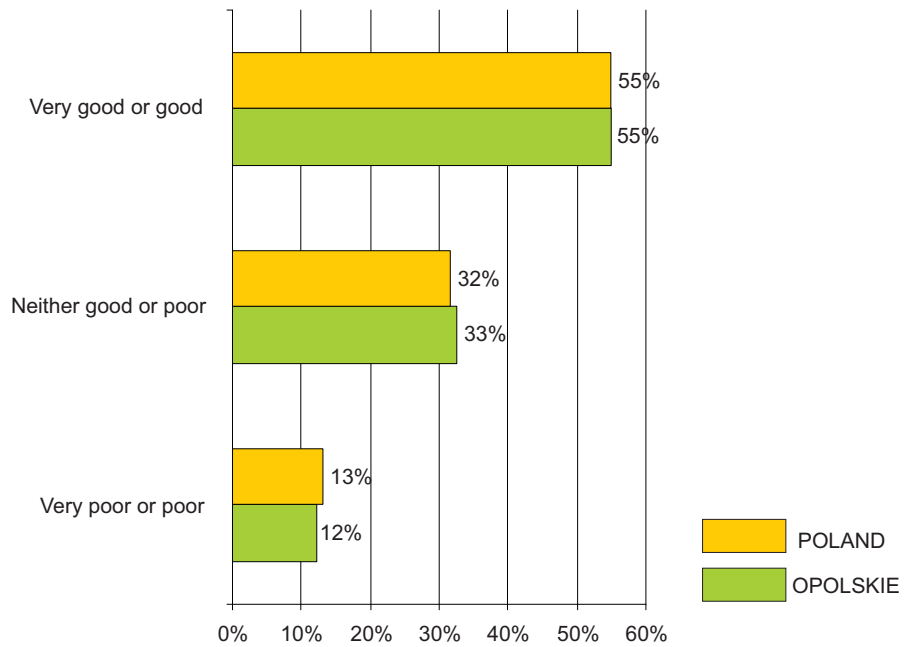
a Monthly monetary income per equivalent unit

## RECEIVING THE EXTERNAL ASSISTANCE in % of households

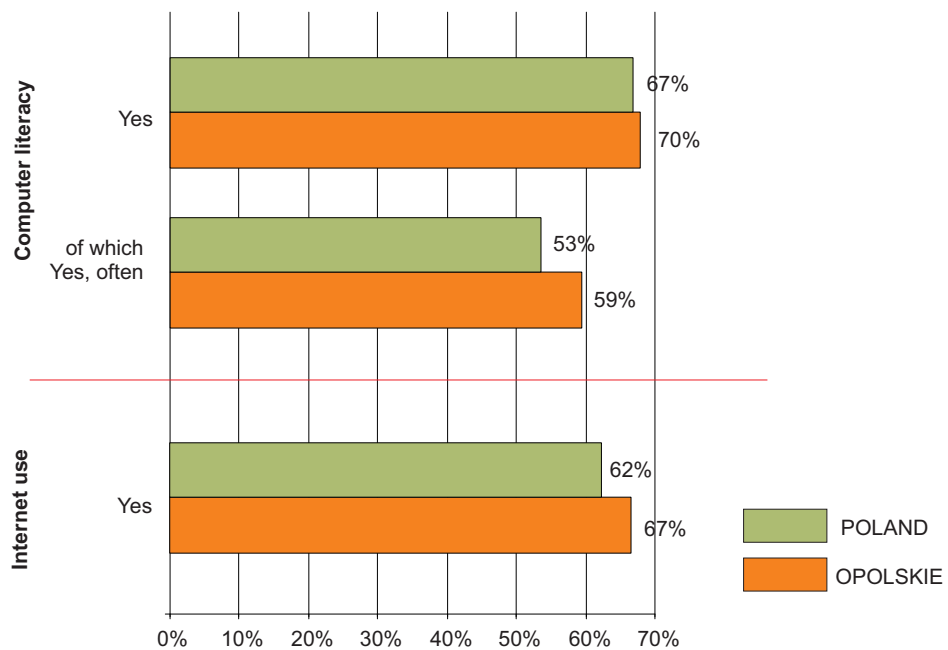


## ELEMENTS OF HUMAN CAPITAL

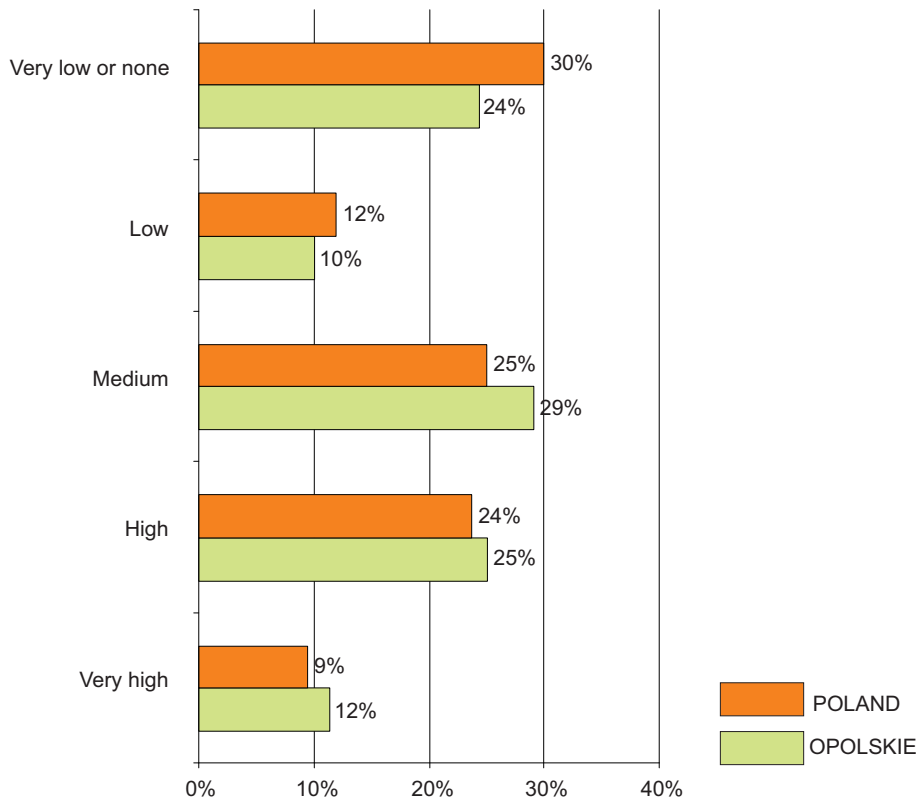
### GENERAL HEALTH ASSESSMENT in % of persons aged 16 or more



### COMPUTER LITERACY AND INTERNET USE in % of persons aged 16 or more

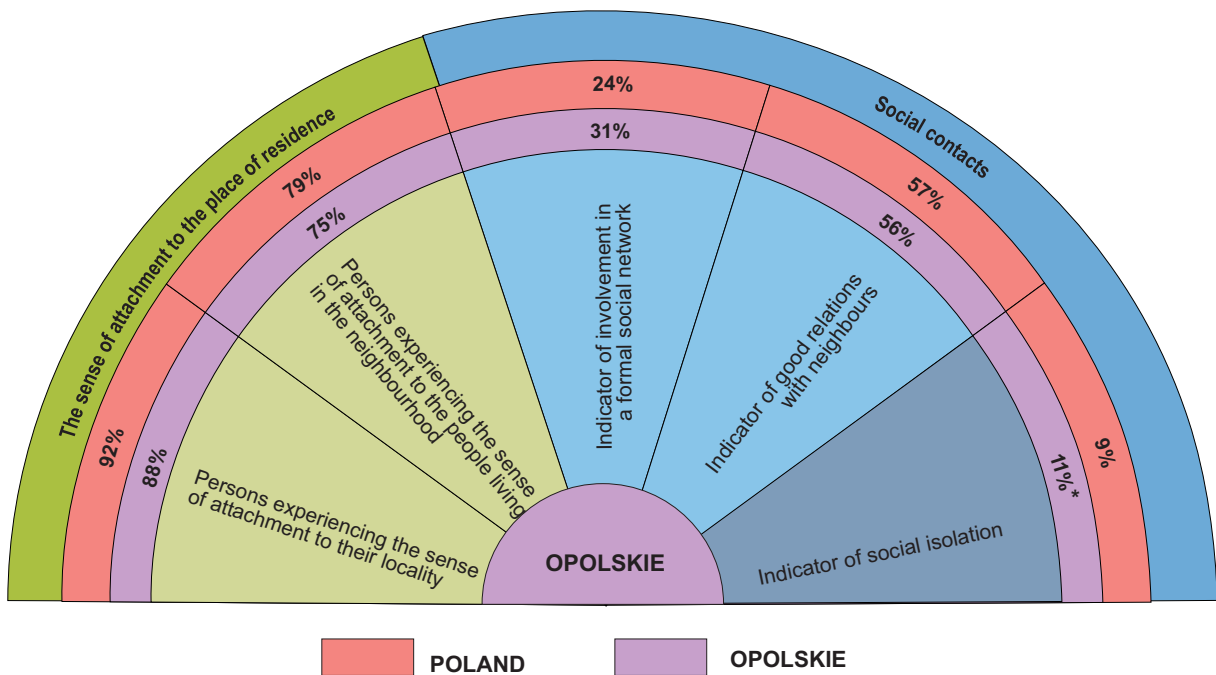


**PERSONAL SKILLS INDICATOR**  
in % of persons aged 16 or more



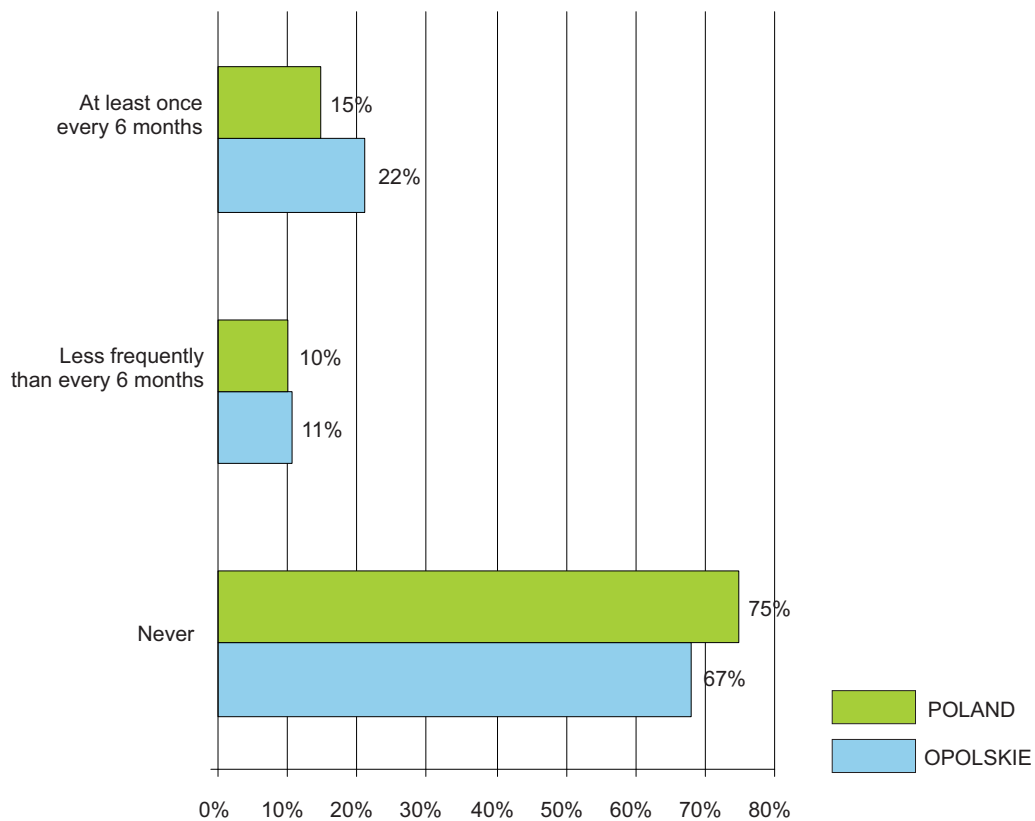
**LOCAL COMMUNITY AND SOCIAL CONTACTS**

**THE SENSE OF ATTACHMENT AND SOCIAL CONTACTS**  
in % of persons aged 16 or more



## PARTICIPATION IN EVENTS ORGANIZED IN THE PLACE OF RESIDENCE

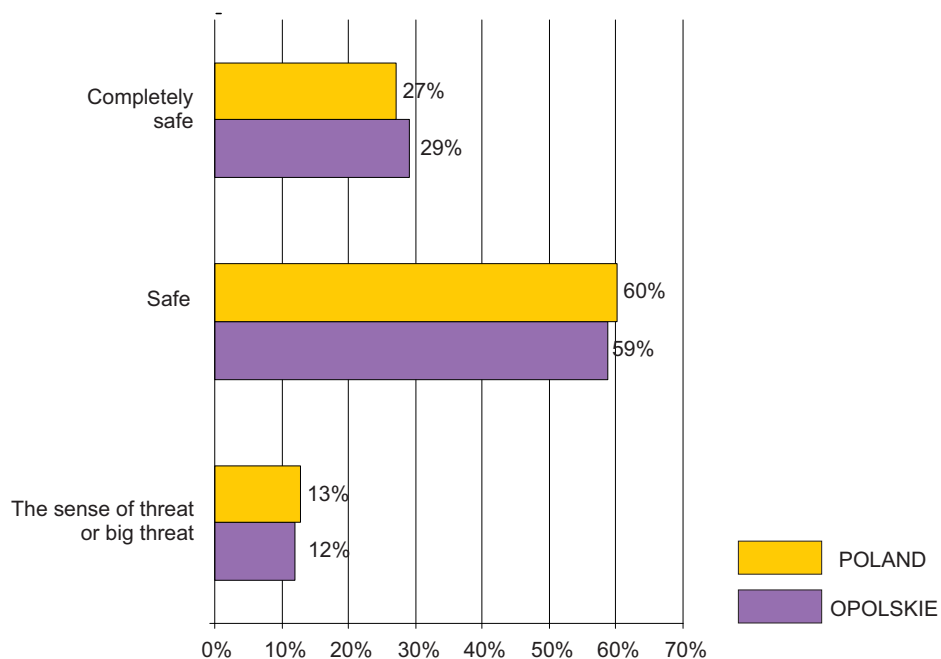
in % of persons aged 16 or more



## SENSE OF PHYSICAL SAFETY

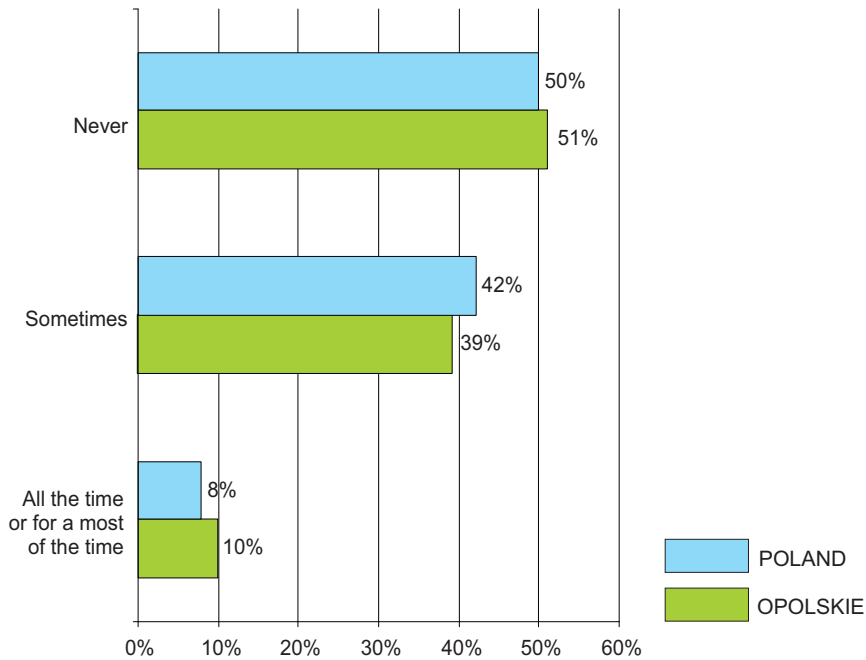
SENSE OF SAFETY IN THE CLOSEST NEIGHBOURHOOD

in % of persons aged 16 or more



THE SENSE OF THREAT OF HOUSEBREAKING

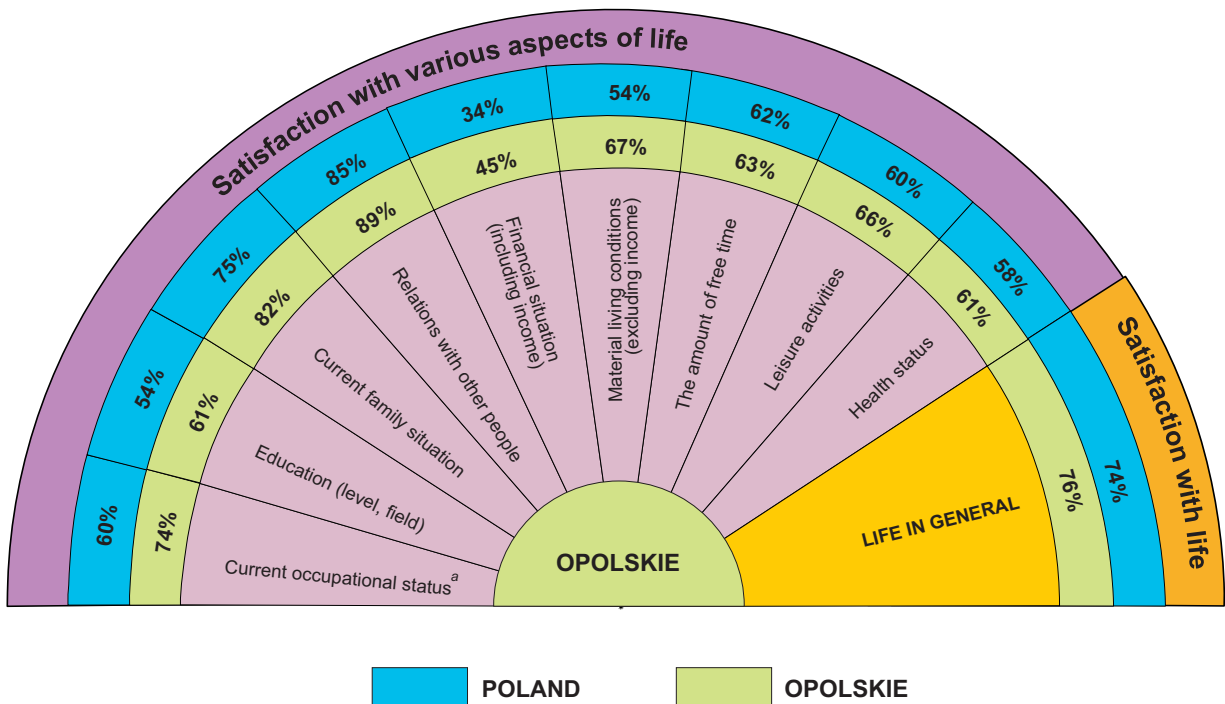
in % of persons aged 16 or more



SATISFACTION WITH VARIOUS ASPECTS OF LIFE

(satisfied and very satisfied persons)

in % of persons aged 16 or more



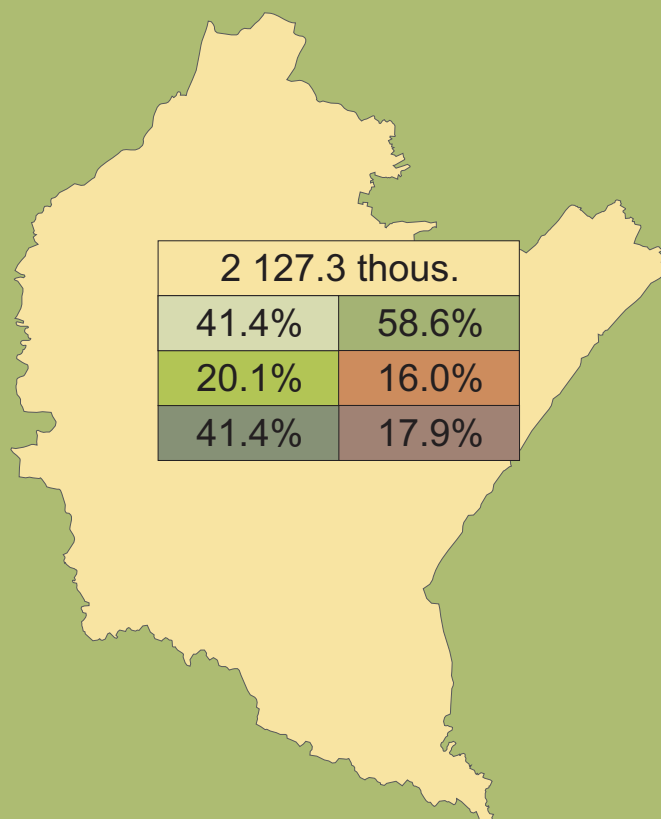
<sup>a</sup> Concerning working people

# PODKARPACKIE VOIVODSHIP

POLAND	
38 511.8 thous.	
60.8%	39.2%
18.7%	16.9%
46.4%	13.0%



Total population	
Population in urban areas	Population in rural areas
Pre-working age population	Post-working age population
Employment rate	Unemployment rate

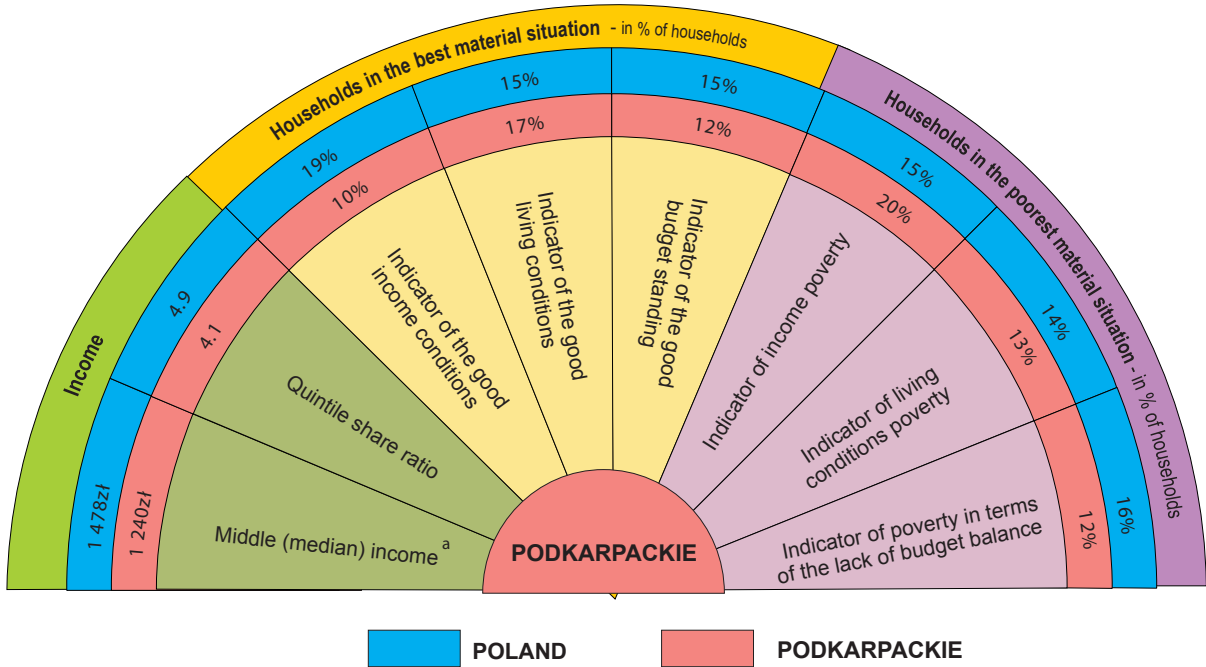


According to the results of the Population and Housing Census 2011 (as 31.03.2011).



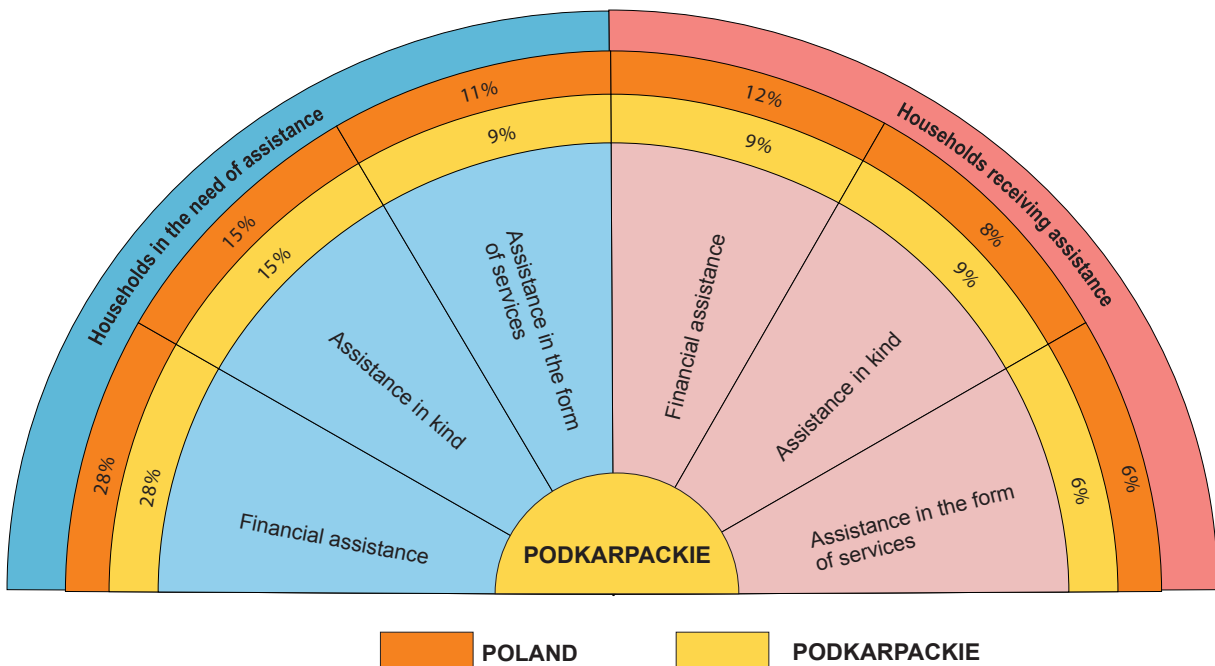
# MATERIAL SITUATION OF HOUSEHOLDS

## DIVERSIFICATION OF HOUSEHOLDS' MATERIAL SITUATION



<sup>a</sup> Monthly monetary income per equivalent unit

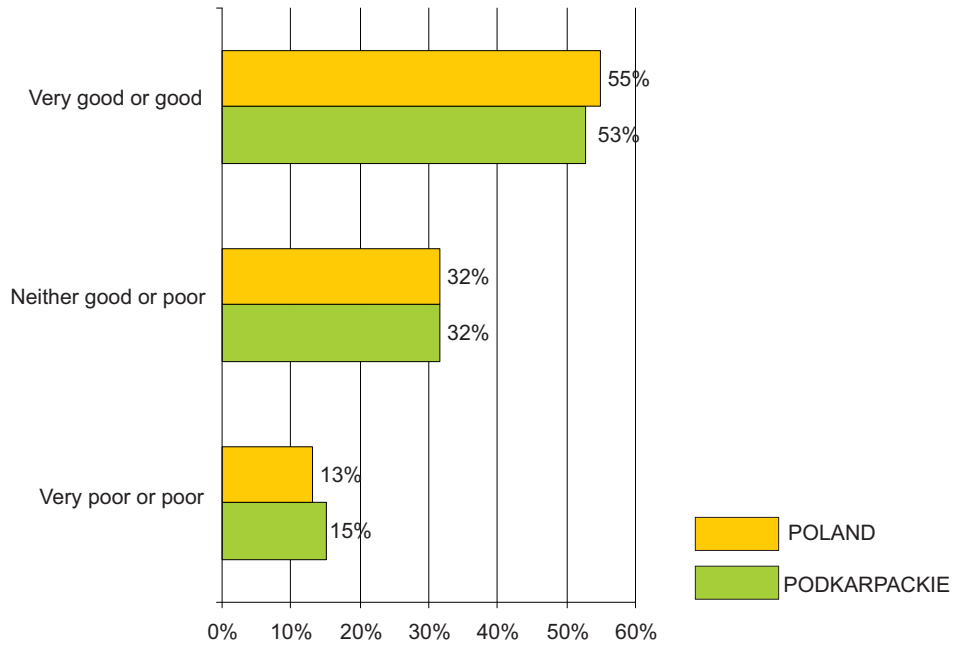
## RECEIVING THE EXTERNAL ASSISTANCE in % of households



## ELEMENTS OF HUMAN CAPITAL

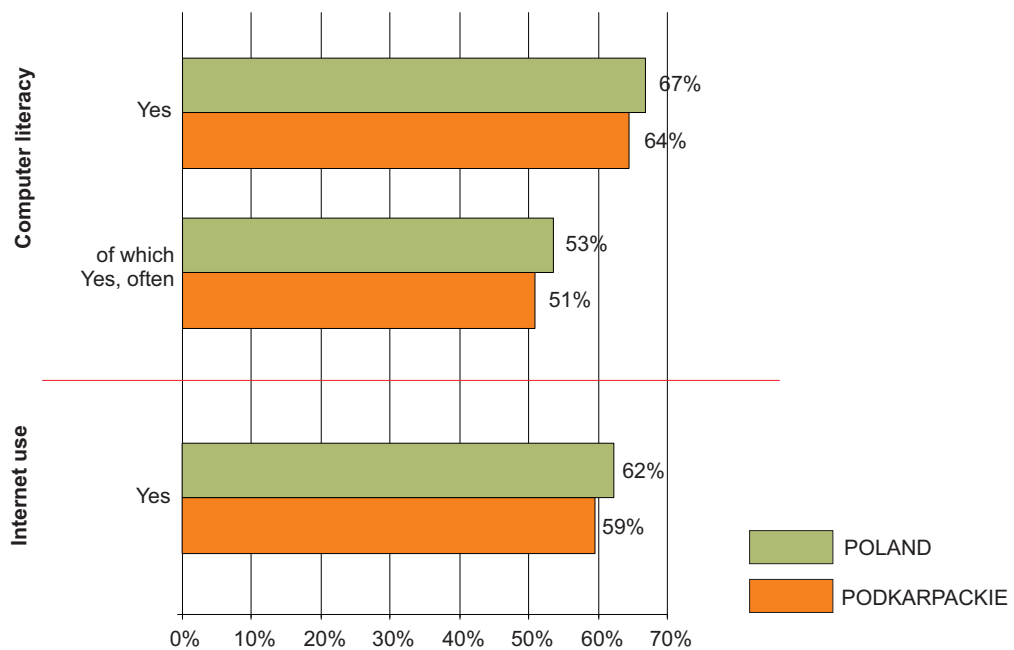
### GENERAL HEALTH ASSESSMENT

in % of persons aged 16 or more

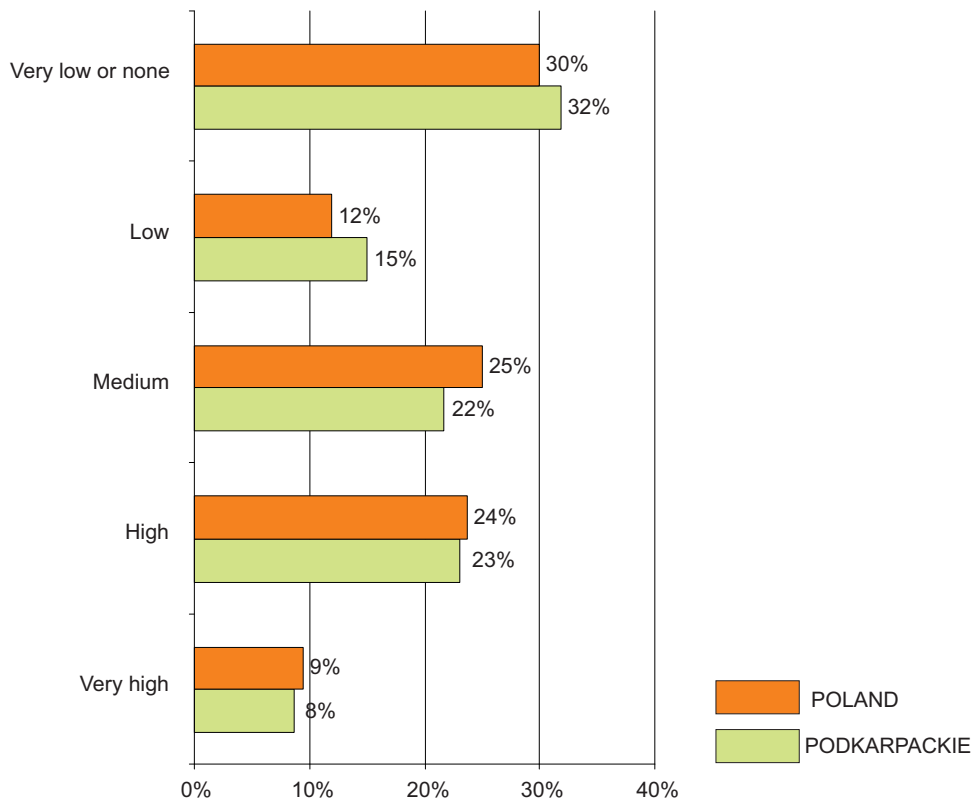


### COMPUTER LITERACY AND INTERNET USE

in % of persons aged 16 or more

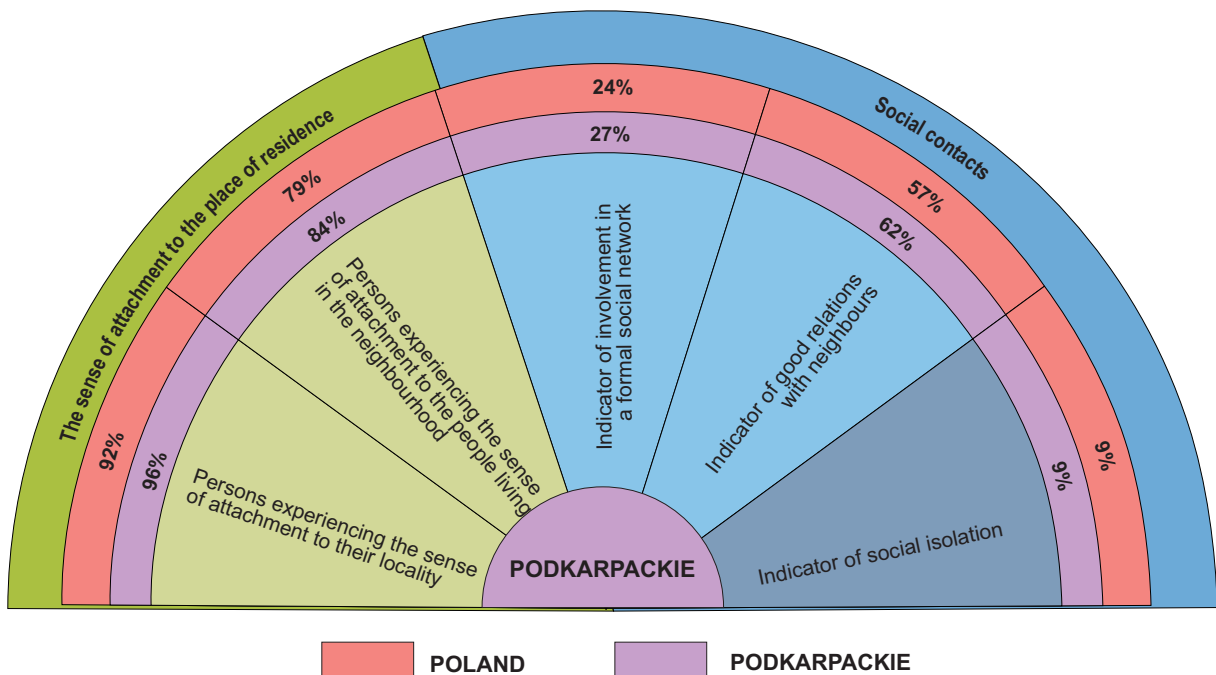


**PERSONAL SKILLS INDICATOR**  
in % of persons aged 16 or more



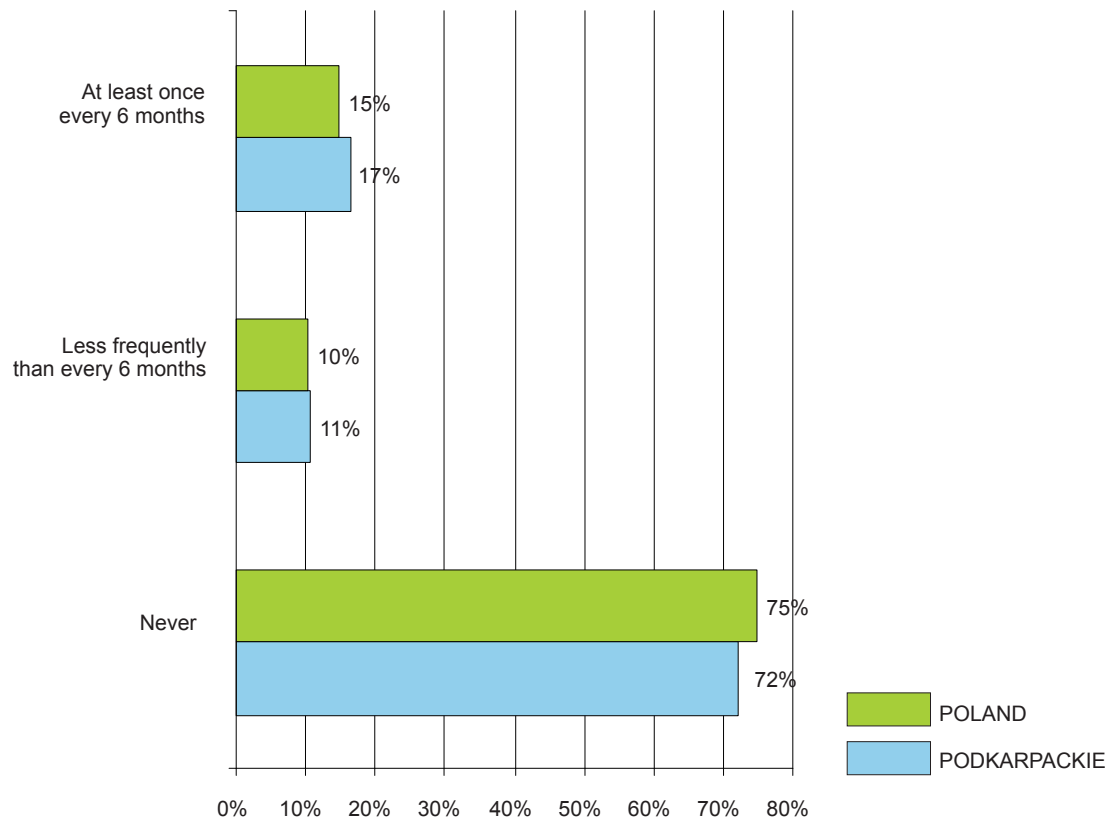
**LOCAL COMMUNITY AND SOCIAL CONTACTS**

**THE SENSE OF ATTACHMENT AND SOCIAL CONTACTS**  
in % of persons aged 16 or more



## PARTICIPATION IN EVENTS ORGANIZED IN THE PLACE OF RESIDENCE

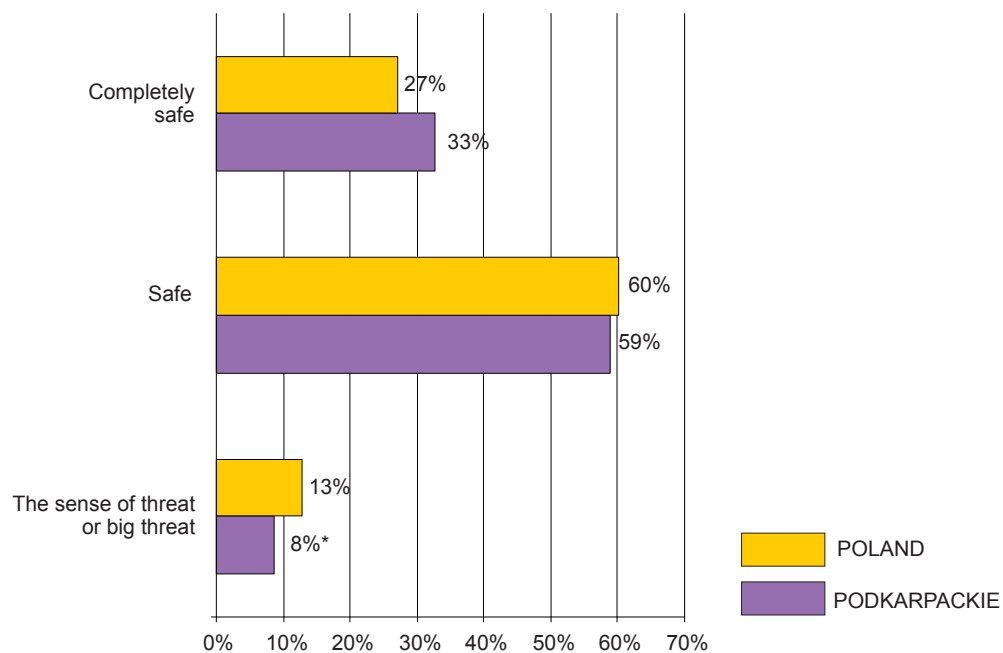
in % of persons aged 16 or more



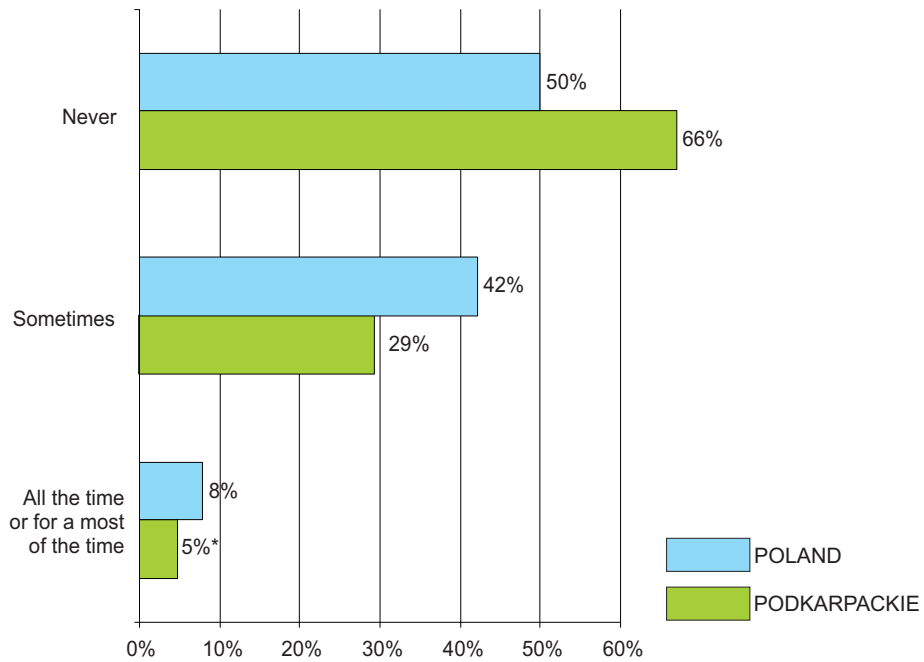
## SENSE OF PHYSICAL SAFETY

### SENSE OF SAFETY IN THE CLOSEST NEIGHBOURHOOD

in % of persons aged 16 or more

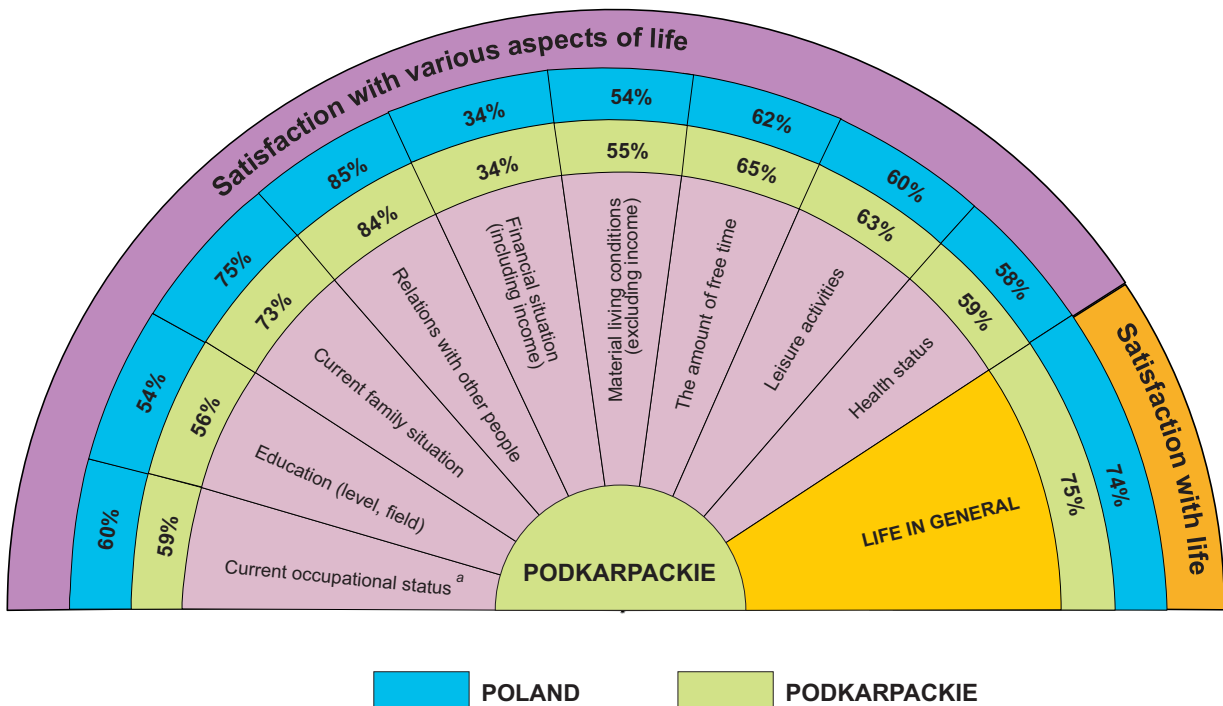


THE SENSE OF THREAT OF HOUSEBREAKING  
in % of persons aged 16 or more



**SATISFACTION WITH VARIOUS ASPECTS OF LIFE**  
(satisfied and very satisfied persons)

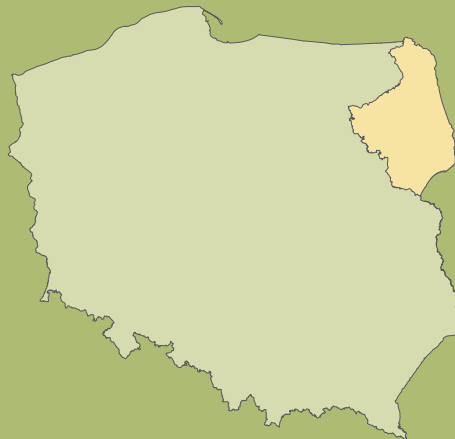
in % of persons aged 16 or more



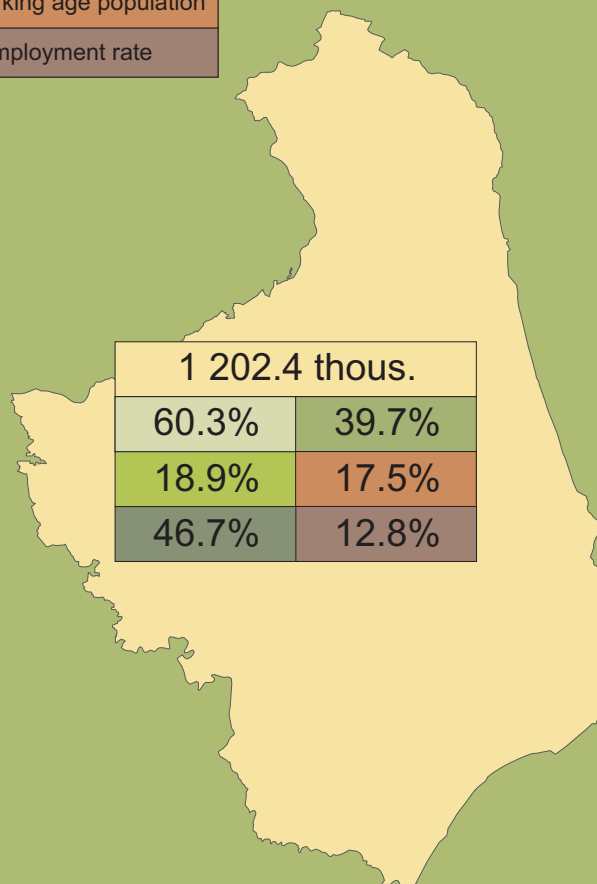
<sup>a</sup> Concerning working people

# PODLASKIE VOIVODSHIP

POLAND	
38 511.8 thous.	
60.8%	39.2%
18.7%	16.9%
46.4%	13.0%



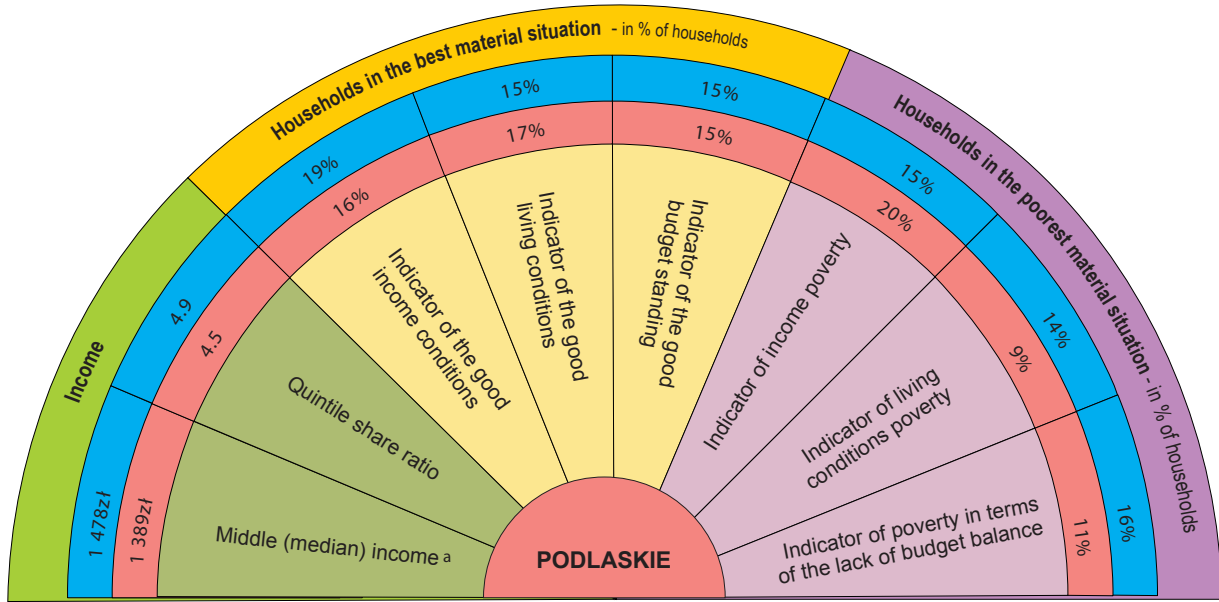
Total population	
Population in urban areas	Population in rural areas
Pre-working age population	Post-working age population
Employment rate	Unemployment rate



According to the results of the Population and Housing Census 2011 (as 31.03.2011).

## MATERIAL SITUATION OF HOUSEHOLDS

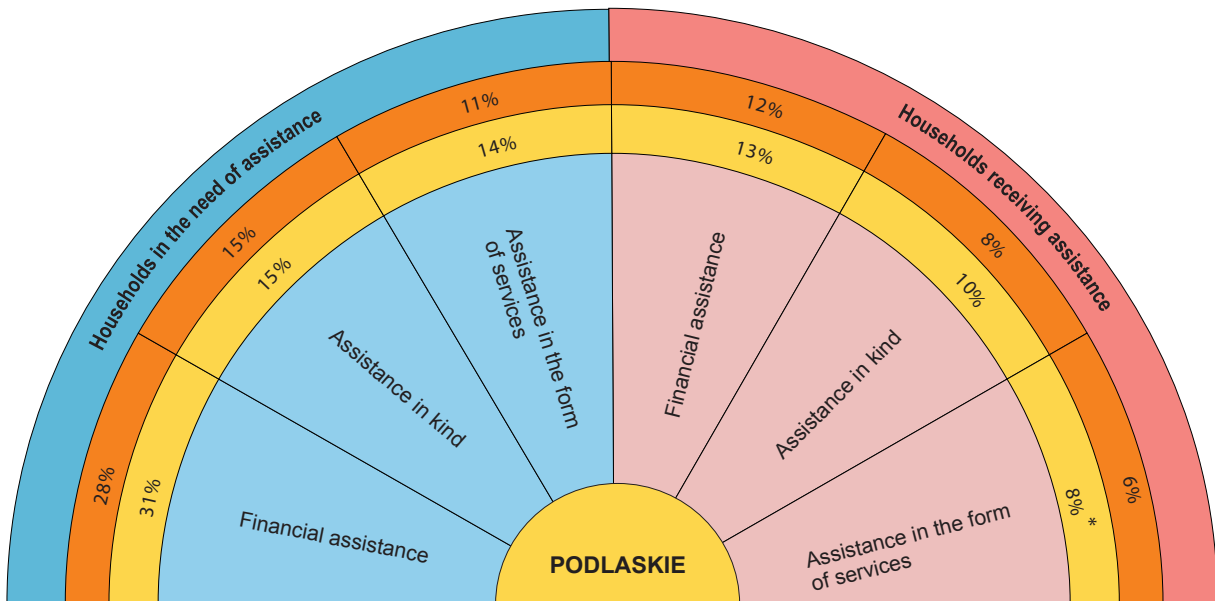
### DIVERSIFICATION OF HOUSEHOLDS' MATERIAL SITUATION



POLAND
  PODLASKIE

<sup>a</sup> Monthly monetary income per equivalent unit

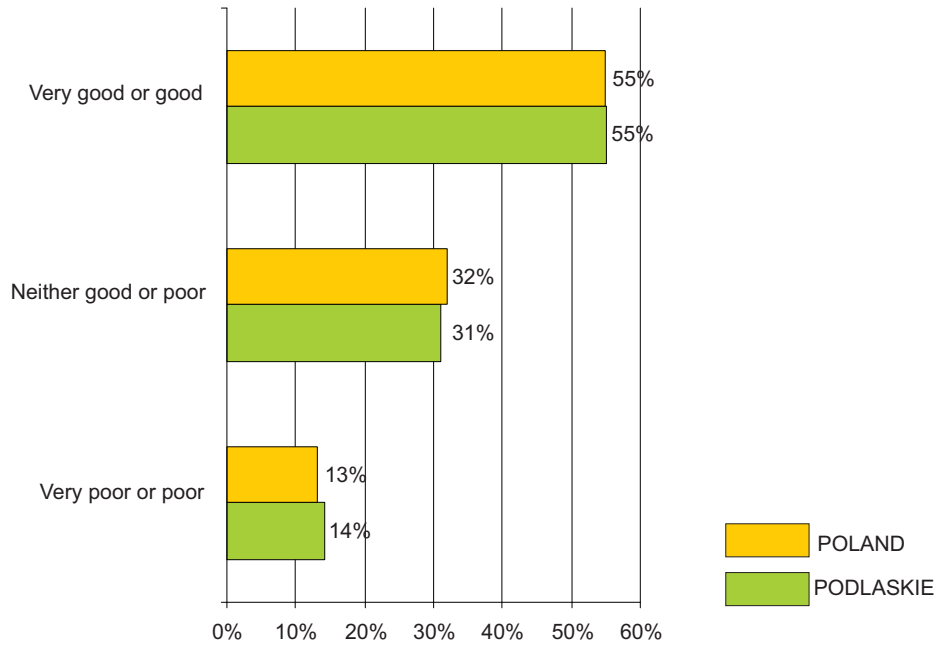
### RECEIVING THE EXTERNAL ASSISTANCE in % of households



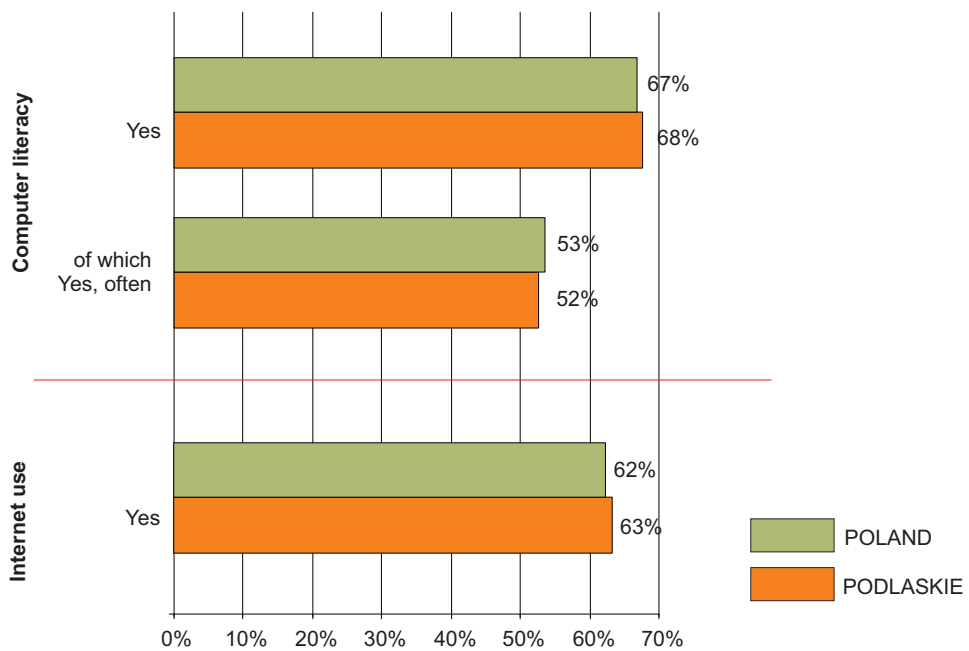
POLAND
  PODLASKIE

## ELEMENTS OF HUMAN CAPITAL

### GENERAL HEALTH ASSESSMENT in % of persons aged 16 or more

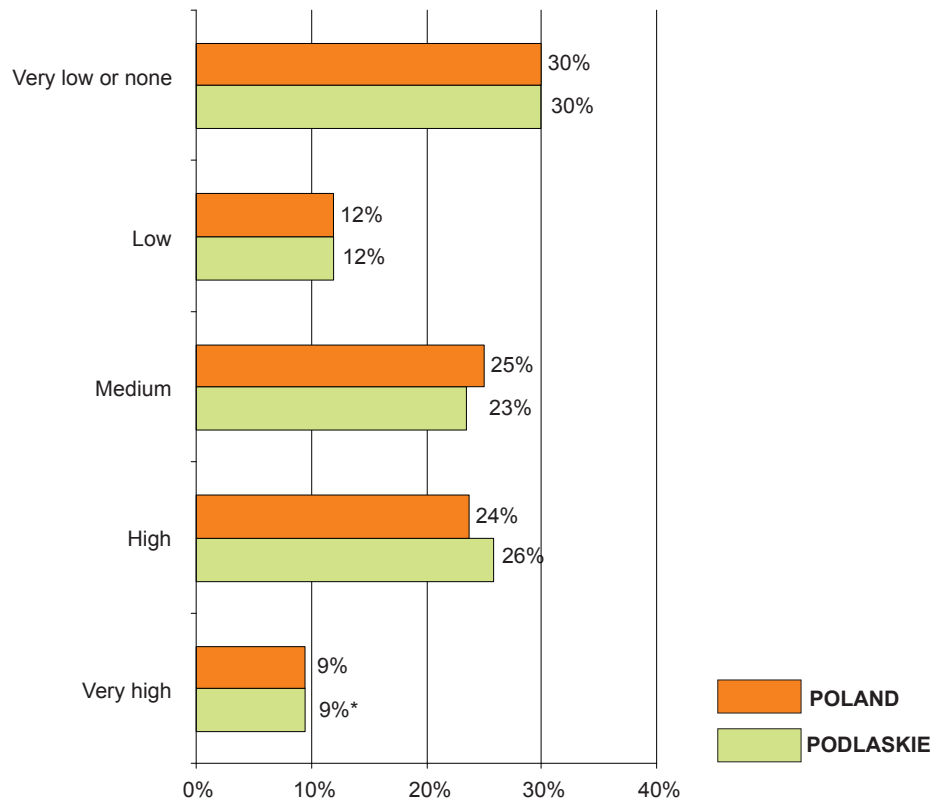


### COMPUTER LITERACY AND INTERNET USE in % of persons aged 16 or more



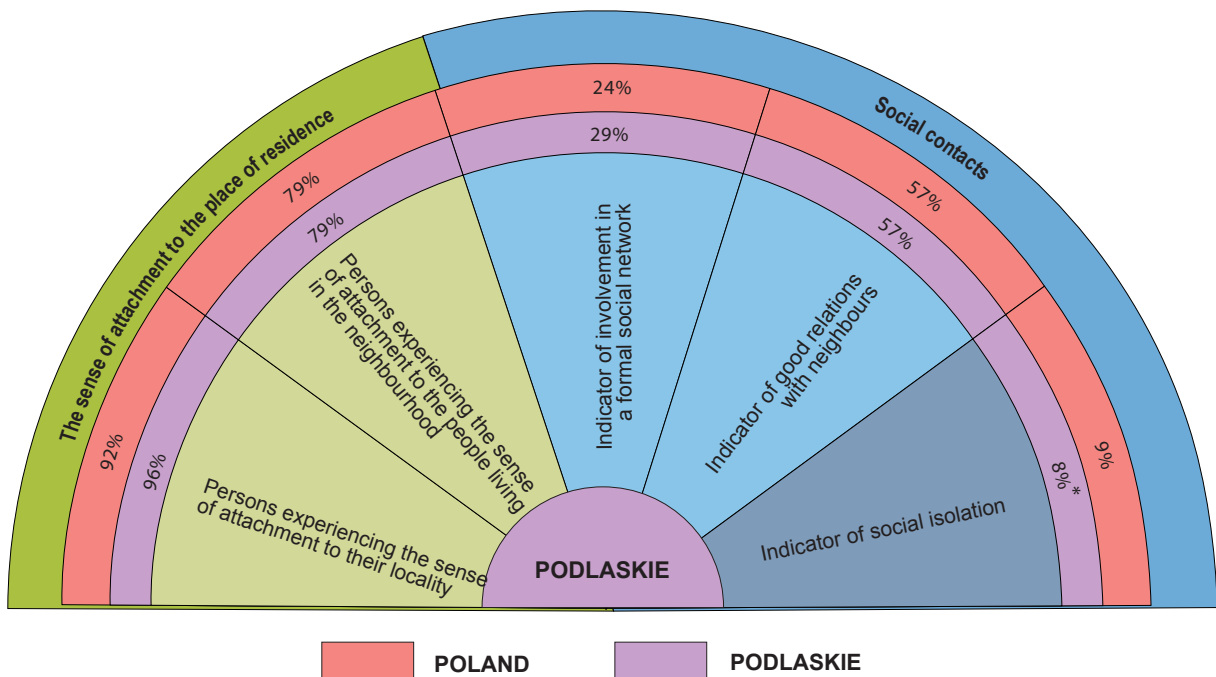


**PERSONAL SKILLS INDICATOR**  
in % of persons aged 16 or more



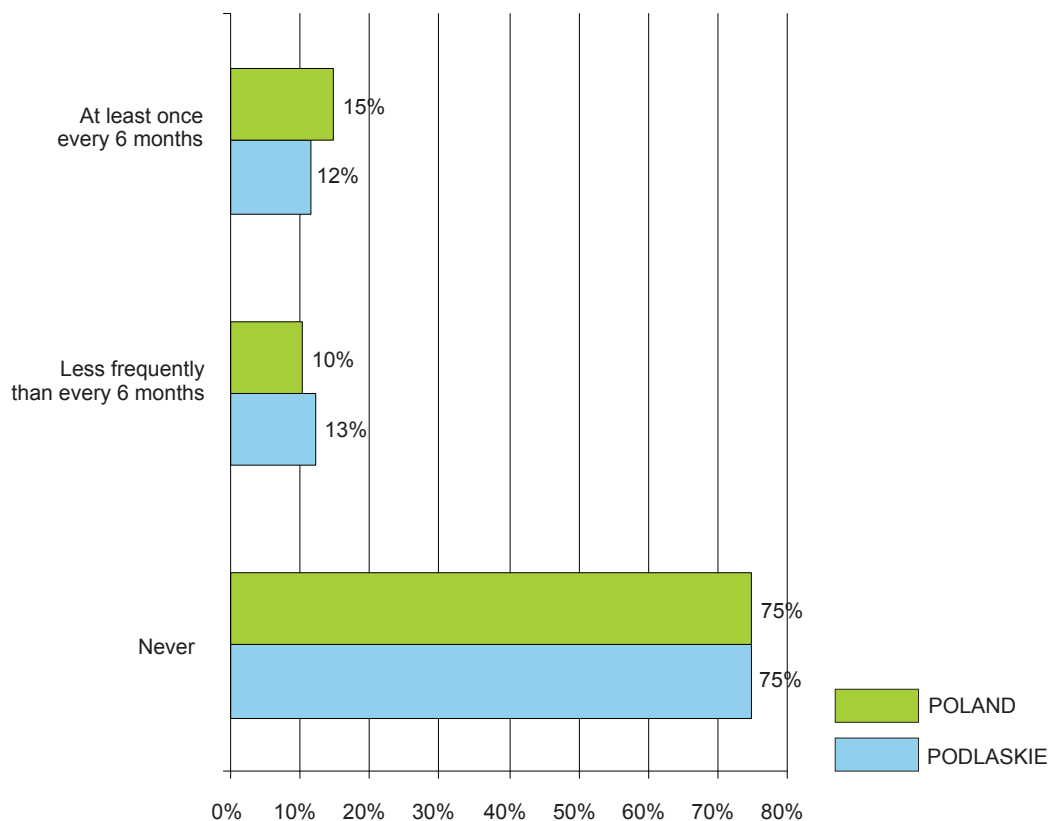
**LOCAL COMMUNITY AND SOCIAL CONTACTS**

**THE SENSE OF ATTACHMENT AND SOCIAL CONTACTS**  
in % of persons aged 16 or more



## PARTICIPATION IN EVENTS ORGANIZED IN THE PLACE OF RESIDENCE

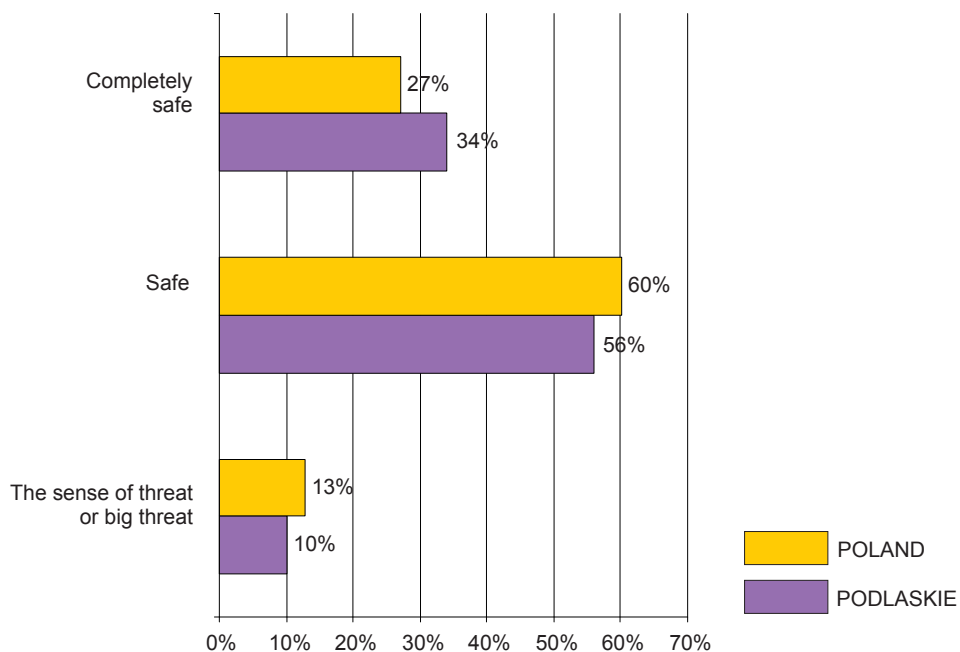
in % of persons aged 16 or more



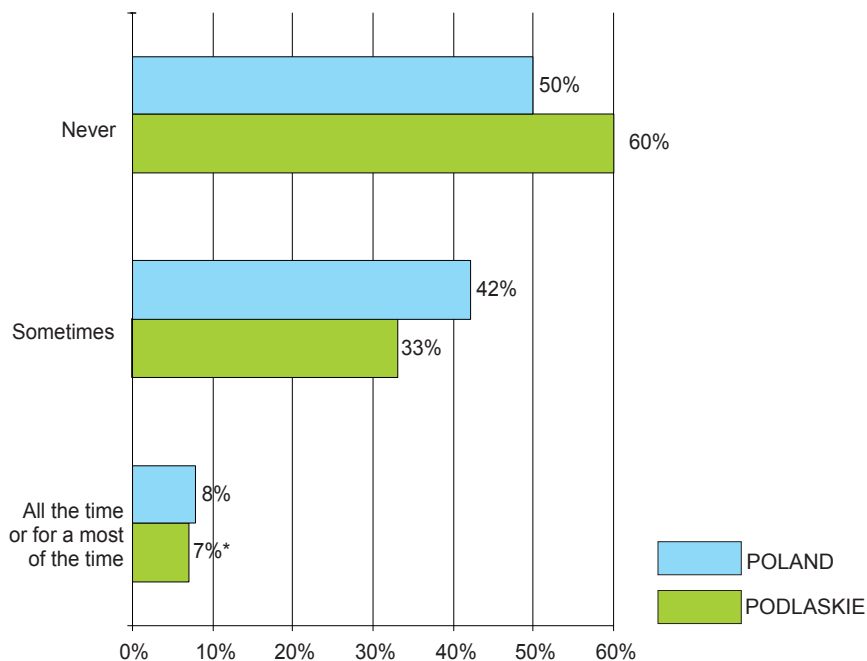
## SENSE OF PHYSICAL SAFETY

SENSE OF SAFETY IN THE CLOSEST NEIGHBOURHOOD

in % of persons aged 16 or more

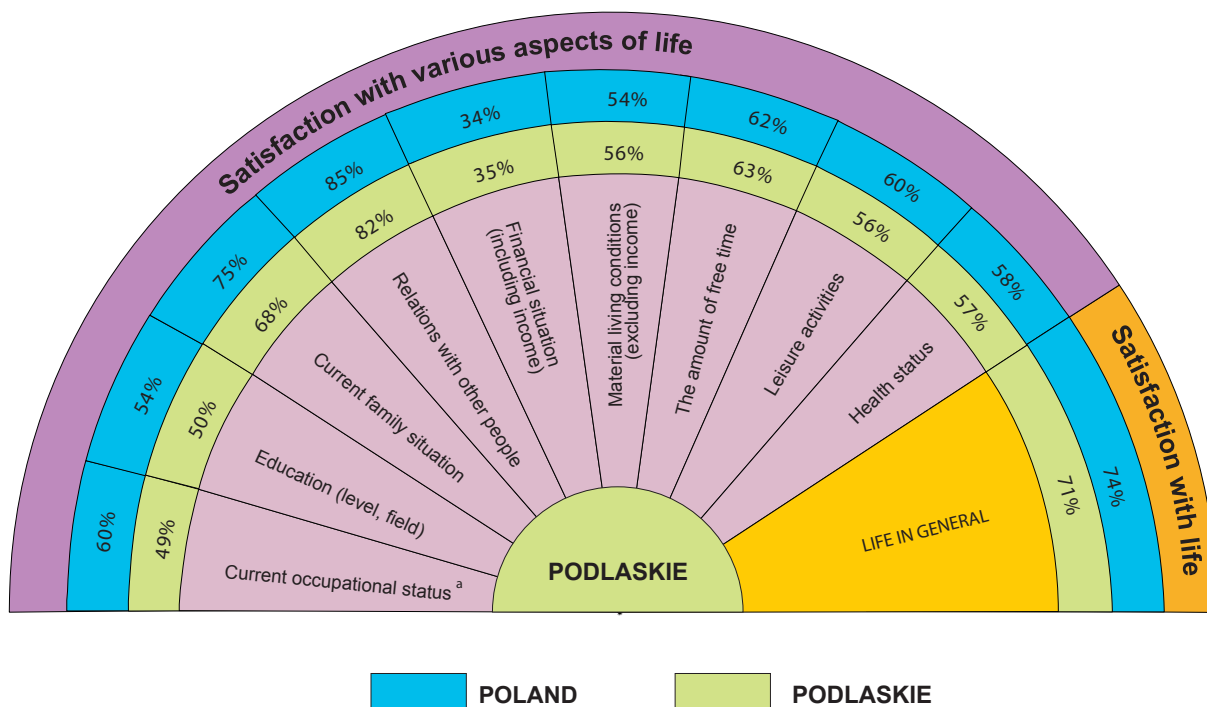


THE SENSE OF THREAT OF HOUSEBREAKING  
in % of persons aged 16 or more



SATISFACTION WITH VARIOUS ASPECTS OF LIFE  
(satisfied and very satisfied persons)

in % of persons aged 16 or more



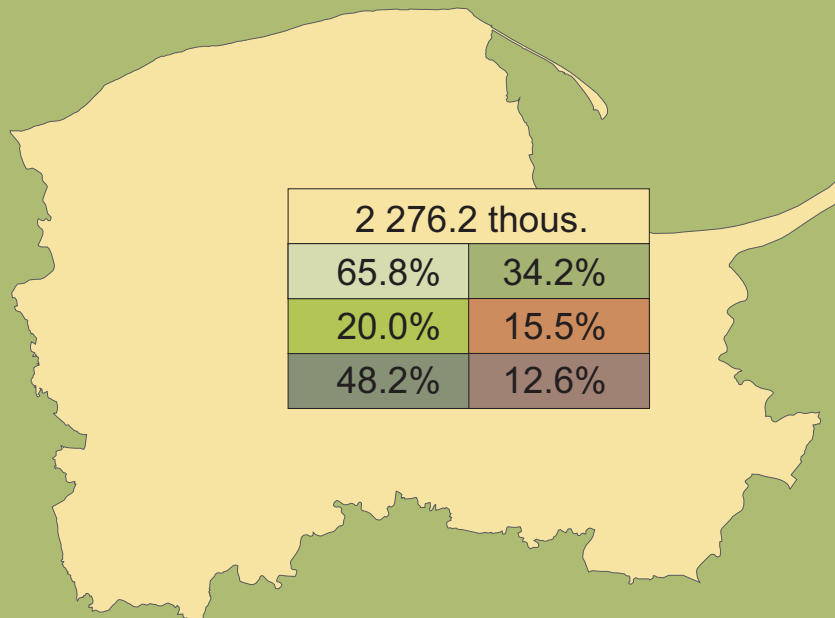
<sup>a</sup> Concerning working people

# POMORSKIE VOIVODSHIP

POLAND	
38 511.8 thous.	
60.8%	39.2%
18.7%	16.9%
46.4%	13.0%



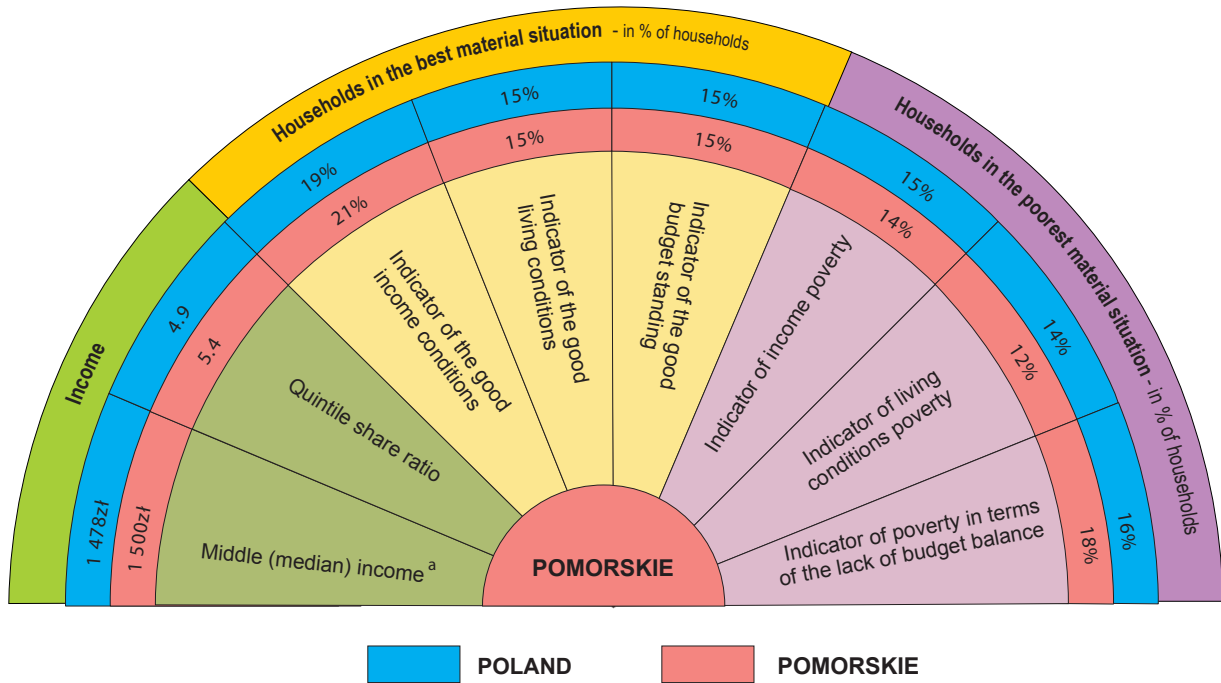
Total population	
Population in urban areas	Population in rural areas
Pre-working age population	Post-working age population
Employment rate	Unemployment rate



*According to the results of the Population and Housing Census 2011 (as 31.03.2011).*

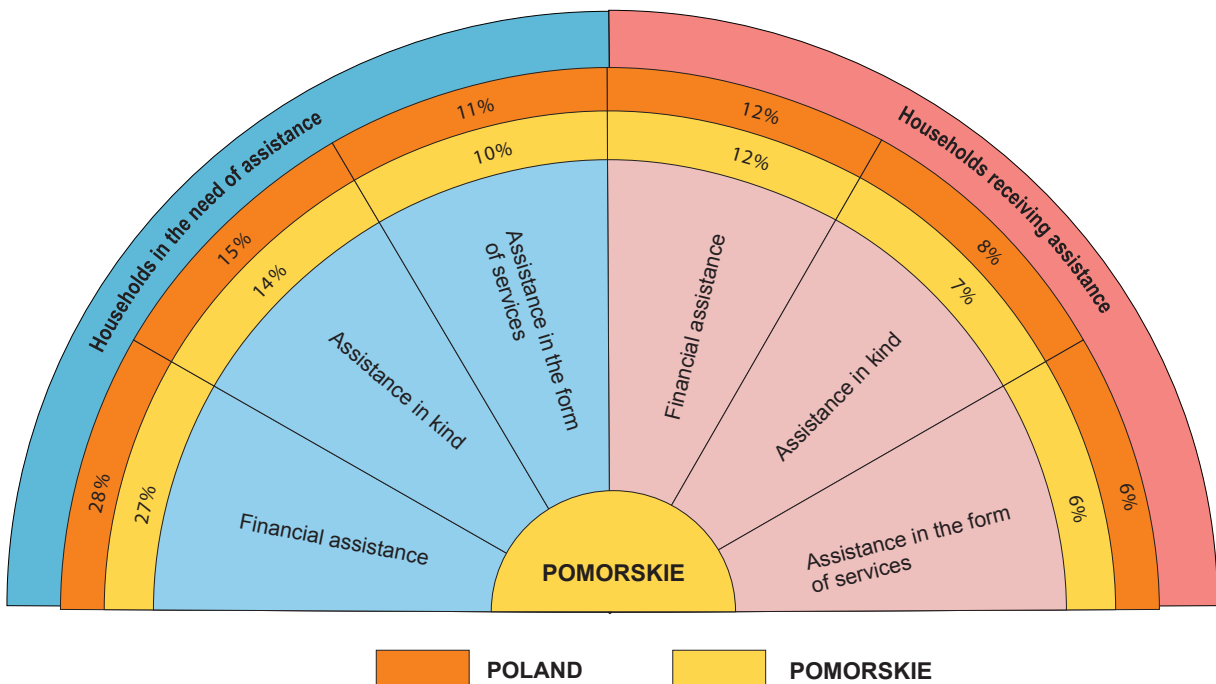
## MATERIAL SITUATION OF HOUSEHOLDS

### DIVERSIFICATION OF HOUSEHOLDS' MATERIAL SITUATION



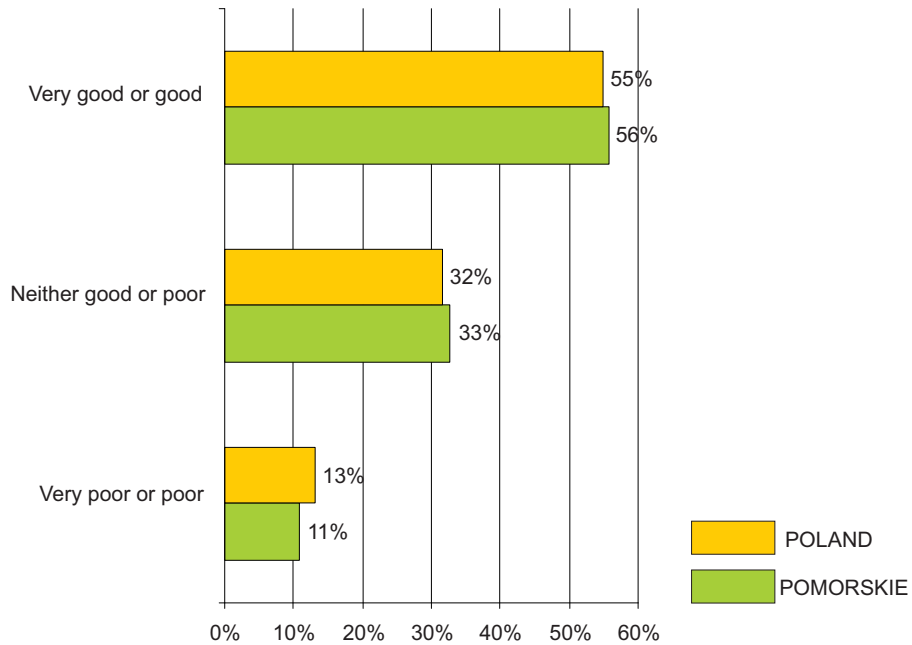
<sup>a</sup> Monthly monetary income per equivalent unit

### RECEIVING THE EXTERNAL ASSISTANCE in % of households

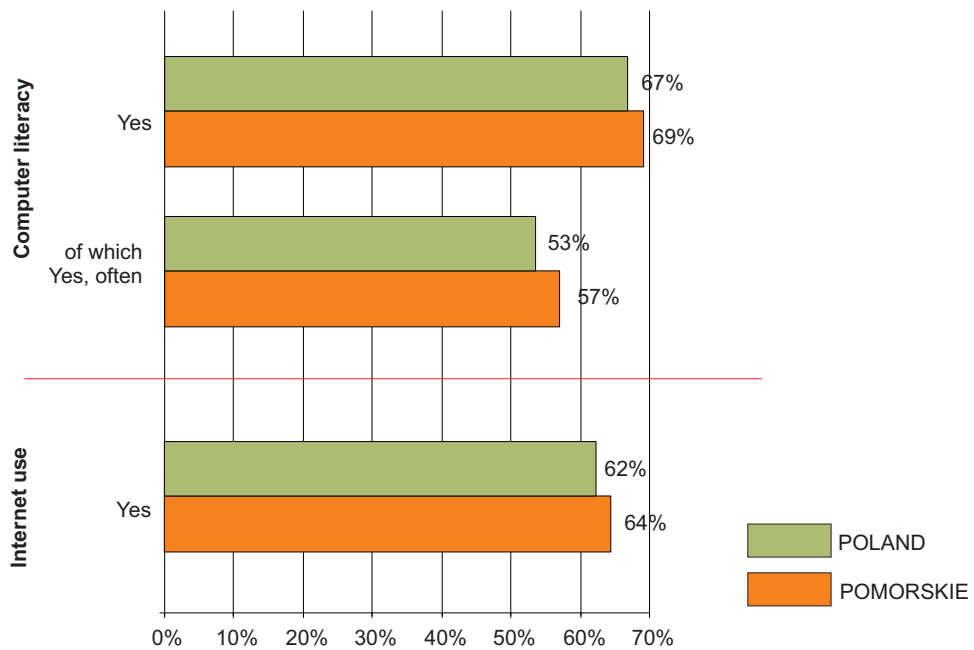


## ELEMENTS OF HUMAN CAPITAL

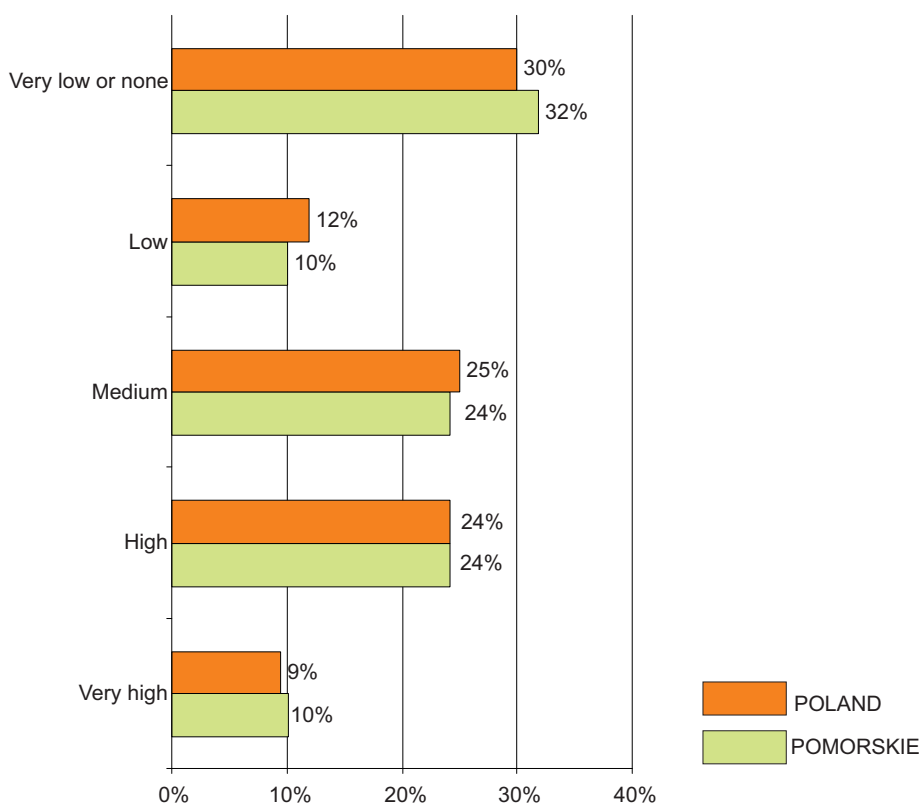
### GENERAL HEALTH ASSESSMENT in % of persons aged 16 or more



### COMPUTER LITERACY AND INTERNET USE in % of persons aged 16 or more

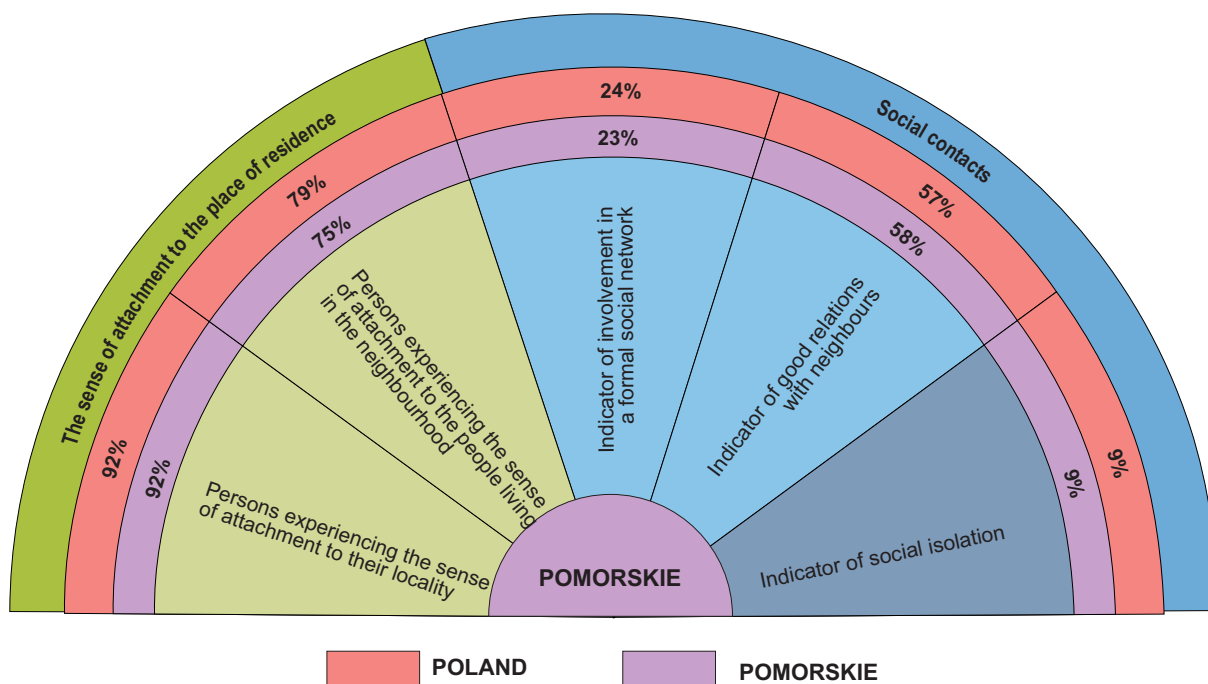


**PERSONAL SKILLS INDICATOR**  
in % of persons aged 16 or more



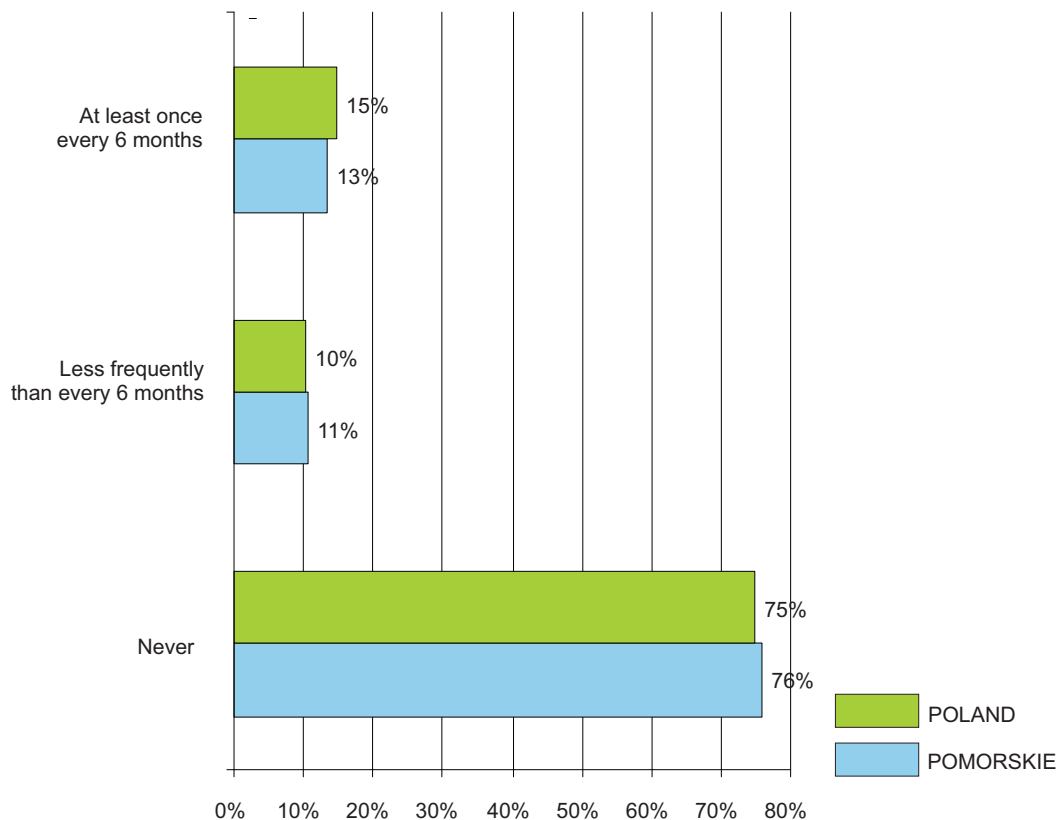
**LOCAL COMMUNITY AND SOCIAL CONTACTS**

**THE SENSE OF ATTACHMENT AND SOCIAL CONTACTS**  
in % of persons aged 16 or more



## PARTICIPATION IN EVENTS ORGANIZED IN THE PLACE OF RESIDENCE

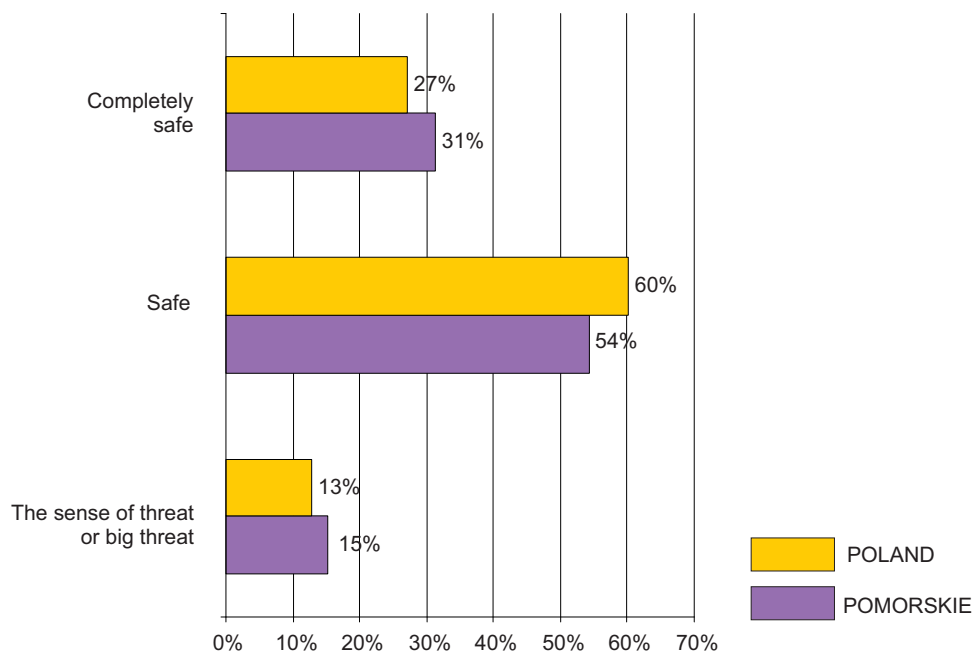
in % of persons aged 16 or more



## SENSE OF PHYSICAL SAFETY

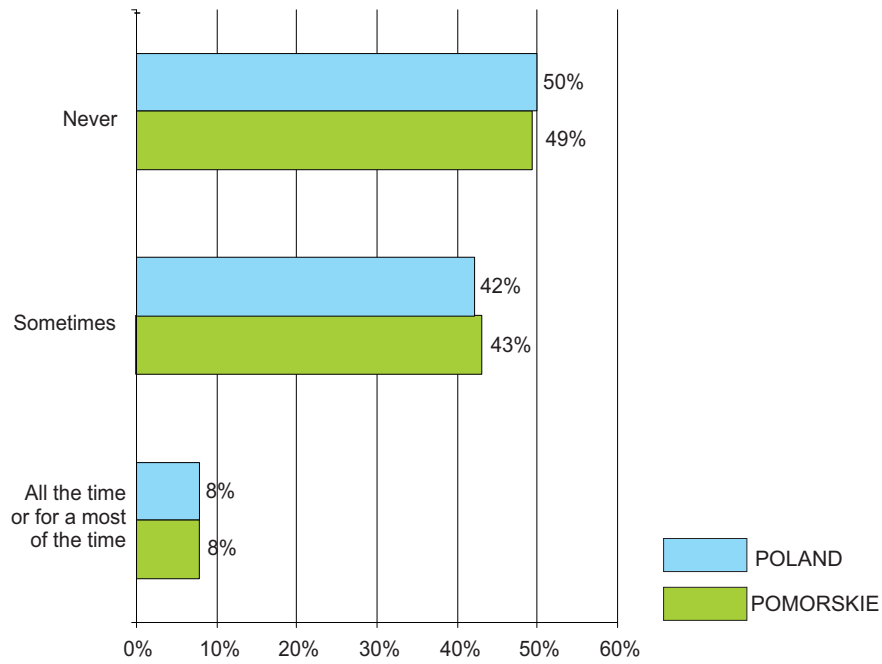
SENSE OF SAFETY IN THE CLOSEST NEIGHBOURHOOD

in % of persons aged 16 or more



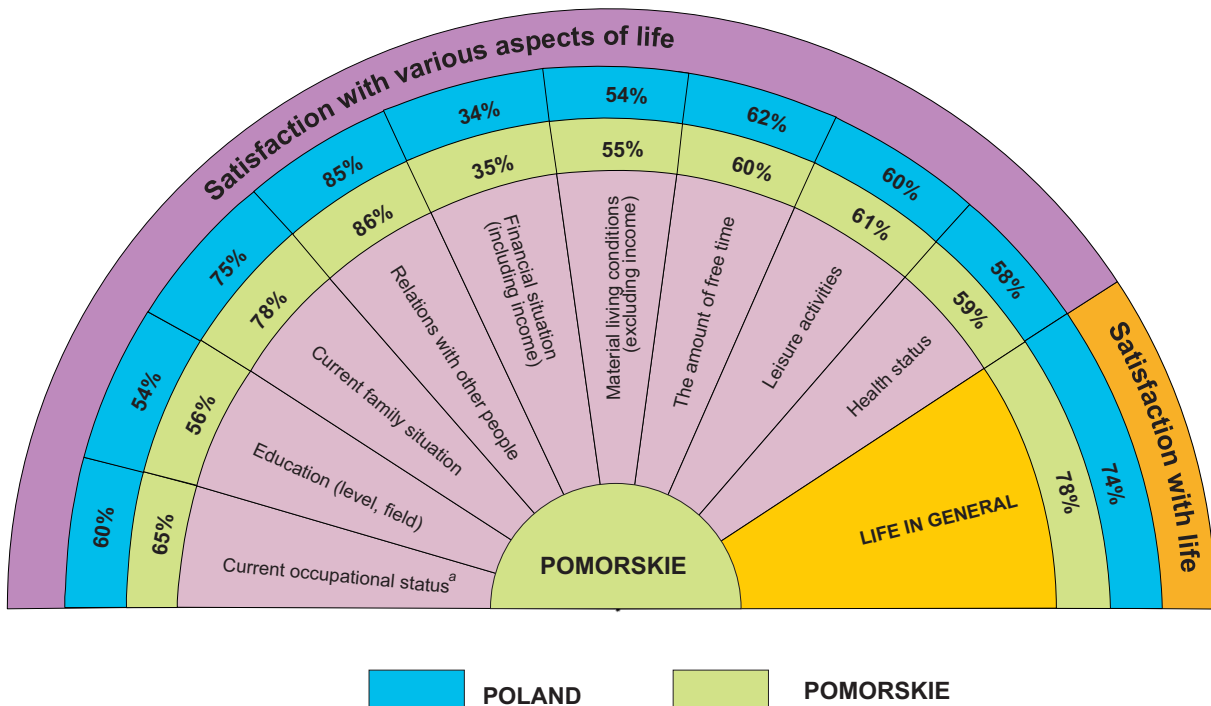


THE SENSE OF THREAT OF HOUSEBREAKING  
in % of persons aged 16 or more



**SATISFACTION WITH VARIOUS ASPECTS OF LIFE**  
(satisfied and very satisfied persons)

in % of persons aged 16 or more



<sup>a</sup> Concerning working people

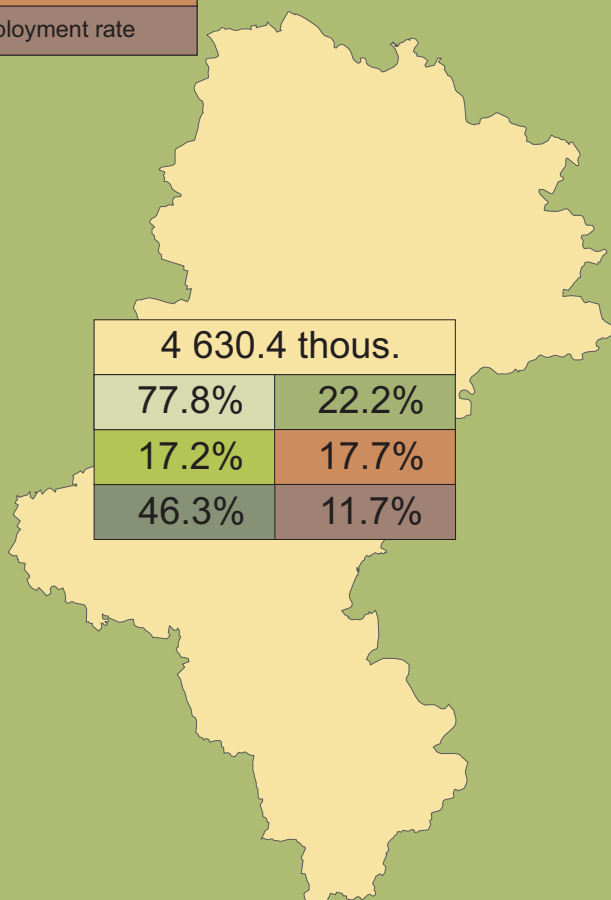
# ŚLĄSKIE VOIVODSHIP

POLAND	
38 511.8 thous.	
60.8%	39.2%
18.7%	16.9%
46.4%	13.0%



Total population	
Population in urban areas	Population in rural areas
Pre-working age population	Post-working age population
Employment rate	Unemployment rate

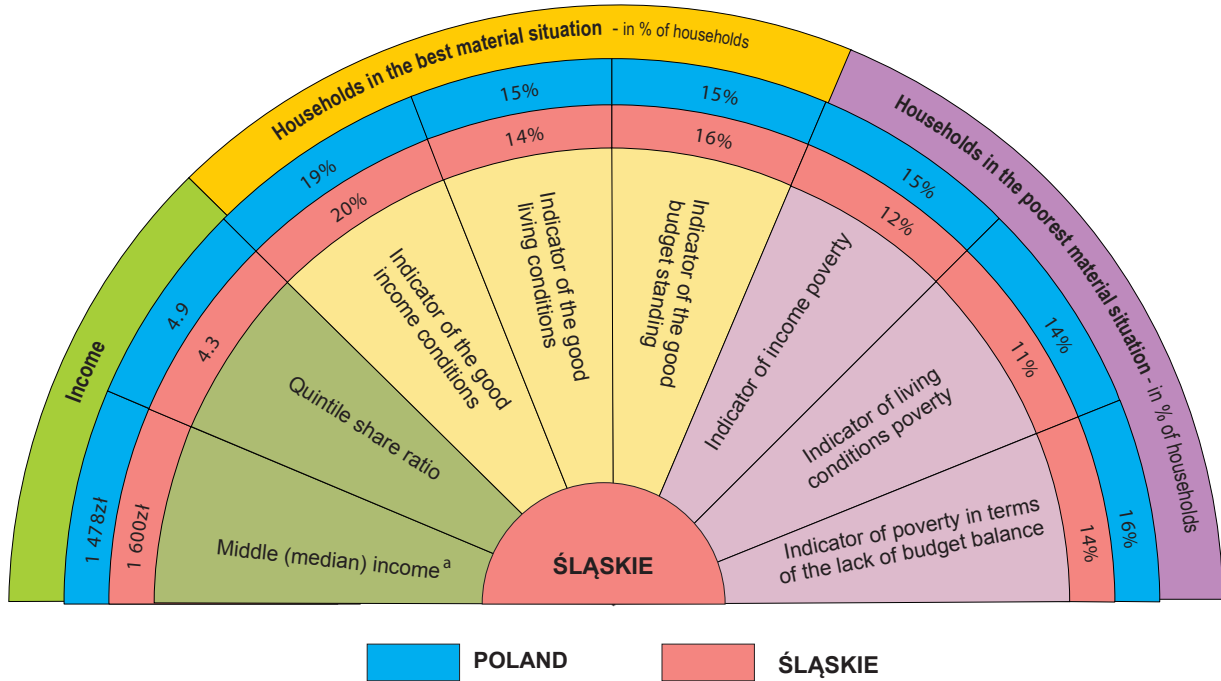
4 630.4 thous.	
77.8%	22.2%
17.2%	17.7%
46.3%	11.7%



According to the results of the Population and Housing Census 2011 (as 31.03.2011).

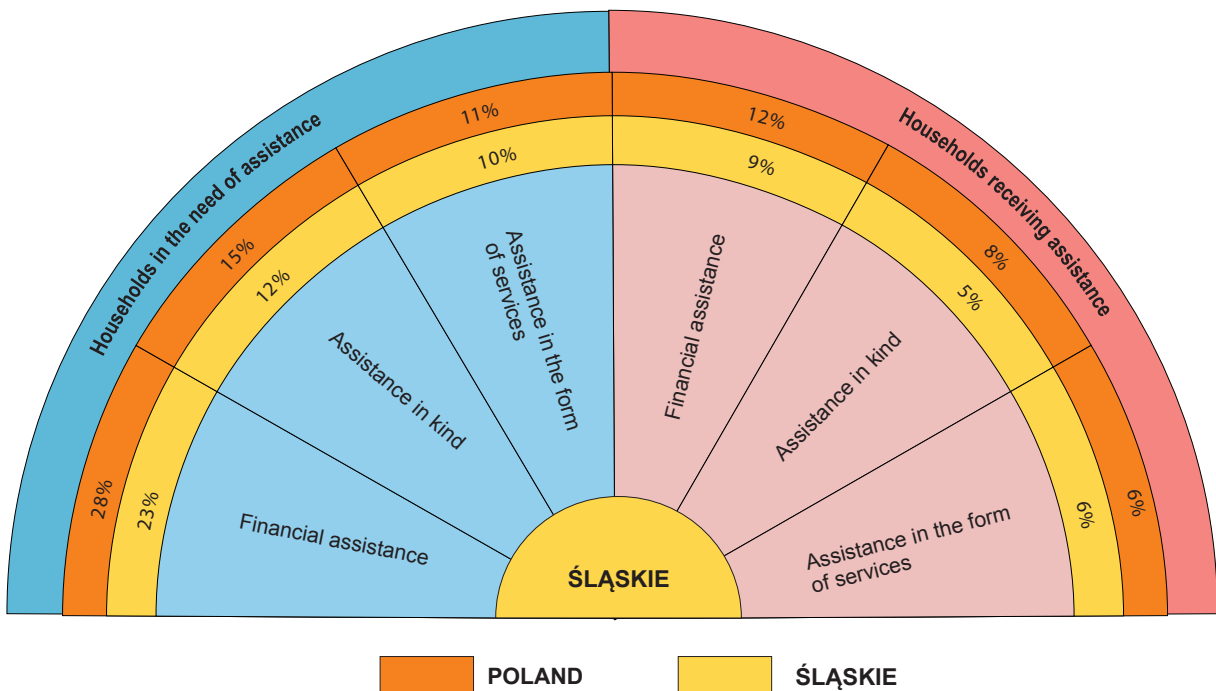
## MATERIAL SITUATION OF HOUSEHOLDS

### DIVERSIFICATION OF HOUSEHOLDS' MATERIAL SITUATION



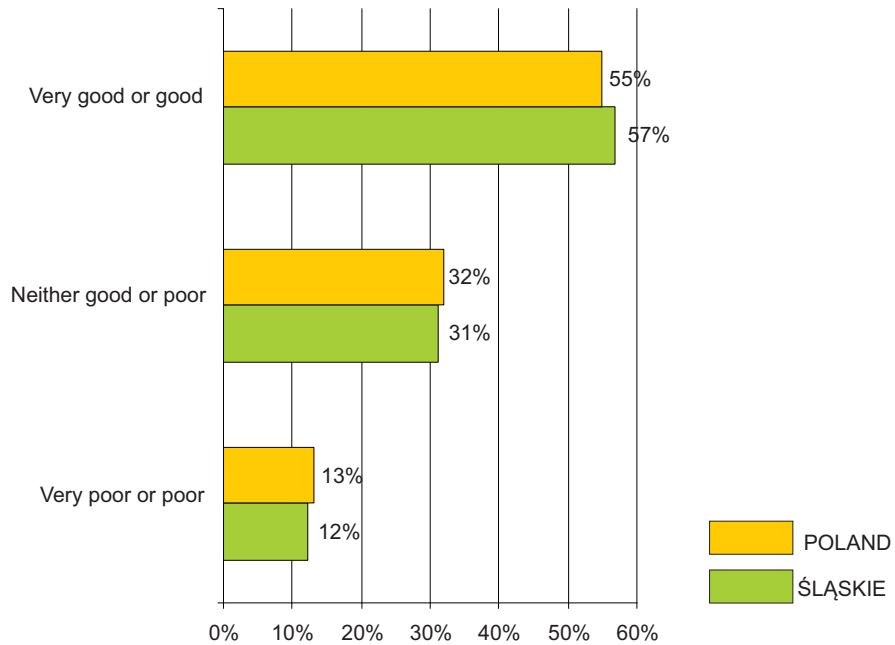
<sup>a</sup> Monthly monetary income per equivalent unit

### RECEIVING THE EXTERNAL ASSISTANCE in % of households

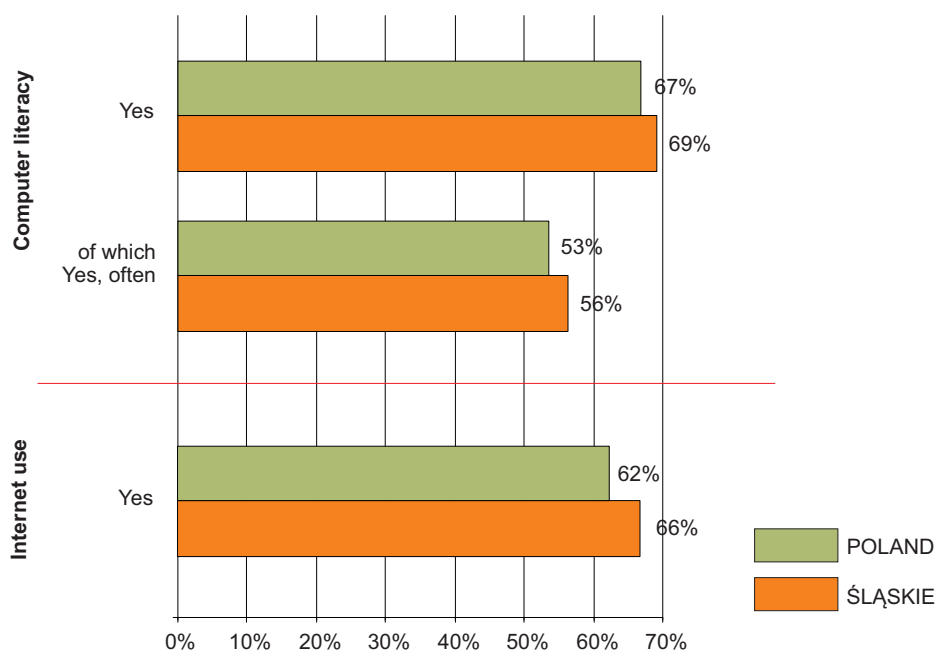


## ELEMENTS OF HUMAN CAPITAL

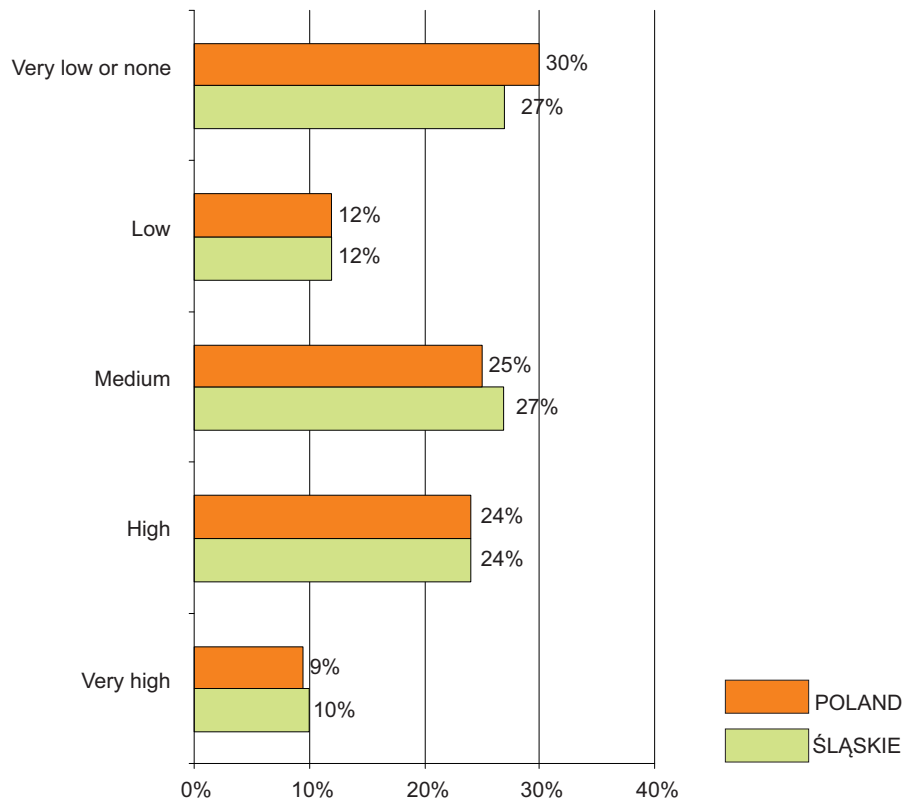
### GENERAL HEALTH ASSESSMENT in % of persons aged 16 or more



### COMPUTER LITERACY AND INTERNET USE in % of persons aged 16 or more

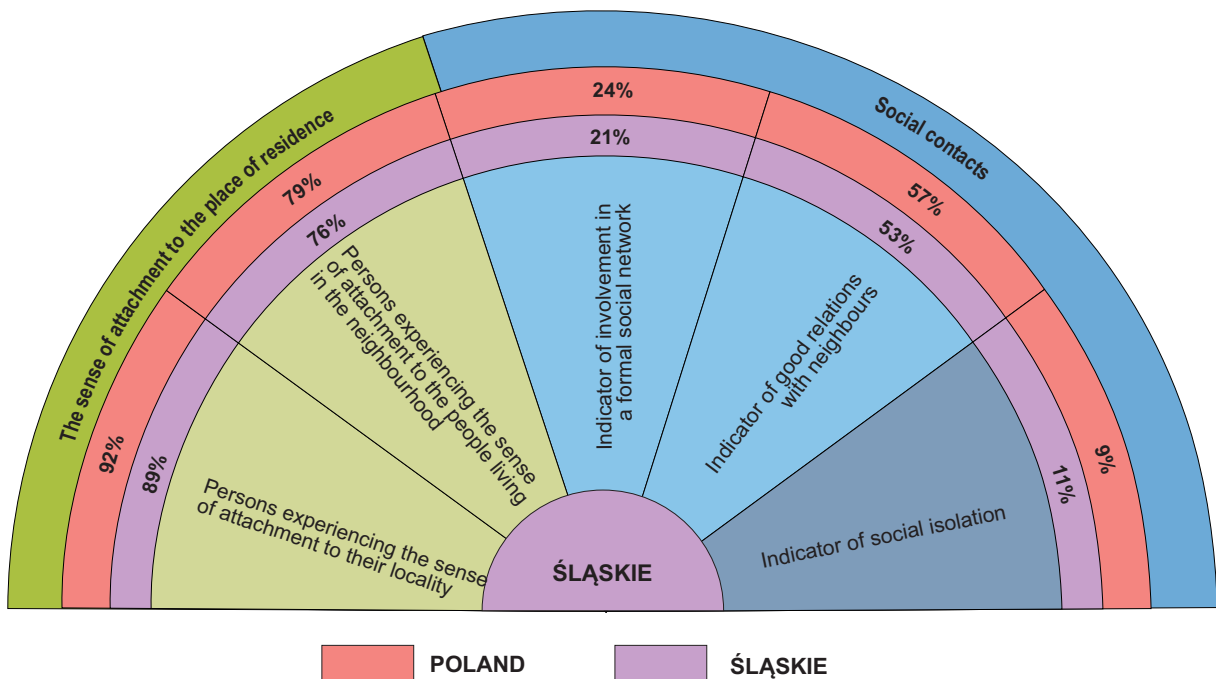


**PERSONAL SKILLS INDICATOR**  
in % of persons aged 16 or more



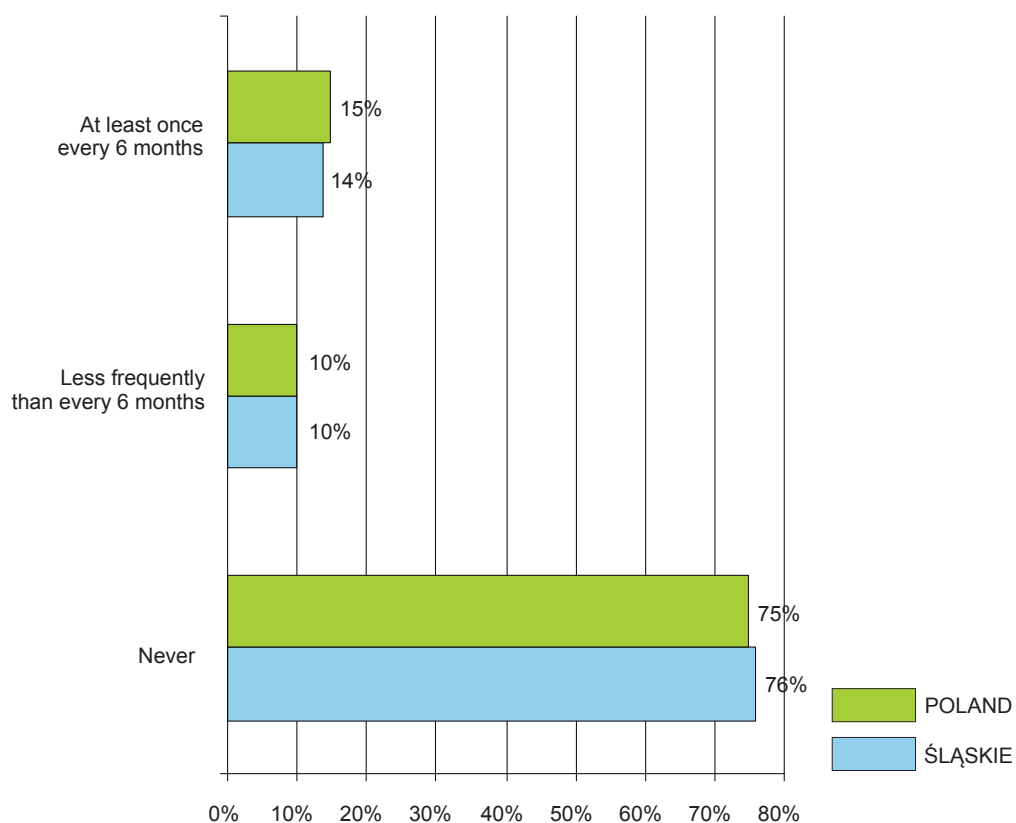
**LOCAL COMMUNITY AND SOCIAL CONTACTS**

**THE SENSE OF ATTACHMENT AND SOCIAL CONTACTS**  
in % of persons aged 16 or more



## PARTICIPATION IN EVENTS ORGANIZED IN THE PLACE OF RESIDENCE

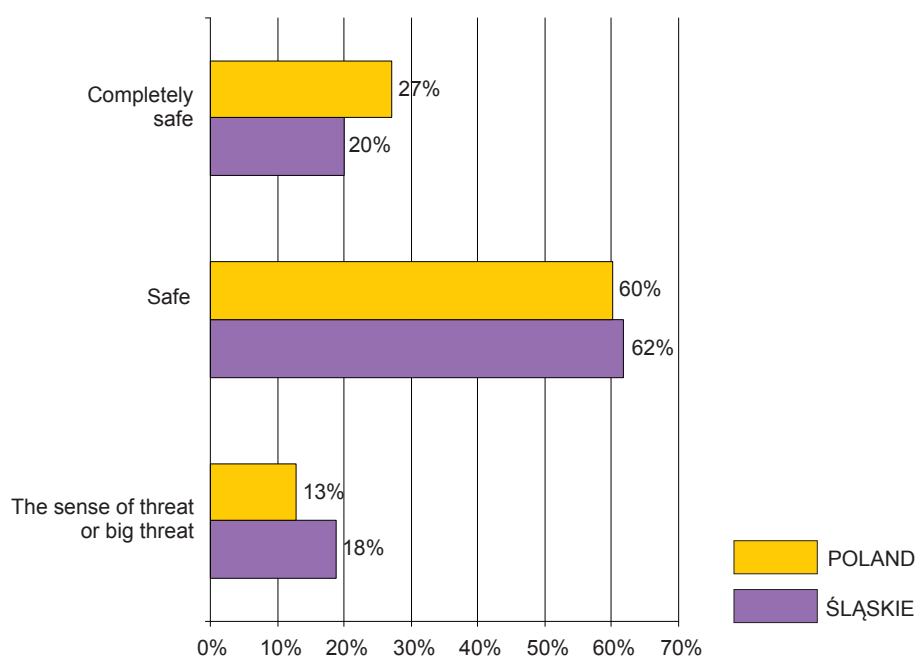
in % of persons aged 16 or more



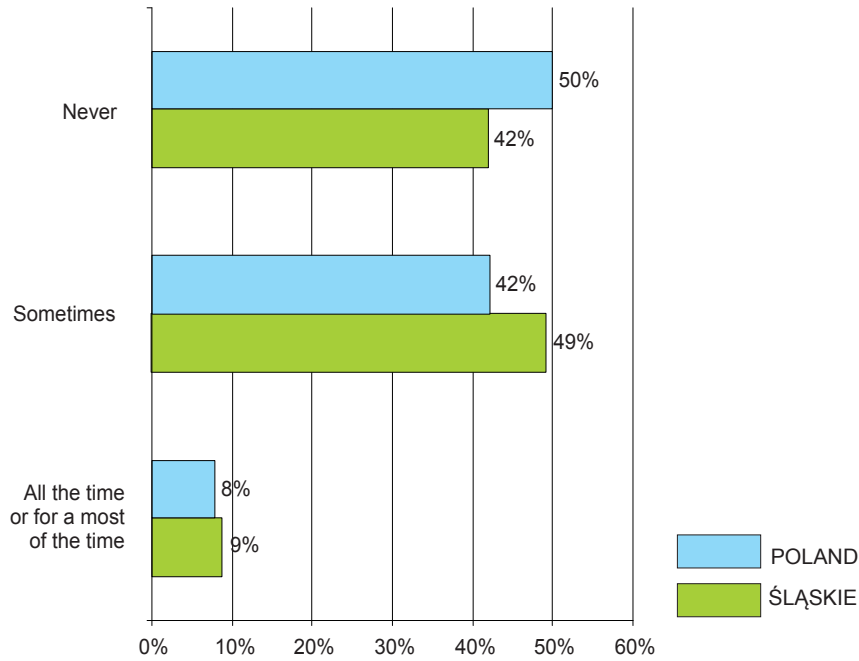
## SENSE OF PHYSICAL SAFETY

SENSE OF SAFETY IN THE CLOSEST NEIGHBOURHOOD

in % of persons aged 16 or more

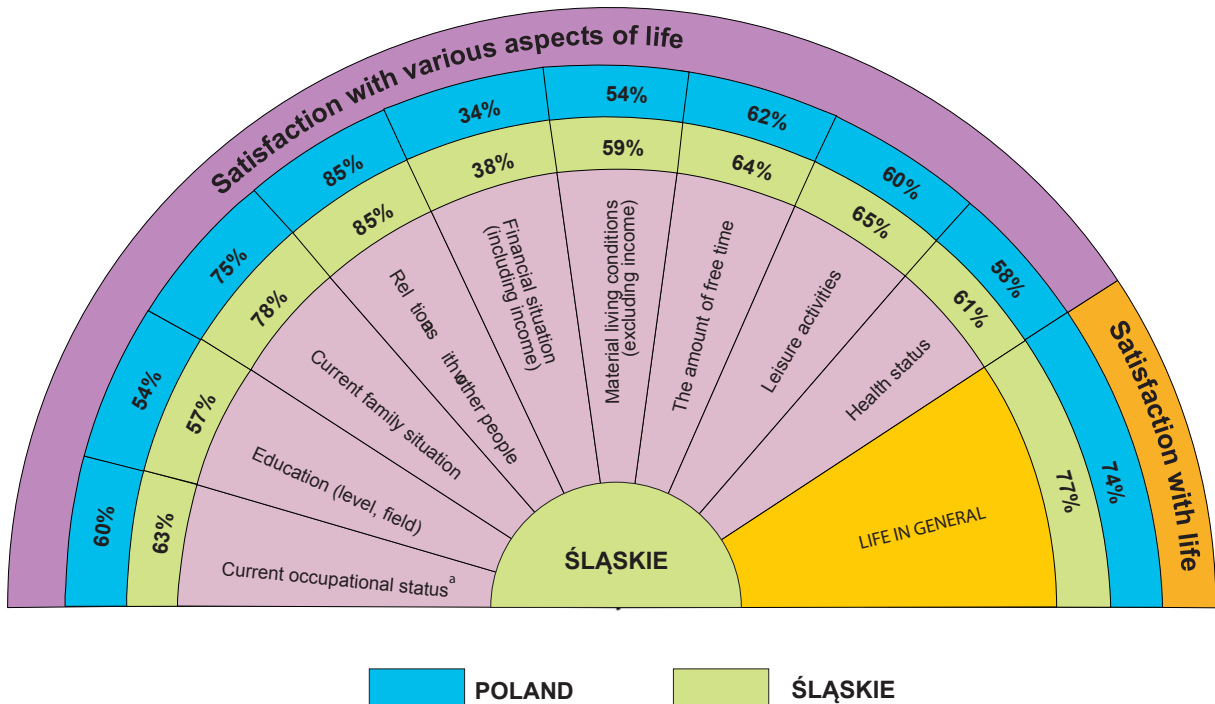


THE SENSE OF THREAT OF HOUSEBREAKING  
in % of persons aged 16 or more



**SATISFACTION WITH VARIOUS ASPECTS OF LIFE**  
(satisfied and very satisfied persons)

in % of persons aged 16 or more



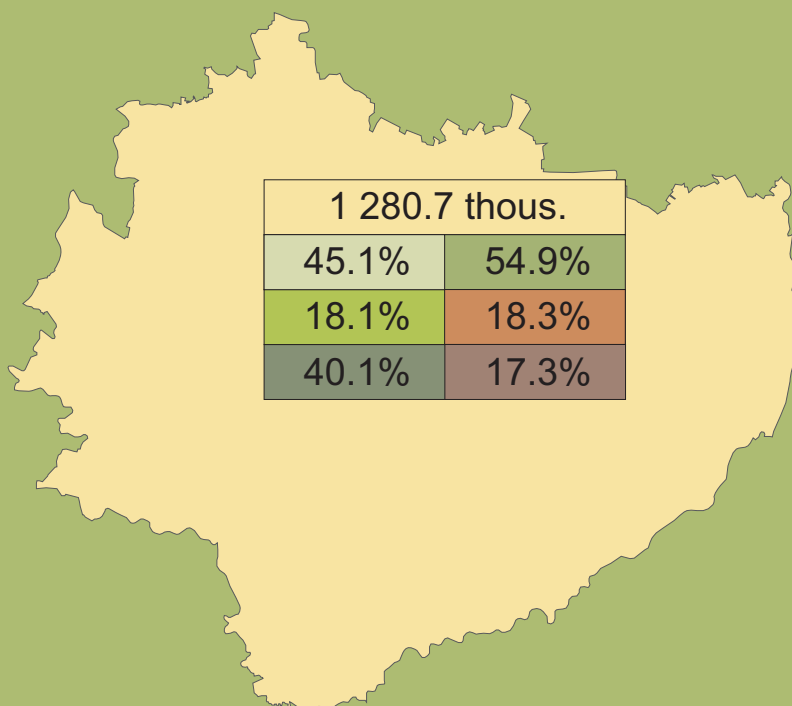
<sup>a</sup> Concerning working people

# ŚWIĘTOKRZYSKIE VOIVODSHIP

POLAND	
38 511.8 thous.	
60.8%	39.2%
18.7%	16.9%
46.4%	13.0%



Total population	
Population in urban areas	Population in rural areas
Pre-working age population	Post-working age population
Employment rate	Unemployment rate

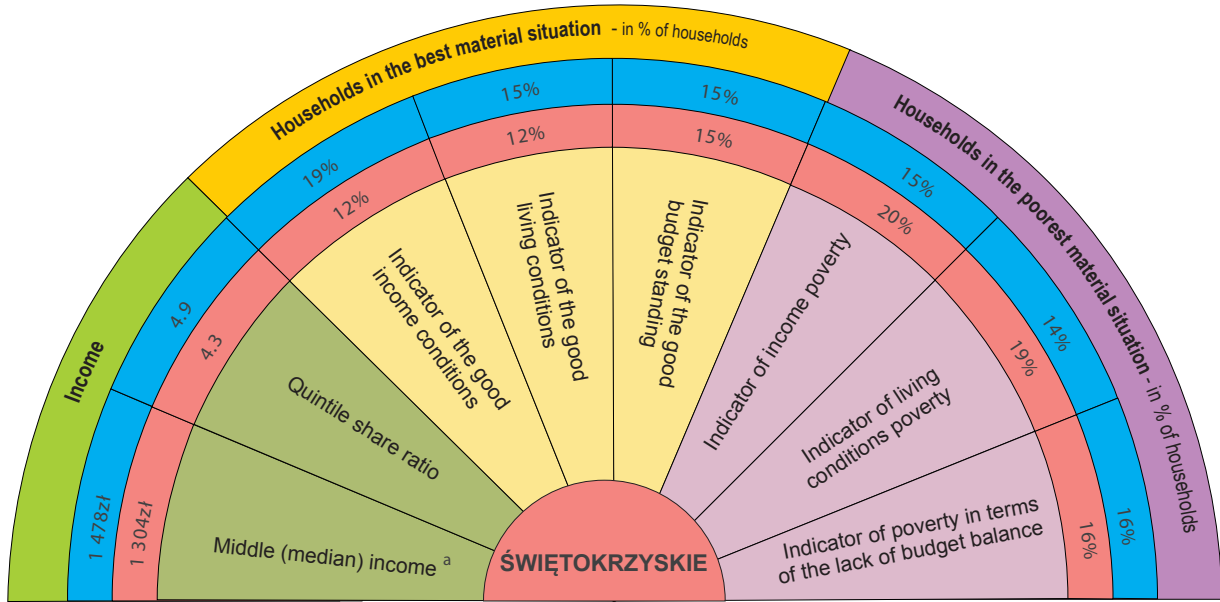


*According to the results of the Population and Housing Census 2011 (as 31.03.2011).*



## MATERIAL SITUATION OF HOUSEHOLDS

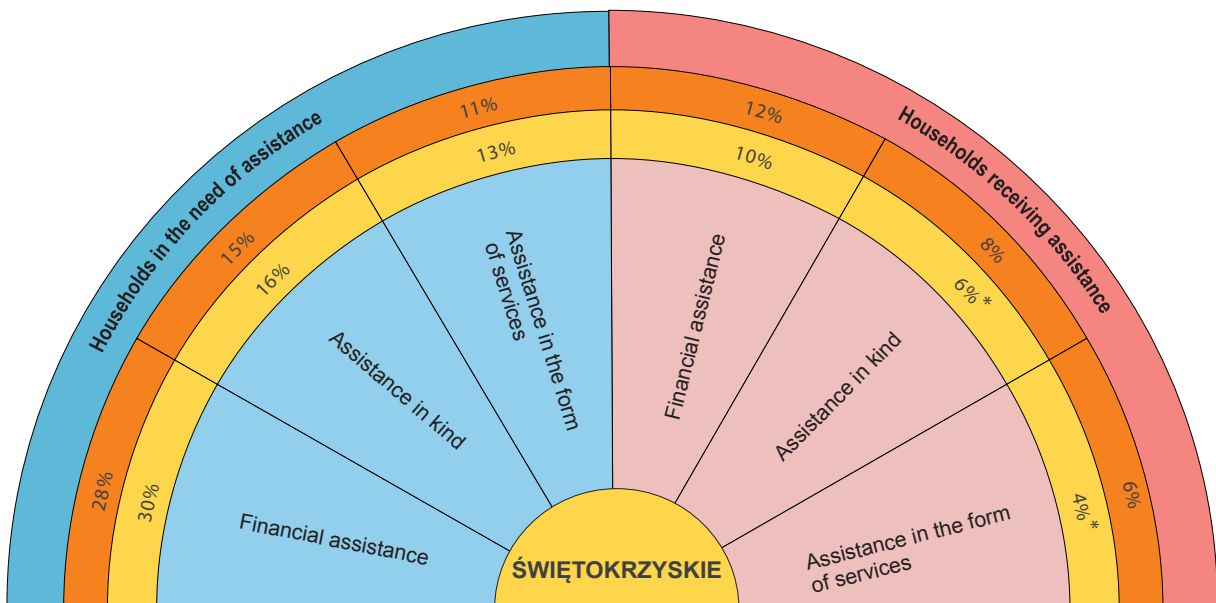
### DIVERSIFICATION OF HOUSEHOLDS' MATERIAL SITUATION



■ POLAND      ■ ŚWIĘTOKRZYSKIE

a Monthly monetary income per equivalent unit

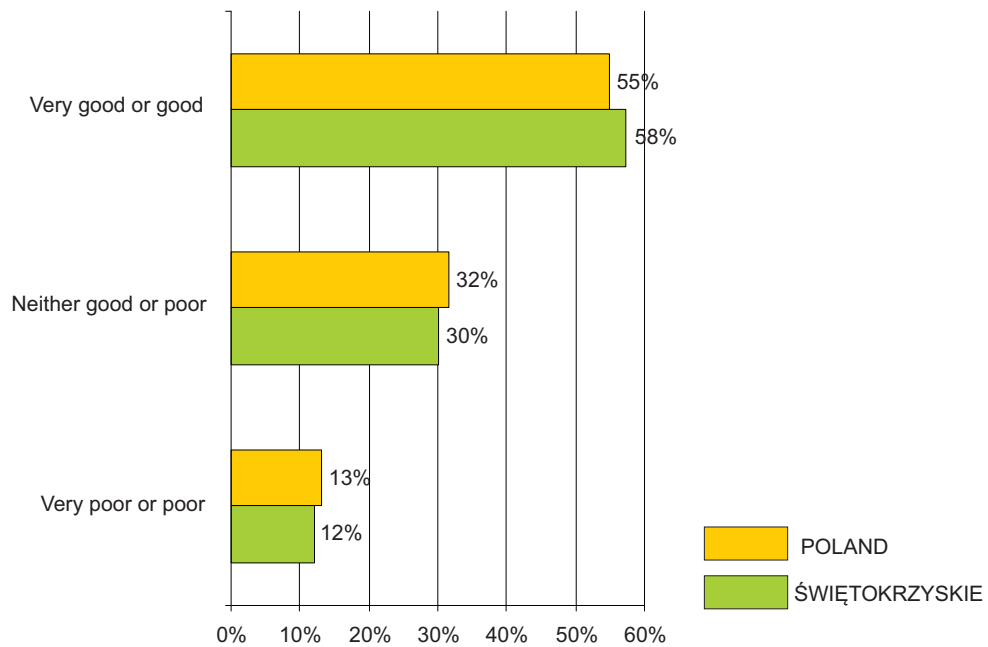
### RECEIVING THE EXTERNAL ASSISTANCE in % of households



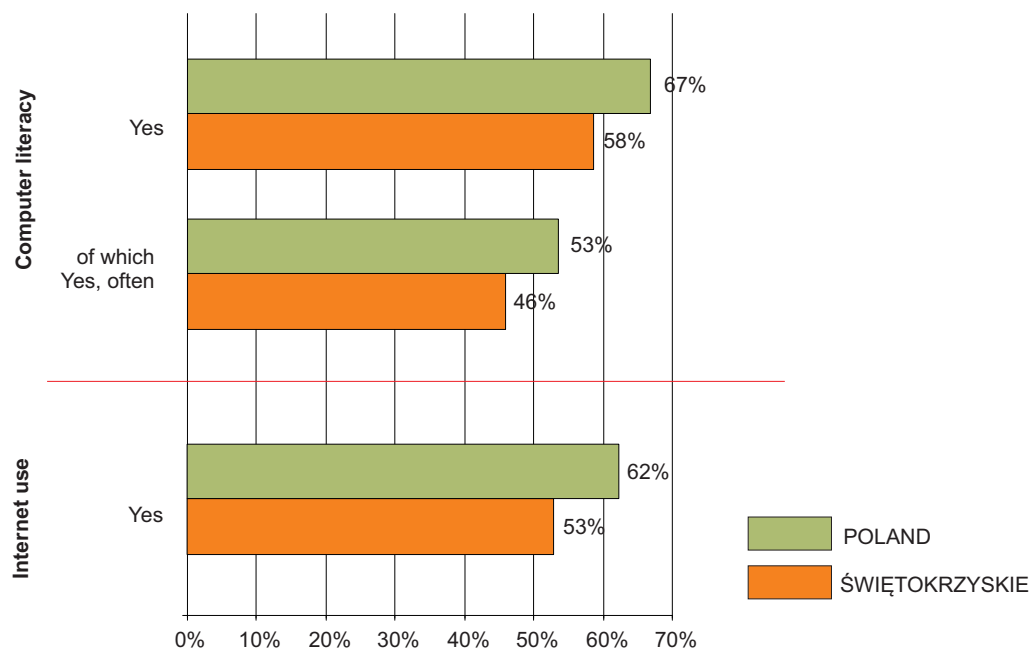
■ POLAND      ■ ŚWIĘTOKRZYSKIE

## ELEMENTS OF HUMAN CAPITAL

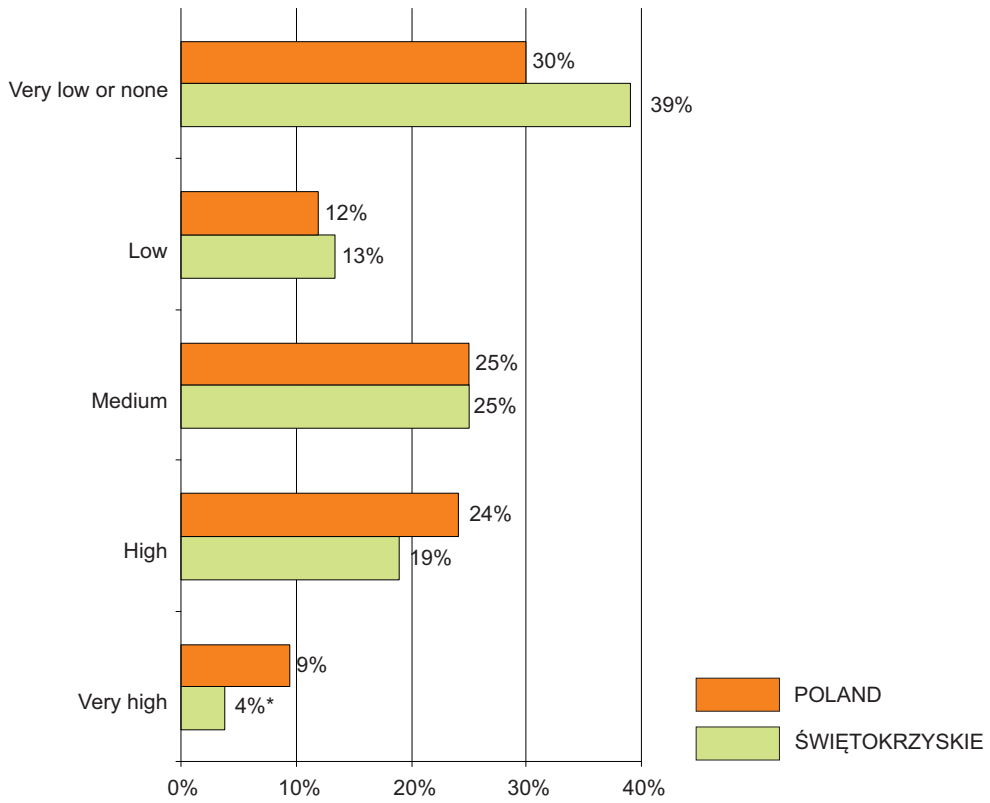
### GENERAL HEALTH ASSESSMENT in % of persons aged 16 or more



### COMPUTER LITERACY AND INTERNET USE in % of persons aged 16 or more

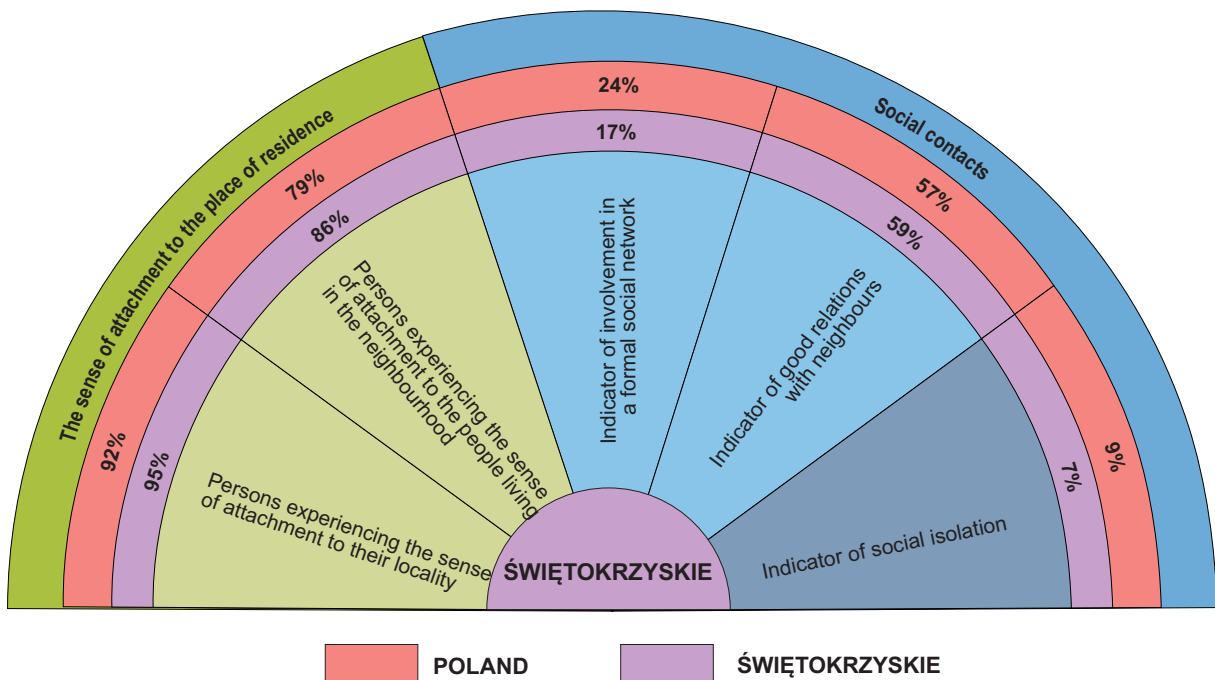


**PERSONAL SKILLS INDICATOR**  
in % of persons aged 16 or more



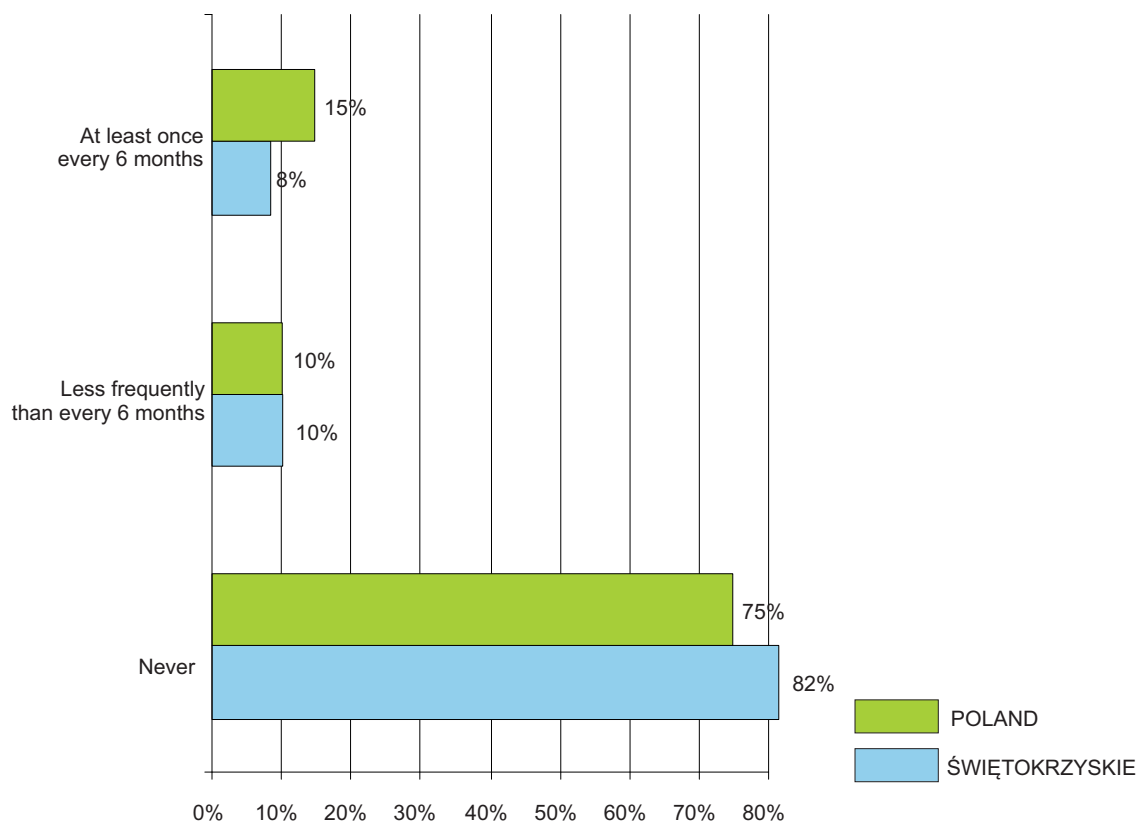
**LOCAL COMMUNITY AND SOCIAL CONTACTS**

**THE SENSE OF ATTACHMENT AND SOCIAL CONTACTS**  
in % of persons aged 16 or more



## PARTICIPATION IN EVENTS ORGANIZED IN THE PLACE OF RESIDENCE

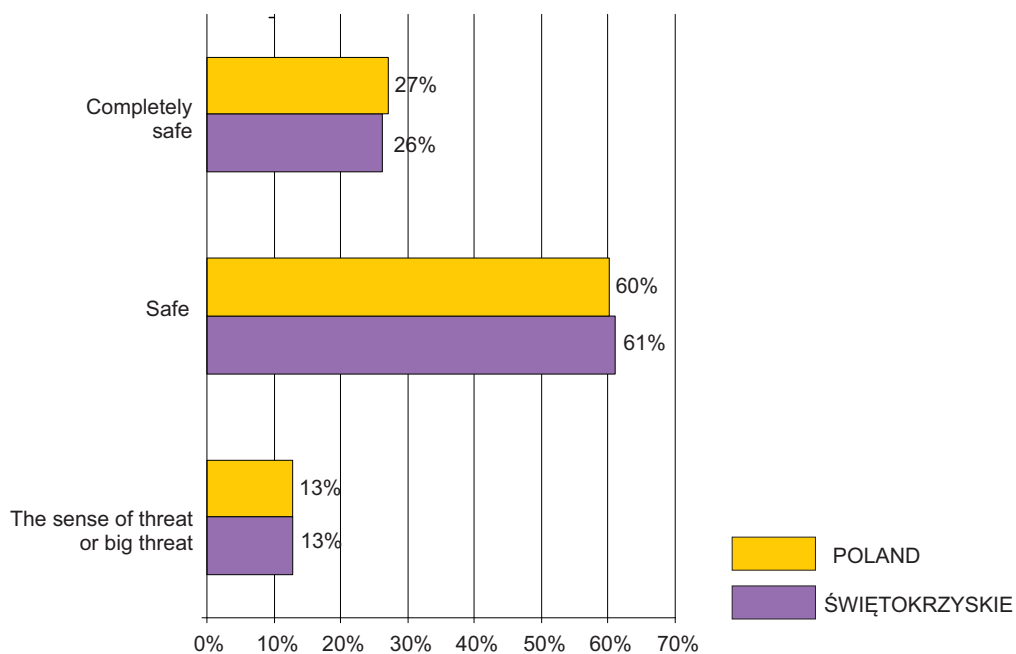
in % of persons aged 16 or more



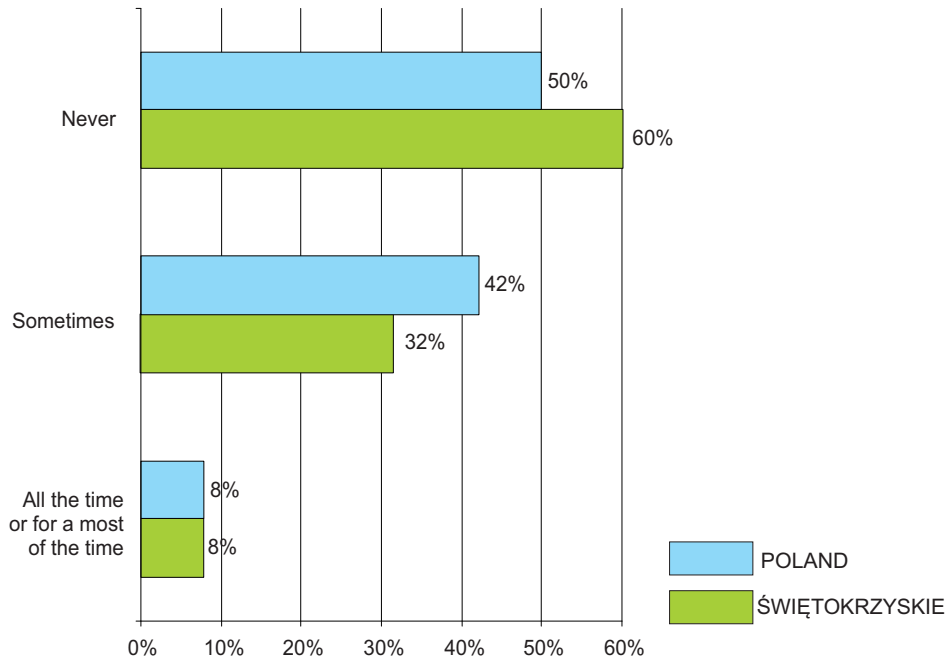
## SENSE OF PHYSICAL SAFETY

SENSE OF SAFETY IN THE CLOSEST NEIGHBOURHOOD

in % of persons aged 16 or more

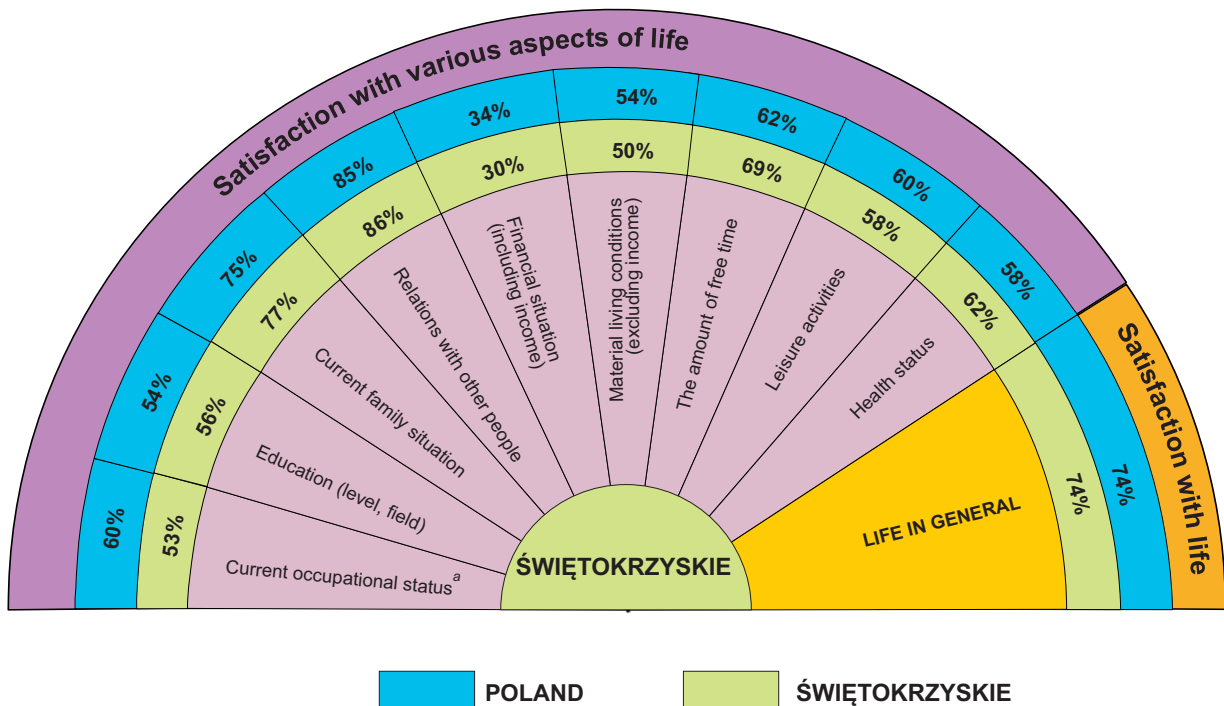


THE SENSE OF THREAT OF HOUSEBREAKING  
in % of persons aged 16 or more



**SATISFACTION WITH VARIOUS ASPECTS OF LIFE**  
(satisfied and very satisfied persons)

in % of persons aged 16 or more



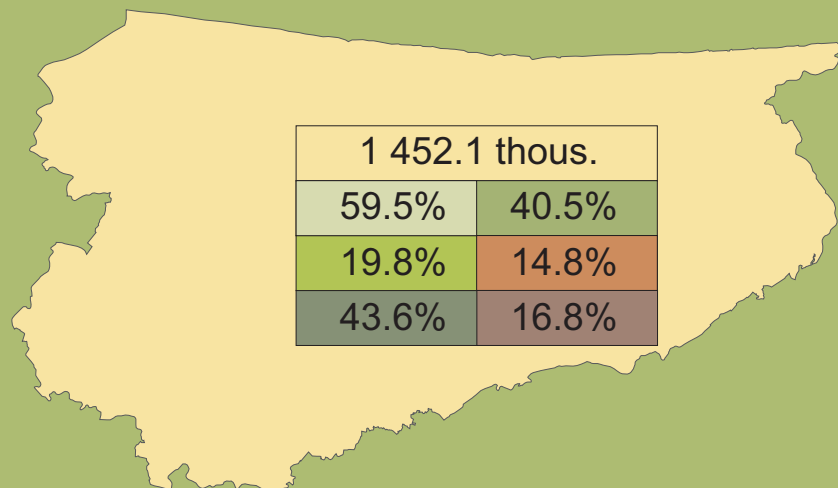
<sup>a</sup> Concerning working people

# WARMIŃSKO-MAZURSKIE VOIVODSHIP

POLAND	
38 511.8 thous.	
60.8%	39.2%
18.7%	16.9%
46.4%	13.0%



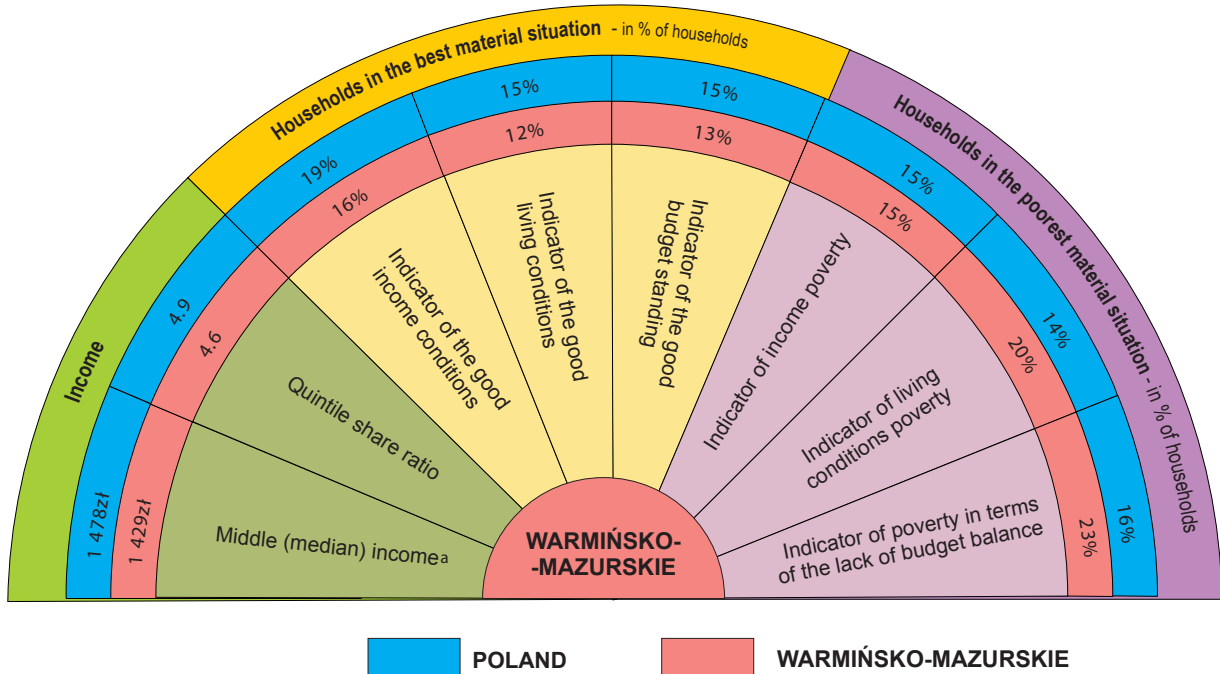
Total population	
Population in urban areas	Population in rural areas
Pre-working age population	Post-working age population
Employment rate	Unemployment rate



*According to the results of the Population and Housing Census 2011 (as 31.03.2011).*

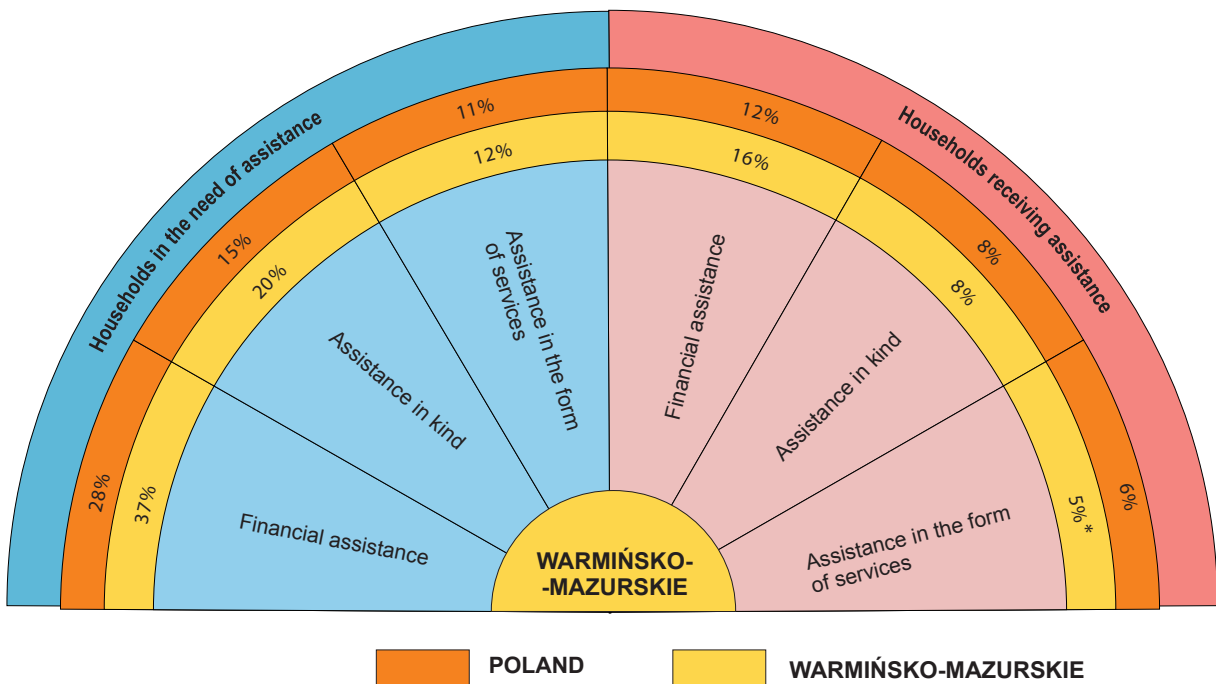
## MATERIAL SITUATION OF HOUSEHOLDS

### DIVERSIFICATION OF HOUSEHOLDS' MATERIAL SITUATION



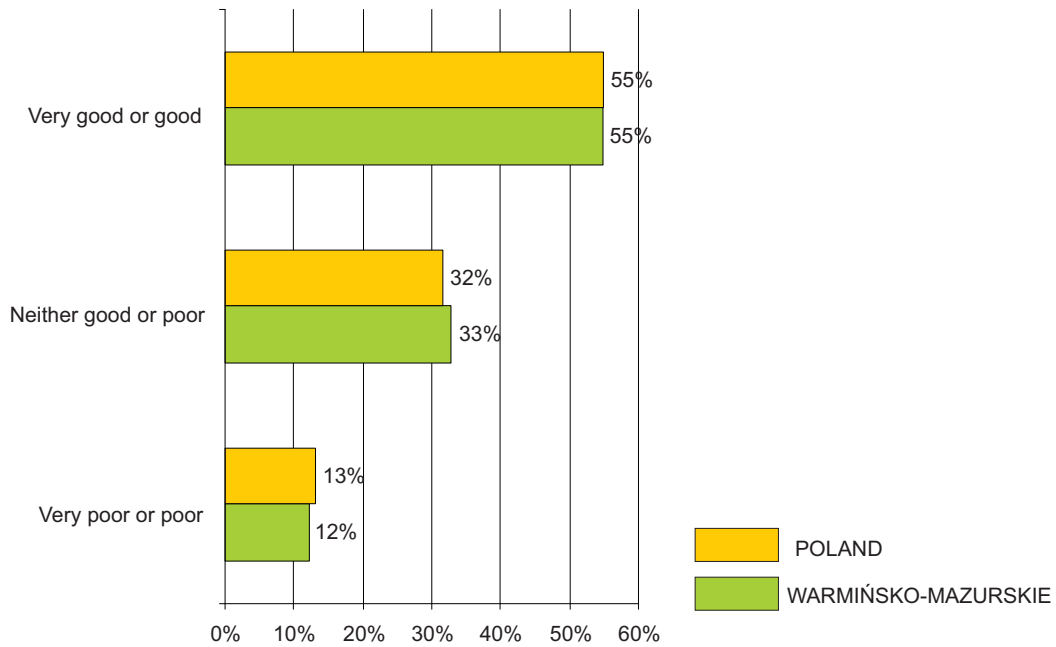
<sup>a</sup> Monthly monetary income per equivalent unit

### RECEIVING THE EXTERNAL ASSISTANCE in % of households

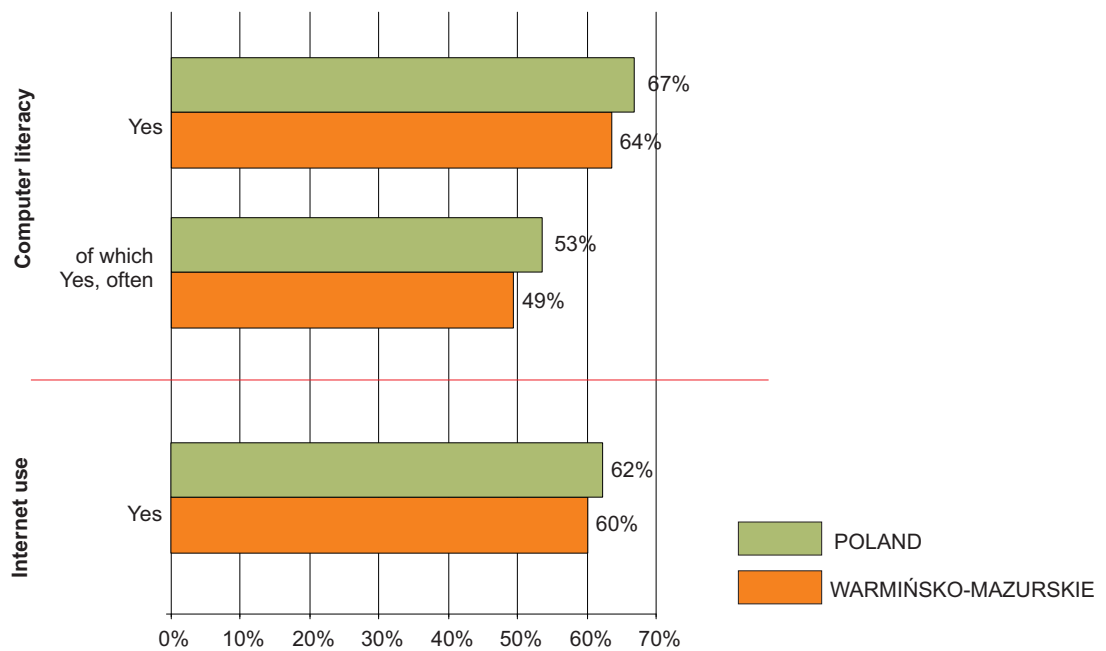


## ELEMENTS OF HUMAN CAPITAL

### GENERAL HEALTH ASSESSMENT in % of persons aged 16 or more

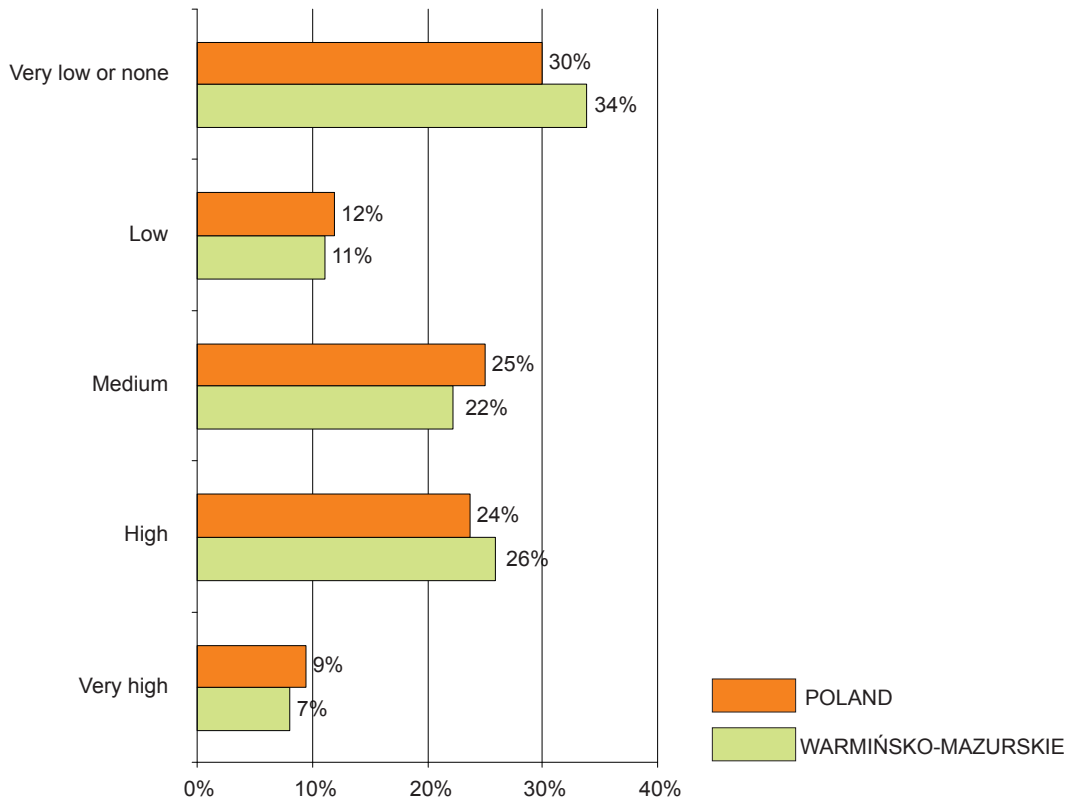


### COMPUTER LITERACY AND INTERNET USE in % of persons aged 16 or more



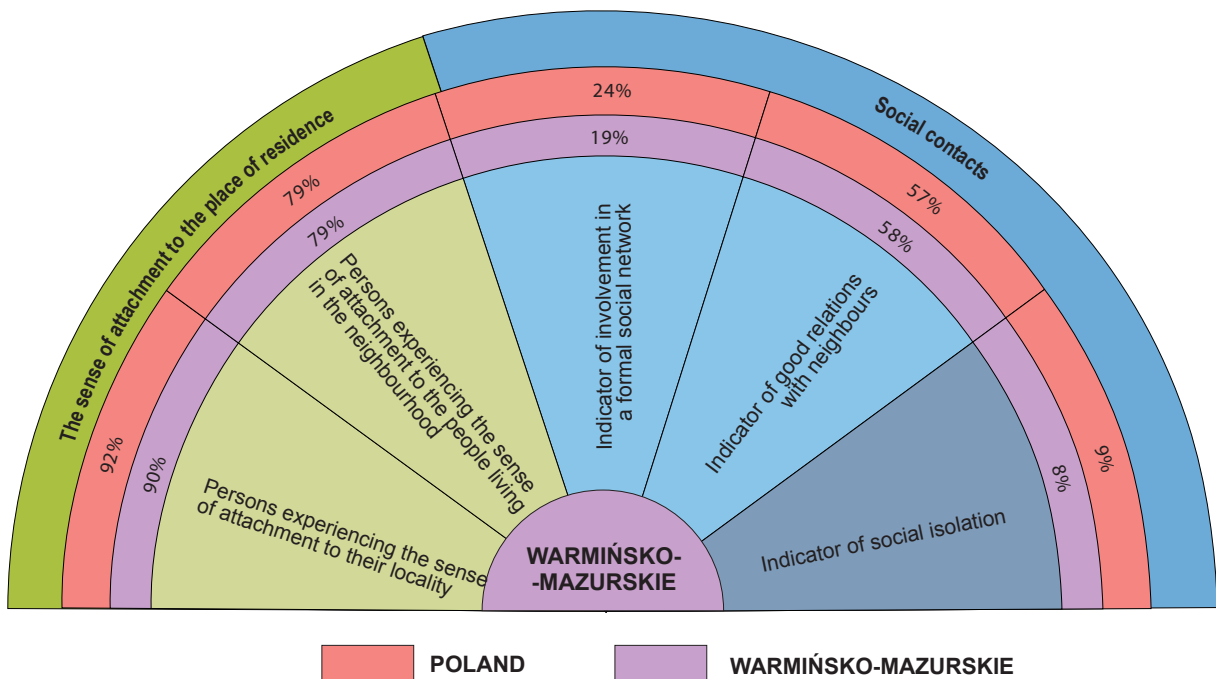


**PERSONAL SKILLS INDICATOR**  
in % of persons aged 16 or more



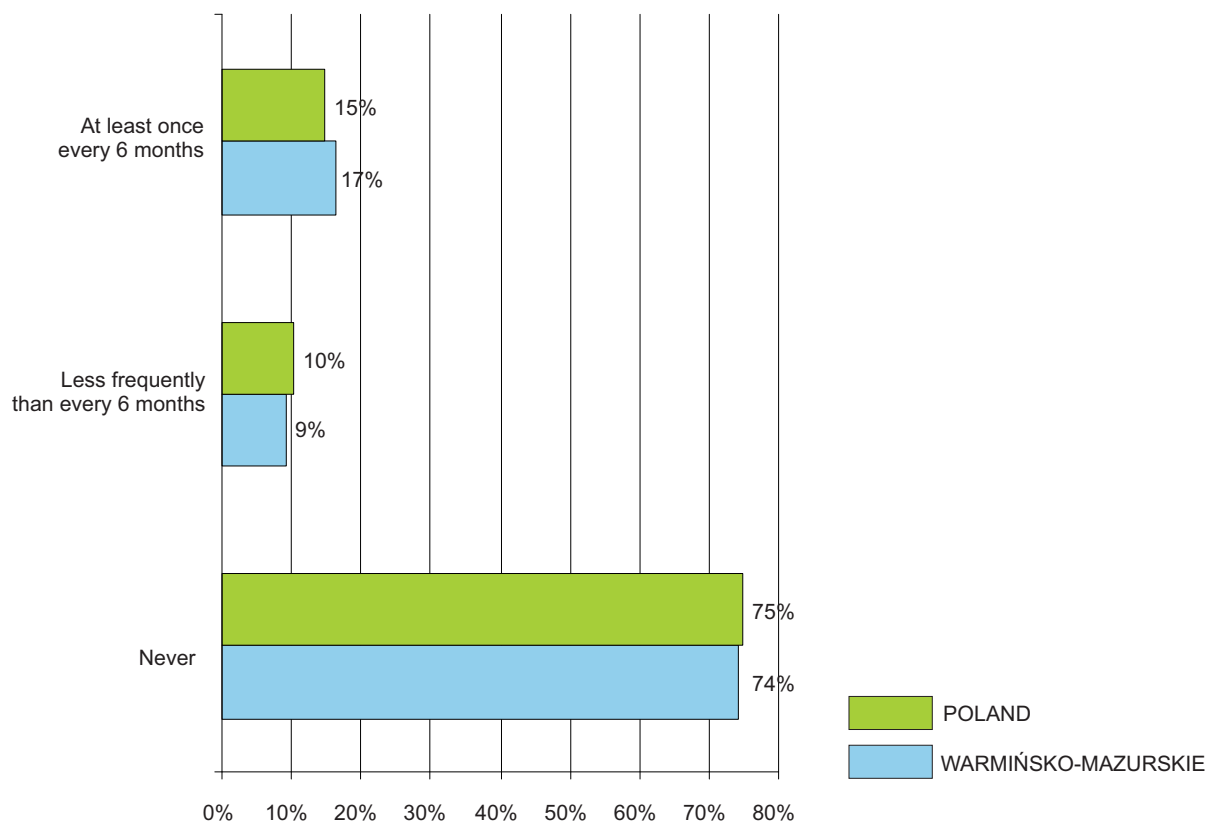
**LOCAL COMMUNITY AND SOCIAL CONTACTS**

**THE SENSE OF ATTACHMENT AND SOCIAL CONTACTS**  
in % of persons aged 16 or more



## PARTICIPATION IN EVENTS ORGANIZED IN THE PLACE OF RESIDENCE

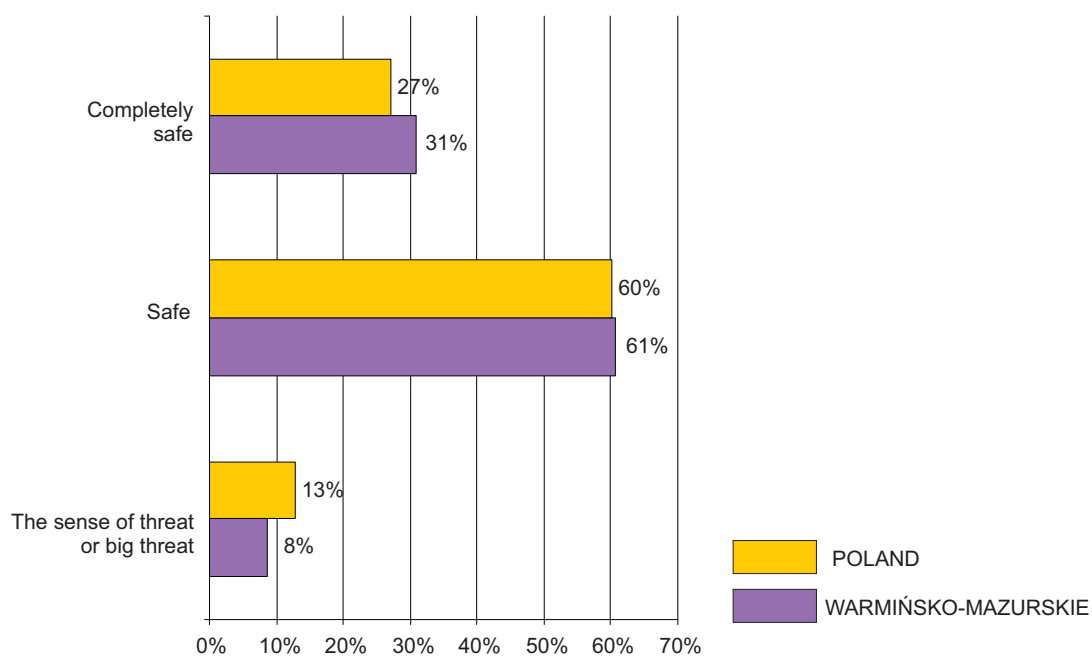
in % of persons aged 16 or more



## SENSE OF PHYSICAL SAFETY

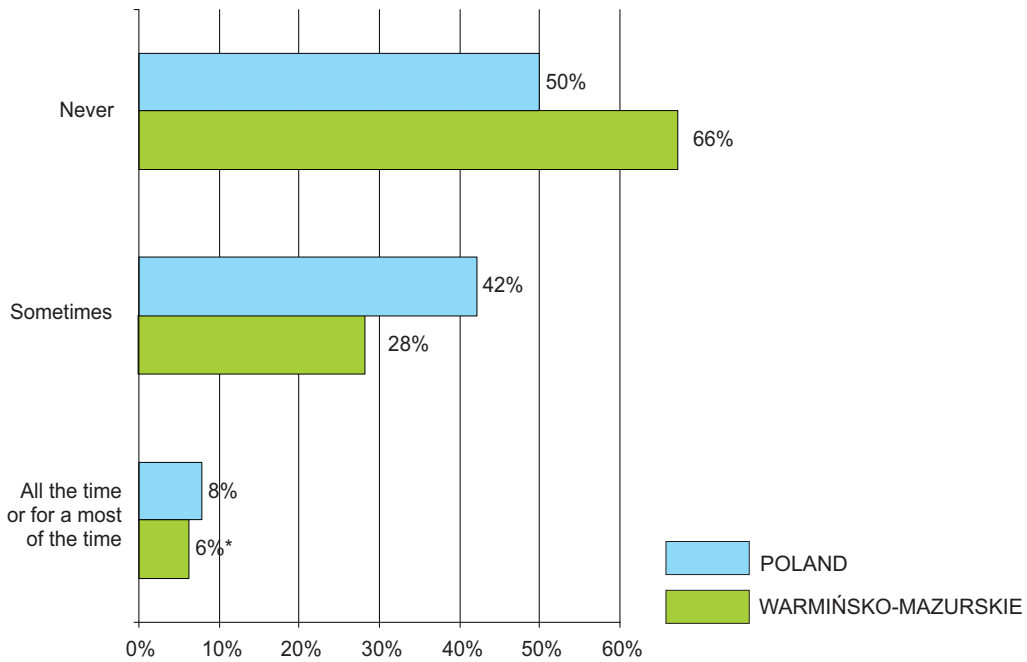
SENSE OF SAFETY IN THE CLOSEST NEIGHBOURHOOD

in % of persons aged 16 or more



THE SENSE OF THREAT OF HOUSEBREAKING

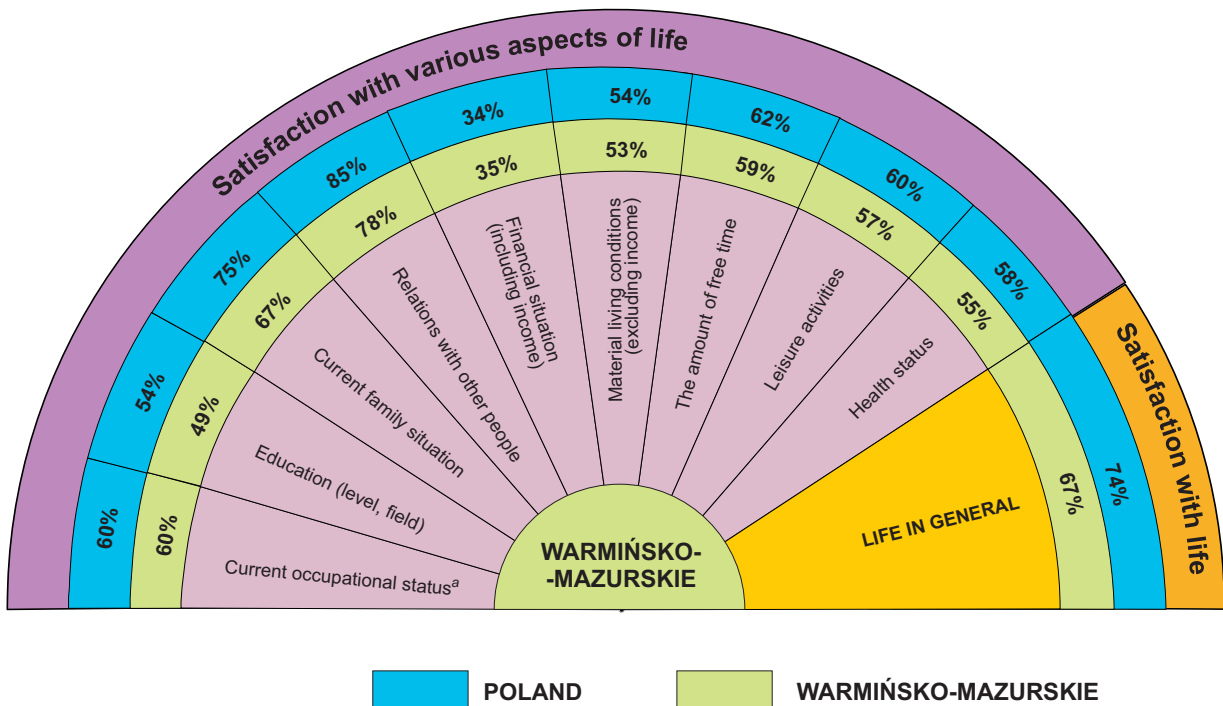
in % of persons aged 16 or more



SATISFACTION WITH VARIOUS ASPECTS OF LIFE

(satisfied and very satisfied persons)

in % of persons aged 16 or more



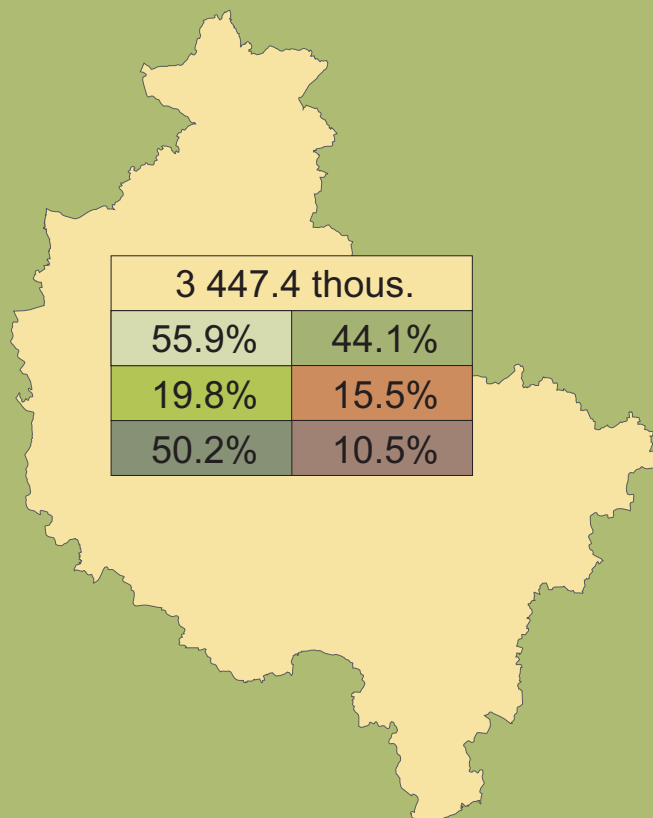
<sup>a</sup> Concerning working people

# WIELKOPOLSKIE VOIVODSHIP

POLAND	
38 511.8 thous.	
60.8%	39.2%
18.7%	16.9%
46.4%	13.0%



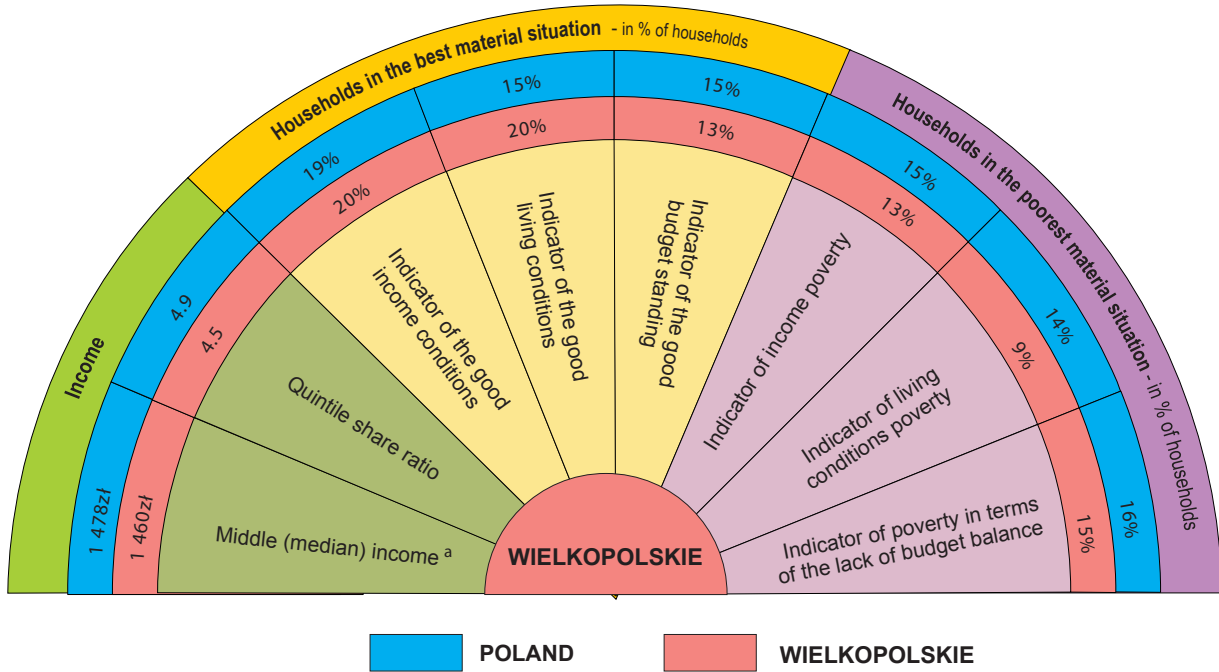
Total population	
Population in urban areas	Population in rural areas
Pre-working age population	Post-working age population
Employment rate	Unemployment rate



According to the results of the Population and Housing Census 2011 (as 31.03.2011).

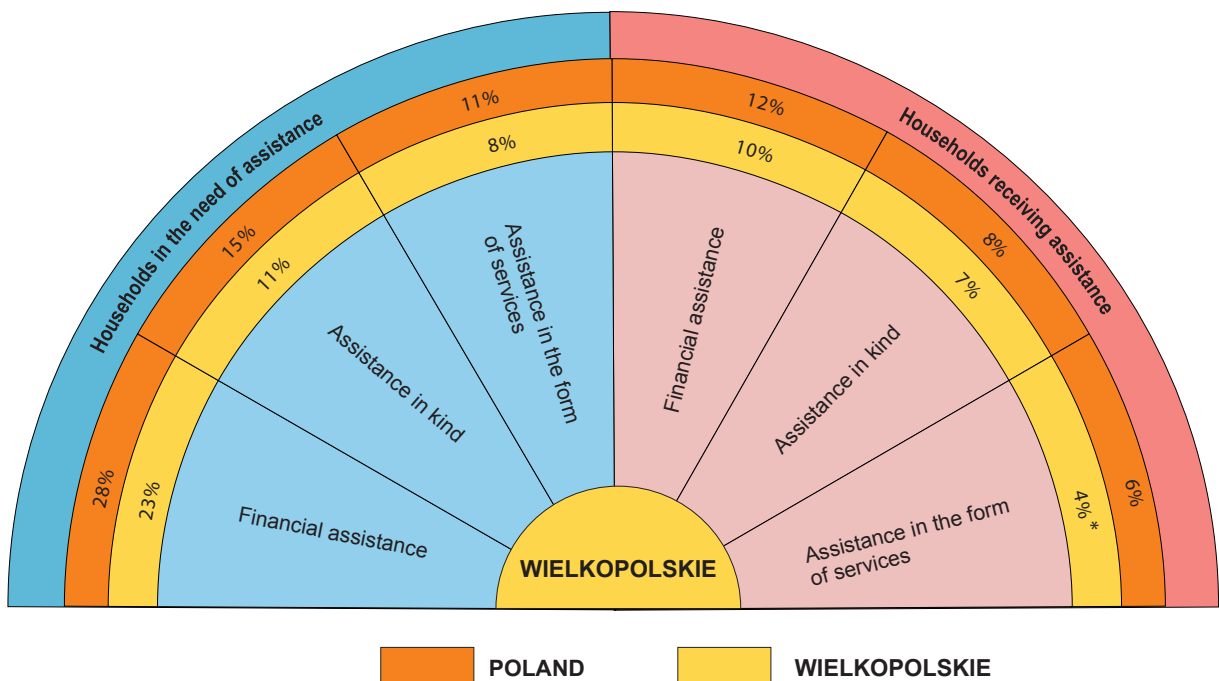
## MATERIAL SITUATION OF HOUSEHOLDS

### DIVERSIFICATION OF HOUSEHOLDS' MATERIAL SITUATION



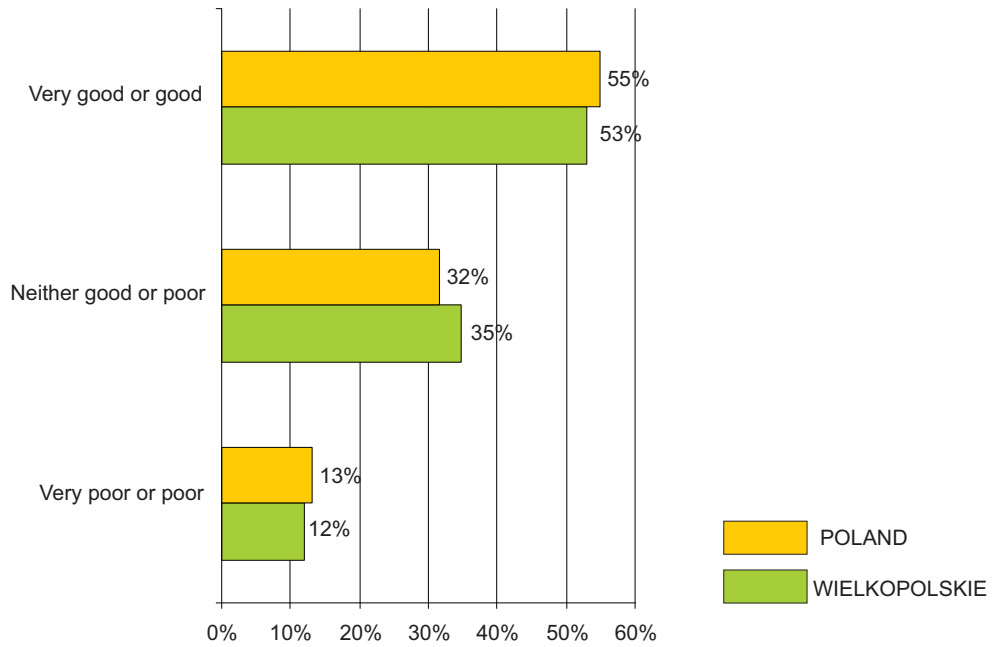
<sup>a</sup> Monthly monetary income per equivalent unit

### RECEIVING THE EXTERNAL ASSISTANCE in % of households

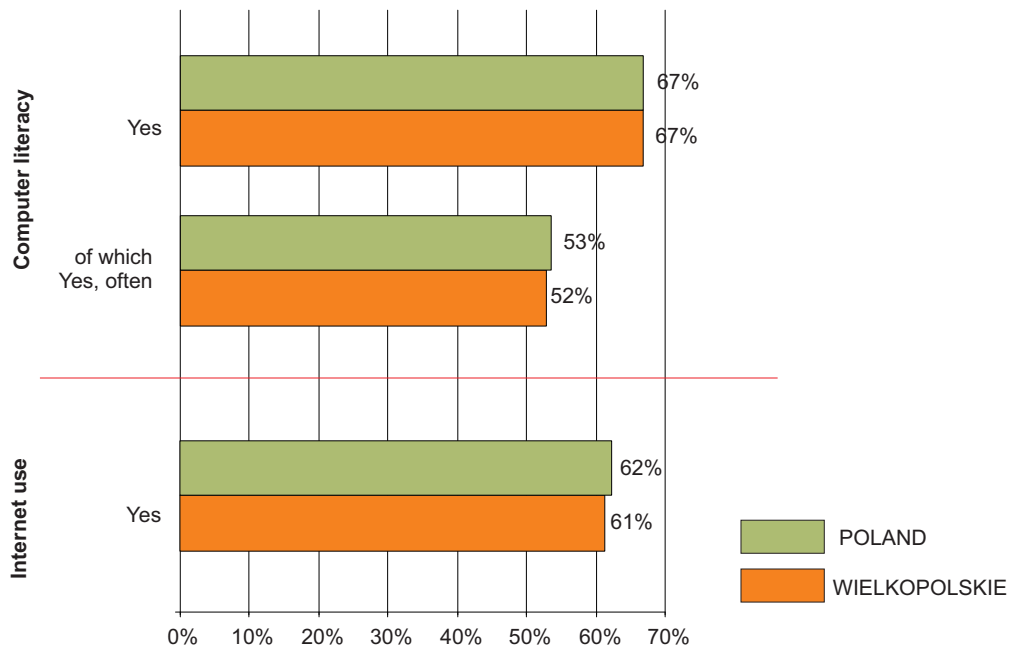


## ELEMENTS OF HUMAN CAPITAL

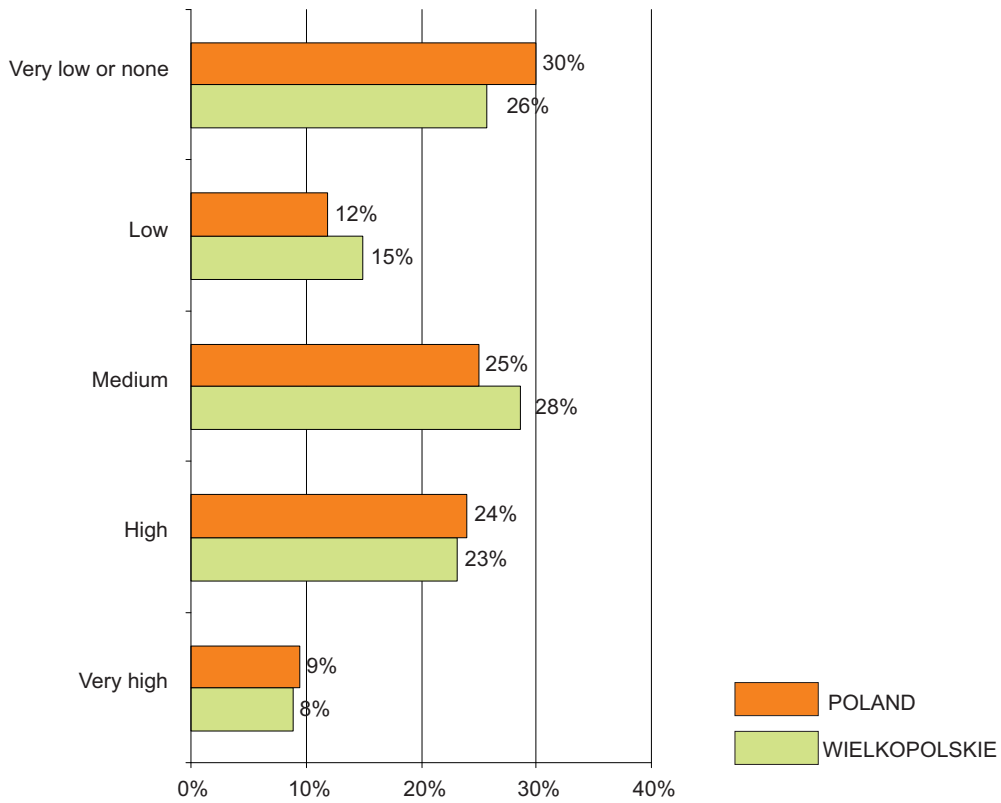
### GENERAL HEALTH ASSESSMENT in % of persons aged 16 or more



### COMPUTER LITERACY AND INTERNET USE in % of persons aged 16 or more

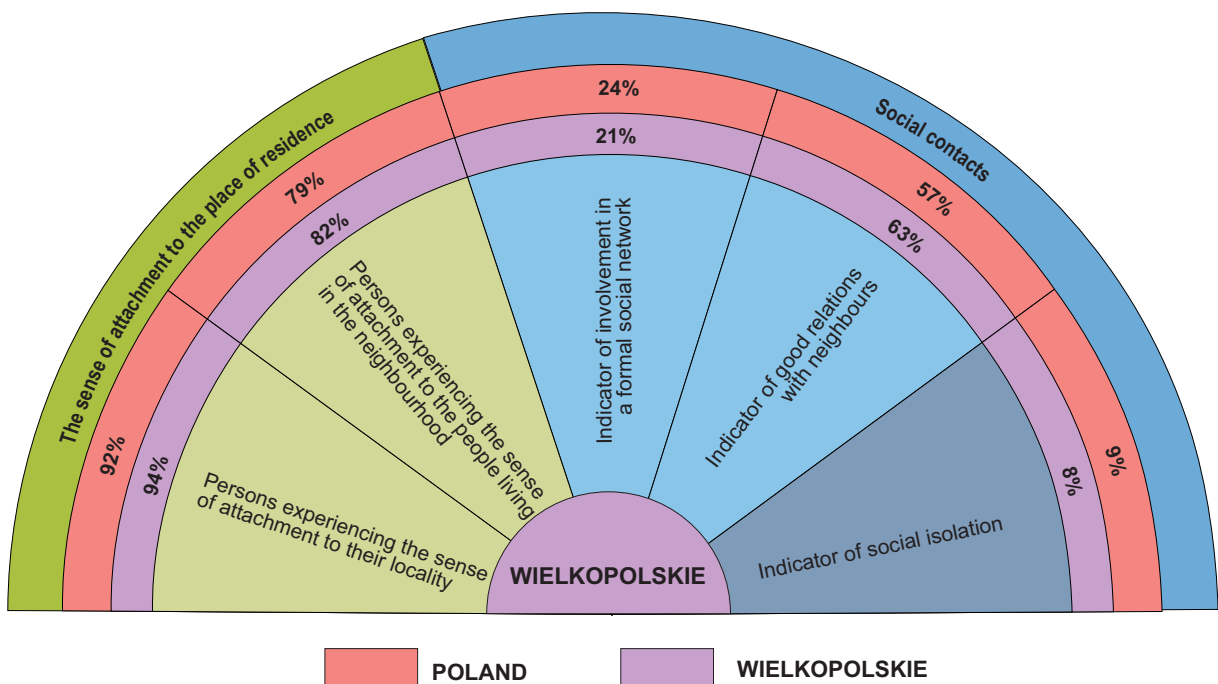


**PERSONAL SKILLS INDICATOR**  
in % of persons aged 16 or more



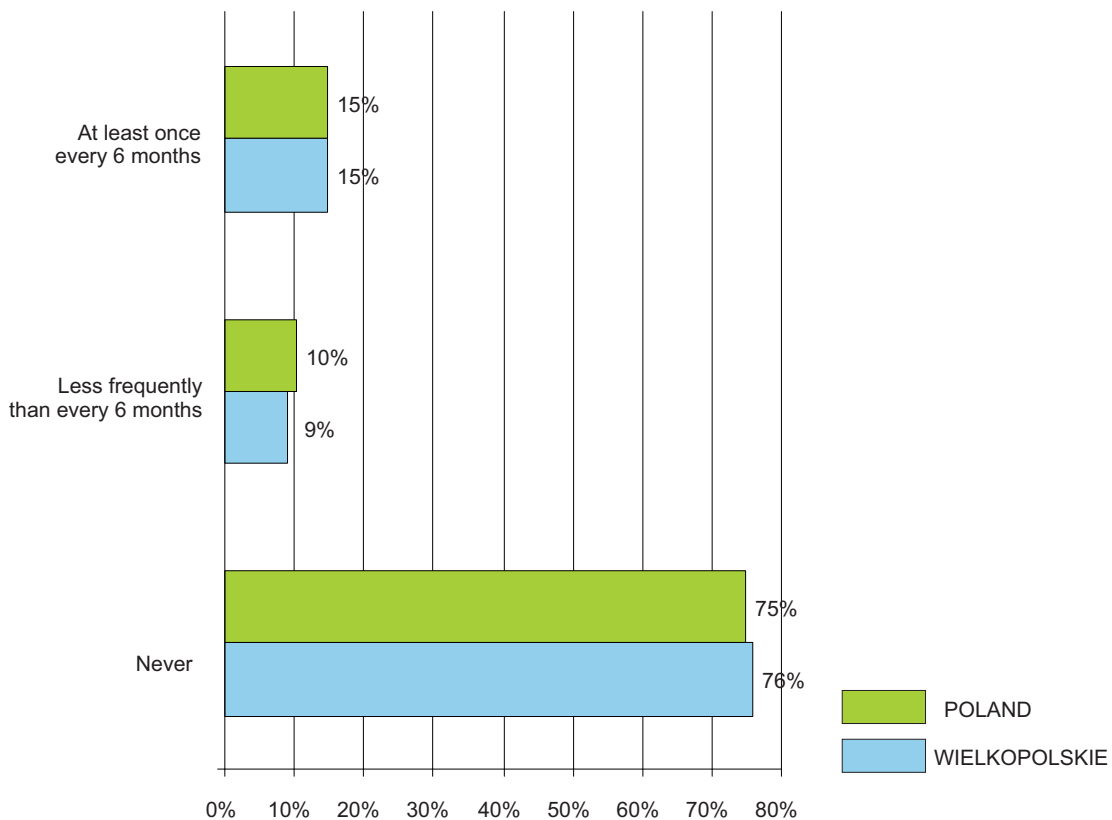
**LOCAL COMMUNITY AND SOCIAL CONTACTS**

**THE SENSE OF ATTACHMENT AND SOCIAL CONTACTS**  
in % of persons aged 16 or more



## PARTICIPATION IN EVENTS ORGANIZED IN THE PLACE OF RESIDENCE

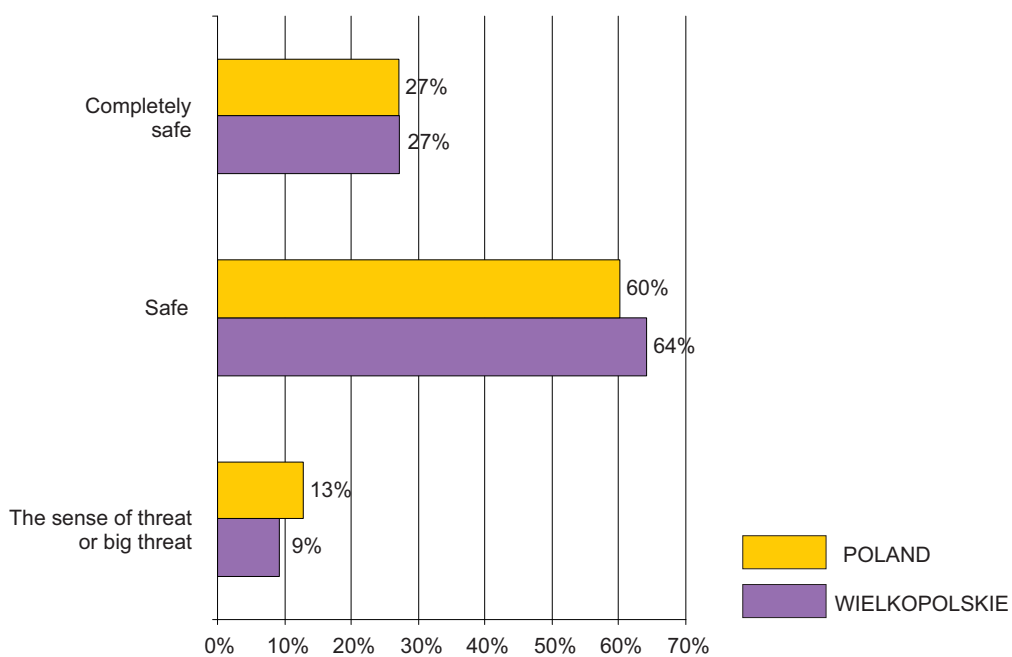
in % of persons aged 16 or more



## SENSE OF PHYSICAL SAFETY

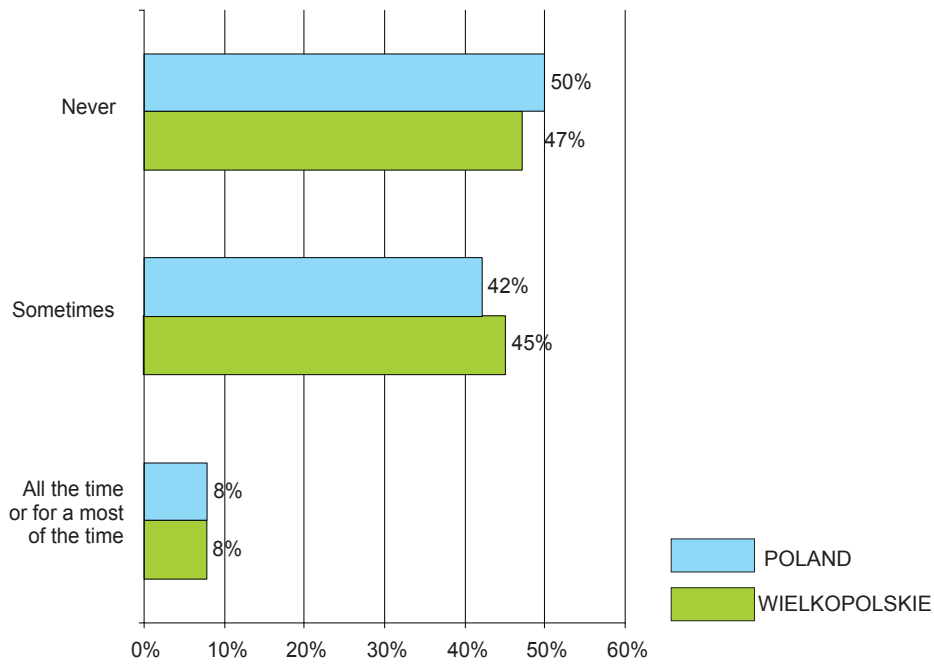
SENSE OF SAFETY IN THE CLOSEST NEIGHBOURHOOD

in % of persons aged 16 or more



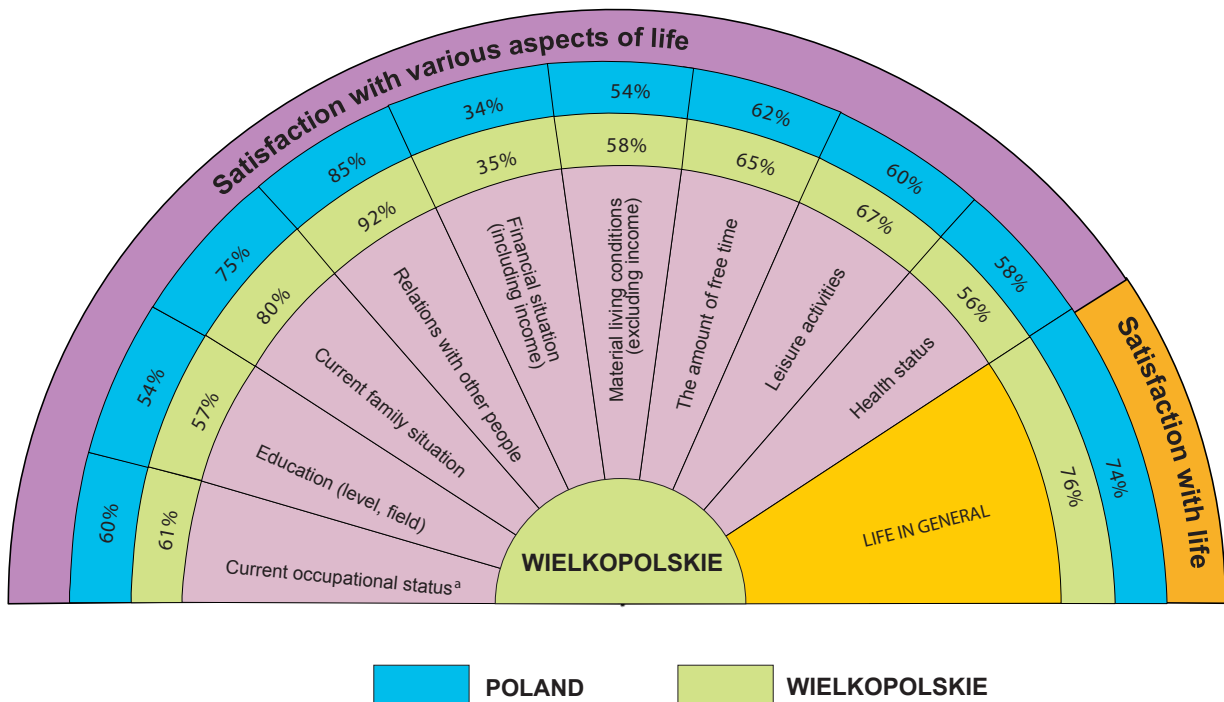


THE SENSE OF THREAT OF HOUSEBREAKING  
in % of persons aged 16 or more



**SATISFACTION WITH VARIOUS ASPECTS OF LIFE**  
(satisfied and very satisfied persons)

in % of persons aged 16 or more

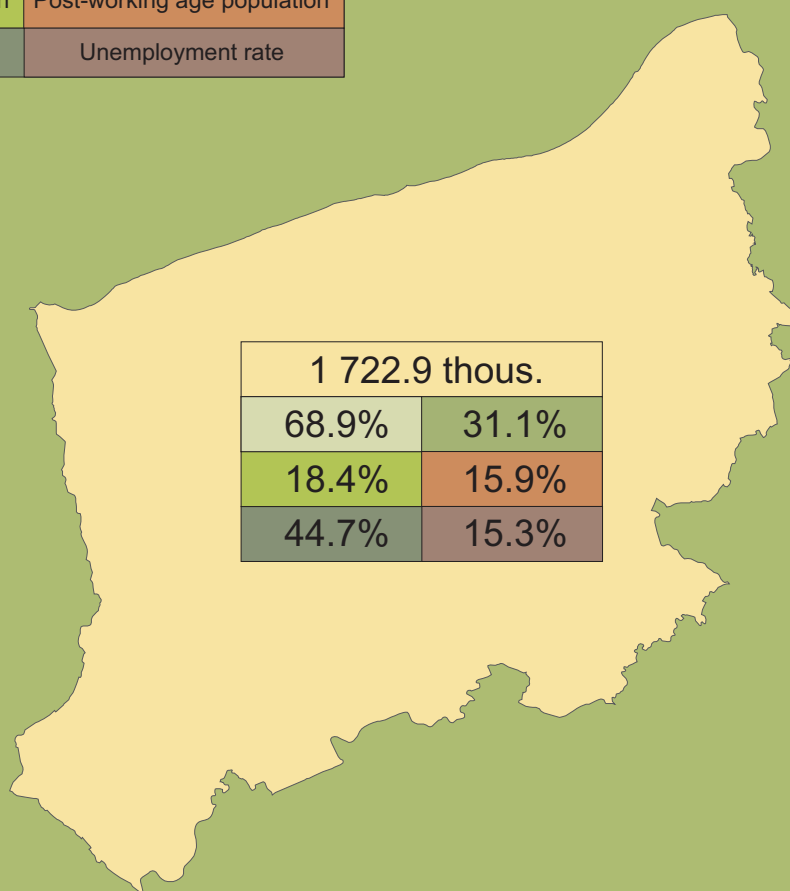


# ZACHODNIOPOMORSKIE VOIVODSHIP

POLAND	
38 511.8 thous.	
60.8%	39.2%
18.7%	16.9%
46.4%	13.0%



Total population	
Population in urban areas	Population in rural areas
Pre-working age population	Post-working age population
Employment rate	Unemployment rate

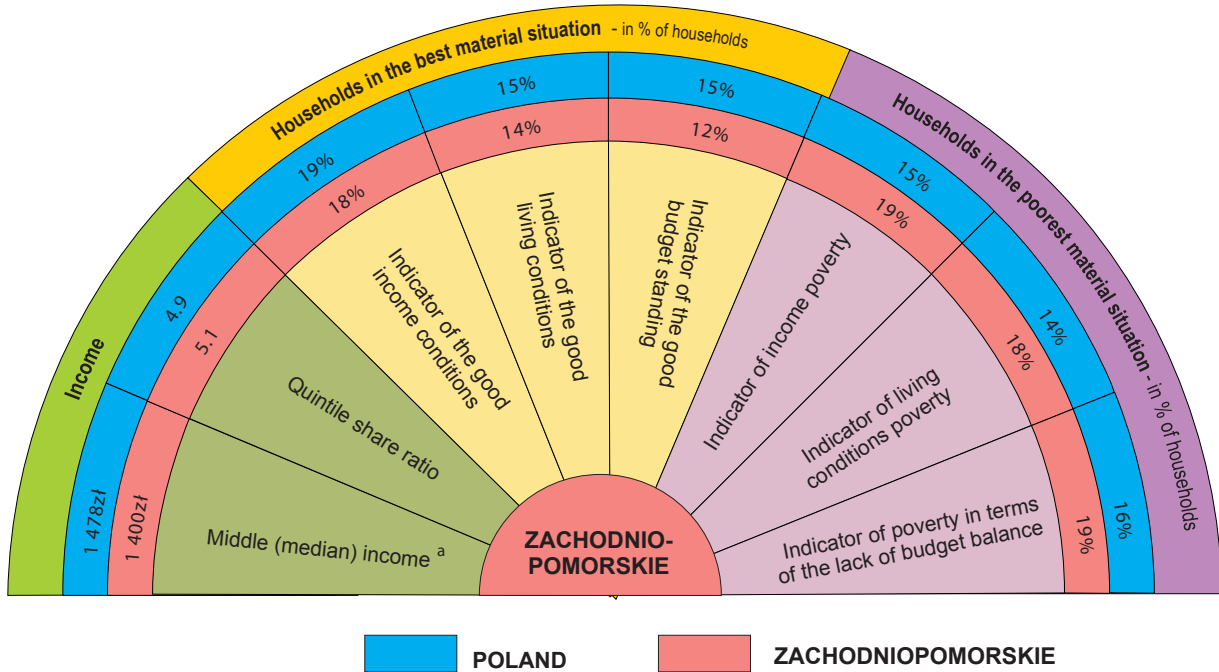


1 722.9 thous.	
68.9%	31.1%
18.4%	15.9%
44.7%	15.3%

*According to the results of the Population and Housing Census 2011 (as 31.03.2011).*

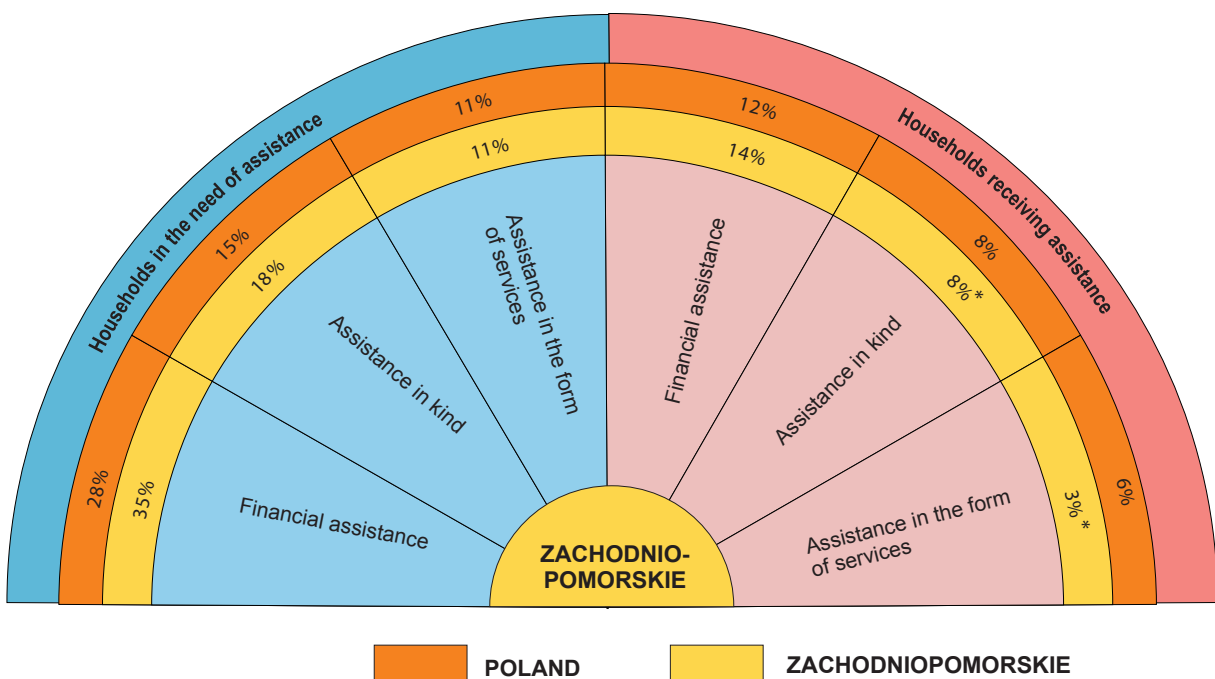
## MATERIAL SITUATION OF HOUSEHOLDS

### DIVERSIFICATION OF HOUSEHOLDS' MATERIAL SITUATION



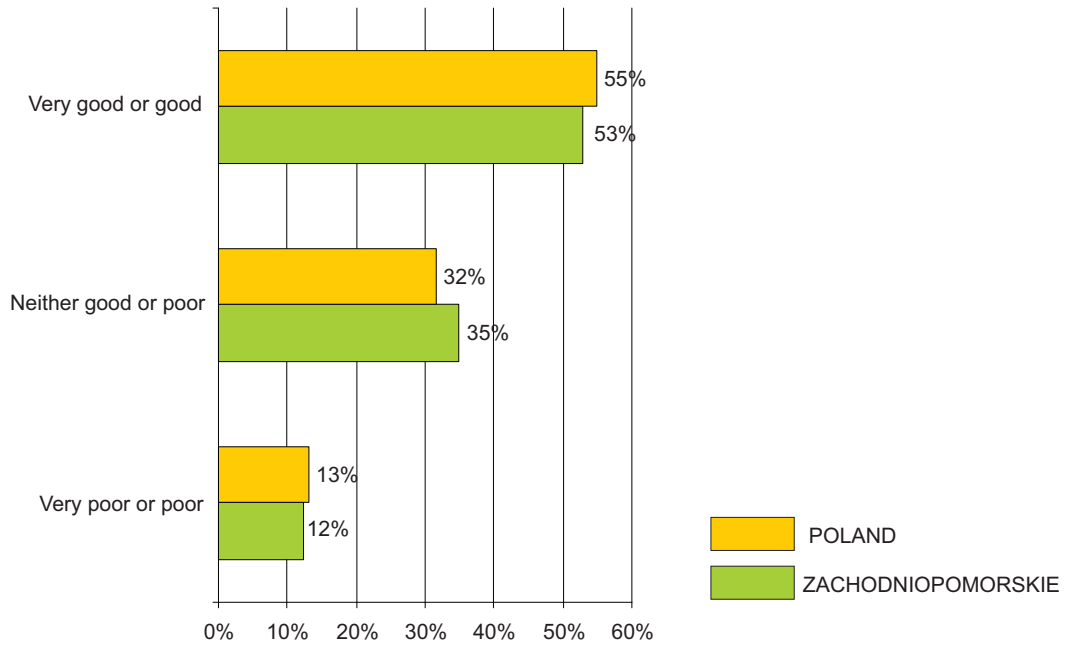
<sup>a</sup> Monthly monetary income per equivalent unit

### RECEIVING THE EXTERNAL ASSISTANCE in % of households

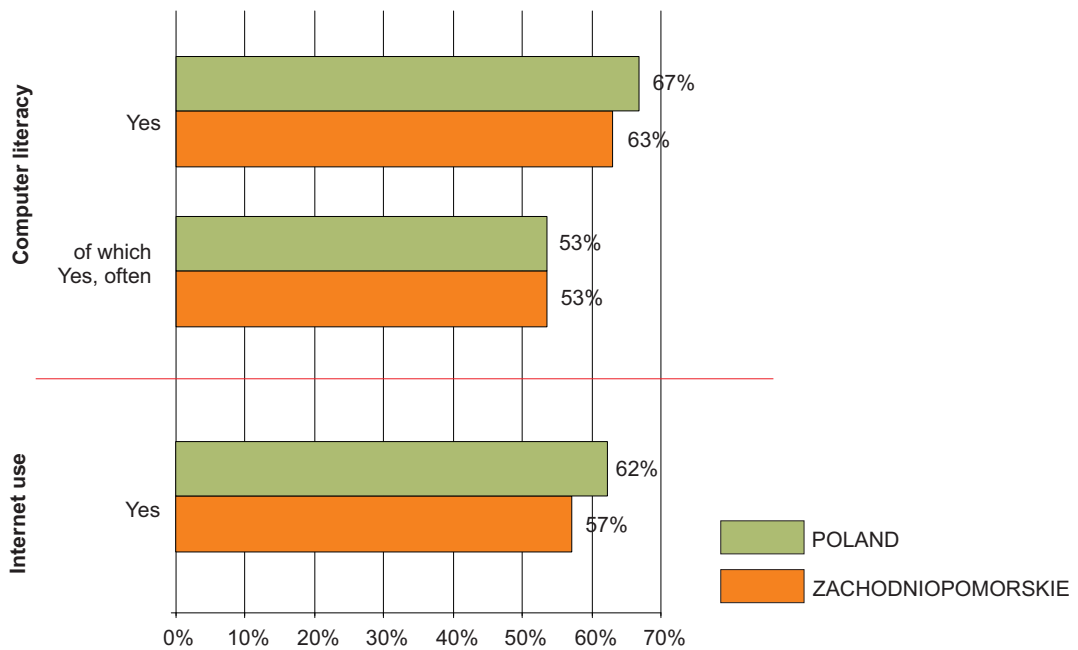


## ELEMENTS OF HUMAN CAPITAL

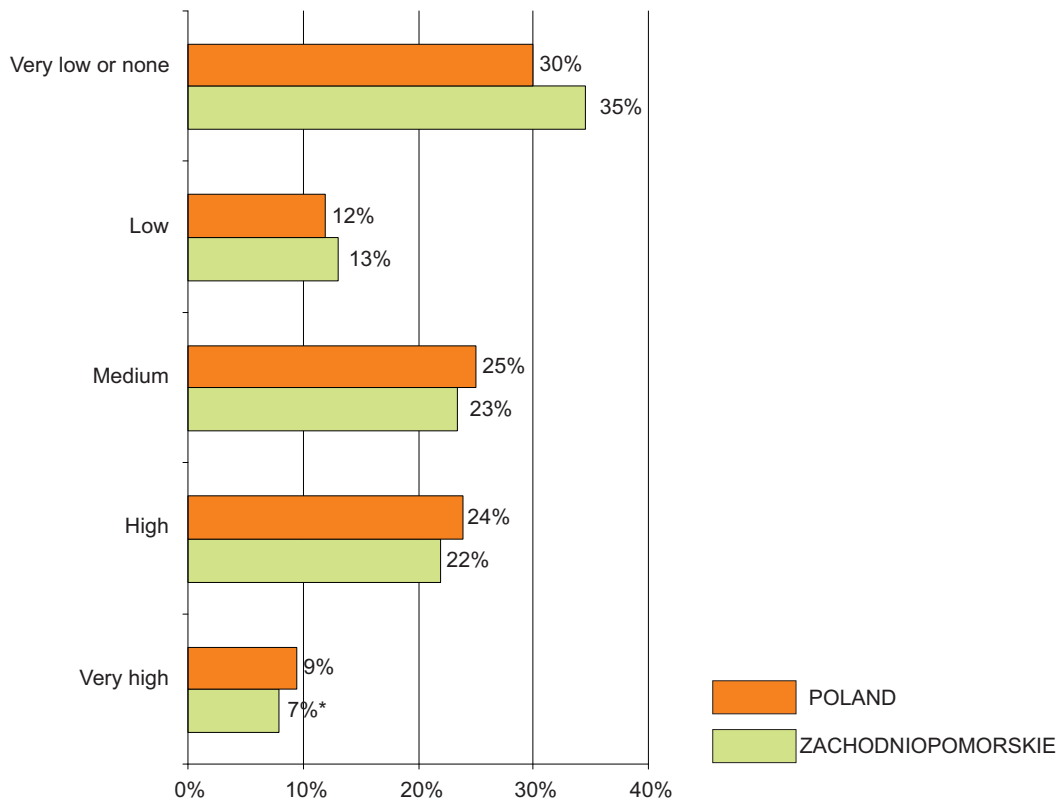
### GENERAL HEALTH ASSESSMENT in % of persons aged 16 or more



### COMPUTER LITERACY AND INTERNET USE in % of persons aged 16 or more

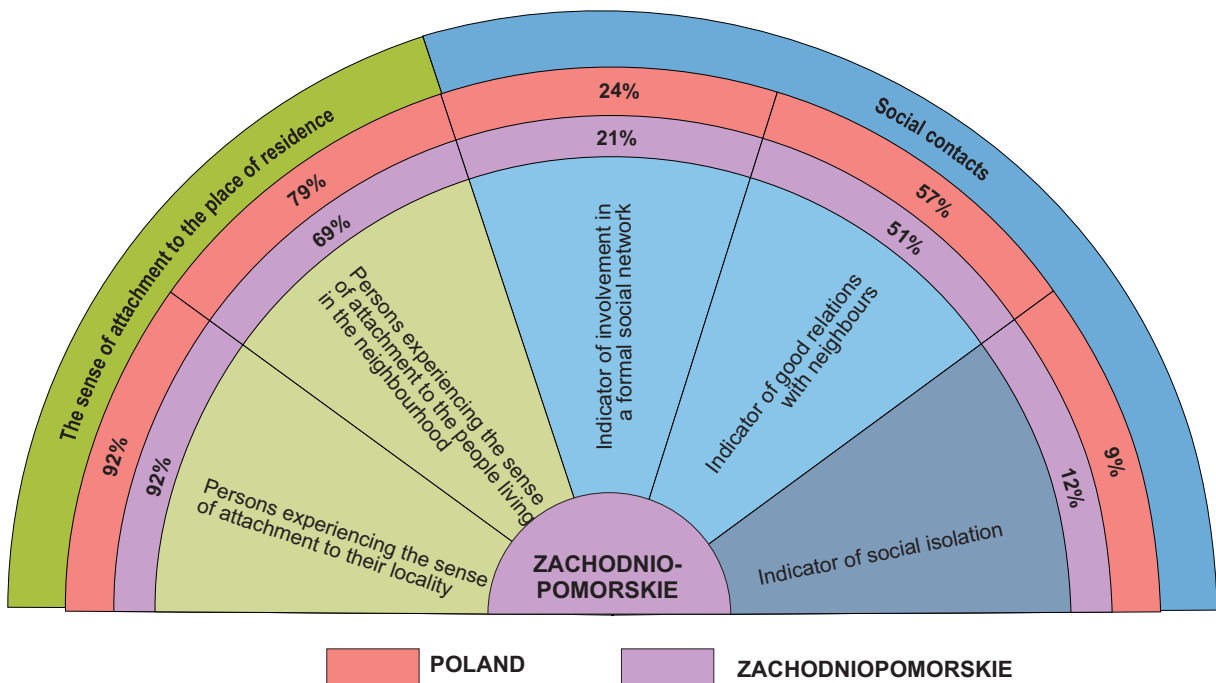


**PERSONAL SKILLS INDICATOR**  
in % of persons aged 16 or more



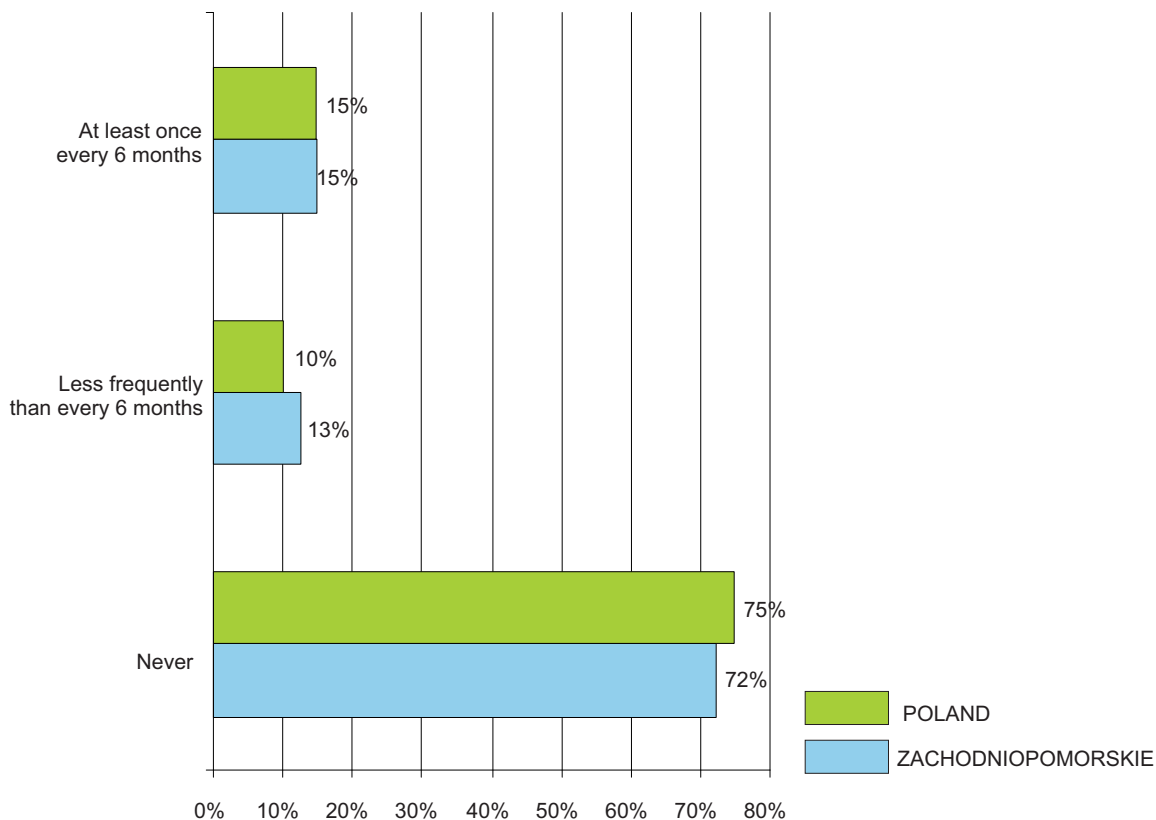
**LOCAL COMMUNITY AND SOCIAL CONTACTS**

**THE SENSE OF ATTACHMENT AND SOCIAL CONTACTS**  
in % of persons aged 16 or more



## PARTICIPATION IN EVENTS ORGANIZED IN THE PLACE OF RESIDENCE

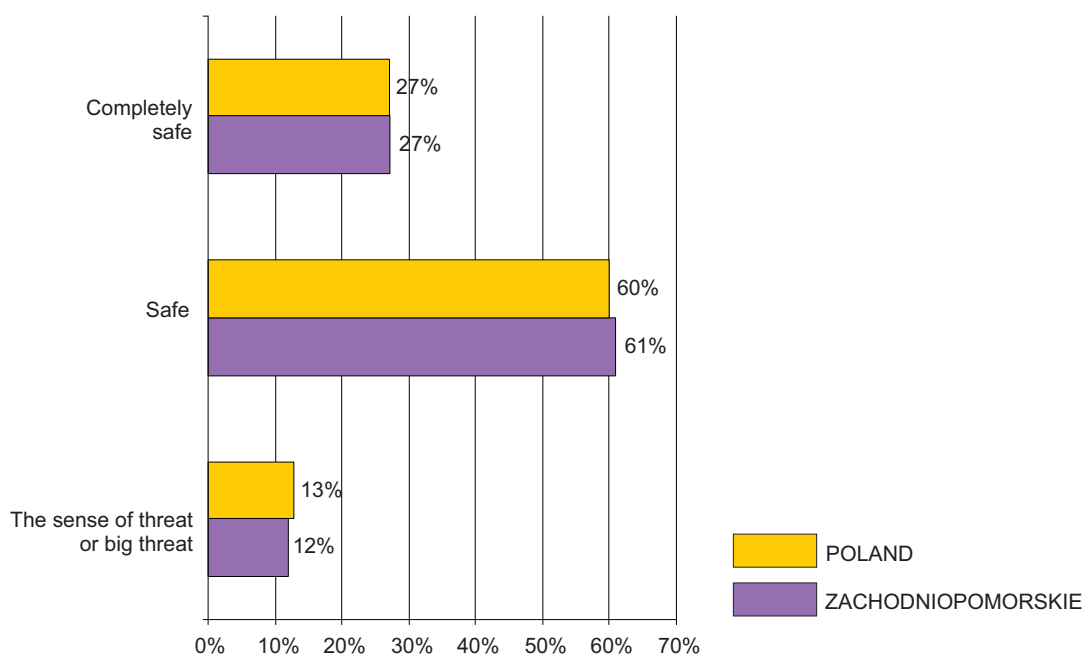
in % of persons aged 16 or more



## SENSE OF PHYSICAL SAFETY

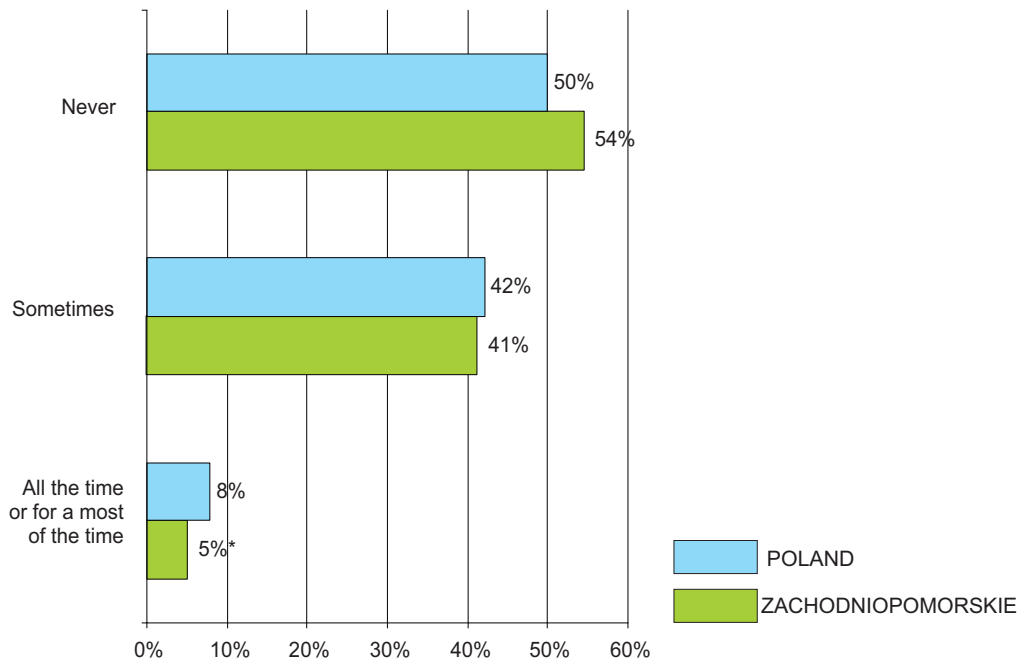
SENSE OF SAFETY IN THE CLOSEST NEIGHBOURHOOD

in % of persons aged 16 or more



THE SENSE OF THREAT OF HOUSEBREAKING

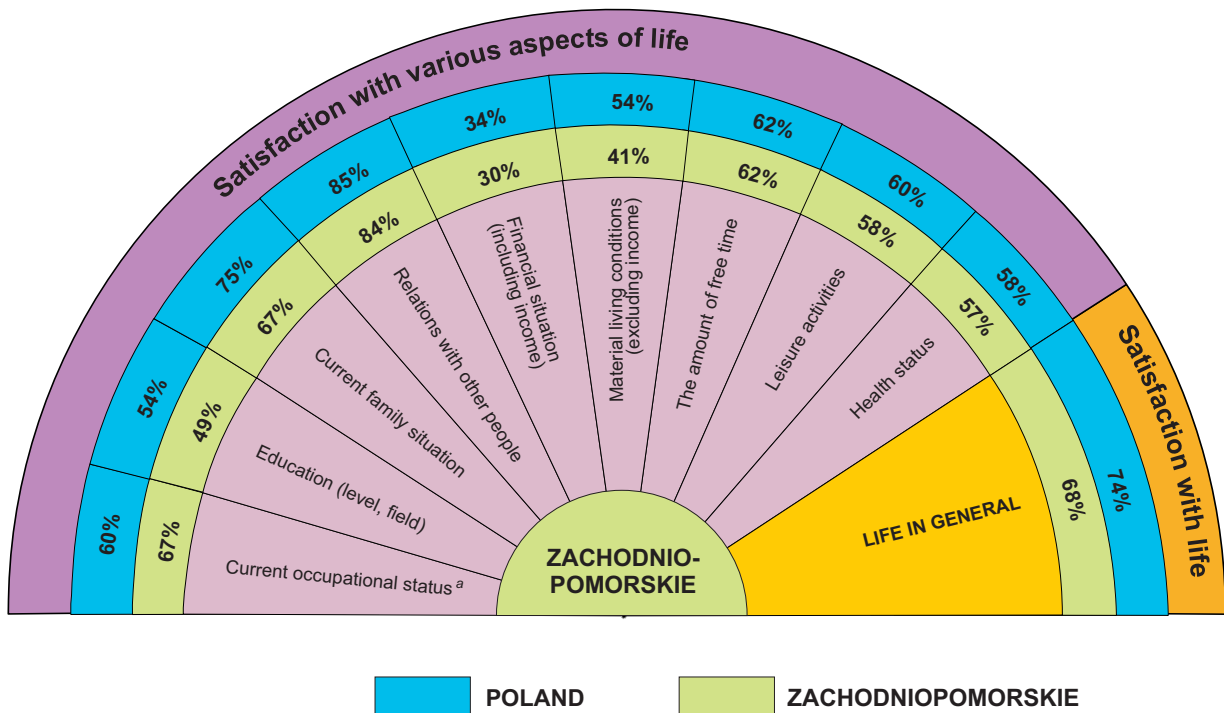
in % of persons aged 16 or more



SATISFACTION WITH VARIOUS ASPECTS OF LIFE

(satisfied and very satisfied persons)

in % of persons aged 16 or more



<sup>a</sup> Concerning working people

## 1. SURVEY ORGANISATION

### Aim of the survey

The development directions of the surveys of official statistics are based on the analysis of the information-related needs that have been expressed by various kinds of data users, taking into consideration both the national and international requirements in this field. Introducing a new multi-dimensional social cohesion survey to the Polish official statistics has provided a response to the growing demand among a wide range of recipients for data concerning the quality of life, understood as a multi-dimensional category (including both economic and social aspects) and assessed through objective and subjective indicators.

The innovative character of the survey mainly entails the ability to integrate individual data concerning the most significant aspects of the quality of life in its broad sense, as has been recommended, among others, in the Stiglitz Report<sup>1</sup>. The individual data integration allows, among other issues, for defining the society groups that exhibit the accumulation of either favourable or unfavourable aspects of the quality of life, as well as for identifying the factors determining such a situation, and the relationship between various dimensions of the quality of life. Undoubtedly, “the value added” of the survey manifests itself in the ability to perform a combined analysis of both objective and subjective aspects of the quality of life. Furthermore, it allows the determination of the degree to which the assessment of the perceived quality of life (i.e. “what people think about how they lead their lives”) is consistent with the assessments based on the so-called hard and objective data. The inclusion of such issues as the broadly-defined social relationships, family bonds, attachment to the place of residence, membership in non-profit organisations and participation in the activity of such organisations also complies with the development trends of the surveys on social capital and social integration.

The survey implementation was based on the assumption that the ability to obtain comprehensive information regarding, among others, the diversification of the quality of life, poverty, social exclusion and social capital, along with cognitive or diagnostic advantages, would also play an important practical role in the development of social policies, including the preparation of strategic documents and reports on social protection and social integration. A periodic survey implementation would also allow the monitoring of social

---

<sup>1</sup> *Report by the Commission on the Measurement of Economic Performance and Social Progress* (2009), ([www.stiglitz-sen-fitoussi.fr](http://www.stiglitz-sen-fitoussi.fr)).



development changes, including the assessment of efficiency of the measures aimed at reducing poverty, developing social integration, and strengthening both human and social capital.

### **Legal basis of the survey**

The social cohesion survey was conducted in accordance with the Regulation of the Council of Ministers of 9 November 2009 on the Surveys Programme of Official Statistics for 2011 (Journal of Laws No. 239, Item 1594). The survey questionnaires were defined in the Regulation of the Council of Ministers of 1 April 2011 (Journal of Laws No. 83, Item 453). The substantive supervision over the survey was performed by the Social Surveys and Living Conditions Department of the Central Statistical Office, in cooperation with the Living Conditions and Questionnaire Surveys Centre in the Statistical Office in Łódź.

### **Date of the survey**

The survey was conducted by the statistical offices in all voivodships in the period **from 1 February to 21 March 2011.**

### **Pilot survey**

The main survey was preceded by a pilot survey, conducted in mid-2008, in the kujawsko-pomorskie voivodship. It was completed by approx. 900 households. The aim of the pilot survey was to test the survey tools and result compilation methods that were applied later on in the main survey.

### **Survey unit**

A household and one selected household member who was older than 16 prior to 31 December 2010 were used as survey units. Households residing in collective accommodation facilities (boarding schools, employee hotels, pensioner houses, monasteries, etc.) were not included, except for the households of employees residing in such facilities because of the position held (e.g. hotel managers and administrators).

### **Questionnaires used in the survey and thematic scope**

Interviews were conducted using the following questionnaires:

- a household questionnaire (BSS-1G) comprising a set of questions devoted to the situation of the whole household,
- an individual questionnaire (BSS-1I) comprising a set of questions concerning one selected person aged 16 years or more.

The information collected at the household level concerned the socio-demographic characteristics of all household members, together with information allowing for a comprehensive assessment of the material standing, taking into account the financial situation (the sources and level

of income, savings and debts), housing conditions (including the dwelling standard and neighbourhood quality), the equipment with durable goods (including the access to information technologies), the deprivation of basic needs (e.g., in respect of food, clothing and footwear, healthcare and leisure activities), assistance received and provided, and subjective assessments of various aspects of the financial standing.

The individual questionnaire comprised questions regarding the educational level and other important skills, health (self-assessment of the general health status, and positive and negative symptoms of mental well-being), economic activity, important events in the respondent's life, the kind, frequency and quality of social contacts (contacts with family members, neighbours and friends), participation in the social life and the sense of attachment (including to the place of residence, the affiliation with an organisation, or voluntary work), leisure activities, and the subjective well-being (overall life satisfaction and satisfaction with various aspects of life).

Moreover, the social cohesion survey included an additional questionnaire aimed at evaluating survey implementation (BSS-1G-RB), completed by interviewers without the presence of respondents. The questionnaire comprised a number of questions regarding, among others, visits in the dwellings selected, and reasons for failure to conduct an interview, or forms of interviews. It was also used by interviewers to record information on households in the event of non-response or refusal, as well as information concerning the households of foreigners who did not participate in the survey. Interviewers also assessed respondents' place of residence by means of defining, among other issues, the locality type, the building type and the external surroundings. Finally, the reference questionnaire included questions regarding the quality of the interview conducted, as perceived by the interviewer.

Apart from questionnaires, respondent showcard were also employed so as to facilitate the choice of an appropriate response in the case of extended categories. Moreover, a separate card was used to collect information on the households that failed to participate in the survey (including refusals). The survey further allowed for collecting information on the households of foreigners who could not participate in the survey because they did not speak Polish, by using bilingual charts for this purpose (available in nine languages<sup>2</sup>). However, the practical use of such charts turned out marginal (in 17 cases, it was used only once).

## **Survey method**

The social cohesion survey was conducted as a sample survey. To this end, a sample of 26 999 dwellings, out of 13.3 million dwellings in total, was selected.

An interview could only be conducted with inhabitants of the dwellings sampled, and the survey covered all households residing in such dwellings. If a dwelling sampled fell beyond the survey scope (e.g., an uninhabited dwelling), or if a household refused to participate in the survey, the interviewer was not allowed to interview any other dwelling instead.

The social cohesion survey was conducted on a voluntary basis by means of a direct personal interview.

---

<sup>2</sup> English, Belarusian, Chinese, French, German, Russian, Turkish, Ukrainian and Vietnamese.

In the case of both household and individual interviews, respondents were given an opportunity to complete the questionnaire on their own (self-reporting), based on respondent instructions, designed with a view to facilitating the questionnaire completion. In this event, the interviewer was obliged to propose that the questionnaire was reviewed upon collection in the respondent's presence to verify its appropriate completion. Such a review was aimed at obtaining quality data and ensuring that no question had been omitted.

The survey did not allow the conducting of a proxy interview, i.e. an interview with some other person than the one sampled. In case the respondent with whom an individual interview was meant to be conducted was not present during the interviewer's visit in the dwelling, the latter was obliged to make another appointment in order to interview for the former.

### **Field survey conduction**

The survey was conducted by properly-trained interviewers employed in voivodship statistical offices, whose total number amounted to 1380. Each interviewer was responsible for an average of 20 questionnaires.

The first visit of an interviewer in a dwelling was preceded by a letter sent by the President of the Central Statistical Office. This specified the aim and date of the survey, and the fact that the dwelling had been sampled. The letter also included the name and surname of the interviewer, along with the telephone number and mailing address of the statistical office, which could be used by the respondent to verify the identity of both the interviewer and the institution conducting the survey. A gift received by the respondent was also helpful in establishing a contact. Respondents were also provided with an information folder devoted to social surveys conducted as part of official statistics.

Interviewers were obliged to record the interview duration. Given the wide thematic scope of the survey, the questionnaires were rather extended, as a result of which the average duration of a household interview amounted to 48 minutes, and that of an individual interview to 52 minutes.

### **Survey implementation monitoring**

The progress in the field work conduction was monitored throughout the survey. Statistical offices were obliged to submit three periodic reports fortnightly, and one final report upon completion of the surveying stage. As a result, the supervisors could be aware of progress being made in the survey conduction, and could promptly react to any delays or problems.

The ongoing reviews performed by inspectors of the first questionnaires submitted by interviewers also constituted one of the evaluation forms and good practices. This also allowed for avoiding the repetition of any possible errors, and for clarifying any related doubts.

## **Control survey**

With a view to verifying the information collected by interviewers, a control survey was conducted between the 28<sup>th</sup> of April and the 13<sup>th</sup> of May, 2011, in all voivodships, by 112 inspectors, who directly targeted the households sampled. In each voivodship, 15 dwellings were sampled by the control survey, which was, therefore, conducted in 240 dwellings countrywide. The control focused, among other issues, on confirming the interviewer's visit, verifying whether the interviewer reached the right address, and checking some of the basic information, such as the number of households in the dwelling sampled. Inspectors also gathered respondents' opinions on the interviewers' work. The control survey did not reveal any significant discrepancies and faults in the interviewers' work.

Along with the principal aim of the control survey, it also had a motivating effect on interviewers, as did the survey monitoring, hence, contributing to better efficiency and quality of field work.

## **2. INDICATORS OF SURVEY IMPLEMENTATION**

### **The level of survey implementation**

The indicators presented below concern the survey implementation statistics and should be related to the sample selected. Their value should be viewed as describing the field process of survey conduction. They are based on unweighted data, in contrast to the indicators used in the survey results generalisation process, the structure of which comprises certain generalisation-oriented elements (the conclusions are transferred into the overall population). For this reason, the indicators used to generalise the survey results, referred to in the section devoted to the sampling scheme and weights structure, are not identical to the survey implementation indicators described here, even though some terms may sound similar.

The following indicators were used to describe the efficiency and completeness of the implementation process of the social cohesion survey:

- the contact indicator,
- the level of implementation of questionnaires BSS-1G (the household questionnaire) and BSS-1I (the individual questionnaire),
- the share of refusals (concerns questionnaire BSS-1G).

Dwellings beyond the scope of the survey were ignored when determining the population for which the values of the indicators listed were calculated. Such dwellings accounted for 10.9% of all dwellings sampled, which was more frequent in rural areas than in the urban ones (14.5% and 9.4%, respectively). In this respect, considerable differences were observed between voivodships, with the share of dwellings beyond the scope of the survey ranging from 8.1% in kujawsko-pomorskie voivodship, to 15.7% in podlaskie voivodship.

The contact indicator was defined as the ratio of the number of households with which contacts were successfully established, to the number of all households residing in the dwellings sampled, less the number of households beyond the scope of the survey. The value of this indicator for the overall population amounted to 88.9%, though it was higher in rural than in the urban ones

(92.9% against 87.3%). Contacts were the most frequently established in podkarpackie voivodship (94.2%), and the least frequently in mazowieckie voivodship (84.3%).

The level of implementation of questionnaires BSS-1G or BSS-1I<sup>3</sup> was defined as the ratio of the number of questionnaires completed, to the number of all households residing in the dwellings sampled, less the number of households beyond the scope of the survey<sup>4</sup>. The level of implementation of the household questionnaire (BSS-1G) amounted in total to 60.8%, including 73.7% in rural areas and 55.6% in the urban ones. The lowest indicator value occurred in zachodniopomorskie voivodship (49.9%), and the highest in podkarpackie voivodship (70.2%). In turn, the level of implementation of the individual questionnaire (BSS-1I) amounted in total to 54.2%, including 65.3% in rural areas and 49.6% in the urban ones. The lowest percentage of individual questionnaires was recorded in dolnośląskie voivodship (40.1%), and the highest in warmińsko-mazurskie voivodship (66.5%).

The share of refusals corresponds to the ratio of the number of households refusing to participate, to the number of all households residing in the dwellings sampled, less the number of households beyond the scope of the survey. In national terms, it amounted to 25.3%. In urban areas 28.6% of households refused to participate in the survey, and in rural areas - 17.3%. The highest share of refusals was recorded in zachodniopomorskie voivodship (32.5%), and the lowest in świętokrzyskie voivodship (19.1%).

## **Causes of the failure to conduct interviews**

### *Households interviews*

Refusals were the most frequent cause of the failure to conduct household interviews (approx. 64% of non-responses), followed by the temporary absence of household members (approx. 25%) and by the inability to conduct the interview because of the respondent's illness or old age (approx. 8%). In approx. 2% of the households for which questionnaire BSS-1G was not completed, the failure stemmed from alcohol addiction or other pathologies. Other reasons concerned approx. 1% of households that did not participate in the survey, including 17 households with whom no interview could be conducted because their members did not speak Polish. Further information about the household was obtained only in one of such cases (the use of a chart for foreigners not participating in the survey).

When refusing to participate in the survey, households usually did not state any reason for doing so (approx. 31% of households refusing to respond to questionnaire BSS-1G). Nearly the same number of respondents refusing to participate in the survey referred to the lack of time (approx. 26%), or did not see any point in discussing the issues surveyed (approx. 25%). Approx. 8% of refusing respondents did not let the interviewer in, despite their obvious presence at home, and approx. 4% feared that the information given could be used for other purposes than the ones specified. Other

---

<sup>3</sup> 14 873 BSS-1G questionnaires and 13 246 BSS-1I questionnaires were completed.

<sup>4</sup> As individual interviews in households were meant to be conducted with one randomly selected person, the number of persons to be surveyed with questionnaire BSS-1I was equal to the number of households.

causes included fatigue resulting from the large number of questions (approx. 3% of refusals), negative experience drawn from participating in other questionnaire surveys (approx. 2%), and unfavourable presentation of the CSO in the media, or the lack of trust in the CSO (approx. 1%).

### *Individual interviews*

With regard to several households, household interviews were successfully conducted, contrary to individual interviews. Such a situation concerned approx. 6.6% of all households residing in the dwellings sampled and falling within the scope of the survey. Refusals were the most frequent cause of the failure to conduct individual interviews, concerning approx. 60% of all cases of failure (in which household interviews were conducted). The inability to participate in the survey because of illness or old age induced the failure to conduct individual interviews in 19.4% of all households, the respondent's absence despite the time of the interviewer's visit having been arranged affected 8.5% of non-responses; temporary absence (e.g. a long business trip, family visits or stay at hospital) affected 7.2% of non-responses, and alcohol addiction or other pathologies had an effect in 1.6%. Other causes of the failure to conduct individual interviews concerned over 3% of those households that responded to questionnaire BSS-1G, but not to questionnaire BSS-1I. This group included three respondents whose command of the Polish language was insufficient to participate in the interview.

Refusals were usually explained by referring to the lack of time (37.9% of refusals), fatigue resulting from the large number of questions (approx. 24.6%), and the fact that the respondent saw no point in discussing the issues surveyed (16.7%). Sometimes no reason was stated (15.1%). Moreover, 4.2% of respondents from the households that completed questionnaire BSS-1G, but refused to complete questionnaire BSS-1I, feared that the information provided in the individual interview could be used for other purposes than the ones stated. Other causes stated a small share of the total survey population. These included negative experience drawn from participating in other questionnaire surveys (0.7%), not letting the interviewer in despite the respondent's presence at home (0.6%), and negative press releases about the CSO, or the lack of trust in the CSO (0.2%).

### **3. DEFINITIONS**

Terms used within this survey include:

**The household** – a group of related or not related people living together and maintaining themselves jointly (multi-person households), or an individual independently maintained (a one-person household), whether residing alone or with other people. Family members residing jointly, but maintaining themselves independently, form separate households.

**The household head (also referred to as the reference person)** – a person aged 16 years or more, who earns the highest income among all the other household members.

The following sources of permanent and recurrent income were taken into account when determining the reference person: hired work, the use of an agricultural holding, own-account work outside agriculture that is for private use, property ownership, property rental, permanent social security

benefits, permanent donations from other households (including alimonies), and foreign retirement pays and pensions. In the case when two or more persons provide the same amount of sources of maintenance, the person who mainly uses those sources is considered the household head.

**The occupation** – the occupations performed by respondents in the main workplace were listed on the basis of the Classification of Occupations and Specialities for the Purpose of the Labour Market, introduced by the Regulation of the Ministry of Labour and Social Policy of 27.04.2010, in force since 1.07.2010. This reference classification was developed on the basis of the International Standard Classification of Occupations ISCO-08, adopted in December 2007 at a trilateral Meeting of Experts on Labour Statistics devoted to updating the International Standard Classification of Occupations (ISCO). Major groups of the reference classification are used as the basis for grouping persons by the occupation performed. The list of the groups is as follows:

- 1 Public authority representatives, senior officials and managers
- 2 Professionals
- 3 Technicians and associate professionals
- 4 Clerical support workers
- 5 Personal service and sales workers
- 6 Agricultural, horticultural, forestry and fishery workers
- 7 Craft and related trades workers
- 8 Plant and machine operators and assemblers
- 9 Elementary occupations
- 0 Armed forces occupations (01 Commissioned armed forces officers, 02 Non-commissioned armed forces officers, 03 Armed forces occupations, other ranks).

As regards group “0 – Armed forces occupations”, a conventional division of armed forces occupations into “civil” groups was applied, according to which commissioned armed forces officers were included in category “1”, non-commissioned armed forces officers in category “2”, and other soldiers in category “3”.

**The household type** – this classification concerns “family-type” households. The type is assigned to the entire household, determined by the family type which constitutes, or is included in, the household (in case some household members do not belong to the family). In case the household comprises several families, the family of the household head is taken into consideration.

The following aspects are taken into consideration when determining the household type:

- if the household is formed by a single person (in the case of families with children: father/mother), or by spouses (in the case of families with children: parents),
- if the household (family) includes children, and if so, how many (children must satisfy the criteria specified below),
- if the household includes other persons than the aforementioned (these may also be adult children who do not satisfy the criteria adopted, or other families).

For this purpose, children are defined as the biological and adopted children of at least one of the spouses forming the family, who have not attained the age of 24 yet, and who are not in a relationship with any other household member.

In accordance with the assumptions presented, the following types of families/households were defined:

- a single woman
- a single man
- a mother or a father with children
- a mother or a father with children and other persons
- spouses without children
- spouses with children (broken down by the number of children)
- spouses with children and other persons (broken down by the number of children)
- spouses without children, but with other persons
- other households (divided into two-, three- or other multi-person households)

Whenever the definition of the type of household contains the term “spouses”, persons living in informal relationships should also be included.

For the purpose of compiling the results of the social cohesion survey, categories related to: ***economic activity, principal source of maintenance, unemployment and disability*** were based on the respondent’s self-assessment. If necessary, the interviewers provided respondents with additional clarifications, based on the information included in the interviewer instructions.

***Economic activity*** – this classification is based on the response to the question on how the respondent mainly considers him/herself (in terms of the current status on the labour market), and what his/her principal source of maintenance is. The grouping thus includes the following categories:

- *Employees* – persons who have declared themselves to be working and who indicated income from hired work as their principal source of maintenance,
- *Own-account workers outside agriculture* – persons who have declared themselves to be working and who indicated own-account work (other than on their own farm) as their principal source of maintenance,
- *Private farmers* – persons who have declared themselves to be working and who indicated income from work on their own farm as the principal source of maintenance,
- *Unemployed persons* – persons who have declared themselves to be unemployed,
- *Students, learners* – persons who have declared themselves to be students or learners,
- *Retired persons outside agriculture* – persons who have declared themselves to be retired and who indicated a retirement pay received through the employee social security system as their principal source of maintenance,
- *Retired farmers* – persons who declared themselves to be retired and who indicated a retirement pay received through the farmer’s system as their principal source of maintenance,



- *Pensioners (on a disability pension)* – persons who have declared themselves to be permanently unable to work, and who collect, or do not collect, a disability pension,
- *Other persons inactive economically* – persons who have declared themselves to be inactive economically, and who do not belong to any of the categories mentioned.

**Household's principal source of maintenance** – for the purpose of the reference survey, household's principal source of maintenance was defined as the one which, based on the respondent's own declaration, provided the highest income within the period of 12 months preceding the survey. The following sources of maintenance are distinguished:

- *Hired work* – permanent or temporary/seasonal work, whether registered or non-registered, performed in the country or abroad,
- *Own-account work outside agriculture* – own-account work outside agriculture, whether permanent or temporary/seasonal, registered or non-registered, performed in the country or abroad,
- *Own-account work in agriculture* – own-account work on a farm, performed by the farm user, i.e. owner, co-owner, or lessee; also comprising subsidies/grants in respect of holding or using the household,
- *Retirement pay (both domestic and foreign)* – also includes bridge benefits and structural benefits,
- *Pension (both domestic and foreign)* – includes disability pensions, family pensions, training pensions and rehabilitation pensions,
- *Other social benefits* – include, among others, unemployment benefits, family benefits, scholarships, social assistance benefits, nursing benefits and compensations resulting from damage to health,
- *Other income* – includes, among others, income from property, income from capital, income from property rental, donations, alimonies from natural persons and payments from private retirement funds.

**Disability** – for the purposes of this publication, only the occurrence of disability was taken into consideration, without making a distinction into degrees and types of disability. While determining disability, both formal criteria (a disability class, a disability certificate) and biological disability were taken into account.

Persons satisfying at least one of the following conditions were considered disabled:

- holding a valid certificate confirming disability, inability to work or invalidism (a disability class),
- in their own opinion, having fully or seriously limited ability to perform the activities appropriate for their age (playing, learning, occupational activity, running a household, self-service) continuing for six months or longer, due to health problems (handicap or chronic disease).

**Equivalised income (per capita)** – this is a theoretical income per capita in the household, recalculated by means of a special scale which takes into consideration the differences in the costs

of living incurred by households with different sizes and structures (adults/children). Formally speaking, this income is not calculated per capita, but per an equivalent unit.

Income recalculation was based on the so-called OECD-modified **equivalence scale**, which takes the following values of equivalent units per household member: for the first adult – 1; for each consecutive household member aged 14 years or more – 0.5; for each child aged less than 14 – 0.3. The equivalised income is obtained by dividing the total household income by the number of equivalent units in the household.

Decile (quintile) groups were determined by ordering the population of households in terms of the equivalised income, and then dividing it into ten (five) groups so that the number of persons in each group would be similar. As a result, ten (five) decile (quintile) groups were established. The decile (quintile) groups were given consecutive numbers, starting with the group earning the lowest income. Therefore, the first decile (quintile) group comprised households with the lowest equivalised income, while the tenth (fifth), i.e. the last, group was made of households with the highest income.

**The locality class** – this refers to the place of respondent's residence, in which the respondent was surveyed. The place of respondent's residence is classified in terms of the type (urban or rural) and, in the case of urban areas, in terms of the size (measured with the population number).

While classifying a locality as urban or rural, the administrative type was taken into consideration, rather than the actual degree of urbanisation of a given area. The following locality classes are distinguished:

- cities with 500 thous. inhabitants or more (i.e. 500 000 or more),
- cities from 100 to 500 thous. inhabitants (100 000 – 499 999),
- towns from 20 to 100 thous. inhabitants (20 000 – 99 999),
- towns with less than 20 thous. inhabitants (19 999 and less),
- villages.

This publication makes use of a **conventional sign (\*)** to mark those numerical values, the accuracy of which could be uncertain. The sign was therefore used if the number of cases included in the generalisation process was lower than 50.

Whenever the publication mentions **inhabitants** (e.g. of Poland, voivodships, etc.), this refers to persons aged 16 years or more.

#### 4. SAMPLING SCHEME IN THE SOCIAL COHESION SURVEY

##### Introductory remarks

The aim of the social cohesion survey implemented in 2011 was to collect a set of data allowing for a thorough assessment of the quality of life in Poland. The information gathered concerned households, particular household members and persons aged 16 years or more, surveyed through individual interviews. The survey was meant to provide information concerning Poland and voivodships. It was assumed that the survey sample would comprise 27 000 dwellings, selected randomly using the two-stage stratified sampling scheme with diversified sampling probabilities at the first stage. This reference scheme is consistently used in virtually all household surveys as it constitutes a compromise between an attempt to reach the highest accuracy possible and the need to achieve a certain degree of respondent concentration in the field. Prior to undertaking the sampling process, the issues of sample allocation between voivodships, and the voivodship-specific stratification principles, had to be determined.

##### Sample allocation between voivodships

Considering the principal aim of the survey, i.e. the need to obtain data by voivodship, the sample allocation between voivodships should lead to application of identical sample sizes in all voivodships. The accuracy of the sample survey results depends, in particular, on the absolute sample size, whereas the relationship between the sample size and the population number of units constitutes a secondary or insignificant factor, in case the sample constitutes a small percentage of the population. Unfortunately, using identical samples for all voivodships is impossible for organisation-related reasons as it would lead to an excessive burden on interviewers in smaller voivodships. In turn, the proportionate sample allocation would not allow the obtaining of accurate results for smaller voivodships. For this reason, a compromise variant was employed, and the dwelling sample allocation between voivodships was done using the so-called square-root rule. The sample allocation process also took into account the survey completeness by locality class, based on previous experience in other household surveys. The level of survey completeness is the lowest in large urban agglomerations, i.e. in cities with 100 thous. inhabitants or more. As a result, the assumed sample of 27 thous. dwellings was divided into two parts, the first of which, comprising  $m_1 = 24$  thous. dwellings, was allocated between voivodships using the aforementioned square-root rule, i.e. according to the following formula:

$$(1) m_{1w} = m_1^* \left( \frac{\sqrt{M_w}}{\sum_w \sqrt{M_w}} \right),$$

where:

$m_{1w}$  – the size of the first part of the sample in the  $w$ -th voivodship,

$M_w$  – the population of dwellings in the  $w$ -th voivodship.

The allocation of the second part of the sample comprising  $m_2 = 3000$  dwellings is described below.

## Sampling scheme

The sample was drawn using the sampling frame established on the basis of the TERYT system, i.e. National Official Register of Territorial Division of the Country. Census areas served as first-stage sampling units while second-stage involved drawing the dwellings sample. The survey covered all households residing in the dwelling sampled, and, additionally, one randomly-selected household member aged 16 years or more.

Prior to the sampling process, the census areas were stratified by voivodship, and in voivodships - by locality class. Depending on the voivodship size and its specificity, the strata were formed by towns and cities, groups of towns and cities with similar numbers of inhabitants, as well as districts of Warsaw, Łódź, Wrocław, Kraków and Poznań. In rural areas, strata were formed by rural gminas in various sub-regions. The number of strata established in voivodships ranged from 13 in opolskie voivodship, to 56 in mazowieckie voivodship. A total of 506 strata were established, including 203 rural ones. Similar stratification method as the one adopted is used in all household surveys conducted by the CSO.

The allocation of the first dwelling sample between voivodship strata was proportionate to the estimated number of dwellings in the stratum recorded in the TERYT system, i.e.:

$$(2) m_{1wh} \approx m_{1w} * \frac{M_{wh}}{M_w}, \quad (h = 1, 2, \dots, L_w; w = 1, 2, \dots, 16)$$

where:

$m_{1wh}$  – the size of the first dwelling sample in the h-th stratum of the w-th voivodship,

$M_{wh}$  – the number of dwellings in the h-th stratum of the w-th voivodship according to the sampling scheme,

$M_w$  – the number of dwellings in the w-th voivodship according to the sampling scheme,

$L_w$  – the number of strata in the w-th voivodship.

The allocation of the second sample, where  $m_2 = 3000$ , between strata in cities with 100 thous. inhabitants or more was proportionate to the size of the first sample in these strata, i.e.:

$$(3) m_{2wh} \approx m_2 * \frac{m_{1wh}}{\sum_{w,h} m_{1wh}},$$

while the final number of dwellings sampled from the h-th stratum of the w-th voivodship amounts to:

$$(4) m_{wh} = m_{1wh} + m_{2wh},$$

where  $m_{2wh} = 0$  for rural strata and in towns with less than 100 thous. inhabitants.

In turn, the number of census areas  $n_{wh}$  sampled at first stage was calculated using the formula:

$$(5) n_{wh} = \frac{m_{wh}}{\bar{m}_{wh}},$$

where:

$\bar{m}_{wh}$  the number of dwellings sampled in a census area, determined for the h-th stratum of the w-th voivodship.

In each census area, in cities with more than 100 thous. inhabitants - three dwellings were selected, in towns from 20 to 100 thous. inhabitants - four dwellings, and in towns with up to 20 thous. inhabitants - five dwellings. In rural areas, six dwellings were selected in each area. The diversification of the number of dwellings selected from census areas, depending on the locality class, constitutes a compromise between an attempt to attain the highest accuracy and the need to achieve a certain respondent concentration in the field.

The first-stage sample was drawn independently in each stratum. The Hartley–Rao method was employed for selecting the sample. The sampling process based on this method entails a systematic selection of randomly ordered units. In each of the areas selected, 3, 4, 5 or possibly 6 dwellings, depending on the locality class, were selected by simple random sampling.

The sample selected comprised 6805 census areas and 26 999 dwellings. The allocation of the sample of census areas and dwellings between voivodships, along with the population of dwellings and the number of strata established are presented in the table below.

*Strata, dwellings and census areas by voivodship:*

Voivodship	Number of strata	Number of dwellings in:		Number of areas in the sample
		the population	the sample	
<b>POLAND</b> .....	<b>506</b>	<b>13 300 256</b>	<b>26 999</b>	<b>6805</b>
Dolnośląskie .....	35	1 058 774	1985	512
Kujawsko–pomorskie.....	25	698 435	1636	422
Lubelskie.....	29	716 625	1541	351
Lubuskie .....	19	347 523	1104	268
Łódzkie .....	32	960 369	1893	493
Małopolskie.....	35	1 068 145	1987	495
Mazowieckie .....	56	2 002 962	2856	779
Opolskie.....	13	340 916	1054	234
Podkarpackie.....	40	619 211	1391	297
Podlaskie .....	19	412 951	1215	299
Pomorskie.....	29	763 653	1714	459
Śląskie .....	51	1 710 880	2663	756
Świętokrzyskie.....	20	420 093	1185	268
Warmińsko-mazurskie .....	27	478 146	1298	311
Wielkopolskie.....	48	1 100 208	1969	475
Zachodniopomorskie .....	28	601 364	1508	386

## 5. WEIGHTS USED IN THE SOCIAL COHESION SURVEY

The social cohesion survey makes use of the following two kinds of weights:

1. household weights, which at the same time constitute weights for household members ( $waga_g = waga_{os}$ ),
2. weights for individual interviews conducted with the sampled person aged 16 years or more ( $waga_{ind}$ ).

The sampling probability of  $i$ -th dwelling ( $\pi_i$ ) constitutes the basis for weights calculation.

The weight based on sampling probability of  $i$ -th dwelling is calculated using the formula:

$$(1) waga1g_i = \frac{1}{\pi_i},$$

This weight is then adjusted to take into account the interviewer's inability to contact the dwelling (household) sampled, and refusals of the households sampled to participate in the survey.

Based on the information coming from questionnaire BSS-1G-RB, concerning the assessment of survey conduction, the dwelling (address) contact indicators were estimated for various locality classes. Similar to LFS and EU-SILC, the following locality classes are distinguished:

1. the Capital City of Warsaw,
2. cities with at least 500 thous. inhabitants, i.e. Łódź, Kraków, Poznań, Wrocław, and the tri-city of Gdańsk, Gdynia and Sopot altogether,
3. cities from 100 thous. to 500 thous. inhabitants,
4. towns from 20 thous. to 100 thous. inhabitants,
5. towns with less than 20 thous. inhabitants,
6. villages.

The contact indicators  $Ra_p$  ( $p = 1, 2, \dots, 6$ ) for the  $p$ -th locality class are calculated using the formula:

$$(2) Ra_p = \frac{SK_p}{SK_p + SN_p},$$

where:

$SK_p$  – an estimated number of dwellings contacted in the  $p$ -th locality class,

$SN_p$  – an estimated number of dwellings not contacted in the  $p$ -th locality class,

The  $SK_p$  and  $SN_p$  values are the sums of weights  $waga1g_i$  for dwellings, for which the value of variable M04<sup>5</sup> amounts to 1 for dwellings contacted, or to 3 or 4 for dwellings not contacted<sup>6</sup>. The  $Ra_p$  calculations did not include dwellings which did not fall within the scope of the survey, i.e. unoccupied dwellings, secondary dwellings, fictitious dwellings, dwellings converted into non-residential buildings, etc., i.e. M04 = 2, 5, 7, 8, 9. The  $Ra_p$  values for Poland, and both the minimum and maximum values for voivodships are presented in the table below.

<sup>5</sup> The variable indicates whether a contact with the household residing in the dwelling sampled was successfully established or not, and in the latter case, the causes for failure are given.

<sup>6</sup> In the case that two households reside at the same address, where M04 = 1 for one household and M04 = 3 for the other, it has been assumed that we are dealing with two dwellings located at the same address. 43 such cases were recorded.

### Contact indicators

Locality class	Ra values		
	Poland	Voivodship minimum	Voivodship maximum
In total	0.890	0.850	0.942
1	0.779	-	-
2	0.837	0.806	0.871
3	0.881	0.814	0.918
4	0.900	0.830	0.947
5	0.895	0.838	0.954
6	0.927	0.839	0.969

The next step in weights calculation entailed estimating response indicators  $Rg_p$  for the locality classes in individual voivodships. These indicators are estimated using  $waga1g_i$  weights according to the formula:

$$(3) Rg_p = \frac{Z_p}{Z_p + N_p},$$

where:

$Z_p$  – an estimated number of households participating in the interview (variable M05<sup>7</sup> = 1),

$N_p$  – an estimated number of households not participating in the interview (variable M05 = 2, 3).

The  $Z_p$  and  $N_p$  values were calculated as the sum of  $waga1g_i$  weights for the relevant households.

The table below features the values of those indicators.

### Response indicators

Locality class	Rg values		
	Poland	Voivodship minimum	Voivodship maximum
In total	0.690	0.596	0.771
1	0.520	-	-
2	0.528	0.444	0.610
3	0.650	0.479	0.714
4	0.682	0.507	0.805
5	0.707	0.613	0.821
6	0.791	0.703	0.850

The next step involved calculating the completeness indicator by locality class in voivodships as a product of the above indicators:

$$(4) R_p = Ra_p * Rg_p,$$

<sup>7</sup> The variable provides information about the completion status of the household questionnaire (the interview was conducted, started but interrupted, or not conducted at all).

The values of these indicators are shown in the table below:

*Completeness indicators*

Locality class	R values		
	Poland	Voivodship minimum	Voivodship maximum
In total	0.614	0.505	0.708
1	0.405	-	-
2	0.442	0.358	0.515
3	0.572	0.395	0.629
4	0.614	0.460	0.723
5	0.633	0.539	0.752
6	0.734	0.637	0.808

Having calculated the  $R_p$  indicators,  $waga2g_i$  weights were calculated for each household, using the formula:

$$(5) waga2g_i = \frac{waga1g_i}{R_p},$$

The weights calculated according to formula (5) are household weights and weights for household members, taking into consideration the survey completeness level by voivodship and locality class. Due to non-response, and for other reasons, the household structured by the number of household members, and the population structure by sex and age group, estimated on the basis of the sample, may differ from the appropriate population structures. As a result, household weights and weights for household members were also calculated by applying an integrated calibration method in the hyperbolic sinus version, which ensured the compliance of the reference structures. To this end, use was made of the information coming from demographic estimations and the National Census 2002, regarding the household number by the number of household members (one-, two-, three-, four-, five- and more-person households), and the population number by sex and age group (below 7 years, 7 – 15 years, 16 – 18, thirteen subsequent five-year age groups, and the group of 80 years or more) in individual voivodships, divided into urban and rural areas. As a result, integrated weights were obtained for households ( $waga_g$ ) and for household members ( $waga_os$ ), with the following equation applicable to the  $i$ -th household:

$$(6) waga_g_i = waga_os_i,$$

Then,  $waga_ind$  weights were calculated for persons aged 16 years or more, who participated in the individual interview. The weight for a person from the  $i$ -th household is calculated in the following way:

$$(7) waga\_ind_i = waga\_os_i * l_i,$$

where:

$l_i$  – the number of persons aged 16 years or more in the  $i$ -th household.

Additionally, the  $waga_ind$  weight was adjusted through an ex post stratification in terms of sex and age group population data, divided into urban and rural areas.



## 6. ACCURACY ASSESSMENT METHODS

The estimation of sampling errors for the indicators estimated in the social cohesion survey was based on the multiple sub-sample selection method. The bootstrap method<sup>8</sup> variant was applied, in which a multiple (several hundred times) selection with replacement of the sub-samples of  $n_h - 1$  among  $n_h$  first-stage units sampled in the  $h$ -th stratum was performed independently in each stratum. While estimating the results accuracy,  $B=500$  repetitions were made. Having sampled first-stage units to the bootstrap sub-sample, the relevant second-stage units sampled (i.e. dwellings, together with their inhabitants) are transferred, and the following modified weights are determined:

$$(8) \quad w_j(b) = w_j \frac{n_h}{n_h - 1} m_j(b),$$

where:

$w_j(b)$  – the weight for a person from the  $j$ -th household in the  $b$ -th bootstrap sub-sample,

$w_j$  – the original weight for a person from the  $j$ -th household,

$m_j(b)$  – the multiplicity of selecting a first-stage unit comprising the  $j$ -th household to the  $b$ -th sub-sample ( $b=1,2,\dots,B$ ).

For a given bootstrap sub-sample, the parameter of interest  $t$  is estimated using modified weights, thus receiving the  $\hat{t}_b^*$  value. Having performed the  $B$  iterations, the estimation of the variance of the analysed parameter estimator  $\hat{t}$  takes the form:

$$(9) \quad \hat{V}(\hat{t}) = \frac{1}{B-1} \sum_{b=1}^B (\hat{t}_b^* - \hat{t})^2.$$

The estimation of the standard (absolute) error for the estimated value  $\hat{t}$  is equal to the square root of the variance estimate obtained, i.e.:

$$(10) \quad SE(\hat{t}) = \sqrt{\hat{V}(\hat{t})}$$

Moreover, relative errors (coefficients of variation) were determined for the estimated indicators using the formula:

$$(11) \quad CV(\hat{t}) = \frac{SE(\hat{t})}{\hat{t}}.$$

The accuracy indicators can be used to determine the confidence intervals which comprise, with a certain probability (referred to as the confidence level, e.g., 95%), the actual value of the parameter estimated. For instance, for the confidence level of 95%, the bounds of such a range take the form:  $\hat{t} \pm 1.96 * SE(\hat{t})$ .

All calculations were done in the SAS system.

<sup>8</sup> Särndal C.E., Swensson B., Wretman J. *Model Assisted Survey Sampling*, Springer Verlag, 1991. pp. 442-444.

Table The accuracy measures for selected indicators by locality class

SPECIFICATION a – indicator (feature) value s – absolute error v – relative error (in %)	In total	Urban areas by the number of inhabitants					Rural areas	
		In total	500 thous. inhabitants or more	from 100 to 500 thous. inhabitants	from 20 to 100 thous. inhabitants	below 20 thous. inhabitants		
<b>HOUSEHOLDS</b>								
Indicator of income poverty	a	15.1	10.7	5.2	9.8	11.9	16.8	23.7
	s	0.3	0.3	0.6	0.5	0.7	1.0	0.7
	v	2.2	3.2	10.8	5.6	5.7	6.1	3.1
Indicator of living conditions poverty	a	13.5	11.5	9.3	10.8	12.1	14.0	17.7
	s	0.3	0.4	0.8	0.6	0.7	1.0	0.7
	v	2.4	3.2	8.2	5.7	5.9	7.2	3.8
Indicator of poverty in terms of the lack of budget balance	a	15.9	15.7	12.9	15.2	17.5	16.7	16.4
	s	0.3	0.4	0.9	0.7	0.8	1.0	0.6
	v	2.1	2.6	7.0	4.9	4.5	6.1	3.7
Total poverty indicator	a	4.6	3.8	2.5	3.6	3.9	5.7	6.0
	s	0.2	0.2	0.4	0.4	0.4	0.6	0.4
	v	4.3	5.7	16.1	10.2	10.4	11.0	6.8
Indicator of good income condition	a	18.8	23.5	38.5	24.9	17.7	13.0	9.6
	s	0.4	0.5	1.4	0.9	0.8	0.9	0.5
	v	2.0	2.1	3.6	3.4	4.5	7.1	5.4
Indicator of good living conditions	a	14.8	15.9	15.6	16.6	15.7	15.3	12.7
	s	0.4	0.4	1.0	0.8	0.9	0.9	0.6
	v	2.4	2.8	6.6	4.6	5.4	6.0	4.6
Indicator of good budget standing	a	14.6	16.4	22.2	17.1	14.1	12.5	10.8
	s	0.4	0.5	1.1	0.8	0.8	1.0	0.6
	v	2.4	2.8	5.1	4.5	5.4	7.6	5.4
Share of households receiving financial assistance	a	12.2	12.5	13.8	12.3	12.5	11.5	11.6
	s	0.3	0.4	0.9	0.7	0.8	0.9	0.6
	v	2.6	3.2	6.3	5.5	6.1	8.0	4.8
Share of households receiving assistance in kind	a	7.5	6.6	7.2	6.1	6.7	6.4	9.4
	s	0.3	0.3	0.7	0.5	0.5	0.7	0.5
	v	3.3	4.5	9.2	7.9	7.6	10.7	5.4
Share of households receiving assistance in the form of services	a	6.0	5.6	6.2	4.6	6.4	5.2	6.6
	s	0.2	0.3	0.7	0.4	0.5	0.6	0.5
	v	4.1	4.6	11.1	8.2	8.2	11.8	7.3

Table The accuracy precision for selected indicators by locality class (cont.)

SPECIFICATION a – indicator (feature) value s – absolute error v – relative error (in %)	In total	Urban areas by the number of inhabitants					Rural areas	
		in total	500 thous. inhabitants or more	from 100 to 500 thous. inhabitants	from 20 to 100 thous. inhabitants	below 20 thous. inhabitants		
<b>PERSONS AGED 16 YEARS OR MORE</b>								
Indicator of social isolation	a	8.9	10.0	9.2	10.8	10.6	8.6	7.1
	s	0.3	0.5	1.0	0.8	0.9	1.1	0.5
	v	3.8	4.5	10.6	7.6	8.0	12.6	6.6
Indicator of social exclusion (with at least one poverty form)	a	3.9	4.0	2.9	3.9	5.0	3.8	3.8
	s	0.2	0.3	0.5	0.4	0.6	0.8	0.4
	v	6.0	7.6	17.0	11.0	12.7	20.8	9.5
Indicator of poor mental condition	a	5.2	5.5	5.8	5.6	5.6	5.2	4.5
	s	0.3	0.3	0.8	0.5	0.6	0.9	0.4
	v	5.1	5.9	13.3	8.9	10.1	16.3	9.4
Indicator of the sense of happiness	a	58.0	57.6	56.2	56.0	58.8	59.0	58.6
	s	0.6	0.7	1.6	1.2	1.2	1.6	1.1
	v	1.0	1.2	2.8	2.1	2.0	2.8	1.9
Indicator of overall life satisfaction	a	74.0	74.3	77.0	74.7	72.4	74.1	73.6
	s	0.5	0.6	1.4	1.0	1.3	1.5	0.9
	v	0.7	0.9	1.8	1.4	1.7	2.0	1.2
Indicator of satisfaction with the current occupational status	a	60.4	62.7	64.6	62.1	61.7	63.2	56.5
	s	0.9	1.1	2.1	1.7	2.0	2.4	1.5
	v	1.5	1.7	3.2	2.7	3.2	3.9	2.6
Indicator of satisfaction with the current educational level	a	54.1	57.4	61.2	58.2	57.0	53.2	48.9
	s	0.6	0.8	1.7	1.2	1.4	1.7	1.1
	v	1.1	1.3	2.7	2.0	2.4	3.2	2.2
Indicator of satisfaction with the family situation	a	74.8	75.0	77.4	74.9	74.7	73.5	74.4
	s	0.5	0.6	1.2	1.1	1.1	1.6	0.9
	v	0.7	0.8	1.6	1.5	1.5	2.1	1.2

Table The accuracy precision for selected indicators by locality class (cont.)

SPECIFICATION a – indicator (feature) value s – absolute error v – relative error (in %)	In total	Urban areas by the number of inhabitants					Rural areas	
		in total	500 thous. inhabitants or more	from 100 to 500 thous. inhabitants	from 20 to 100 thous. inhabitants	below 20 thous. inhabitants		
<b>PERSONS AGED 16 YEARS OR MORE</b>								
Indicator of satisfaction with interpersonal relations	a	84.9	84.9	84.6	84.5	85.1	85.2	85.1
	s	0.4	0.5	1.1	0.9	1.0	1.1	0.8
	v	0.5	0.6	1.3	1.0	1.1	1.3	0.9
Indicator of satisfaction with the current financial situation	a	34.2	35.8	39.2	37.6	34.1	32.9	31.4
	s	0.6	0.6	1.5	1.2	1.3	1.5	1.1
	v	1.7	1.8	3.8	3.2	3.8	4.5	3.4
Indicator of satisfaction with financial living conditions	a	54.3	55.3	59.2	56.0	53.5	53.5	52.6
	s	0.6	0.7	1.5	1.3	1.3	1.8	1.0
	v	1.1	1.3	2.6	2.4	2.5	3.4	2.0
Indicator of satisfaction with health status	a	58.1	58.4	59.1	57.8	58.1	59.1	57.7
	s	0.6	0.7	1.6	1.2	1.4	1.6	1.0
	v	1.0	1.2	2.7	2.1	2.3	2.7	1.8
Share of persons attached to their place of residence	a	92.0	91.3	90.0	90.9	91.6	92.7	93.2
	s	0.3	0.4	0.9	0.6	0.7	0.9	0.5
	v	0.3	0.4	1.0	0.7	0.8	1.0	0.6
Share of persons attached to the people living in the neighbourhood	a	78.7	73.0	62.7	68.3	76.9	83.1	87.8
	s	0.5	0.6	1.6	1.1	1.1	1.3	0.7
	v	0.6	0.9	2.5	1.6	1.5	1.6	0.8
Share of persons feeling secure at night in their place of residence	a	87.1	82.5	80.8	77.3	82.4	91.3	94.5
	s	0.4	0.5	1.2	1.0	1.1	0.8	0.5
	v	0.5	0.7	1.5	1.3	1.3	0.9	0.5

Table The accuracy precision for selected indicators by voivodship

No.	SPECIFICATION a – indicator (feature) value s – absolute error v – relative error (in %)		In total	Voivod					
				dolnośląskie	kujawsko- pomorskie	lubelskie	lubuskie	łódzkie	małopolskie
									HOUSE
1	Indicator of income poverty	a	15.1	11.4	16.8	23.5	15.1	13.1	17.7
		s	0.3	1.2	1.5	1.7	1.7	1.2	1.2
		v	2.2	10.9	8.9	7.0	11.0	9.1	7.0
2	Indicator of living conditions poverty	a	13.5	14.0	13.8	16.0	14.7	16.8	12.4
		s	0.3	1.3	1.5	1.5	1.5	1.4	1.2
		v	2.4	9.1	11.0	9.5	10.4	8.5	9.6
3	Indicator of poverty in terms of the lack of budget balance	a	15.9	17.7	16.1	15.2	18.8	18.5	15.6
		s	0.3	1.4	1.4	1.4	2.0	1.4	1.3
		v	2.1	7.7	9.0	9.0	10.5	7.7	8.6
4	Total poverty indicator	a	4.6	4.6	4.6	5.6	5.6	3.8	4.6
		s	0.2	0.8	0.8	1.0	1.1	0.6	0.7
		v	4.3	17.4	16.4	17.0	19.1	16.6	15.2
5	Indicator of good income condition	a	18.8	19.5	17.1	11.7	14.3	17.8	16.2
		s	0.4	1.3	1.3	1.2	1.6	1.3	1.4
		v	2.0	6.8	7.8	10.2	11.2	7.5	8.7
6	Indicator of good living conditions	a	14.8	13.7	18.4	11.1	11.3	12.5	12.1
		s	0.4	1.3	1.6	1.2	1.6	1.1	1.2
		v	2.4	9.7	8.9	10.4	14.3	8.5	9.8
7.	Indicator of good budget standing	a	14.6	16.1	13.6	13.1	10.8	13.2	12.7
		s	0.4	1.3	1.3	1.4	1.3	1.1	1.3
		v	2.4	8.3	9.7	11.0	12.3	8.5	9.8
8	Share of households receiving financial assistance	a	12.2	14.2	13.9	14.8	12.9	11.6	13.4
		s	0.3	1.4	1.4	1.5	1.6	1.1	1.2
		v	2.6	9.6	9.7	10.1	12.3	9.0	9.0
9	Share of households receiving assistance in kind	a	7.5	7.0	7.6	10.8	8.1	7.6	9.5
		s	0.3	0.9	1.0	1.2	1.3	0.8	1.1
		v	3.3	12.7	12.8	11.0	15.9	10.8	11.3
10	Share of households receiving assistance in the form of services	a	6.0	4.7	4.2	11.9	5.9	7.3	5.3
		s	0.2	0.9	0.8	1.3	1.0	0.9	0.8
		v	4.1	19.9	18.6	10.9	16.8	12.7	14.8

ships										No.
mazowieckie	opolskie	podkarpackie	podlaskie	pomorskie	śląskie	świętokrzyskie	warmińsko -mazurskie	wielkopolskie	zachodnio- pomorskie	
HOLDS										
12.2	17.2	19.7	19.9	14.1	11.8	19.5	15.5	13.3	18.5	1
0.9	2.1	1.6	1.9	1.4	0.9	1.8	1.7	1.4	1.6	
7.6	12.4	8.3	9.6	9.7	7.7	9.4	10.7	10.7	8.9	
13.8	10.0	13.5	9.1	12.4	11.0	18.8	19.6	9.3	17.9	2
1.1	1.7	1.3	1.5	1.5	0.9	1.8	1.6	1.1	1.6	
8.1	16.7	9.6	16.7	12.1	8.5	9.6	8.0	11.4	9.2	
15.0	12.2	11.9	11.2	18.0	13.9	15.7	23.2	15.4	18.6	3
1.1	1.8	1.3	1.4	1.5	0.9	1.7	1.7	1.4	1.8	
7.1	14.4	10.5	12.0	8.6	6.8	10.5	7.3	8.9	9.6	
5.0	4.3	3.7	3.4	4.6	3.3	5.6	7.5	3.6	6.1	4
0.7	1.3	0.7	0.8	0.9	0.5	1.1	1.2	0.7	1.1	
13.3	29.7	18.9	22.0	18.8	13.9	20.1	15.5	19.9	17.8	
28.4	15.2	10.2	15.5	21.0	20.0	12.1	16.2	19.9	17.7	5
1.3	1.7	1.2	1.6	1.6	1.1	1.4	1.5	1.5	1.8	
4.6	11.2	11.6	10.5	7.8	5.3	11.8	9.5	7.7	10.0	
16.2	19.6	17.0	17.4	14.6	14.1	11.7	11.8	19.9	14.2	6
1.1	2.3	1.6	2.0	1.5	1.0	1.4	1.6	1.6	1.7	
6.6	11.5	9.4	11.2	10.2	7.3	11.8	13.1	7.8	11.9	
18.2	15.1	12.2	15.4	15.2	15.5	15.3	13.4	12.9	11.7	7
1.2	1.8	1.5	1.8	1.4	1.0	1.6	1.5	1.3	1.5	
6.4	12.2	11.9	11.9	9.3	6.6	10.3	11.2	9.7	13.0	
12.5	14.4	9.4	13.3	11.7	9.1	10.4	15.8	10.2	14.0	8
0.9	1.9	1.2	1.7	1.4	0.8	1.3	1.6	1.1	1.7	
7.3	13.5	12.9	12.6	11.7	8.5	12.9	10.1	11.2	12.0	
7.3	7.9	9.2	9.7	6.8	5.1	5.9	8.1	6.7	7.7	9
0.8	1.3	1.1	1.6	1.1	0.6	1.0	1.1	0.9	1.3	
11.0	16.4	11.7	16.0	15.3	11.7	16.8	13.2	12.8	16.4	
7.3	3.6	6.5	8.1	5.7	5.7	4.0	5.0	4.4	3.2	10
0.8	1.0	1.0	1.4	0.9	0.7	0.7	1.0	0.7	0.9	
11.5	28.1	15.3	17.8	16.2	12.1	18.1	19.5	15.5	26.8	

Table The accuracy measures for selected indicators by voivodship (cont.)

No.	SPECIFICATION a – indicator (feature) value s – absolute error v – relative error (in %)		In total	Voivod					
				dolnośląskie	kujawsko- pomorskie	lubelskie	lubuskie	łódzkie	małopolskie
PERSONS AGED									
1	Indicator of social isolation	a	8.9	9.3	9.5	7.0	9.2	13.9	6.0
		s	0.3	1.5	1.3	1.1	1.7	1.5	1.0
		v	3.8	16.0	13.4	15.6	18.3	11.0	16.4
2	Indicator of social exclusion (with at least one poverty form)	a	3.9	4.6	5.1	3.2	5.1	6.0	3.1
		s	0.2	1.1	1.1	0.8	1.5	1.0	0.7
		v	6.0	24.8	21.8	26.5	30.2	16.1	22.2
3	Indicator of poor mental condition	a	5.2	6.4	4.4	6.6	4.6	4.6	4.4
		s	0.3	1.2	0.8	1.0	1.6	0.7	0.7
		v	5.1	18.4	17.9	15.0	34.5	14.6	16.7
4	Indicator of the sense of happiness	a	58.0	56.0	55.8	52.9	56.1	52.5	65.1
		s	0.6	2.4	2.4	2.4	3.1	2.0	2.1
		v	1.0	4.3	4.2	4.5	5.5	3.8	3.2
5	Indicator of overall life satisfaction	a	74.0	76.1	75.9	67.9	77.1	71.0	75.8
		s	0.5	1.9	2.0	2.0	2.5	1.7	1.6
		v	0.7	2.5	2.6	3.0	3.3	2.4	2.1
6	Indicator of satisfaction with their current occupational status	a	60.4	65.1	63.8	49.9	64.9	52.1	60.1
		s	0.9	3.3	3.0	3.4	3.8	2.8	3.1
		v	1.5	5.1	4.6	6.7	5.9	5.4	5.1
7	Indicator of satisfaction with their current educational level	a	54.1	53.7	54.1	45.6	53.5	52.3	55.0
		s	0.6	2.2	2.5	2.5	3.1	2.0	2.0
		v	1.1	4.1	4.5	5.5	5.8	3.7	3.7
8	Indicator of satisfaction with the family situation	a	74.8	74.7	78.9	69.9	78.2	71.4	74.8
		s	0.5	1.9	1.8	1.9	2.4	1.8	1.9
		v	0.7	2.6	2.3	2.8	3.1	2.5	2.5
9	Indicator of satisfaction with interpersonal relations	a	84.9	83.0	87.7	82.5	86.2	85.1	84.0
		s	0.4	1.7	1.5	1.8	2.1	1.3	1.4
		v	0.5	2.0	1.7	2.2	2.5	1.5	1.6
10	Indicator of satisfaction with the current financial situation	a	34.2	37.9	33.4	27.8	32.0	31.8	31.7
		s	0.6	2.4	2.0	2.0	2.8	1.8	2.1
		v	1.7	6.2	6.0	7.3	8.8	5.5	6.7
11	Indicator of satisfaction with material living conditions	a	54.3	56.6	55.0	48.1	54.1	49.1	54.4
		s	0.6	2.3	2.2	2.4	3.3	2.0	2.1
		v	1.1	4.1	4.0	5.0	6.1	4.1	3.9
12	Indicator of satisfaction with health status	a	58.1	58.6	58.8	55.7	58.6	56.0	60.7
		s	0.6	2.3	2.2	2.0	3.0	1.9	2.0
		v	1.0	3.9	3.8	3.6	5.1	3.5	3.3
13	Share of persons attached to their place of residence	a	92.0	92.5	92.0	95.0	91.5	90.8	94.2
		s	0.3	1.1	1.3	0.8	1.8	1.1	0.9
		v	0.3	1.2	1.4	0.9	1.9	1.2	0.9
14	Share of persons attached to the people living in the neighbourhood	a	78.7	76.0	79.9	86.8	81.4	79.8	82.2
		s	0.5	2.0	1.7	1.4	2.3	1.6	1.5
		v	0.6	2.6	2.2	1.6	2.8	1.9	1.9
15	Share of persons feeling secure at night in their place of residence	a	87.1	81.7	86.4	88.6	88.9	83.1	89.8
		s	0.4	1.8	1.5	1.5	1.7	1.4	1.0
		v	0.5	2.2	1.7	1.6	1.9	1.6	1.1

ships										No.
mazowieckie	opolskie	podkarpackie	podlaskie	pomorskie	śląskie	świętokrzyskie	warmińsko -mazurskie	wielkopolskie	zachodnio- pomorskie	
16 YEARS OR MORE										
6.4	10.5	8.6	7.9	9.4	11.3	7.2	8.4	7.7	12.5	1
0.8	2.5	1.7	1.5	1.4	1.1	1.2	1.2	1.3	2.1	
12.7	23.8	20.2	19.3	14.7	9.5	16.5	13.9	17.4	16.9	
2.7	2.0	4.3	3.9	4.1	4.8	3.6	3.3	3.0	4.9	2
0.4	0.5	1.4	1.2	1.0	0.7	1.0	0.8	0.9	1.6	
16.7	25.7	32.8	31.6	23.8	14.6	26.2	23.7	30.2	31.8	
6.4	4.8	3.4	3.0	4.5	5.6	3.4	6.1	4.9	6.1	3
0.9	1.4	0.8	1.0	0.8	0.7	0.8	1.4	1.0	1.4	
13.7	29.4	22.7	33.4	18.2	12.4	22.7	23.3	19.7	22.8	
56.1	64.2	65.2	63.0	61.9	61.8	58.6	50.7	54.4	51.2	4
1.7	3.4	2.3	3.0	2.4	1.5	2.6	2.7	2.3	2.7	
3.0	5.3	3.6	4.7	3.9	2.4	4.5	5.2	4.2	5.3	
72.4	75.7	75.4	71.1	77.6	77.4	73.8	67.4	75.9	67.9	5
1.5	3.0	2.5	2.9	2.2	1.3	2.1	2.1	1.7	3.1	
2.1	3.9	3.4	4.1	2.8	1.7	2.9	3.2	2.3	4.6	
61.6	74.2	58.6	49.3	65.2	62.6	53.0	59.9	60.7	67.4	6
2.0	4.3	3.9	4.5	3.5	2.5	4.3	3.8	3.3	4.3	
3.3	5.7	6.6	9.1	5.4	3.9	8.1	6.4	5.4	6.3	
55.2	60.8	55.6	50.4	55.8	56.7	55.6	48.8	56.7	49.0	7
1.8	3.3	2.7	2.8	2.6	1.6	2.8	2.3	2.3	3.0	
3.3	5.5	4.8	5.6	4.7	2.9	5.0	4.7	4.1	6.2	
73.7	82.4	72.8	68.5	77.6	77.7	76.8	67.1	79.9	67.2	8
1.5	2.5	2.1	3.0	2.0	1.4	2.0	2.2	1.7	2.9	
2.0	3.1	2.9	4.4	2.6	1.8	2.6	3.3	2.1	4.4	
83.3	89.2	83.8	82.3	86.5	84.9	86.3	77.5	91.8	83.6	9
1.4	2.6	1.7	2.4	1.8	1.1	1.5	2.0	1.1	2.4	
1.6	2.9	2.1	2.9	2.0	1.3	1.8	2.6	1.2	2.9	
34.4	45.1	33.9	35.1	35.1	37.9	29.6	35.1	34.8	29.5	10
1.7	3.2	2.7	3.1	2.4	1.7	2.3	2.9	2.1	2.5	
5.0	7.1	7.8	9.0	6.8	4.5	7.9	8.2	6.0	8.4	
52.6	67.4	55.2	55.7	55.2	59.4	50.5	52.7	58.3	41.2	11
1.7	3.0	2.3	3.4	2.5	1.6	2.7	2.7	2.4	2.8	
3.2	4.5	4.2	6.2	4.5	2.8	5.3	5.1	4.1	6.8	
55.9	60.7	58.9	56.7	59.2	60.8	62.4	54.7	56.4	56.8	12
1.8	3.3	2.6	2.6	2.6	1.5	2.3	2.4	2.2	3.0	
3.3	5.5	4.4	4.6	4.4	2.5	3.6	4.3	3.9	5.2	
89.9	89.4	95.9	96.0	91.7	89.0	94.7	90.0	93.5	92.2	13
1.0	2.7	1.0	1.1	1.4	1.1	1.4	1.7	1.0	1.2	
1.1	3.0	1.0	1.2	1.5	1.3	1.5	1.9	1.1	1.3	
73.1	76.1	84.5	79.1	75.4	76.5	85.5	78.7	82.2	69.1	14
1.5	3.5	2.1	2.6	2.1	1.3	1.9	2.4	1.7	2.7	
2.0	4.5	2.5	3.2	2.8	1.7	2.2	3.0	2.1	3.9	
88.4	88.2	92.3	89.6	84.6	81.6	87.2	92.1	90.9	87.5	15
1.0	2.0	1.7	2.0	1.6	1.3	1.5	1.2	1.0	1.8	
1.1	2.2	1.9	2.2	1.9	1.6	1.7	1.3	1.1	2.1	



## 7. INCOME IMPUTATION

Given the objective and thematic scope of the social cohesion survey, the results compilation process requires obtaining income information about the households surveyed.

The income-related question is sensitive, which often leads to a large number of refusals. In order not to disqualify the interviews in which respondents provide most of the information sought, but are not willing to discuss their income, the survey construction made it possible for respondents not to answer the question about income (a non-response to one question). As it is necessary to combine the household and individual interviews with income information, the missing data resulting from respondents' refusals to provide income information must be imputed.

A number of additional questions are used with a view to ensuring most efficient and accurate imputation, based on the information received from the respondent. The form is constructed in such a way so as to obtain the largest amount of information related to, and describing, respondent's income, even though the exact income amount is not given.

The household's average monthly net income in the last twelve months preceding the survey, i.e. the annual income amount divided by 12, provides the basis for compiling the survey results. As the reluctance to provide income information does not often stem from unwillingness, but rather from the difficulty in estimating the exact amount, respondents were allowed to provide income information by referring either to the average monthly or total annual income. The survey further includes a question about the income earned in the month preceding the survey. Such information may not be directly converted into the data of interest, but, whenever provided, it constitutes the basis for a very reliable imputation through statistical correlations between the income earned in the last month and the income for the entire last year, as recorded in the population surveyed.

Each question aimed at obtaining income information can be answered in two ways. The first and the preferred one, which directly provides the information at issue, entails specifying the exact income amount by the respondent, without the need to employ any imputation procedures. However, if the respondent is unwilling or unable to do so, he/she may indicate the relevant income range. In this case, the income information obtained is also relatively accurate (especially for non-extreme ranges), though it needs to be made more precise by way of imputation which is limited to the income range selected. We deal with information fully based on statistical imputation only when the respondent is not willing to provide any indication as to the income range in any income-related questions.

Income is imputed by means of the stochastic regression imputation method. It entails using the theoretical (predicted) value based on a regressive model, supplemented with an imputation residual (reflecting the random component). The latter is generated from the theoretical distribution with specific parameters (estimated).

As the imputation method applied bears a stochastic feature, it includes a random component (i.e. the imputation values cannot be predetermined, and each repetition for the same data may give different results). In consequence, the imputation has a minor impact on the imputed variable distribution, and the distribution patterns obtained are "similar" to the natural ones, and no artificial sets of identical imputation values are established.

Furthermore, the method applied allows the usage of a uniform methodological approach in the situations where the income range is or is not indicated by the respondent. In the latter case, the imputation residuals are generated through unconditional distribution. In contrast, when the income range is known, the truncated distribution is applied (i.e. the value generated falls within the assumed range) so as to ensure that the imputation value obtained would be consistent with the income range declared.

The imputation models applied take the power-exponential form (i.e. a linear model after log transformation). All residuals are generated through normal distribution (truncated normal distribution) for the model after log transformation.

The imputed variable (explained in the models) corresponds to the household's average monthly net income in the last 12 months. One of two alternative models is applied to each household requiring imputation, depending on the accessibility of explanatory variables.

In the case of missing data concerning the imputed variable:

- a) if information about the monthly income for the month preceding the survey (the current income) is available, the model applied comprises the following explanatory variables: the current income and descriptive information on the change of income in relation to the preceding year (an increase/a decrease/approximately no change),
- b) if no information about the current income is available (missing data), the model applied explains the income value by referring to the objective factors determining the amount of income and the household's ability to earn income, including the source of maintenance, and the kind of work, occupation and educational level of the household head.

Model (a) provides a much better explanation, as it makes use of the income information provided by the respondent. For this reason, it is applied whenever possible, taking into consideration the information available.

Model (b), along with objective factors (such as the educational level and occupation), also includes information about how the household "makes ends meet". This variable considerably increases explanation accuracy. Such a specification can be interpreted in such a way that the objective factors determine the income-related abilities and aspirations of both individuals and households. They, nevertheless, fail to provide any information about the degree to which the actual income corresponds to such abilities and aspirations. It can be assumed that the response to the question about the household's ease or difficulty to manage its financial resources can provide, at least to a certain degree, some information on this issue.

While determining the set of explanatory variables, several model variants were tested. The final variant was considered the best in terms of explanation quality and the possibility to interpret the specification adopted.

For the purposes of this survey, 666 records were imputed using model (a), and 3 305 using model (b). These numbers refer to both statistical imputation, in the case of which no information about the imputation variable was provided by the respondent, and the situations in which the income range was reported.

The statistics distinguishing the cases of full-scope imputation from imputation with a known income range is crucial to assessing the scope of income imputation in the data set processed, and the scale of related potential errors. Therefore, with respect to the sample comprising 14 884 records (households):

- 2 176 records were imputed where the exact income range, i.e. the upper and lower boundary, (other than the extreme range) was known,
- 21 records were imputed where it was known that they belonged to the extreme ranges (groups with the lowest or highest income),
- 1 774 records underwent full imputation, i.e. the income range was not known.

Only for 1 774 households listed in the last bullet point can it be assumed that the assigned income value was entirely derived through statistical imputation.

## **8. LOGISTIC REGRESSION**

Logistic regression is one of the methods applied in this study with a view to analysing the determinants of certain phenomena (both negative - such as poverty or isolation, and positive - such as well-being), i.e. factors which determine whether a certain phenomenon will concern a given person or household.

The logistic regression model (used here as the logit model) is a tool of statistical analysis which allows the explanation of the probability of occurrence or non-occurrence of certain states (the variable of interest is a dichotomous qualitative variable, which can take two possible values, i.e. the phenomenon occurred or did not occur) through other variables, i.e. explanatory variables used in the model. The explanatory variables may be quantitative or qualitative.

The application of logistic regression allows the assessment of whether a certain (potential) explanatory variable exerts a significant impact on the variable of interest (i.e. the occurrence of the phenomenon of interest), as well as to determine the impact direction (whether contributory or inhibitory) and to estimate the strength (extent) of this impact.

In the case of qualitative explanatory variables, which can take several different values (variants, e.g., age – expressed in ranges), we can assess the significance and extent of the influence of each of these values (variants, e.g., each of the age groups), along with the significance of the influence of the entire factor (e.g., age). For such variables, one of the values (variants) must be treated as the reference value. We do not obtain estimates for this value, but all estimations obtained for other values of this variable reflect the effects on the reference value. For instance, if the reference 35-44 age group is adopted for the purpose of the explanatory variable of age, when explaining the phenomenon of social isolation, the effects estimated from the remaining age groups include information on whether or not, and to what extent, a person from a certain age group is more (or less – in the case of negative parameters) threatened with social isolation than persons from the 35-44 age group.

While constructing the models applied in the publication, a neutral value (e.g. a “neither yes nor not” response), also referred as the “typical” value, the most common in the population,

or corresponding to an average or middle value in the rating, is usually used as the reference value for qualitative variables.

While presenting the logistic regression results in this study, a parameter (effect) value connected with a given value (variant) of the explanatory variable is displayed, together with the Wald statistics value. The higher the Wald statistics value, the stronger the statistical proof of a given effect – the critical value of the relevant test at the significance level of 5% amounts to approximately 4. The results of the significance test for parameters (based on the Wald statistics) were also presented using appropriate symbols. All the effects marked with asterisks are significant at the significance level of 10%, with at least 2 asterisks – at the level of 5%, and with 3 asterisks – at the level of 1%.

Wald statistics were also compiled for complete factors that group the effects connected with individual values/variants of one qualitative variable, in order to assess the significance of their total influence (the total influence of a quality-type explanatory variable taking several possible values/variants).

Such an application of the regression model, including logistic regression, may constitute, to some extent, an alternative to the analysis of the influence of various factors on the occurrence of the phenomenon surveyed, by analysing the differences in the distribution of the variable surveyed in the groups distinguished in terms of this factor (the explanatory variable). For instance, if we were to assess how the educational level contributes to social isolation, we could calculate and compare the share of isolated persons in the groups reflecting various educational levels.

The distributions comparison-based approach is descriptive, and it does not require making any assumptions or formulating any direct hypotheses, in contrast to the regression-based approach where the model specification itself constitutes a certain assumption on the shaping of the phenomenon surveyed, which is partially (but not wholly) verified through statistical procedures. The regression-based approach provides direct information on the statistical significance of the influence of individual factors, and not only on the parameter values, which constitutes a significant advantage. However, there is some more important reason, which make this procedures not fully interchangeable. The effects observed in both cases do not express exactly the same phenomenon and have different interpretation, what is explained below.

In the distributions comparison, each factor is analysed on a separate way<sup>9</sup>. The application of regression allows us to obtain the values of separate effects for each of the explanatory variables considered, using the procedure which takes into account the influence of all such variables. As a result, we obtain “pure” effects, reflecting the intrinsic impact of a given factor, “purified” from the influence of other factors considered in the model.

For instance, when analysing the influence of the educational level on social isolation, by comparing the share of isolated persons in various groups by educational level (the distributions comparison), we obtain information on the differences between those groups, thereby indirectly learning about how the educational level impacts social isolation. We can distinguish groups with extremely low and extremely high share of isolated persons, thus determining which type of education

---

<sup>9</sup> If we want to learn about the impact of each factor, and not the total impact for specific combinations of values (variants) of many factors.

contributes to, and which prevents, social isolation. A similar comparison can be made by taking into account the groups by income quintile, thereby assessing how the income size affects social isolation.

It is, nevertheless, believed that education is a crucial factor determining the size of income earned. If so, and if the distributions comparison shows the diversification of the phenomenon surveyed (isolation), both by educational level and by income, we cannot tell if both effects observed (the influence of the educational level and the influence of income) are not the same effect, and if so, to what extent. In other words, the above analysis does not answer the question about the degree to which the influence of the educational level on the phenomenon surveyed (isolation) is exerted through income, and to what extent this factor has an intrinsic (income-unrelated) impact, if any.

In turn, by using a model which comprises both the educational level and the income quintile, the effects estimated for various factors will reflect the “pure” impact of each of them. This means that, in the case of the educational level, the information obtained concerns its intrinsic impact, exerted in other ways than through income. The estimate of the impact extent can, therefore, differ, and so can the conclusion on its significance, as the model allows the analysis of de facto a different effect (the effect of other interpretation) than a simple distributions comparison. Moreover, by analysing the influence of the same factor (e.g., the educational level) on the same phenomenon (e.g., isolation) by model, we can obtain different effects bearing various interpretations, depending on the model applied, i.e. the set of the additionally included explanatory variables. Obviously, any such model allows the verification of a different research hypothesis, leading to different conclusions on the phenomenon surveyed.