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Material Deprivation in Poland and Slovakia – a Comparative Analysis*

Abstract

One of the key targets of the EU's 2020 Strategy is to substantially reduce the number of people at risk of poverty or social exclusion. The EU seeks to reduce poverty by lifting at least 20 million people out of the risk of poverty or social exclusion by 2020. The monitoring of progress towards this target is based on the headline indicator AROPE – people at risk of poverty or social exclusion. The indicator applies to people either at risk of poverty or severely materially deprived or living in a household with a very low work intensity. This article focuses on material deprivation, one of the three components monitored to evaluate the social situation in the EU.

The article deals with material deprivation and severe material deprivation in Slovak and Polish households. The two main goals of this article are to examine which factors have a significant effect on material deprivation and to determine the influence of those relevant factors on material deprivation of Slovak and Polish households. The article

provides a comparative analysis of the material deprivation of Slovak and Polish households.

We used microdata from EU SILC 2012 from Poland and Slovakia and association analysis including logistic regression. These statistical methods were applied using SAS Enterprise Guide.

Keywords: EU SILC – European Union Statistics on Income and Living Conditions, material deprivation, severe material deprivation, logistic regression.

1. Introduction

Material deprivation is one of the measures used to assess social exclusion. Together with the indicators *at-risk-of-poverty* and *low work intensity*, a severe material deprivation rate creates the aggregate indicator of poverty and social exclusion (AROPE). AROPE is a key indicator used to monitor the progress being made towards meeting the Europe 2020 goal of reducing the number of persons at risk of poverty or social exclusion by 20 million. As shown by A. C. Guio and E. Maquet (2007), the risk of poverty masks great differences in living standards, and therefore the risk of poverty (for relative national poverty thresholds) appears to be quite similar among the countries of the EU (see Israel & Spannagel 2013). Because material deprivation provides a clearer picture of social exclusion in EU countries, it raises the importance of current studies and analyses that employ it as a measure.

Material deprivation (MD) is defined as the inability of individuals or households to afford those consumption goods and activities commonly bought in a society at a given point in time, irrespective of people's preferences with respect to these items. Material deprivation in a population is measured by means of the material deprivation rate and severe material deprivation rate. The indicator material deprivation rate is defined as the percentage of a population[1] with an enforced lack of at least three out of nine material deprivation items in the economic strain and durables category. The nine items include (Eurostat 2012)[2]:

1) arrears on mortgage or rent payments, utility bills, hire purchase instalments or other loan payments (HS011, HS021, HS031),

2) the capacity to afford paying for a one-week annual holiday away from home (HS040),

3) the capacity to afford a meal with meat, chicken, fish (or vegetarian equivalent) every second day (HS050),

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[1] In this article, a household is a statistical unit.

[2] Variables from survey EU SILC to identify people or households that are deprived in individual items are given in parentheses.

4) the capacity to face unexpected financial expenses set as an amount corresponding to the monthly national at-risk-of-poverty threshold of the previous year (HS060),

5) the household cannot afford a telephone (including a mobile phone) (HS070),

6) the household cannot afford a colour TV (HS080),

7) the household cannot afford a washing machine (HS100),

8) the household cannot afford a car (HS110),

9) the ability of the household to pay for keeping its home adequately warm (HH050).

Severe material deprivation rate is defined as the enforced inability to pay for at least four of the above items. The indicators distinguish between individuals who cannot afford a certain good or service, and those who do not have this good or service for another reason, e.g. because they do not want or need it.

Many scientific works have focused on material deprivation. We were inspired by (Fusco, Guio & Marlier 2011, Gerbery 2012, Israel & Spannagel 2013, Stávková, Birčiaková & Turčínková 2012).

The article provides a comparative analysis of the material deprivation of Slovak and Polish households on the basis of microdata from EU SILC[3] 2012. The two main goals of this article are to examine which factors have a significant effect on material deprivation, and to determine the influence those relevant factors have on the material deprivation of Slovak and Polish households.

2. Material Deprivation of Slovak and Polish Households in 2012

For the purposes of this article, the material deprivation rate (MD rate) is defined as the proportion of households that cannot afford to pay for at least three out of the nine items specified above, while those that are unable to afford four or more items are considered to be severely materially deprived (severe MD rate). Table 1 shows the share of households unable to afford individual items that are taken into account in evaluating MD according to the current methodology used by Eurostat.

The most households – more than half in each country, in fact – were unable to afford a one-week annual holiday away from home. More than 50% of Polish households had an enforced lack of item 4, the capacity to face unexpected financial expenses. At 37.15%, Slovak households were deprived much less in meeting

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[3] EU-SILC (European Union Statistics on Income and Living Conditions) is a cross-sectional and longitudinal sample survey based on data from EU member states and coordinated by Eurostat. EU-SILC provides data on income, poverty, social exclusion and living conditions in the European Union.

such expenses. The third most critical item in both countries was the capacity to afford a meal with meat, chicken or fish (or vegetarian equivalent) every second day. In comparison with Polish households, Slovak households had a higher enforced lack of just two items: the capacity to afford meat (item 3) and the inability to afford a car (item 8). Almost every household (less than 1% of households) could afford a colour TV, washing machine and telephone (items 5, 6, 7)[4].

Table 1. Material Deprivation of Households (%) by Particular Item in 2012

Country	1	2	3	4	5	6	7	8	9
SR	6.82	52.39	25.15	37.15	0.99	0.63	0.70	17.59	6.29
PL	14.55	62.43	17.56	56.91	1.08	0.64	0.83	11.98	15.39

Source: EU SILC 2012, the authors' own elaboration.

According to Table 2, both the MD and severe MD rates are higher in Poland than in Slovakia. While there were slightly less than 25% of households that had a lack of at least 3 out of the 9 items in Slovakia, slightly more than 30% of households in Poland faced the same lack. For comparison, 19.7% of EU-28 members' population was materially deprived in 2012. 15.3% of households in Poland and 10.6% of households in Slovakia suffered from severe MD. This means that approximately half of materially deprived Polish and Slovak households were severely materially deprived. The same was true for the EU-28 as a whole: 9.9% of the population was severely deprived.

The next indicator that is used to monitor MD is depth of MD, defined as the mean of the number of items lacked by the materially deprived population. Again here we focus on households and not on persons. To gain a better view of the state of MD, we estimated depth of MD for households that suffered from MD and households that suffered from severe MD. We also calculated the average number of items all Slovak and Polish households lacked that were included in the EU SILC databases.

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[4] It is obvious that actually some items such as a washing machine, a colour TV or a telephone are no longer items people cannot afford in EU Member States. On the other hand, there are other variables that reflect better current living standards and the lack of which is a clear identifier of social exclusion in those same countries today. This led the Eurostat Task Force to elaborate and agree on a list of 7 new material deprivation variables for the whole population (to be used together with 6 of the current 9 EU-SILC variables on material deprivation). The proposed new variables are being collected in EU-SILC. An analysis of the indicators based on at least three pilot years (2009, 2013, and 2014) will then be possible in order to set up definitively the revised list of material deprivation variables and the new threshold numbers of items that a household cannot afford to be considered materially or severely materially deprived (Eurostat 2013, Guio & Marlier 2013).

Table 2. Comparison of Selected Indicators of Material Deprivation in Slovak and Polish Households in 2012

Indicator	SR	PL
MD rate	24.55%	30.27%
Severe MD rate (MD4+)	10.65%	15.29%
Average number of items lacked	1.48	1.81
Depth of MD	3.64	3.80
Depth of severe MD	4.48	4.57

Source: EU SILC 2012, the authors' own elaboration.

Listed in Table 2, the results indicate that Polish households had a higher MD rate and MD of greater depth than Slovak households, though relative differences in the depth are not as severe as in the rate. The differences in the depth of MD between Polish and Slovak households are less than 5% while the MD rate is 23% higher and the severe MD rate is even 44% higher in Polish than in Slovak households.

3. The Material Deprivation Rate and Severe Material Deprivation Rate in Breakdown by Relevant Factors

Significant associations between MD (in case of both indicators MD3+ and MD4+) and the following variables were confirmed in both countries[5]:
   – *EAS* – economic activity status (PX050: Most frequent activity status),
   – *Education* (PE040: Highest ISCED level attained),
   – *Marital status* (PB190: Marital status),
   – *Health* (PH010: General health),
   – *HT* (HT: household type),
   – *Urbanisation* (DB100: Degree of urbanisation).
The strength of these associations is quantified in Fig. 1 by means of Cramer's V. All the tests used (*Chi*-square, Likelihood Ratio *Chi*-square, Mantel-Haenszel *Chi*-square) showed that there were significant associations between the variables and MD3+ as well as MD4+ at a confidence level of 0.01. These associations are weak or very weak in the case of *Urbanisation*.

The MD and severe MD rates broken down by economic activity are displayed in Fig. 2. It is natural that the highest risk of deprivation is in households where the head of household is unemployed. It is interesting that it was the only category

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[5] The first four variables are related to the head of household.

of economic activity where the situation was better in Polish households than in Slovak ones.
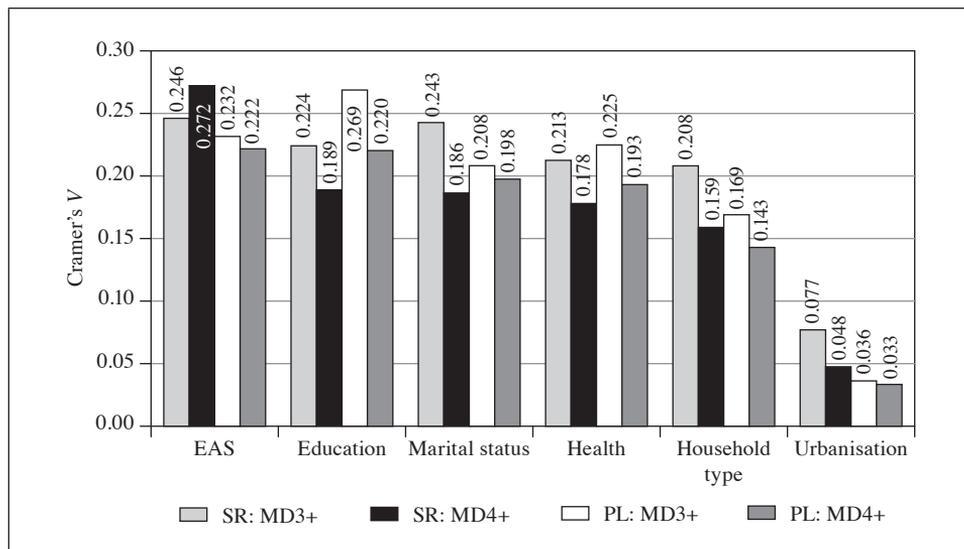

Fig. 1. Association between Material Deprivation (MD3+ and MD4+) and Individual Relevant Factors

Source: EU SILC 2012, the authors' own elaboration.

More than 60% of households with an unemployed person as its head suffered from MD and more than 40% of those households suffered from severe MD. In other categories the situation was better in Slovakia. Focusing on households with an employed person as its head, in 2012, 17.6% of Slovak households were classified as materially deprived and 6.4% as severely materially deprived. In Poland, the occurrence of materially deprived and severely materially deprived households was higher by about 3.7 and 4.9 pp, respectively.

The occurrence of MD was highest in households where the head of household had a low level of education (pre-primary, primary or lower secondary education). In these educational categories the MD rate ranged from 44.9% to 60.5% and the severe MD rate ranged from 23.5% to 39.5%. Much lower rates of MD and severe MD characterised households where the head of household had upper secondary or post-secondary education. The lowest occurrence of MD characterised households in which the head had a tertiary education.

Households where the head was married were the least materially as well as severely materially deprived. The MD and severe MD rates for these households were almost equal to households where the head was employed.

Fig. 2. Material Deprivation Rate by the Head of Household's Economic Activity
Source: EU SILC 2012, the authors' own elaboration.
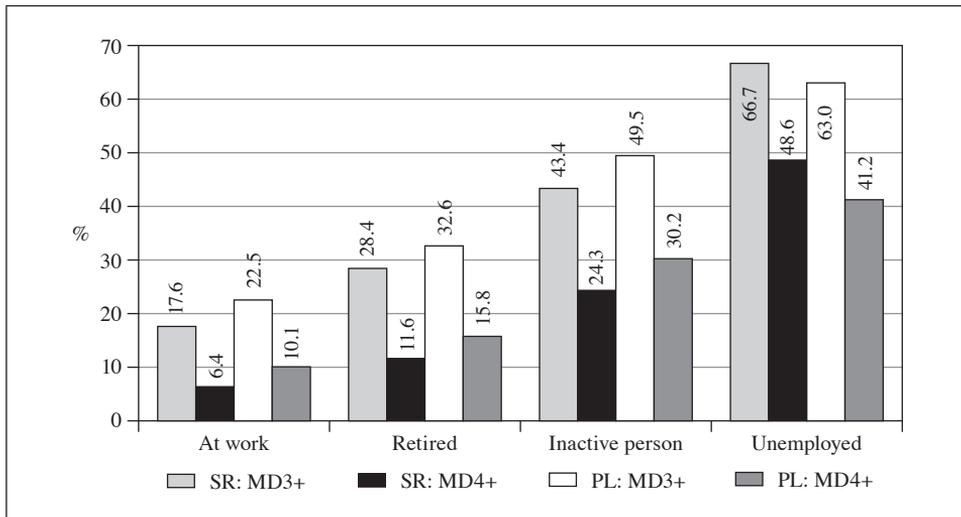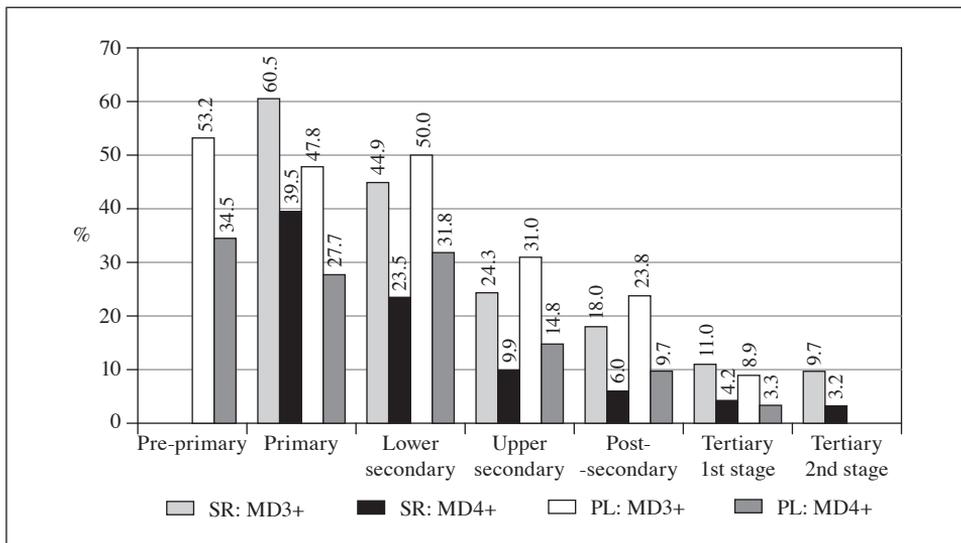

Fig. 3. Material Deprivation Rate by the Head of Household's Education
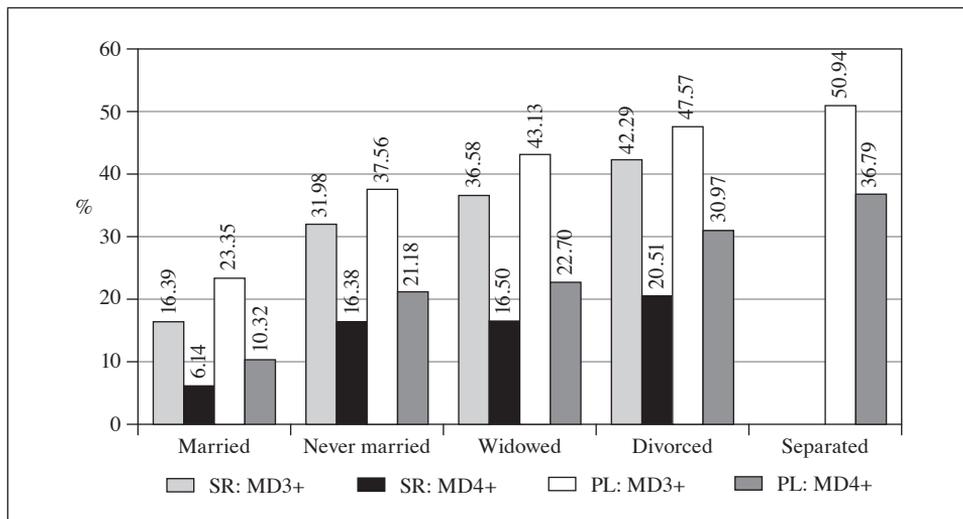Source: EU SILC 2012, the authors' own elaboration.

Fig. 4. Material Deprivation Rate by the Head of Household's Marital Status
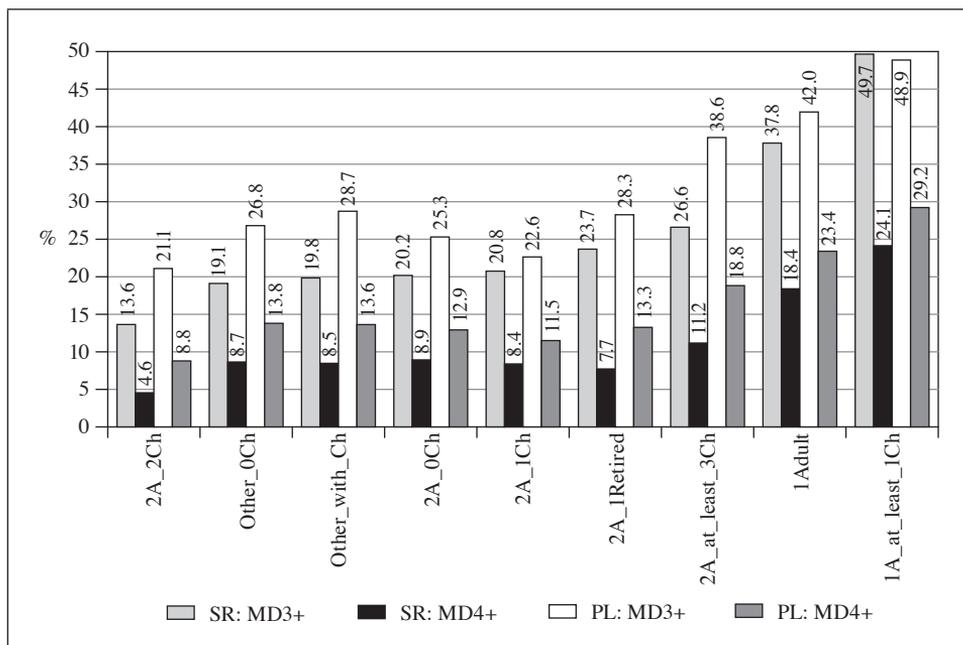Source: EU SILC 2012, the authors' own elaboration.

Fig. 5. Material Deprivation Rate by Household Type
Source: EU SILC 2012, the authors' own elaboration.

Concerning the material deprivation rate by the household type, we determined that households with two adults and two dependent children had the lowest rate. Conversely, the worst situation was in households with one adult and at least one dependent child, followed by single-person households and households with two adults and at least three children.

4. Quantifying the Impact of Relevant Factors on Material Deprivation Using Logistic Regression

The influence of the variables on the binary variable *MD3+* (MD4+) was considered based on the model of logistic regression (see e.g. Stankovičová & Vojtková 2007). To select factors that have a relevant influence on material deprivation we used the Stepwise regression method (see e.g. Šoltés 2008) in the logistic regression procedure in Enterprise Guide application of the statistical software SAS. The main tests and statistics related to logit models of logistic regression are listed in Table 3.

All of the categorical variables used in part 3 were entered into the logistic regression model. One continuous variable – *Age* (RX010: age at the end of income reference period) had a significant impact on the material deprivation of Slovak and Polish households in 2012.

Parameters of the logistic regression models containing seven of the variables are estimated for Slovak households as well as for Polish households in Table 4. This model made it possible to predict the probability of a randomly selected household to be materially deprived based on given values of the explanatory variables.

Our main goal was to quantify the impact of individual variables on material deprivation. To help us do that, we focused on estimators of the odds ratios, which the next section of the article describes.

By increasing the age of head of household by one year, the probability that the household will be materially deprived decreases by 1.015 times in Slovak households and by 1.016 times in Polish households. Values of the odds ratio for the factor economic activity confirmed that the worst material deprivation characterises households with an unemployed head, which are 6.673 times likelier in Slovakia and 3.803 times likelier in Poland to be materially deprived. As established earlier in this article, households with unemployed persons suffer from MD more frequently in Slovakia than in Poland. Conversely, households where the household head is retired had a worse situation in Poland. In Slovakia, there was no significant difference between materially deprived households with an unemployed head and households with a retired head.

Table 3. Evaluation of the Quality of Logistic Regression Models

Testing Global Null Hypothesis: BETA = 0						
	SR			PL		
Test	*Chi*-square	DF	Pr > *Chi*-square	*Chi*-square	DF	Pr > *Chi*-square
Likelihood Ratio	810.1	26	< 0.0001	2098.4	28	< 0.0001
Score	816.7	26	< 0.0001	1954.3	28	< 0.0001
Wald	654.7	26	< 0.0001	1600.7	28	< 0.0001
Type 3 Analysis of Effects						
	SR			PL		
Effect	DF	Wald *Chi*-square	Pr > *Chi*-square	DF	Wald *Chi*-square	Pr > *Chi*-square
Age	1	8.855	0.0029	1	35.987	< 0.0001
EAS	3	124.745	< 0.0001	3	170.242	< 0.0001
Education	5	110.059	< 0.0001	5	498.459	< 0.0001
HT	8	35.598	< 0.0001	9	76.261	< 0.0001
Health	4	81.514	< 0.0001	4	280.636	< 0.0001
Marital status	3	99.465	< 0.0001	4	181.710	< 0.0001
Urbanisation	2	7.018	0.0299	2	6.097	0.0474
Association of Predicted Probabilities and Observed Responses						
Characteristics		SR			PL	
Percent concordant		74.6			74.1	
Percent discordant		25.4			25.9	
Percent tied		0.0			0.0	
Pairs		5 023 258			34 318 482	
Somers' *D*		0.493			0.482	
Gamma		0.493			0.482	
Tau-a		0.182			0.204	
c		0.746			0.741	
Hosmer and Lemeshow Goodness-of-Fit Test						
SR			PL			
Chi-square	DF	Pr > *Chi*-square	*Chi*-square	DF	Pr > *Chi*-square	
4.3018	8	0.8289	7.1565	8	0.5198	

Source: EU SILC 2012, the authors' own elaboration using SAS Enterprise Guide.

Table 4. Logistic Regression Models for Material Deprivation of Slovak and Polish Households

Analysis of Maximum Likelihood Estimates						
Parameter		SR			PL		
		Estimate	*p*-value	Odds Ratio Estimate	Estimate	*p*-value	Odds Ratio Estimate
Intercept		−1.335	< 0.0001	–	−0.869	< 0.0001	–
Age		−0.015	0.0029	0.985	−0.016	< 0.0001	0.984
EAS	Unemployed	1.898	< 0.0001	6.673	1.336	< 0.0001	3.803
	Inactive	0.590	0.0002	1.804	0.440	< 0.0001	1.546
	Retired	0.050	0.7124	1.051	0.170	0.0188	1.185
	At work	Reference category					
Education	Pre-primary	–	–	–	0.723	< 0.0001	2.060
	Primary	1.149	0.0011	3.155	0.601	< 0.0001	1.823
	Lower secondary	0.718	< 0.0001	2.051	0.309	0.5016	1.362
	Post-secondary	−0.282	0.3019	0.754	−0.444	0.0002	0.642
	Tertiary 1st	−0.817	< 0.0001	0.442	−1.475	< 0.0001	0.229
	Tertiary 2nd	−0.851	0.1708	0.427	–	–	–
	Upper secondary	Reference category					
Household type	1A_at_least_1Ch	0.906	< 0.0001	2.473	0.571	< 0.0001	1.769
	2A_at_least_3Ch	0.767	0.0007	2.153	0.838	< 0.0001	2.312
	1Adult	0.392	0.0084	1.480	0.092	0.2846	1.097
	Other_with_Ch	0.169	0.2793	1.184	0.182	0.0292	1.200
	2A_1Ch	0.324	0.0636	1.382	0.150	0.1185	1.161
	2A_1Retired	0.357	0.0362	1.429	−0.110	0.2210	0.896
	2A_2Ch	0.120	0.5106	1.128	0.101	0.3131	1.107
	Other_0Ch	0.0001	0.9994	1.000	−0.016	0.8500	0.984
	Other	–	–	–	0.631	0.0006	1.880
	2A_0Ch	Reference category					
Health	Very good	−0.378	0.0179	0.685	−0.389	< 0.0001	0.678
	Fair	0.474	< 0.0001	1.606	0.524	< 0.0001	1.688
	Bad	0.958	< 0.0001	2.607	0.9248	< 0.0001	2.521
	Very bad	0.978	< 0.0001	2.658	1.448	< 0.0001	4.256
	Good	Reference category					

Table 4 cnt'd

Analysis of Maximum Likelihood Estimates						
		SR			PL	
Parameter		Estimate	*p*-value	Odds Ratio Estimate	Estimate	*p*-value	Odds Ratio Estimate
Marital status	Divorced	1.215	< 0.0001	3.369	1.052	< 0.0001	2.864
	Separated	–	–	–	0.982	< 0.0001	2.669
	Never married	0.669	< 0.0001	1.952	0.817	< 0.0001	2.264
	Widowed	0.602	< 0.0001	1.825	0.486	< 0.0001	1.626
	Married	Reference category					
Urbanisation	Dense	−0.242	0.0116	0.785	0.066	0.2090	1.068
	Intermediate	−0.011	0.8932	0.989	0.131	0.0140	1.140
	Sparse	Reference category					

Source: EU SILC 2012, the authors' own elaboration using SAS Enterprise Guide.

Because the two countries' education systems differ, we have to compare the Slovak and Polish data carefully when evaluating the factor *highest attained level of education of household head*. The risk of MD for households whose head has a low level of education (primary or even pre-primary) is several times larger (approximately three times in Slovak households and two times in Polish households) than for households whose head has an upper secondary education. The lowest risk of MD occurs in households headed by an individual with a tertiary level of education. In 2012, the risk that those households were going to suffer from MD was about 2.3 and 4.4 times smaller in Slovakia and Poland, respectively, than the risk for households whose head had an upper secondary education. When comparing households whose head has a primary education with those with a tertiary education, we can easily calculate that the former have slightly more than seven times higher risk of MD in Slovakia and nearly nine times higher risk in Poland. Our outcomes confirmed that education plays a fundamental role in the risk of MD. On the basis of the Wald test, we cannot reject a non-significant difference in the risk of MD between households whose head has an upper secondary and post-secondary education (in Slovak households) or lower secondary education (in Polish households).

Eurostat statistics show that single-person households with dependent children are mostly classified as being materially deprived. Both Slovak and Polish households confirm the phenomenon (see Fig. 5). But if we consider other factors, households with two adults and three or more dependent children (see Table 4) were at the greatest risk of MD in Poland. Our analysis shows that these households are among the most frequently materially deprived households not only in

Poland, but also in Slovakia and throughout the EU-28 as well. Generally, households without dependent children have the lowest risk of MD. However, outcomes of our analysis show that there are also other household types whose risk of MD was not significantly different from this household type.

Another significant indicator that has an impact on MD is the head of household's general health. The computed odds ratios prove what we had expected: the worse the health, the higher the risk of material deprivation.

It is not surprising that from the point of view of marital status, the worst social situation characterises households headed by a divorced person. These households are at approximately three times higher risk of material deprivation than households whose head is married.

The last factor that has a significant effect on material deprivation is the degree of urbanisation in the area where the household lives. Based on the logistic regression models shown in Table 4, we cannot draw clear conclusions about the influence of this factor on the risk of material deprivation. On the other hand, the logistic regression models presented in Table 5 clearly show that the highest risk of severe material deprivation occurs in areas with an intermediate degree of urbanisation.

Table 5. Logistic Regression Models for Severe Material Deprivation of Slovak Households and Polish Households

Analysis of Maximum Likelihood Estimates							
		SR			PL		
Parameter		Estimate	*p*-value	Odds Ratio Estimate	Estimate	*p*-value	Odds Ratio Estimate
Intercept		–2.920	< 0.0001	–	–1.751	< 0.0001	–
Age		–0.012	0.0729	0.988	–0.020	< 0.0001	0.981
EAS	Unemployed	2.264	< 0.0001	9.620	1.355	< 0.0001	3.876
	Inactive	0.754	< 0.0001	2.125	0.547	< 0.0001	1.728
	Retired	–0.0096	0.9594	0.990	0.169	0.0669	1.184
	At work	Reference category					
Education	Pre-primary	–	–	–	1.017	< 0.0001	2.765
	Primary	1.407	0.0001	4.083	0.728	< 0.0001	2.070
	Lower secondary	0.870	< 0.0001	2.388	0.438	0.3811	1.550
	Post-secondary	–0.327	0.4498	0.721	–0.553	0.0010	0.575
	Tertiary 1st	–0.687	0.0002	0.503	–1.528	< 0.0001	0.217
	Tertiary 2nd	–0.846	0.4103	0.429	–	–	–
	Upper secondary	Reference category					

Table 5 cnt'd

Analysis of Maximum Likelihood Estimates						
Parameter		SR			PL		
		Estimate	*p*-value	Odds Ratio Estimate	Estimate	*p*-value	Odds Ratio Estimate
Household type	1A_at_least_1Ch	0.765	0.0058	2.148	0.392	0.0111	1.480
	2A_at_least_3Ch	0.604	0.0653	1.829	0.633	< 0.0001	1.882
	1Adult	0.249	0.2150	1.282	0.008	0.9417	1.008
	Other_with_Ch	0.100	0.6486	1.105	0.119	0.2702	1.127
	2A_1Ch	0.237	0.3406	1.267	0.162	0.1937	1.176
	2A_1Retired	–0.005	0.9844	0.995	–0.165	0.1540	0.848
	2A_2Ch	0.024	0.9320	1.024	–0.050	0.7120	0.951
	Other_0Ch	0.032	0.8790	1.032	–0.043	0.6994	0.958
	Other	–	–	–	0.685	0.0023	1.984
	2A_0Ch	Reference category					
Health	Very good	0.065	0.7709	1.067	–0.333	0.0082	0.717
	Fair	0.661	< 0.0001	1.936	0.500	< 0.0001	1.649
	Bad	1.147	< 0.0001	3.149	0.968	< 0.0001	2.633
	Very bad	1.407	< 0.0001	4.085	1.580	< 0.0001	4.856
	Good	Reference category					
Marital status	Divorced	1.225	< 0.0001	3.403	1.329	< 0.0001	3.778
	Separated	–	–	–	1.371	< 0.0001	3.941
	Never married	0.883	< 0.0001	2.419	0.897	< 0.0001	2.449
	Widowed	0.631	0.0002	1.880	0.495	< 0.0001	1.641
	Married	Reference category					
Urbanisation	Dense	–0.032	0.8121	0.968	–0.003	0.9647	0.997
	Intermediate	0.214	0.0553	1.238	0.135	0.0433	1.144
	Sparse	Reference category					

Source: EU SILC 2012, the authors' own elaboration using SAS Enterprise Guide.

Note that the above interpretations of the odds ratios assume that the other factors included in logistic models remain constant.

Largely similar outcomes were gained by means of logistic regression models for severe material deprivation of Slovak and Polish households (Table 5). However, most of the factors have an even stronger influence on severe MD than on MD.

5. Conclusions

The analysis of the impact of relevant factors on material deprivation and severe material deprivation revealed that there are many similarities and some differences between Slovak and Polish households. We discovered that the occurrence and risk of material deprivation as well as severe material deprivation significantly depend on age, economic activity, education, marital status, the general health of the head of household, household type and degree of urbanisation where the household lives. The article provides estimates of materially deprived and severely materially deprived Slovak and Polish households, broken down by the seven categorical variables (excluding continuous variable: age of head of household).

The impact of the individual variables was quantified through odds ratios related to logistic regression models. We conclude that households that are most threatened with material deprivation and severe material deprivation are those Slovak households that consist of one adult and at least one dependent child and Polish households that have two adults and at least three dependent children. Households without children and households with two adults and two dependent children in Slovakia as well as in Poland have the smallest risk of both MD and severe MD.

Concerning the other characteristics of households analysed in the article, Slovak and Polish households which live in intermediate populated areas and households whose head is unemployed, divorced, has a pre-primary or primary education and is in very bad general health are at the largest risk of MD and severe MD. Conversely, households located in densely populated areas with an employed head who is married, has a tertiary education, and is in very good health are at the least risk.

Table 6 shows the ratios of risk of material deprivation for households at the greatest and least risk (from the point of view economic activity, education, general health and marital status of household head as well as from the point of view of household type and degree of urbanisation).

The impact of economic activity and education are noteworthy: both factors have a stronger influence on risk of severe MD than on risk of MD. Households whose head is unemployed in comparison to households whose head is employed are at 9.6 times higher risk of being materially deprived in Slovak households and at 3.9 times higher risk in Polish households. The economic activity of the head of household has a more significant effect on severe MD in Slovak households than in Polish ones. On the other hand, the risk of severe MD due to low education is higher in Poland. Polish households with a poorly educated head have up to 12.7 times higher risk of severe MD than households headed by an individual with a tertiary education. The same odds ratio for Slovak households is 9.5.

Table 6. Comparison of Odds Ratios Between the Riskiest and Least Risky Categories of Individual Relevant Factors of MD and Severe MD

Variable	The Worst and the Best Category	SR		PL	
		Odds Ratio for MD	Odds Ratio for Severe MD	Odds Ratio for MD	Odds Ratio for Severe MD
EAS	Unemployed	6.7	9.6	3.8	3.9
	At work				
Education	Pre-primary (Primary)	7.4	9.5	9.0	12.7
	Tertiary 1st (Tertiary 2nd)				
Household type	1A_at_least_1Ch (2A_at_least_3Ch)	2.5 (2.2)	2.1 (1.8)	1.8 (2.3)	1.5 (1.9)
	2A_0Ch				
Health	Very bad	3.9	4.1	6.3	6.8
	Very good				
Marital status	Divorced	3.4	3.4	2.9	3.8
	Married				
Urbanisation	Intermediate	1.3	1.3	1.1	1.1
	Dense				

Source: EU SILC 2012, the authors' own elaboration based on findings from Tables 4 and 5.

Besides the odds ratios, logistic regression models estimated in the article provide the option of estimating the probability that the household is materially deprived or severely materially deprived. Probabilities of MD and severe MD for the household from the most and the least risky categories are listed in Table 7. All the probabilities are calculated for a 40 year-old head of household.

Table 7. Percent of MD and Severe MD for Those Slovak and Polish Households that Were the Most and the Least Threatened with MD in 2012

Households	SR		PL	
	MD	Severe MD	MD	Severe MD
The most threatened with MD and severe MD	98.52	97.95	98.21	97.12
The least threatened with MD and severe MD	3.21	1.44	3.27	1.22

Source: EU SILC 2012, the authors' own elaboration based on findings from Table 4 and Table 5.

We can see that in both countries, the households most threatened with material deprivation have a probability of being materially deprived of over 98% and a greater than 97% probability of being severely materially deprived.

On the other hand, households that are the least threatened with material deprivation have a less than 3.5% probability of being materially deprived and even less than 1.5% probability of being severely materially deprived. Our findings show how material deprivation and severe material deprivation of Slovak and Polish households are strongly determined by certain relevant factors.

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Materialne zubożenie w Polsce i na Słowacji – analiza porównawcza
(Streszczenie)

Jednym z kluczowych celów Unii Europejskiej zawartym w strategii Unii Europejskiej „Europa 2020" jest zasadnicza redukcja liczby osób zagrożonych ubóstwem lub wykluczeniem społecznym. Unia Europejska poszukuje możliwości zmniejszenia problemu ubóstwa poprzez ograniczenie do 2020 r. liczby osób zagrożonych ubóstwem lub wykluczeniem społecznym o co najmniej 20 milionów. Monitorowanie procesu redukcji ubóstwa zostało oparte przede wszystkim na wskaźniku AROPE, który odnosi się do sytuacji osób zagrożonych ubóstwem lub doświadczających poważnej materialnej deprywacji albo żyjących w gospodarstwach domowych utrzymujących się przede wszystkim z innych źródeł niż praca. Artykuł jest poświęcony problemowi materialnej deprywacji jako jednemu z trzech komponentów monitorowanych w ramach ewaluacji sytuacji społecznej w Unii Europejskiej.

Wspomniana deprywacja została w nim ujęta w stopniu ogólnym i intensywnym. Celem opracowania jest odpowiedź na pytanie, jakie czynniki i w jaki sposób istotnie wpływają na materialną deprywację gospodarstw domowych w Polsce i na Słowacji. Poddanie badaniu gospodarstw ze wspomnianych państw pozwoliło na przeprowadzenie analizy porównawczej w zarysowanym powyżej obszarze badawczym.

Dane statystyczne w postaci zbiorów indywidualnych obserwacji gospodarstw domowych zaczerpnięto z badania EU SILC przeprowadzonego w Polsce i na Słowacji w 2012 r. Do realizacji celu pracy wykorzystano metody analizy zależności, w tym modele regresji logistycznej, natomiast obliczenia przeprowadzono przy użyciu SAS Enterprise Guide.

Słowa kluczowe: EU SILC – Europejskie Badanie Warunków Życia Ludności, materialna deprywacja, poważna deprywacja materialna, regresja logistyczna.