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Abstract. In avoiding social tension and contributing to the wellbeing of society, an essential role is played by the social security system that protects individuals in the event of social risks and provides individuals incapable of work with means of existence. The research hypothesis is as follows: there are significant disparities in social security among municipalities in Latvia. The research aim is to identify social security clusters in Latvia and to determine the overall development level of each cluster. The term social security is interpreted differently; thus, a classification of social security elements is not strictly defined. For having a single understanding, the authors suggest using the term social security in a broader sense, which involves social protection, health care and the promotion of education and employment, and in a narrow sense, which entails only social protection. The present research revealed that the indicators of poverty and social exclusion were low for the clusters with low levels of income security, health care and social protection. However, the same indicators were high for the clusters with high levels of income security, health care and social protection. The research found that there were no significant differences in the proportions of budgetary expenditures on social protection in Latvia's municipalities, while Riga city (Cluster 2) and small municipalities (in terms of area) with a low social security level (Cluster 5) spent on social protection a greater proportion of their budgets compared with the other municipalities. There were also no significant differences in social security between the municipalities belonging to Clusters 1-4 and Clusters 5 and 6.

Key words: social security, social protection, cluster.

JEL code: F5, R5, G00

Introduction

The priority "human resilience" set in the National Development Plan of Latvia for 2014-2020 (Cross-Sectoral Coordination Centre, 2012) states that "historical experience, social stratification and crises have negatively influenced the resilience of many individuals; for this reason, the government's objective is to create conditions for strengthening their resilience". The government, taking care about the resilience of individuals, envisages contributing to the middle class and the demographic situation (CSCC, 2012).

In avoiding social tension and contributing to the wellbeing of society, an essential role is played by the social security system that protects individuals in case of social risks and provides individuals incapable of work with means of existence.

A number of researchers and organisations have focused on social security and social protection problems in Latvia, e.g. A.Grinfelde (2010), I.Latviete (2012), E.Volskis (2008), the Free Trade Union Confederation of Latvia (2011) etc. Social insurance problems were a focus in a number of studies by the Ministry of Welfare (Ministry of Welfare, 2015a).

The research object is 119 municipalities in Latvia (nine republican cities: Riga, Daugavpils, Jekabpils, Jelgava, Jurmala, Liepaja, Rezekne, Valmiera and Ventspils and 110 amalgamated municipalities). The research subject is social security. In their previous research studies (Mistre B., Muska A., 2013), the authors have found that, according to the Central Statistical Bureau (2015), 110 municipalities of Latvia very diverse in terms of area, population, population density, economic profile and economic development level. The mentioned facts put forward a hypothesis: there are significant disparities in social security among municipalities in Latvia. The research aim is to identify social security clusters in Latvia and to determine the overall development level of each cluster.

To achieve the aim, the following specific **research tasks** were set:

1) to examine the nature and content of the term social security;

2) to identify the social security development level in the municipalities and republican cities of Latvia by applying clustering and ranking.

The present research also employed the monographic method, analysis and synthesis, deduction and induction as well as multifactor statistical analysis.

The research used data of the Central Statistical Bureau (CSB), the State Social Insurance Agency (SSIA), the Ministry of Welfare (MoW) and the State Employment Agency (SEA) as well as findings and deductions of research studies conducted in Latvia that related to the problem researched by the authors.

The research novelty involves the identification of social security clusters in Latvia and the examination of their overall development levels.

Research results and discussion 1. Nature and content of social security

Based on the research studies by A. Grinfelde (2010), I. Latviete (2012), E. Volskis (2008) and other researchers, the authors find that there is no single understanding of the terms social security, social protection and social provision.

Examining the quality of life of pensioners at national and regional levels in her doctoral thesis entitled Quality of Life of Pensioners in the Regions of Latvia, A. Grinfelde (2010) uses the term social security system, which involves social protection, health care and social assistance.

However, I. Latviete (2012) finds in her research on policies made by the Ministry of Welfare of the Republic of Latvia that one of the government policy areas is social protection that involves social insurance, social benefits, social services and social assistance, while at the same time ascertaining that the Ministry of Welfare works on a social policy involving social security, health care, employment and labour problems. Her research does not clearly state whether the terms social protection and social security are identical. The Free Trade Union Confederation of Latvia (2011), examining the term social security and the nature of social security, finds that social security usually includes three key systems: the social insurance system, the system providing other incomes (usually benefits funded by the national and local governments and private organisations) and the system of social services.

After examining the Summary of Court Practices in Legal Cases on Social Security Disputes in 2007-2013 by the Supreme Court of the Republic of Latvia (2014) as well as a summary of the PhD paper Pension System's Development Problems in Latvia by E.Volskis (2008), the authors find that the term social provision is used as well. The Summary of Court Practices in Legal Cases on Social Security Disputes in 2007-2013 (Supreme Court of the Republic of Latvia, 2014) states that social security and social provision are identical terms and that the key components of the social provision system are: state social insurance, social assistance and services and social support.

E. Volskis (2008) believes that complete social provision should also involve social rights that include the right to employment, the right to choose the type and place of an occupation, the right to fair and favourable working conditions, the right to social protection in case of unemployment etc.

The Free Trade Union Confederation of Latvia (2011) has also identified that in Latvia the term social security is sometimes replaced with the term social provision. According to the researchers, such a replacement is the narrowing of the term social security. The authors of the paper also agree with this conclusion. The Free Trade Union Confederation of Latvia (2011) has also stated that sometimes the term social security is used in a general sense of the term security, integrating the basic needs in the term: food, clothing, housing, education, income, availability of health care and at times even public security.

The term social protection is used in the European Union. Social protection is the key instrument of social assistance, a security net based on redistribution policies through which individuals are protected from the financial forms of social risks and poverty and social exclusion. According to the European statistical methodology, social protection involves all appropriations provided by national and local government institutions and private organisations to help individuals in the event of problems of the following predefined categories: sickness, disability, old age, survivors, family and children, unemployment and homelessness. Social protection also entails the promotion of employment, pensions and health care. According to the EU definition, the term social protection is a synonym for the term social security used in Latvia's legal acts (Free Trade Union Confederation of Latvia, 2011).

In Latvia, the Law On Social Security (1995) stipulates the principles of formation and functioning of a social security system, the key social rights and obligations of persons and the basic prerequisites for their implementation as well as the type of social services. However, the law does not define the term social security but it specifies the following social rights: promotion of education and employment, social insurance, the right to health care, social guarantees associated with particular circumstances in the case of loss of health, reimbursement of family expenses, benefits for the ensuring of a suitable apartment, assistance for children and youths, social assistance and involvement of disabled persons in social life.

The Free Trade Union Confederation of Latvia (2011) has also declared that social security elements take different forms in international practices; thus, the classification of social security elements may not be strict. The authors also agree with this opinion.

For having a single understanding, the authors suggest using the term social security in a

Jelgava, LLU ESAF, 21-22 April 2016, pp. 123-125 broader and a narrow sense. In a broader sense, the term social security should involve social protection, health care and the promotion of education and employment. In a narrow sense, social security means social protection that entails state social insurance, government social benefits, social assistance and social services that are funded from the central government basic budget and the central government special budget as well as local government budgets.

2. Assessment of social security in the municipalities of Latvia

A cluster analysis was performed to assess the social security situation in the municipalities and republican cities of Latvia. Fifty-seven statistical indicators, which characterised social security in the broader sense, i.e. social protection, health care and the promotion of education and employment, in 110 municipalities of Latvia and 9 cities in 2014 were selected for the cluster analysis.

A dispersion analysis (ANOVA), which is part of the statistical data processing module Cluster Analysis in SPSS for Windows, showed that only 22 of the selected 57 indicators were statistically significant for grouping the amalgamated municipalities and republican cities into clusters. The significance level did not exceed 0.05. The authors did not use the statistically insignificant indicators in their further analysis.

Inter-cluster distances indicate associations between clusters. Clusters with low inter-cluster distances, if redistributed, can move to the next level and create new clusters or cluster groups.

Several clustering options were considered when performing the statistical data analysis. The most appropriate possibility is to divide Latvia into six clusters consistent with the social security level, as then the number of municipalities and cities of clusters is more even.

In addition to clustering, the clusters were ranked based on all the statistically significant

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indicators to identify each cluster's overall development level relative to that of the other ones. Furthermore, the authors classified the statistically significant indicators of social security into three groups for the purpose of interpretation of the results:

1) indicators of poverty and social exclusion:

- number of poor individuals (MoW data);
- number of recipients of housing benefits (MoW data);
- number of recipients of the guaranteed minimum income level (hereinafter GMI) (MoW data);
- number of income-tested recipients of municipal social assistance benefits (hereinafter social assistance benefits) (MoW data);
- number of recipients of unemployment benefits (SSIA data);
- number of long-term unemployed (SEA data);
- number of unemployed youths aged 15-24 (SEA data);
- number of preretirement age unemployed (SEA data);
- emigration of individuals, as internal regional disparities encourage residents move either to the capital city or abroad (CSB data);
- 2) indicators of income security:
- average number of employees in cities and municipalities (CSB data);
- number of self-employed individuals in cities and municipalities (CSB data);
- number of recipients of old-age pensions (SSIA data);

- number of recipients of parents' benefits (SSIA data);
- average old-age pension, EUR (SSIA data);

3) indicators of health care and social protection:

- number of doctors per 10 000 capita (Health Inspectorate data);
- child mortality (CSB data);
- number of children having received social rehabilitation services (MoW data);
- number of children (aged under 15) (CSB data);
- number of employees of municipal institutions providing social services and social assistance (MoW data);
- local government budgetary expenditures on social assistance measures, EUR (MoW data);
- local government budgetary expenditures on social protection, EUR (State Regional Development Agency (hereinafter SRDA) data);
- personal income tax (hereinafter PIT) revenues in municipal budgets, EUR (SRDA data) (Table 1).

The ranking showed that the best situation in terms of social security was specific to Cluster 1 that included the republican city of Ventspils as well as Ogre municipality. The only indicator to be ranked in first position was "*average old-age pension*". Cluster 1 featured small numbers of long-term unemployed –138 unemployed people – and unemployed youths – 105 young individuals, on average.

Average cluster values and ranks for social securit	y in Latvia in 2014
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Indicator	1.		2.		3.		4.		5.		6.		
	Avg. value	Rank											
Group 1: indicators of poverty and social exclusion													
number of poor individuals	1802	4	18383	6	2566	5	1104	2	412	1	1150	3	
number of recipients of housing benefits	3222	4	25858	6	5286	5	1918	3	385	1	1141	2	
number of GMI recipients	441	3	13694	6	965	5	377	2	147	1	493	4	
number of recipients of social assistance benefits	7071	4	39512	6	7300	5	2757	3	642	1	1720	2	
number of recipients of unemployment benefits	680	4	9779	6	1392	5	461	3	92	1	267	2	
number of long-term unemployed	138	2	2622	6	885	5	255	3	113	1	374	4	
number of unemployed youths	105	3	1192	6	249	5	108	4	24	1	79	2	
number of preretirement age unemployed	166	4	2184	6	412	5	128	3	39	1	125	2	
emigration of individuals	416	4	6192	6	824	5	230	3	38	1	124	2	
Total rank for Group 1:	-	32	-	54	-	45	-	26	-	9	-	23	
Group 2: indicators of income security													
average number of employees in cities and municipalities	13422	3	418145	1	26691	2	9595	4	1202	6	4310	5	
number of self-employed individuals in cities and municipalities	746	3	10660	1	1350	2	515	4	151	6	389	5	
number of recipients of old-age pensions	8698	3	156230	1	16147	2	5103	4	1170	6	3254	5	
number of recipients of parents' benefits	224	3	4646	1	409	2	160	4	24	6	82	5	
average old-age pension, EUR	315	1	302	2	289	3	284	4	255	6	278	5	
Total rank for Group 2:	-	13	-	6	-	11	-	20	-	30	-	25	

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1. 2. 3. 4. 5. 6. Group 3: indicators of health care and social protection number of doctors per 10 000 capita child mortality 0.3 number of children having received social rehabilitation services number of children (aged under 15) number of employees of municipal institutions providing social services and 1 093 social assistance local government budgetary expenditures 1.5 36.0 2.4 0.7 0.2 0.5 on social assistance measures, mln EUR local government budgetary expenditures 3.4 78.7 6.0 0.5 2.1 1.4 on social protection, mln EUR PIT revenues in municipal budgets, mln 22.2 430.0 37.5 13.2 2.0 7.0 EUR Total rank for Group 3: ------Total: ------

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Source: authors' calculations

Cluster 2 included the capital city of Riga. The indicators of poverty and social exclusion as well as the indicator "child mortality" were ranked 6th, while the indicators of income security (except the indicator "average old-age pension") and health care and social protection (except the mentioned indicator "child mortality") were ranked in the highest position (1st). The authors explain it by the large number of people residing in the capital city. According to the CSB (2015), 643 368 people lived in Riga in 2014, which accounted for a third of Latvia's population. The high concentration of people results in a larger number of employees and self-employed individuals, which, in its turn, leads to greater tax revenues in the local government's budget. This, in its turn, influences decisions concerning social policies - the local authority can afford to spend more on social protection and social support measures. In 2015, Riga's local government spent on social protection 10.6 % of its basic budget, while the local governments included in Clusters 1 and 3 spent, on average, almost 7.7 %, and those belonging to Cluster 4 - on average, 8.7 %. However, the large number of people also means that the local government has to spend more on social protection and social support measures in absolute terms. It is likely that a great deal of the region's population is subject to the risk of poverty and social exclusion. An analysis of the following indicators: proportion of poor persons, proportion of recipients of housing benefits and proportion of recipients of social assistance benefits in the total number of city/municipality population leads to a conclusion that the proportions of such people in the capital city of Riga were the lowest (3 %, 4 % and 6 %, respectively). The authors explain the facts by the high economic activity level in the capital city compared with the other republican cities (Mistre B., Muska A., 2013), which negatively affected the capital city's population's social protection.

Cluster 3 included four Latvia's cities: Jurmala, Liepaia, Daugavpils and Jelgava. Like in Cluster 2, all the indicators of poverty and social exclusion as well as the indicator "child mortality" were ranked in the low 5th position, while the indicators of income security (except the indicator "average old-age pension") and health care and social protection (except the mentioned indicator "child mortality") were ranked in the high 2nd position. Daugavpils, Liepaja, Jelgava and Jurmala were Latvia's largest cities behind Riga where 4.4 %, 3.6 %, 2.9 % and 2.5 % of the total population lived. Approximately 5% of the population of Daugavpils and Jelgava and 2.5 % of those living in Jurmala and Liepaja were poor persons. Of the total population in Daugavpils and Jelgava, 14 % were recipients of social assistance benefits. The proportion of such people in Liepaja comprised 10 % of the total population of the city, while in Jurmala it was only 4 %. Of the total population in Jelgava and Jurmala, 2 % received housing benefits, while in Liepaja this indicator was slightly higher at 10 % and in Daugavpils it was 14 %.

Previous research studies by the authors (Mistre B., Muska A., 2013) showed that Jurmala and Jelgava featured a higher economic activity level and, unlike Daugavpils, the cities are located close to the capital city; therefore, their local governments have to spend less funding on housing benefits to meet this basic need of the population. The economic activity level in Liepaja was higher than in Jurmala and Jelgava, even though Liepaja is located 217 km from the capital city.

The situation in Clusters 4, 5 and 6 was opposite. All the indicators of poverty and social exclusion as well the indicator "*child mortality*" were ranked in high positions (from 1 st to 3 rd), while the indicators of income security (except the indicator "*average old-age pension*") and health care and social protection (except the mentioned indicator "*child mortality*") were ranked in the lowest positions (from 4 th to 6 th).

Cluster 4 comprised three republican cities -Jekabpils, Rezekne and Valmiera and municipalities located next to the capital city -Kekava, Olaine and Salaspils - as well as the nearby municipalities of Bauska and Dobele. An analysis of the indicators: proportion of poor persons, proportion of recipients of housing benefits and proportion of recipients of social assistance benefits in the total number of city/municipality population leads to a conclusion that the proportions of the mentioned individuals rise with the distance increasing from the municipality, included in the cluster, to the capital city. The reason, as found by the previous research studies by the authors (Mistre B., Muska A., 2013), is a lower economic activity level in the remote regions.

Cluster 6 consisted of 24 municipalities (Aizkraukle, Aluksne, Balvi, Iecava, Cesis, Daugavpils, Gulbene, Jelgava, Ozolnieki, Kraslava, Kuldiga, Limbazi, Ludza, Madona, Ikskile, Lielvarde, Rezekne, Adazi, Babite, Carnikava, Garkalne, Stopini, Smiltene and Ventspils), while Cluster 5 consisted of 76 municipalities (Jaunjelgava, Plavinas, Koknese, Nereta, Skriveri, Ape, Vilaka, Baltinava, Rugaji, Rundale, Vecumnieki, Ligatne, Amata, Priekuli, Jaunpiebalga, Pargauja, Rauna, Vecpiebalga, Ilukste, Auce, Tervete, Jekabpils, Akniste, Viesite, Krustpils, Sala, Dagda, Aglona, Skrunda, Alsunga, Aizpute, Durbe, Grobina, Pavilosta, Priekule, Nica, Rucava, Vainode, Aloja, Salacgriva, Karsava, Zilupe, Cibla, Cesvaine, Lubana, Varaklani, Ergli, Kegums, Preili, Livani, Riebini, Varkava, Vilani, Baldone, Saulkrasti, Sigulda, Incukalns, Krimulda, Malpils, Ropazi, Seja, Broceni, Dundaga, Mersrags, Roja, Kandava, Engure, Jaunpils, Valka, Strenci, Koceni, Mazsalaca, Rujiena, Beverina, Burtnieki and Naukseni), which are mostly small municipalities (in terms of area). In 2014, the mentioned municipalities spent on social 7.7 % protection (Cluster 6) 9.6 % and (Cluster 5) of their basic budgets.

If the indicator averages of Cluster 5 are compared with those of the other clusters, one can find that the averages of Cluster 5 are considerably lower, as the municipalities of this cluster are small (in terms of area) with low population densities and small numbers of employed and self-employed individuals. There are significant differences in indicators between Cluster 2, which consists of only the country's capital city and the other clusters. The present research also proves one of the findings made by the authors in their previous research studies (Mistre B., Muska A., 2013) that a monocentric trend in development prevails in Latvia. Due to the trend, there are significant disparities between Riga, capital city of Latvia and the other amalgamated municipalities and republican cities. The authors classify the territory of Latvia by economic activity into three categories: (1) the capital city of Riga, (2) republican cities, except Riga, and large amalgamated municipalities (in terms of area), (3) small municipalities (in terms of area) (Mistre B., Muska A., 2013).

After comparing the ranks showing social security, one can conclude that there were no considerable differences in social security between the municipalities of Latvia included in Clusters 1-4 and those belonging to Clusters 5 and 6.

Conclusions, proposals, recommendations

The term social security is interpreted differently; thus, a classification of social security elements is not strictly defined. For having a single understanding, the authors suggest for scientists to use the term social security in a broader and a narrow sense. In a broader sense, the term social security, according to the authors, should involve social protection, health care and the promotion of education and employment. In a narrow sense, the term social security should entail only social protection.

The indicators of poverty and social exclusion were low for the clusters with low levels of income security, health care and social protection. However, the same indicators were high for the clusters with high levels of income security, health care and social protection.

There were no significant differences in the proportions of budgetary expenditures on social protection in the municipalities of Latvia, while Riga city (Cluster 2) and small municipalities (in terms of area) with a low social security level (Cluster 5) spent on social protection a greater proportion of their budgets compared with the other municipalities.

There were no considerable differences in social security between the municipalities of Latvia included in Clusters 1-4 and those belonging to Clusters 5 and 6.

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