

## **Synergy of Recipients of State Social Security Benefits and Economic Development in Latvia**

**Baiba Mistre**, *Mg.oec., lecturer, PhD student*

*Department of Accounting and Finance, Latvia University of Agriculture*

**Aina Muska**, *Dr.oec., associate professor*

*Department of Business and Management, Latvia University of Agriculture*

**Abstract.** The research showed that with the beginning of economic crisis and owing to the amendments made in legislative enactments, the numbers of recipients of unemployment and sickness benefits have increased in Latvia's regions, while the number of recipients of paternity and maternity benefits has decreased. The majority of recipients of social security benefits is concentrated in the regions of Riga and Pierīga, while the smallest one in Vidzeme region. A cluster analysis showed that monocentric economic development trends were specific to Latvia, as result of which there were significant differences between the country's capital city of Riga and the rest of Latvia's regions. The economic development level in many border districts of Latvia is low; hence, the socio-economic differences increase and differences in the number of recipients of social security benefits increase in the regions of Latvia. According to the research results, there is interaction – synergy – among the number of recipients of unemployment benefits per 1000 employed individuals, the number of recipients of maternity and parental benefits per 1000 employed individuals, the economic development level of districts, as well as the distance of districts to the country's capital city. There is also a strong interaction between the number of recipients of sickness benefits per 1000 employed individuals and the number of recipients of maternity and parental benefits per 1000 employed individuals, while there is no interaction between the number of recipients of sickness benefits per 1000 employed individuals and economic activities.

**Key words:** state social security benefits, economic development, synergy.

### **Introduction**

The capacity of social security system and sustainable development, which protects individuals in case of social risk and provide disabled individuals with means of existence, plays an important role in avoiding social tension and ensuring the wellbeing of the society. To provide a sustainable social security system in Latvia, maintaining its financial stability and fostering its development as well as achieving the society's better understanding on the role of social insurance system were set as the key tasks to be solved in the "National Development Plan 2007-2013". After analysing the amounts of state social security benefits in Latvia and its regions during 2005-2009, Mistre B. and Dobele A. emphasise that there are significant differences among the amounts of these benefits in different Latvia's regions (Mistre B, Dobele A., 2010). Social insurance problems, including changes in the amount and number of social security benefits, were revealed in several studies conducted by the Ministry of Welfare (Optimāla, nodarbinātību veicinoša .., 2007; Cunska Z., Muravska T, 2008; National Strategy Report... , 2008).

However, few studies on the synergy of recipients of social security benefits and economic development, which is a complementary precondition for sustainable development in its regions, have been done presently in Latvia. Therefore, the synergy between economic development and recipients of social security benefits, which is revealed in this paper, can be regarded as the paper's novelty.

**Hypothesis:** a synergy exists in Latvia between the number of recipients of state social security benefits and the economic development level of its districts. The **research aim** is to identify interaction between the number of recipients of state social security benefits and the economic development level in Latvia. The following **tasks** were set forth to achieve the research aim:

- 1) to investigate the economic and legal aspects of the country's state social security benefits;
- 2) to examine the economic development in Latvia's districts;
- 3) to compare the number of recipients of state social security benefits with the results of cluster analysis.

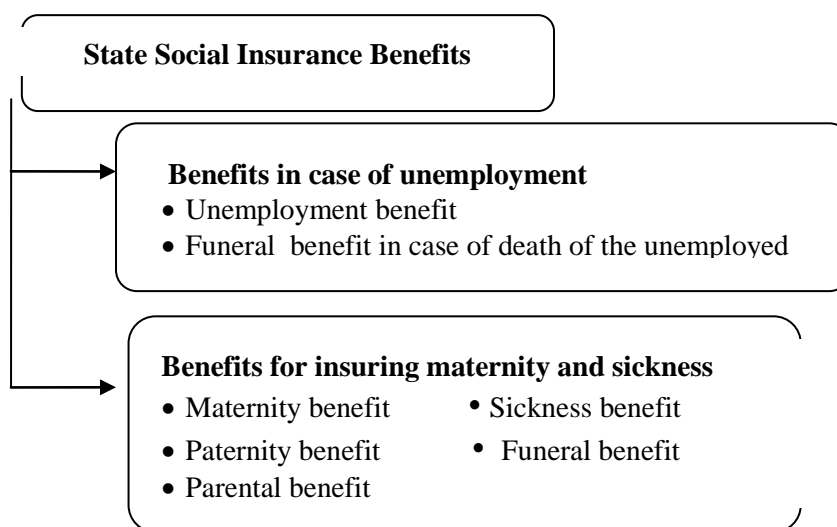
The present research is based on the monographic method, analysis and synthesis, deduction and induction, factor analysis as well as the economic and statistical method. Mostly legal enactments of the Republic of Latvia, data of the Central Statistical Bureau (CSB) and the State Social Insurance Agency (SSIA), and pieces of research done in Latvia in the field of social insurance were used in the present research. The research covers the period of 2006-2009, analysing the data by statistical regions and districts (a unit of administrative and territorial division in Latvia until the middle of 2009). Planning and statistical regions are the largest territorial units, for which the statistical information is collected and analysed in Latvia. Planning regions (Riga, Vidzeme, Kurzeme, Zemgale, and Latgale) have been established in Latvia for regional development planning and ensuring the cooperation between local governments. Six statistical regions have been established for the purposes of registration. In the system of statistical regions, Riga planning region has been divided into 2 statistical regions – Riga and Pierīga (Development of regions..., 2009).

## Results

### 1. Economic and legal aspects of state social insurance benefits

A social safety system is established in any country, which largely depends on the social and economic situation as well as on the social policy implemented in it. Latvia's social safety system includes state social insurance, state social benefits, social services, and social assistance that are financed both from the central government's basic budget and special budget, and the budget of local governments. The goal of social insurance system is to insure individuals and their dependent individuals against the risk of losing their earned income due to sickness, disability, maternity, unemployment, old age, accidents at work or occupational disease as well as against additional expenses related to childcare and the death of insured persons or their dependents.

Latvia's social insurance includes state pensions and state social security benefits. In accordance with the law "On Insurance in Case of Unemployment" (1999) and the law "On State Social Insurance" (1997), state social insurance benefits are classified into two groups: benefits in case of unemployment and benefits of maternity and sickness (Figure 1).



Source: authors' construction based on the law "On Insurance in Case of Unemployment" (1999) and the law "On State Social Insurance" (1997)

Fig. 1. Classification of state social insurance benefits in Latvia

Due to the limitation set for the paper, only the trends in the number of recipients of state social security benefits were analysed using the unpublished data of the SSIA.

Table 1  
Changes in the number of recipients of state social security benefits in Latvia's regions in 2006-2009

Type of benefit	Region	Average number of recipients				Annual increase rate, %		
		2006	2007	2008	2009	2007	2008	2009
Unemployment benefit	Riga	9676	9171	9216	21007	-5.22	0.49	127.94
	Pierīga	5772	5929	5531	11531	2.72	-6.71	108.48
	Vidzeme	3545	3457	3119	6791	-2.48	-9.78	117.73
	Kurzeme	4888	4922	4727	9450	0.70	-3.96	99.92
	Zemgale	4524	4245	3922	8511	-6.17	-7.61	117.01
	Latgale	6351	6130	5390	9741	-3.48	-12.07	80.72
Sickness benefit	Riga	6904	7087	7572	8497	2.65	6.84	12.22
	Pierīga	3789	3960	4253	4897	4.51	7.40	15.14
	Vidzeme	2447	2540	2800	3258	3.80	10.24	16.36
	Kurzeme	3109	3067	3135	3331	-1.35	2.22	6.25
	Zemgale	2640	2713	2820	2920	2.77	3.94	3.55
	Latgale	2983	3142	3201	3361	5.33	1.88	5.00
Maternity benefit	Riga	880	956	946	829	8.64	-1.05	-12.37
	Pierīga	435	481	494	468	10.57	2.70	-5.26
	Vidzeme	209	228	232	206	9.09	1.75	-11.21
	Kurzeme	296	321	308	277	8.45	-4.05	-10.06
	Zemgale	261	296	302	264	13.41	2.03	-12.58
	Latgale	257	273	273	254	6.23	0.00	-6.96
Paternity benefit	Riga	164	211	254	225	28.66	20.38	-11.42
	Pierīga	107	136	165	152	27.10	21.32	-7.88
	Vidzeme	57	72	85	72	26.32	18.06	-15.29
	Kurzeme	83	94	114	95	13.25	21.28	-16.67
	Zemgale	74	84	112	92	13.51	33.33	-17.86
	Latgale	65	81	87	85	24.62	7.41	-2.30

Source: authors' calculations based on the SSIA data

Table 1 does not include changes in the number of recipients of parental benefits, since such a benefit was introduced in 2008.

Table 1 shows that the number of recipients of unemployment benefits in the whole country as well as in all its regions, except Riga region, has decreased in 2008. A similar trend was also observed in the previous years, as the economic boom positively affected the situation in Latvia's labour market, causing almost full employment. The publication "Social Policy Implementation in Latvia after Joining the European Union" (2009) states that "the average number of recipients of unemployment benefits slightly decreased every year since Latvia's accession to the EU..."

The procedure of granting and paying **unemployment benefits** is regulated by the law "On Insurance in Case of Unemployment" (1999). A person being granted the status of unemployed and having a period of insurance not less than 1 year is entitled to unemployment benefit, if obligatory social insurance contributions for unemployment have been paid or had to be paid in the Republic of Latvia for at least nine months during the recent 12 month period prior to the date of gaining the status of unemployed.

After the years of strong economic growth, in 2009, Latvia's national economy faced an economic crisis that was caused both by structural and cyclical, and exogenous factors. The economic recession significantly affected the labour market – the registered unemployment rate increased, the rate of employment decreased, the economic activity

indicators sharply fell, and the wages were significantly cut (Konceptija par sociālās..., 2010). In 2009, the increase in the rate of unemployment affected also changes in the number of recipients of unemployment benefits. Table 1 shows that the number of recipients of unemployment benefits increased – it doubled in all Latvia's regions. The fastest annual increase was observed in Riga region and Vidzeme region, i.e. in the regions with the largest concentration of residents and the lowest unemployment rate in the period until 2008 as well as in Zemgale region (Development of Regions..., 2010.). The smallest annual increase was observed in Latgale region – in the region having the highest unemployment rate during the entire period since Latvia restored its independence.

An analysis of the percentage distribution of recipients of unemployment benefits showed that on average 28.8% of benefit recipients are concentrated in Riga region, in Pierīga region - 17.2%, Vidzeme region - 10.1%, Kurzeme - 14.4%, Zemgale - 12.6%, and Latgale - 17.0% over the researched period.

A **sickness benefit** is granted if a person does not go to work and thus loses job income or if a self-employed person loses income: disability due to sickness or trauma, medical care or prevention is needed, isolation due to quarantine is necessary, treatment at a medical institution during the period of recovery after sickness or trauma if such treatment is needed to restore working capabilities, care, prosthesis, or orthosis for a child under 14 years of age at hospital.

Since 2009, a sickness benefit is granted and paid for a period from the 11<sup>th</sup> day of incapacity for work till the day of restoring working capabilities, but for not more than 26 weeks from the first day of incapacity for work if the incapacity is continuous, or for not more than 52 weeks within a three year period if the incapacity returns interruptedly. Until 2009, any sickness benefit was granted and paid for a period starting with the 15<sup>th</sup> day of incapacity for work till the day of restoring working capabilities, but for not more than 52 weeks from the first day of incapacity for work if the incapacity is continuous or for not more than 78 weeks within a three year period if the incapacity returns interruptedly.

A sickness benefit in the event of taking care of a sick child under 14 years of age is granted and paid for a period from the first day of incapacity for work until the 21<sup>st</sup> day of incapacity for work (On Maternity and ..., 1995).

Table 1 shows that the number of recipients of sickness benefit tended to increase in all the regions of Latvia during 2006-2009. After analysing the percentage distribution of benefit recipients, one can conclude that the largest share of recipients of sickness benefit is in Riga region or on average 31.8% of the total number of recipients of sickness benefit in Latvia, followed by Pierīga region with 17.9% on average, and Kurzeme and Latgale regions with 13.4% on average. The increase in the number of recipients of sickness benefit is related to almost full employment in Latvia's labour market in the period until 2008 as well as to the legalisation of employment, i.e. social insurance payments were made from all incomes, thus gradually reducing the phenomenon of under-the-table wages.

In accordance with the law "On Maternity and Sickness Insurance" (1995), a **maternity benefit** is granted and paid during the entire period of pregnancy leave (56 days) and postnatal leave (56 days) if a woman does not go to work and, thus, loses job income or if a self-employed woman loses income.

A woman who has initiated pregnancy-related medical care till the 12<sup>th</sup> pregnancy week at a preventive medical institution and continued it for the entire period of pregnancy, is granted a 14 day extra leave that is added to her pregnancy leave.

A **paternity benefit** is granted and paid to the child's father for *ten calendar days* of the leave granted in relation to childbirth.

To adjust the state social insurance system to economic possibilities, in 2009, the law "On State Pensions and Benefits Paid in the Period of 2009-2012" (2009) was passed. It provides that during the period from 3 November 2010 to 31 December 2012, maternity and paternity benefits, which are stipulated in the law "On Maternity and Sickness

Insurance”, are paid 80% of their recipients’ average wage subject to insurance contributions.

Table 1 shows that the number of recipients of maternity benefit in the whole country as well as in Latgale did not change in 2008. In the regions of Pierīga, Vidzeme, and Zemgale, the number of recipients of maternity benefit increased, while a decrease was observed in the regions of Riga and Kurzeme. In 2007, an increase in the number of recipients of benefits was observed in all the regions and the whole country, whereas in 2009 it tended to decrease.

After analysing the number of recipients of paternity benefit over the researched period, one can see that this number has gradually increased in the whole country and all its regions in 2007 and 2008; while in 2009 there was an opposite trend – the number of benefit recipients decreased.

The authors of the paper believe that maternity and paternity benefits are short-term benefits and, thus, the changes in their number have to be viewed along with the legislation concerning parental benefits. The authors believe that the birth rate has to be stimulated mostly by parental benefits and their duration. Since 2005, a parental benefit depends on incomes and only partially, it can be viewed as a social benefit; it also features an instrument for family planning. The change in legal enactments, i.e. the introduction of the so-called “mothers’ wage” encouraged families to afford one more child, especially during 2006-2007. Therefore, the number of recipients of parental benefits gradually decreased in Latvia until 2007, but their number increased by 4525 in 2007 if compared with the previous year. In 2008, it again sharply fell, as this support increased mostly owing to an increase in childbirths and during the first year of life of children; after the second year of their life this support decreases. It means that support for children in Latvia is intended only for a relatively short period (2 years), hence, it does not provide a real support for families and does not promote an increase in child births (Cunška Z., Muravská T., 2008).

A **parental benefit** is granted and paid to a socially insured person that *nurses his/her child aged less than one year* if this person is employed on the day of granting the benefit and is on leave for child care or does not gain income from self-employment due to child care.

Half of the recipients of maternity and paternity benefits are concentrated in the regions of Riga and Pierīga, whereas the smallest share of them is in Vidzeme region.

The numbers of recipients of state social insurance benefits significantly diverge among the districts of Latvia. Therefore, the authors computed the indicator “number of benefit recipients per 1000 employed individuals” (Table 2). The indicator was calculated per 1000 employed individuals, as state social insurance benefits may be received only by employed individuals. The year 2008 was selected for analysis, as a cluster analysis of the economic development was also done for this year and there was a lack of statistical data for 2009.

After analysing the numbers of recipients of state social security benefits by type of security benefits in Latvia’s districts, one can conclude that these numbers are different, except the numbers of recipients of paternity benefits.

The calculation showed that explicitly the smallest number of recipients of state social security benefits per total number of employed individuals dominates in Riga City. Per 1000 employed individuals. Totally, 19 individuals received a sickness benefit, 2 individuals were granted a maternity benefit, 1 - benefited from a paternity benefit, and 15 had a parental benefit.

In terms of the smallest number of recipients of sickness benefit, Riga city was followed by the districts of Gulbene, Ludza, Liepāja, Ventspils, Saldus, Daugavpils, Preiļi, Krāslava, Alūksne, and Jēkabpils in which this indicator ranged within 27-32 per 1000 employed individuals.

The largest number of recipients of maternity benefit per 1000 employed individuals was in the districts of Ogre, Bauska, Limbaži, Riga, Jelgava, Tukums, and Dobeles where it was within a range of 4-6. However, per 1000 employed individuals, 3 individuals

received a maternity benefit in the districts of Krāslava, Daugavpils, Gulbene, Ludza, Preiļi, Ventspils, Madona, Rēzekne, Liepāja, Jēkabpils, Valmiera, and Kuldīga, which is the lowest indicator after Riga City.

Table 2  
Average number of recipients of state social insurance benefits per 1000 employed individuals in Latvia's districts in 2008

District	Unemployment benefit	Sickness benefit	Maternity benefit	Paternity benefit	Parental benefit
Riga City	23	19	2	1	15
Riga	44	35	4	1	29
Liepāja	49	31	3	1	22
Daugavpils	37	31	3	1	18
Rēzekne	66	37	3	1	19
Jelgava	41	38	4	1	29
Ogre	69	51	6	2	39
Bauska	77	39	5	2	36
Tukums	51	41	4	2	29
Cēsis	46	48	4	1	25
Preiļi	79	31	3	1	21
Jēkabpils	46	32	3	1	22
Ventspils	34	30	3	1	22
Valmiera	34	41	3	1	22
Talsi	50	43	4	1	24
Dobele	73	49	4	1	29
Kuldīga	78	37	3	1	26
Limbaži	79	50	5	2	30
Madona	58	45	3	1	22
Ludza	86	29	3	1	20
Saldus	57	30	4	1	24
Aizkraukle	58	37	4	2	27
Krāslava	74	32	3	1	17
Valka	52	42	4	1	25
Balvi	71	41	4	1	22
Gulbene	48	27	3	1	19
Alūksne	53	32	4	1	24

Source: authors' calculations based on the SSIA and CSB data

The calculations showed that per 1000 employed individuals, 2 individuals received a paternity benefit in the districts of Ogre, Bauska, Tukums, Limbaži, and Aizkraukle, which is the highest indicator among the districts.

The largest number of recipients of parental benefit per 1000 employed individuals was observed in the districts of Ogre, Bauska, Limbaži, Jelgava, Tukums, Riga, and Dobele, ranging within 29-39.

In terms of the smallest number of recipients of parental benefit per 1000 employed individuals (within 17-20), Riga City was followed by the districts of Krāslava, Daugavpils, Rēzekne, Gulbene, and Ludza.

It is necessary to evaluate the economic development of the districts to make a deeper analysis of differences regarding the numbers of recipients of state social security benefits.

## **2. Evaluation of economic development in Latvia's districts**

A cluster analysis was performed to compare the economic development levels by various indicators in Latvia's districts. Sixteen statistical indicators were selected for the cluster analysis: the number of residents at the beginning of 2009; the change in the number of residents (from the beginning of 2005 to that of 2009, %); the population density at the beginning of 2009 (people per 1 km<sup>2</sup> of territory); the number of employees at their basic work in 2008 (thou.); demographic burden per 1000 residents as of the beginning of 2009; net wage in the private sector in 2008 (LVL); net wage in the public sector in 2008 (LVL); the number of economically active legal entities or entrepreneurs and businessmen per 1000 residents in 2008; the number of businessmen per 1000 residents in 2008; total revenues of the basic and special budget in 2008 (LVL); revenues of the basic budget in 2008 (LVL); revenues of the basic budget per capita in 2008 (LVL); Gross Domestic Product budget in 2006 (thou. LVL); Gross Domestic Product budget per capita in 2006 (LVL); and non-financial investments in 2006 (mill. LVL); non-financial investments per capita in 2006 (LVL) (Table 3).

These statistical indicators were summarised for all the 26 districts of Latvia. Riga City or the country's capital was excluded from Riga district.

The analysis of variance (ANOVA), which is included in the module Cluster Analysis of SPSS for Windows, showed that all the selected indicators, except five: change in the number of residents, demographic burden per 1000 residents, net wage in the private sector, the number of economically active legal entities or entrepreneurs and businessmen per 1000 residents, and non-financial investments per capita are statistically significant for grouping the districts into clusters. Their significance did not exceed a level of 0.05. The statistically insignificant indicators were omitted by the authors.

The cluster-to-cluster distances obtained in the analysis prove that there is a relationship among the clusters. The clusters being closer to each other can move to another level if a new distribution of them is performed, and they can create new clusters or cluster groups.

In clustering the statistical data, several numbers of clusters were considered: from 2 to 10 clusters. Latvia's territorial division by the economic development into 7 clusters was the most appropriate option, as the number of Latvia's districts was more equable with such a distribution into clusters.

In addition to the clustering results, the clusters were ranged for all the statistically significant indicators to determine the overall development level of each cluster in relation to the other clusters (Table 3).

The ranging showed that the most positive situation regarding economic development was in Cluster 1 that included only the capital city of Riga; the values of all the statistically significant indicators were placed in the first position.

Table 3

## Average values and ranks of clusters in the cluster analysis of the economic development in Latvia

Indicator	Cluster 1		Cluster 2		Cluster 3		Cluster 4		Cluster 5		Cluster 6		Cluster 7	
	Average value	Rank	Average value	Rank	Average value	Rank	Average value	Rank	Average value	Rank	Average value	Rank	Average value	Rank
Number of residents	713016	<b>1</b>	185863	<b>2</b>	115260	<b>3</b>	65803	<b>4</b>	55215	<b>5</b>	47026	<b>6</b>	31196	<b>7</b>
Population density, people per 1km <sup>2</sup>	2353.2	<b>1</b>	62.8	<b>2</b>	48.4	<b>3</b>	24.55	<b>4</b>	20.5	<b>5</b>	19.87	<b>6</b>	14.47	<b>7</b>
Number of employees, thou.	400.1	<b>1</b>	58.8	<b>2</b>	36.75	<b>3</b>	21.45	<b>4</b>	15.05	<b>5</b>	12.46	<b>6</b>	7.39	<b>7</b>
Net annual wage in the public sector, LVL	5737	<b>1</b>	4110	<b>2</b>	4036	<b>5</b>	4037	<b>4</b>	4024	<b>6</b>	4085	<b>3</b>	3820	<b>7</b>
Number of businessmen per 1000 residents	56	<b>1</b>	24	<b>2</b>	24	<b>2</b>	21	<b>4</b>	22	<b>3</b>	20	<b>5</b>	15	<b>6</b>
Total revenues of the basic and special budget, mill. LVL	606.80	<b>1</b>	72.65	<b>2</b>	60.55	<b>3</b>	36.65	<b>4</b>	21.35	<b>5</b>	13.79	<b>6</b>	9.04	<b>7</b>
Revenues of the basic budget, mill. LVL	554.77	<b>1</b>	63.36	<b>2</b>	55.41	<b>3</b>	32.78	<b>4</b>	19.35	<b>5</b>	11.93	<b>6</b>	7.81	<b>7</b>
Revenues of the basic budget per capita, LVL	778	<b>1</b>	358	<b>4</b>	485	<b>3</b>	513	<b>2</b>	351	<b>5</b>	261	<b>6</b>	254	<b>7</b>
GDP, thou. LVL	6722327	<b>1</b>	624151	<b>2</b>	378723	<b>3</b>	237340	<b>4</b>	136374	<b>5</b>	122971	<b>6</b>	64249	<b>7</b>
GDP per capita, LVL	9272	<b>1</b>	3299	<b>3</b>	3213	<b>4</b>	3702	<b>2</b>	2435	<b>6</b>	2573	<b>5</b>	1980	<b>7</b>
Non-financial investments, mill. LVL	2034.90	<b>1</b>	338.15	<b>2</b>	142.35	<b>3</b>	121.75	<b>4</b>	69.15	<b>5</b>	57.33	<b>6</b>	26.19	<b>7</b>
<b>Total rank</b>	-	<b>11</b>	-	<b>25</b>	-	<b>35</b>	-	<b>40</b>	-	<b>55</b>	-	<b>61</b>	-	<b>76</b>
Districts included into clusters	Rīga		Daugavpils Rīga		Jelgava Liepāja		Rēzekne Ventspils		Cēsis Tukums		Aizkraukle Bauska Jekabpils Kuldīga Madona Ogre Saldus Talsu Valmiera		Alūksne Balvi Dobele Gulbene Krāslava Limbaži Ludza Preiļi Valka	

Source: authors' construction based on the CSB data



Cluster 2 included the districts of Riga and Daugavpils. The values of all the mentioned indicators were placed in the second position, except the indicators: revenues of the basic budget per capita and Gross Domestic Product budget per capita. The values of these indicators are reduced by the large number of residents in the districts included into Cluster 2.

After comparing the average values of Clusters 2 and 1, one can conclude that there is a significant difference pointing that the economic development level in the capital city is much higher than in the districts included into Cluster 2.

Cluster 3 includes 2 districts – Jelgava and Liepāja. The indicator “number of businessmen per 1000 residents” was placed in the second position, the indicator “GDP per capita” had the fourth position, and the indicator “net wage in the public sector” took the fifth position; all the values of the other indicators were placed in the third position.

Cluster 4 also includes 2 districts – Rēzekne and Ventspils. The indicators “revenues of the basic budget per capita” and “GDP per capita” were placed in the second position. The values of the other indicators had taken the fourth position.

The average value of the indicator “number of residents” in Cluster 4 is smaller than that in Clusters 2 and 3. Therefore, the value of the indicator “revenues of the basic budget per capita” is higher, although the indicators “total revenues of the basic and special budget”, “revenues of the basic budget” as well as “GDP” are almost twice as high.

Cluster 5 includes the districts of Cēsis and Tukums. The highest indicator of this cluster is “number of businessmen per 1000 residents”, which was placed in the third position in the ranking, but if the average values of this indicator are compared among Clusters 2, 3, 4, 5, and even 6, one can see that there are no significant differences among the values. A similar conclusion can be made for the indicator “net annual wage in the public sector”, which was ranked in a low sixth position. However, after comparing the average values among Clusters 3, 4, and 5, one has to conclude that there are no large differences among them. The indicator “GDP per capita” is also ranked in the low sixth position. The values of the other indicators are ranked in the fifth position.

Cluster 6 includes 9 districts of Latvia: Aizkraukle, Bauska, Jēkabpils, Kuldīga, Madona, Ogre, Saldus, Talsi, and Valmiera. The average values of the indicators were ranked mostly in the sixth position for this cluster, meaning that the economic development level in this cluster is lower than in the previous five ones.

Cluster 7 also includes 9 districts: Alūksne, Balvi, Dobeles, Gulbene, Krāslava, Limbaži, Ludza, Preiļi, and Valka. The values of the all selected indicators characterising their economic development level are ranked only in the lowest positions, meaning that districts of this cluster feature the lowest economic development level in the country.

### **Discussion**

If comparing the clustering results with the number of recipients of unemployment benefits per 1000 employees, one can see that the number of benefit recipients in the clusters of higher economic development level is smaller than that in the clusters of lower economic development level. In Riga, which is the country’s capital city and is included into Cluster 1, the number of recipients of unemployment benefits is the smallest, i.e. 23 benefit recipients per 1000 employed individuals.

In the districts included into Cluster 2, there are 37 benefit recipients in Daugavpils district, but in Riga district – 44 benefit recipients per 1000 employees.

In Jelgava district, which is included into Cluster 3, there are 41 benefit recipients, but in Liepāja district – 49 such individuals per 1000 employees.

There are only 34 recipients of unemployment benefit per 1000 employees in Ventspils district, which is included into Cluster 4. It is the second lowest rate in the country after Riga city.

An exception has to be noted: the number of recipients of unemployment benefit per 1000 employees is 34 in Valmiera district from Cluster 6. The authors of the paper explain this fact by the relatively small distance of this district to the capital city. Therefore, a part of Valmiera district’s population is employed in Riga or its vicinity having one of the lowest unemployment rates. The National Strategy Report on Social Protection and Social Inclusion 2008-2010 also states that the low registered unemployment rate in the regions of Riga and Pierīga has

promoted regional mobility, respectively, a part of businessmen have attracted their employees from more distant planning regions of Latvia as well.

Cluster 4, except Ventspils district, includes also Rēzekne district that has a large number of recipients of unemployment benefit or 66 per 1000 employees. This large number of recipients of unemployment benefit can be explained by the high unemployment rate in this district and by the large distance from it to the capital city. The authors believe that a large distance to Riga determines the relatively large number of recipients of unemployment benefit (49) in Liepāja district.

In Clusters 5, 6, and 7 where a lower economic development level is observed if compared with the previous clusters, the number of recipients of unemployment benefit ranges from 50 to 86. The largest number of benefit recipients (86) is in Ludza district that has a low economic development level and there is a large distance from it to the capital city.

It means there is interaction – synergy – among the number of recipients of unemployment benefits, the economic development level of districts as well as the distance of districts to the country's capital city.

After comparing the clustering results with the number of recipients of maternity, paternity, and parental benefits per 1000 employees, one can conclude that a larger number of benefit recipients per 1000 employees is observed in the districts that are located next to the capital city or quite close to it, i.e. Ogre, Bauska, Limbaži, Riga, Jelgava, Tukums, Dobele, Cēsis, and Aizkraukle as well as in the districts of Cluster 6 – Aizkraukle, Bauska, Ogre, and Valmiera.

The gained results can be explained by the fact that Cluster 6 includes the indicator "net annual wage in the public sector, LVL" that is one of the highest value indicators ranked in the high third position. The authors of the paper believe that the rise in wages promoted an increase in the birth rate in the country, which also affected the indicator "number of benefit recipients per 1000 residents". It is also stated in the National Strategy Report on Social Protection and Social Inclusion 2008-2010 that an expenditure increase in the sphere of social insurance was impacted by the significant rise of wages in the national economy, as a result of which the amount of benefits increased, pensions were annually indexed, and birth indicators improved in the country, which in their turn were affected by an increase in the number of maternity benefits.

After analysing the statistically insignificant indicator "net annual wage in the private sector, LVL", the authors found that this indicator would not affect the results of cluster analysis and it would be placed in the fifth position with an average value of LVL 3512.56 for Cluster 6.

In the districts closely located to Riga City – Riga, Jelgava, and Cēsis – the average wages in the public and private sectors do not significantly differ from the average values of respective indicator in Cluster 6. A large part of residents living in the districts closely located to Riga city work in the country's capital, and thus the authors believe that in 2008, the residents of these districts regarded their future prospects as much more optimistic than the residents of more distant districts (for instance, the districts of Krāslava, Gulbene, Ludza, and Preiļi), meaning that their uncertainty about tomorrow – their job and income – was lower; it explains the gained results.

According to a household budget survey conducted by the CSB (Household Budget Survey..., 2009), the self-assessments of wellbeing in various planning regions of Latvia are different. The largest share of households who choose a response "we are not rich, but we live well" come from the regions of Riga, Pierīga, and Kurzeme. Whereas the response "we are on the brink of poverty or we are poor" was mostly expressed in Latgale. In 2008, the self-assessment of wellbeing of households living in Latgale has improved compared with the previous years.

To prove the thesis set in the paper, the authors developed dispersion diagrams for the indicators "net wage in the public sector", "number of recipients of maternity benefits per 1000 employees", "net wage in the private sector", and "number of recipients of parental benefits per 1000 employees", finding that there is a medium strong relationship between the variables.

The largest number of recipients of maternity and parental benefits per 1000 employees is in Ogre district, 6 and 39 respectively. In the districts of Bauska and Limbaži, there are 5 recipients of maternity benefit and respectively 36 and 30 recipients of parental benefit per

1000 employees. There are 4 recipients of maternity benefit and 29 recipients of parental benefit per 1000 employees in the districts of Tukums, Jelgava, Dobeles, and Riga. Irrespective of the high economic development level in the country's capital city of Riga (Cluster 1), the numbers of recipients of maternity and parental benefits per 1000 employees in Riga are the lowest compared with the whole country or only 2 recipients of maternity and 15 recipients of parental benefits per 1000 employees. This result gained by the authors may be explained by the large number of individuals employed in the capital city or 400.1 thousand people, which is almost 7 times more than the number of employees included into Cluster 2, and 54 times more than those in Cluster 7.

In the more economically developed districts located in the border area of Latvia – Daugavpils, Liepāja, Ventspils, and Rēzekne – the number of recipients of maternity and parental benefits is smaller if compared with the districts of Riga, Jelgava, Cēsis, and Tukums.

If the indicator “number of newborns per 1000 residents” is analysed, a similar trend may be observed – the birth indicator is higher in the districts closely located to the capital city, but lower in more distant districts (Demography 2009, 2009).

Thus, there is interaction – synergy – among the number of recipients of maternity and parental benefits, the economic development level of districts as well as the distance of districts to the country's capital city.

After comparing the number of recipients of sickness benefit per 1000 employees with the results of cluster analysis, the authors did not find any interaction, but after comparing the number of recipients of sickness benefit per 1000 employees with the number of recipients of maternity and parental benefits per 1000 employees, one can find a medium strong relationship: in the districts, where the number of recipients of maternity and parental benefits per 1000 employees is larger, the number of recipients of sickness benefit is also larger. For instance, the largest number of recipients of maternity and parental benefits per 1000 employees is in Ogre district, and the largest number of recipients of sickness benefit in the country or 51 is also observed there. Limbaži district features the second largest number of recipients of sickness benefit per 1000 employees, and the number of recipients of maternity and parental benefits is large as well. The smallest number of recipients of sickness benefit per 1000 employees is in the capital city (19), and the number of recipients of maternity and parental benefits is also the smallest there. The results gained by the authors can be explained by means of the country's present legal acts: part of recipients of sickness benefit (according to the SSIA data – approximately 20%) are parents of children. According to the authors, it explains the medium strong relationship between the numbers of benefit recipients.

Thus, there is a medium strong relationship between the number of recipients of sickness benefit and the number of recipients of maternity and parental benefits; whereas no relationship was identified between the number of recipients of sickness benefit and the economic activities.

## **Conclusions**

1. With the beginning of economic crisis and owing to the amendments made in legislative enactments, the numbers of recipients of unemployment and sickness benefits increased, while the number of recipients of paternity and maternity benefits decreased in the regions of Latvia. The majority of recipients of social security benefits is concentrated in the regions of Riga and Pierīga, but the smallest one in Vidzeme region.
2. Monocentric economic development trends are specific to Latvia, as result of which there are significant differences between the country's capital city of Riga and the rest of Latvia's regions.
3. The economic development level in many Latvian border districts is low, thus the socio-economic differences increase and differences in the number of recipients of social security benefits in also increase in the regions of Latvia.
4. There is interaction – synergy – among the number of recipients of unemployment benefit per 1000 employees, the number of recipients of maternity and parental benefits per 1000 employees, the economic development level of districts as well as the distance of districts to the country's capital city.

5. There is a medium strong relationship between the number of recipients of sickness benefit per 1000 employees and the number of recipients of maternity and parental benefits per 1000 employees, whereas no relationship was identified between the number of recipients of sickness benefit per 1000 employees and the economic activities.

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