

## MAIN FACTORS OF DIRECT EFFECT ON EMPLOYMENT IN LATVIA

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**Abstract.** The employment of the local population is a topical problem in Latvia and its regions. There is an economic and social need to promote employment both in Europe and in Latvia.

The research aim is to investigate and evaluate the main factors of direct effect on employment in the regions of Latvia. The findings, based on the expert method, showed that the following significant factors have a direct effect on employment: number of jobs, wage, number of working population, number of enterprises, and demographic burden.

The correlation analysis showed that there was a strong correlation between the number of vacant jobs and the number of employed persons in the regions of Vidzeme, Kurzeme, and Latgale. A medium strong correlation was observed in the regions of Riga, Pieriga, and Zemgale. With an increase in the number of vacant jobs, the number of employed persons in the regions of Latvia also rose and vice versa.

The present research found that stimulation of the factors of direct effect on employment would promote employment in Latvia's regions.

**Key words:** employment, direct factors, regions of Latvia.

**JEL code:** J00

### Introduction

Over the recent years in Latvia, the labour market has been researched from various aspects, and there are studies on possibilities to promote employment in the country. The previous researches have not contributed to finding an effective solution for it, and the problem of employment becomes more acute. The employment of the local population is an urgent problem of Latvia and its regions.

There is an economic and social need to promote employment both in Europe and in Latvia. As the birth rate declines in the European Union Member States, significant demographic changes are expected for the next 50 years (population aging). As a result, the present European pension and social security model will be overburdened more than up to now and possibly even critically overburdened. Presently, part of the working age population is not employed for various reasons; therefore, many efforts are made to integrate economically inactive persons in the labour market (Optimala, nodarbinatību veicināšana..., 2007).

Increasing employment would promote the economic development of Latvia and its regions and raise the standard of living of the population. Various factors influence employment, which may be classified according to the way of effect into two groups: factors of direct and indirect effect. Factors of direct effect are the factors that primarily can affect employment in Latvia and its regions, therefore, it is important to identify and research them.

Research **hypothesis:** various factors have an effect on employment in Latvia.

The **research aim** is to investigate and evaluate the main factors of direct effect on employment in the regions of Latvia.

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

- 1) the nature of and development trends in employment in Latvia and its regions were described;
- 2) an expert rating and ranking of the factors of direct effect on employment in Latvia was performed.

Research **subject:** factors of direct effect on employment in Latvia.

**Research methods:** the monographic and descriptive methods as well as analysis and synthesis, the graphic method, a statistical analysis method – correlation analysis, and a sociological method – the expert method were employed in the present research.

The present research is based on various scientific publications, documents that are publicly available as well as information available in the databases of the Republic of Latvia and expert survey results and other sources of information.

### Research results and discussion

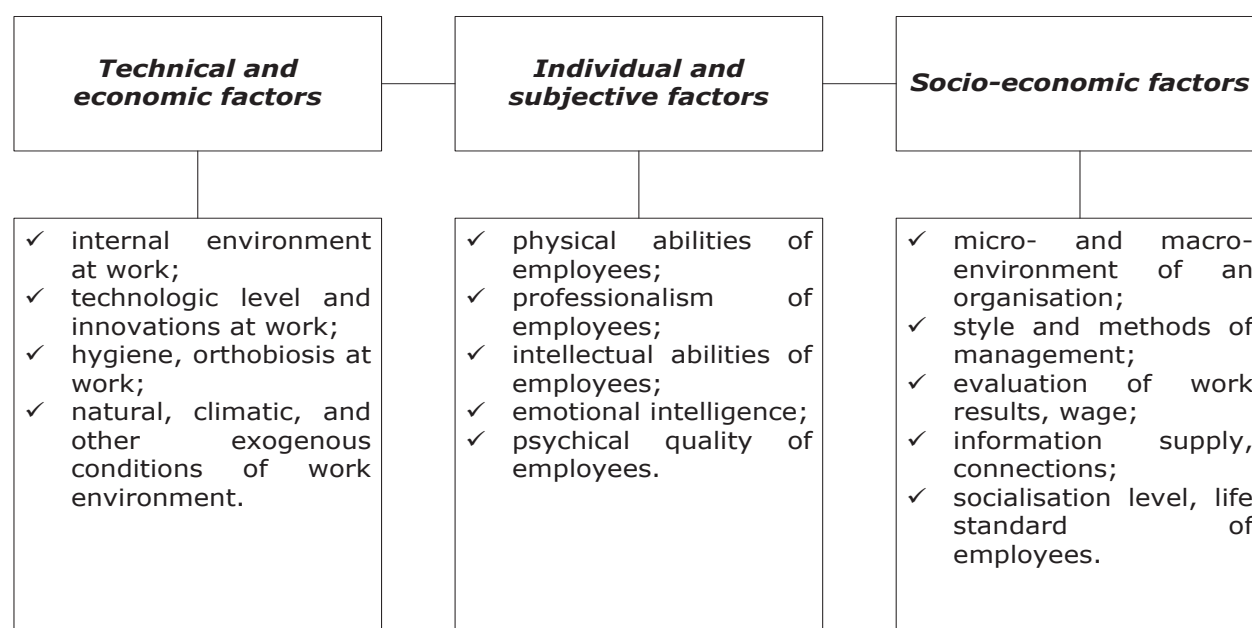
#### 1. Nature of and development trends in employment in Latvia and its regions

Employment is a totality of physical, material, and emotional efforts made to produce goods and services that are intended for self-consumption or consumption by others. Employment is divided into three categories: employment as economic activity, employment as unpaid labour (leisure time spending), and voluntary work (Marshall G., Scott J., 2005).

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Source: Garleja, R., 2003

Fig.1.1. Groups of factors affecting the working process

Table 1.1

Number of employed persons in Latvia and its regions in 2006-2011, thous.

Statistical region	2006	2007	2008	2009	2010	2011	Change (+/-) 2011/2006, %
Riga	381.3	386.1	380.6	333.3	306.0	320.7	-15.9
Pieriga	172.6	189.1	192.8	170.7	168.2	174.3	1.0
Vidzeme	105.0	105.9	105.9	94	95.5	98.8	-5.9
Kurzeme	138.4	145.7	144.5	128.4	125.9	124.9	-9.8
Zemgale	129.4	133.4	137.5	118.8	111.7	118.2	-8.7
Latgale	160.9	158.8	162.8	141.5	133.7	133.6	-17.0
<b>Latvia</b>	<b>1087.6</b>	<b>1119.0</b>	<b>1124.1</b>	<b>986.7</b>	<b>940.9</b>	<b>970.5</b>	<b>-15.9</b>

Source: authors' construction based on the data of CSB and State Employment Agency

The main and positive aspect of an employment situation is a job. A. Giddens has outlined six elements that characterise paid and regular employment: money, activity level, variety, time planning, social contacts, and personal identity (Giddens A., 1999).

Habilitated pedagogical and economics doctor Rasma Garleja conditionally classifies the factors affecting the working process into three groups: technical and economic, individual and subjective, and socio-economic factors (Figure 1.1).

Employment theories described in literature are associated with wages and prices. For instance, a macroeconomics book, written by R.Dornbusch and S.Fischer, analyses employment in relation to wages and prices. The authors point to a correlation between wages, prices, and employment and the regulation process of changes in aggregate demand – monetary, lending, and financial policies or autonomous changes in consumption. The authors believe that the nature of

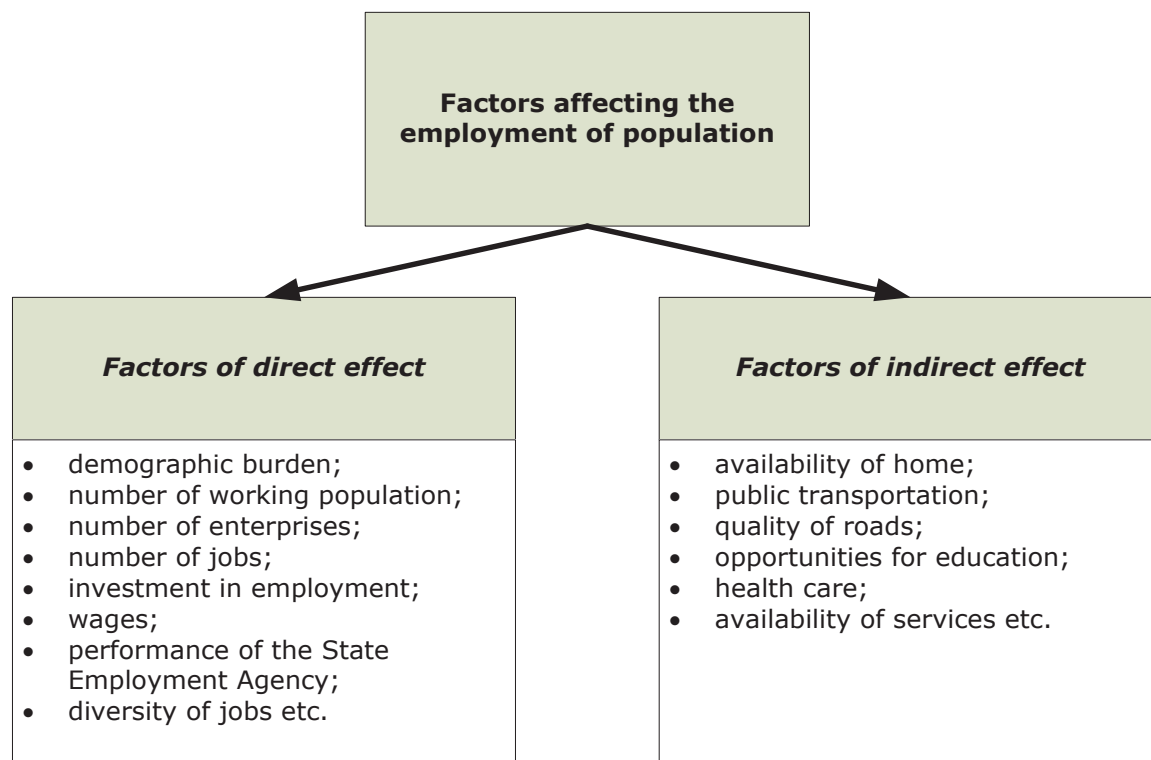
supply economics relates to changes in prices and output, i.e. the regulation of prices and output after a while when the economy starts fluctuating (Begg D., Fischer S., Dornbusch R., 1984).

The total number of employed persons decreased in Latvia from year to year. The analysis of the number of employed persons by statistical region shows that it has been unstable (Table 1.1).

According to Table 1.1, the greatest change in the number of employed persons was observed in Latgale region – in 2011 compared with 2006, it decreased by 17%, while in the entire Latvia it decreased by 15.9%. Only in Pieriga region it rose by 1.0%.

If analysing employment in the country, it is important to find the rate of employment or the share of employed persons in the total number of population expressed as a percentage.

The average share of employed persons in the total number of population in Latvia in the period



**Source: authors' construction based on Saulaja I., Rasnaca L., et al., 2007; Mihejeva L., Saulaja I., 2009; Zvaigzne A., et al., 2012.**

Fig.1.2. **Factors of direct and indirect effect on employment in Latvia**

2006-2011 was 58.1%. The highest annual rate was in Riga region, as it is the capital city of Latvia. Over the period of analysis, a decrease in the rate of employment was observed in all the regions. The greatest decrease was in the regions of Riga, Pieriga, and Zemgale.

The rate of job seekers tended to increase in Latvia every year. The share of job seekers is an indicator showing a percentage of job seekers in the total number of economically active population.

In 2006-2011, the share of job seekers increased in each region (Number of job...). In 2011, the greatest increase was observed in the regions of Zemgale and Riga, whereas the smallest – 5.5% – was in Vidzeme region.

One of the most urgent problems in the labour market of Latvia from 2009 to 2011 was high unemployment. The number of unemployed persons in Latvia increased even twice. A sharp increase in the number unemployed persons was observed in 2009, especially in Pieriga region – 934.4%, followed by Riga region with 305.6%, and in the remaining regions it was 200.0%. Over the period considered, such an increase in the number of unemployed persons might be explained by the worsening of economic situation in the country. The situation slightly stabilised in 2011 when, compared with 2009, this number started decreasing: by 35.89% in Riga region, 75.9% in Pieriga, 30.5% in Kurzeme, 8.5% in Latgale, 26.0% in Vidzeme, and by 26.2% in Zemgale region.

Based on the research of other authors (Saulaja I., Rasnaca L., et al., 2007; Mihejeva L., Saulaja I., 2009; Zvaigzne A., et al., 2012) regarding employment, the factors affecting employment in Latvia may be classified into two groups (Figure 1.2):

- 1) factors of direct effect;
- 2) factors of indirect effect.

Employment in Latvia is directly affected by the demographic burden, the number of the working population, the number of enterprises, and the other factors of direct effect as presented in Figure 1.2. Employment is also affected by such factors of indirect effect as the availability of home and public transportation, the quality of roads, opportunities for education, and the availability of health care and services, yet, they were not researched.

The factors of direct effect on employment in Latvia will be further investigated in the present research.

## **2. Rating and ranking of the main factors of direct effect on employment in Latvia by experts**

An expert survey was conducted within the present research, in which five experts were questioned to identify the key factors of direct effect on employment and rank them by significance on the scale from 1 (the most significant factor or priority No.1 in promoting employment) to 10 (the most insignificant factor or priority No.10). The results of the expert discussion are presented in Table 2.1.

Table 2.1

**Expert rating results, ranks, and concordance coefficients or a Kendall's *W* test**

Factors	Experts					Rank $\sum L_i$	$d_i = L_i - L_{vid}$	$(d_i)^2$	Rank <i>R</i>
	A	B	C	D	E				
	Ratings								
demographic burden	4	6	5	4	3	22	2.1	4.41	4
number of working population	1	3	3	1	2	10	-9.9	98.01	2
number of enterprises	3	2	3	2	1	11	-8.9	79.21	3
number of jobs	2	1	1	1	1	6	-13.9	193.21	1
investment in employment	6	4	4	6	6	26	6.1	37.21	6
wages	2	1	1	1	1	6	-13.9	193.21	1
performance of the State Employment Agency	5	4	5	7	5	26	6.1	37.21	6
diversity of jobs	5	3	5	4	6	23	3.1	9.61	5
social responsibility at an enterprise	6	7	3	8	7	31	11.1	123.21	7
labour safety at an enterprise	7	8	6	9	8	38	18.1	327.61	8
<i>n</i> =10	<i>m</i> =5					$\sum L_i = 199$	-	<i>S</i> =1102.90	-

Source: authors' calculation based on the data obtained in December 2012, ranking the factors of direct effect on employment by the experts

The replies provided by the experts were evaluated in terms of opinion concordance degree (Table 2.1). In the case of direct evaluation of parameters, the expert concordance degree is evaluated by means of the concordance coefficient *W* (Kendall M.G., 1955; Diakov N., Krug G., 1966) according to Formula 2.1:

$$W = \frac{12 \sum_{i=1}^n \left\{ \sum_{j=1}^m r_{ij} - \frac{1}{2} m(n+1) \right\}^2}{m^2 (n^3 - n)} \quad (2.1.)$$

Where:

*W* - concordance coefficient;

*n* - number of factors observed;

*m* - number of experts;

*r<sub>ij</sub>* - rank for the *i*-th object based on the *j*-th expert's opinion.

Values of the concordance coefficients *W<sub>t</sub>* and *W<sub>p</sub>* change within a range  $0 \leq W \leq 1$ , besides, *W* = 0, if there is no correlation between ranks, and *W* = 1, if all experts have equally ranked the objects. A sufficient concordance coefficient is assumed to be  $W \geq 0.5$ , as it is believed that such concordance of experts is sufficiently high (Kendall M.G., 1955; Diakov N., Krug G., 1966).

Based on Formula 2.1 and the data of Table 2.1, the concordance coefficient was calculated:

$$W = \frac{12 \times 1102.9}{25 \times 10(100 - 1)} = 0.53$$

An average value of the rank sum *L* may be calculated by using Formula 2.2 (Kendall M.G., 1955; Diakov N., Krug G., 1966).

$$L_{vid} = \sum \frac{L_i}{n} \quad (2.2.)$$

Based on Formula 2.2 and the data of Table 2.1, the average value of the rank sum *L* was calculated:

$$L_{vid} = \sum \frac{L_i}{n} = \frac{199}{10} = 19.9$$

The average value of the rank sum was 19.9.

The concordance coefficient (*W*) was equal to 0.53, which indicated that the experts were quite unified in their opinions and unanimously recognised such factors of direct effect on employment as:

- Rank R No.1 – number of jobs;
- Rank R No.1 – wages;
- Rank R No.2 – number of working population;
- Rank R No.3 – number of enterprises;
- Rank R No.4 – demographic burden.

One of the most significant factors of direct effect on employment is demographic burden (Rank R No.4, Table 2.1), which is indicated by the number of persons under and over the working age per 1000 capita.

The demographic burden increased in Latvia in the period from 2010 to 2012. The difference in demographic burden among the statistical regions is comparatively small. In 2012, the demographic burden in the regions of Vidzeme and Latgale was higher than on average in the entire Latvia, while in the other regions it was lower.

Table 2.2

**Average share of the population by age group in Latvia and its regions in 2008-2011, %**

Region	2008			2009			2010			2011		
	Under working age population	Working age population	Over working age population	Under working age population	Working age population	Over working age population	Under working age population	Working age population	Over working age population	Under working age population	Working age population	Over working age population
Riga	12.3	66.1	21.6	12.5	66.4	21.1	12.7	65.9	21.4	12.9	65.4	21.7
Pieriga	15	66	19	15.1	66.6	18.3	15.2	66.4	18.4	15.3	66.2	18.5
Kurzeme	15.1	64.6	20.3	14.9	65.3	19.8	14.8	65.3	19.9	14.6	65.2	20.2
Vidzeme	14.3	64.6	21.1	14	65.5	20.5	13.7	65.7	20.6	13.5	65.7	20.8
Latgale	13.1	65.7	21.2	12.9	66.4	20.7	12.9	66.4	20.7	12.7	66.3	21
Zemgale	14.8	65.7	19.5	14.5	66.5	19	14.4	66.5	19.1	14.3	66.4	19.3
On average in Latvia	14.1	65.45	20.45	13.98	66.12	19.90	13.95	66.03	20.02	13.88	65.87	20.25

Source: authors' construction based on CSB data

Table 2.3

**Average gross monthly wage in the public sector in Latvia and its regions in 2006-2011**

Region	2006	2007	2008	2009	2010	2011	Change (+/-) 2011/2006, %
Riga	409	552	659	585	548	579	41.56
Pieriga	333	455	530	465	435	449	34.83
Vidzeme	280	376	459	413	374	384	37.14
Kurzeme	289	390	466	421	383	395	36.68
Zemgale	289	394	476	412	377	392	35.64
Latgale	261	350	427	375	347	360	37.93
<b>Latvia</b>	<b>350</b>	<b>474</b>	<b>564</b>	<b>504</b>	<b>470</b>	<b>492</b>	<b>40.57</b>

Source: authors' construction based on CSB data

According to the experts, a significant factor of direct effect on employment was also the number of the working population (Rank R No.2, Table 2.1).

According to Table 2.2, the share of the working age population has started to decrease since 2009, whereas the share of the above-working-age population has increased. In 2011, the highest share of the under-working-age population (15.3%) existed in Pieriga region, whereas in Latgale region this indicator was the lowest – 12.7%.

One of the factors causing the decrease in the number of the working age population was migration. According to statistics, totally 48774 persons emigrated from Latvia in 2010, which was almost 3% more than in the year before. Regionally, the trend was the same – the number of emigrants increased. The number of emigrants decreased only in Riga region, by 4.7%, in 2010 compared with 2009 (Long-term migration...).

A significant factor affecting employment was the number of enterprises (Rank R No.3, Table 2.1). In the period 2006-2011, the number of economically active market sector statistical units increased in all the

regions. In 2011, the greatest number of economically active market sector statistical units operated in Riga region (55314 or 39.1% of their total number), followed by Pieriga (22175 or 15.7%), while the smallest number was in Zemgale (14304 or 10.1%).

In 2011 in Riga and Pieriga, the majority of these units were companies – in total, there were 42094 companies in Riga region, which accounted for 76% of the total number of economically active market sector statistical units registered in this region, while in Pieriga there were 11332 companies, accounting for 51% of their total number in this region. Yet, in all the other regions in 2011, the majority consisted of self-employed persons.

The number of economically active market sector statistical units per 1000 capita also increased in the period 2006-2011. In 2011, it increased 40% in Riga region, while in the entire Latvia it increased by 33%.

According to the experts, employment was significantly affected by the wages and the number of jobs (Rank R No.1, Table 2.1). An analysis of the average gross wage by region both in the public and in the private sector showed that there was inequality among

Table 2.4

**Average gross monthly wage in the private sector in Latvia and its regions in 2006-2011**

Region	2006	2007	2008	2009	2010	2011	Change (+/-) 2011/2006, %
Riga	317	410	492	495	483	503	58.68
Pieriga	268	354	432	423	418	432	61.19
Vidzeme	206	267	329	308	317	351	70.39
Kurzeme	228	308	381	366	381	392	71.93
Zemgale	216	282	344	335	340	379	75.46
Latgale	173	219	267	265	271	301	73.99
<b>Latvia</b>	<b>277</b>	<b>362</b>	<b>438</b>	<b>433</b>	<b>427</b>	<b>447</b>	<b>61.37</b>

Source: authors' construction based on CSB data

the regions. The unequal wage level also promoted the unequal development of employment in the regions, as people wish to work and live in a region where they can earn more.

In the period 2006-2011, the highest gross wage in the public sector was reported in 2008 – LVL 564. In 2008, the highest gross wage was reported in Riga region – LVL 659, whereas the lowest one was in Latgale region with LVL 427 (Table 2.3).

The greatest increase in the average gross wage in the private sector was observed in the regions of Zemgale and Latgale, 75.46% and 73.99%, respectively, whereas the smallest increase was observed in Pieriga region with 61.19% (Table 2.4). It may be explained by the fact that in 2006 the average gross wage in the private sector in Pieriga region was higher than in the regions of Latgale, Zemgale, Kurzeme, and Vidzeme.

A very significant factor was the number of vacant jobs. An analysis of the average number of vacant jobs in Latvia regions in the period 2006-2010 showed that the trend was negative. In 2011, the sharpest decrease in the number of vacant jobs occurred in Zemgale region – by 92.72%, while a slightly smaller decrease was observed in Latgale region with 79.37%.

In the aspect of providing jobs in Riga region in 2011, the most significant industry was trade along with lodging and catering services; in Vidzeme, this industry also had the greatest proportion of employees. In Kurzeme region, the greatest number of employed persons was reported in agriculture, forestry, and fisheries, whereas in the regions of Zemgale and Latgale, the greatest number of jobs was provided by manufacturing and the power industry.

In the period 2006-2011, the proportion of vacant jobs both in the private and in the public sector of Latvia and its regions tended to decline.

The Kendall's  $W$  test showed that one of the most significant factors of direct effect was the number of vacant jobs. Therefore, a correlation analysis was performed in the present research. A correlation indicates an association between two or among several variables (i.e., if one of the variables changes, then the other one also changes) (Arhipova I., Balina S., 2003). The present research was conducted to identify whether the number of vacant jobs influenced the number of employed persons.

In the correlation analysis, the authors used statistical data for the period 2005-2011. The calculation confirmed that there was a strong correlation between the number of vacant jobs and the number of employed persons in Vidzeme ( $r=0.81$ ), Kurzeme ( $r=0.85$ ), and Latgale ( $r=0.84$ ). A medium strong correlation between the variables was observed in the regions of Riga ( $r=0.68$ ), Pieriga ( $r=0.48$ ), and Zemgale ( $r=0.71$ ). With an increase in the number of vacant jobs, the number of employed persons in Latvia's regions also increased and vice versa.

### Conclusions, proposals, recommendations

1. The employment of local residents is a topical problem in Latvia's regions. There is an economic and social need to promote employment both in Europe and in Latvia. The government has to promote the development of employment rather than the system of social benefits in the country.
2. The highest rate of employment, in the period of analysis, was in Riga region, whereas the lowest rate was reported in Latgale region. The government has to promote the equalisation of the employment rate in the regions of Latvia.
3. The findings, based on the expert method, showed that employment is directly affected by the following significant factors: number of jobs, wage, number of working population, number of enterprises, and demographic burden.
4. The number of the working age population has decreased in Latvia and its regions. The government has to elaborate effective measures hindering the decrease in the number of the working age population, including the decrease due to the emigration of the population to other countries.
5. An analysis of the average gross wage by region both in the public and in the private sector showed that there was inequality among the regions. The government has to eliminate the difference in wages in the public sector among the regions.
6. The correlation analysis showed that there was a strong correlation between the number of vacant jobs and the number of employed persons in Vidzeme, Kurzeme, and Latgale. A medium strong

correlation between the variables was observed in the regions of Riga, Pieriga, and Zemgale. With the increase in the number of vacant jobs, the number of employed persons in Latvian regions also increased and vice versa. By means of various government benefits and activities, the creation of new jobs has to be promoted to increase the number of employed persons in Latvia and its regions.

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