

## Rising in labour potential: the role of wages

*The article deals with the identification of empirical interrelations between wages and rising in realization of labour potential. Theoretical and methodological research base includes copyright developments in the field of sociological evaluation of the implementation of labor potential. The study revealed a motivational function of wages. The author substantiated the role of wages in increasing the implementation of labour potential of the population in our time. It is shown that the current practice of pay and its institutional features are such that wages are not an effective tool for enhancing the implementation of the population's employment potential. The results will be helpful to employees of regional authorities, managers of enterprises and organizations.*

*Labor potential, wages, realization of labour potential, work motivation.*



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### **Introduction**

Wages and salaries is one of the key concepts of labor economics. Such great economists like D. Ricardo, J. Mill, J.B. Say, A. Marshall, K. Marx, John Maynard Keynes and many others researched the development of the theory of wages in due course. High scientific interest in the issues of wages is determined by a variety of functions performed by the wages in the socio-economic development of territories. These are the following functions: a reproduction function (ensuring the reproduction of labor force), regulating function (it promotes the establishment of the proportions between supply and demand), social one (it allows you to enjoy social benefits), stimulating one (it is used by the employer to encourage the employee's working activity), motivational one (it creates the work motivation), status one (it reflects an employment status of the employee) etc.

Wage plays an important role in solving the problems of improving productivity and increasing the gross output. As it is shown in the published works of the International Labour Organization, "even with the wide dispersion in the country-level indicators there can be generally traced a positive relationship between rise in labour productivity and rise in real wages"<sup>1</sup>. In this case, the labour productivity was measured by the ILO experts as GDP per an employee. It means that for each country they used the indicators of average productivity and average wages, and all obtained relationships are true of the "average" employee.

In this article we have tried to get away from such a macro-economic approach and to answer the questions: How are wages and labor efforts of real workers not the "average" ones

<sup>1</sup> The report "Wages in the world". – International Labour Organization, 2010. – P. 18.

interconnected? What role do wages play in rising in the implementation of the employee's labor potential?

The sociological measurements allow us to answer these questions. Thus, the information basis of our study was the data of monitoring of the qualitative state of the population's labor potential of Vologda region, conducted by the Institute of Social and Economic Development of the Territories of RAS. Within the framework of monitoring the object of research is the working-age population of Vologda region. The polls are held every year in August – September in the cities of Vologda and Cherepovets and in eight districts of the region (with the centers in Babayevo, Veliky Ustyug, Vozhega, Gryazovets, Kirillov, Nikolsk, Tarnoga and Sheksna). The sample size is 1500 people. The sampling method is zoning with proportional distribution of observation units. The sample type is quota sample by sex and age. The magnitude of the random sampling error is 3-4% with confidence interval 4-5%.

In accordance with the specifics of the study we don't consider the working-age respondents who don't work at the time of the survey and receive no salary.

The study revealed the relationship between the wages and the level of implementation of the labor potential of the working population. It revealed the motivational function of wages. We substantiated the role of wages in our time in rising in the implementation of the labour potential of the population.

#### ***Theoretical and methodological basis***

Under the implementation of the labour potential the economists mean the process and result of its use in the production of tangible and intangible goods and services<sup>2</sup>.

Labor potential is a multilevel category. In this study the labour potential was considered

<sup>2</sup> Forexample, see: Soboleva M., Maslova I., Beloserova S. The implementation of labour potential // Human and labour, 2006. – № 9; Maslova I.S. – Labour potential of the Soviet society: the theory and methodology issues of research / I.S.Maslova. – 1987. – 32 p.; Skarzhynskii M.I. Labour potential of the socialistic society / M.I. Skarzhynskii, I.Yu. Balandin, A.I. Tyazhov. – M., 1987. – 102 p.

at the level of the individual, the individual worker, i.e. the unit of analysis was the personal labour potential as a primary structure-forming element of the labor potential of the higher levels: the level of group, company, society, region or country. Meanwhile, by the labour potential we meant qualitative characteristics of working-age employees: physical and mental health, cognitive and creativity potentials, communicability, cultural and moral levels, need for achievement<sup>3</sup>.

Regardless of the considered level the form of implementation of labor potential is the labor activity of its specific bearer. By its socio-economic content the labor activity reflects the social form of labor and employment simultaneously. In this case the implementation of the society labor potential is characterized by the level of use of the totality of its resource capabilities and versatile qualities by the working-age population.

To estimate the level of implementation of the qualities and skills in specific work within the labour potential monitoring held by the ISERT of RAS in 2009, there was developed a special technique based on a block of questions such as “How much do you “work flat out”? How much do you use your qualities and skills?” The following four-point scale was proposed: “I use in full” (at the limit of one's capabilities) – 4 points, “more or less completely” (I can use more) – 3, “in part” (little) – 2, “very little” (minimum) – 1 (*tab. 1*).

Further, by dividing the actual number of points into the maximally possible number the obtained points were transferred into the indexes conventionally named as an index of the implementation of labor potential and corresponding to eight basic qualities of labour potential (physical and mental health, cognitive and creative potentials, communicability, cultural and moral levels, need for achievement).

<sup>3</sup> For example, see: The quality of population / ed. by N.M. Rimashevskaya, V.G. Kopnina. – M., 1993. – 185 p.; Rimashevskaya N.M. About the methodology of determination of the qualitative state of population [Text] / N.M. Rimashevskaya // Demography and sociology. – Issue 6. – M., 1993. – Pp. 7-21.

Table 1. Distribution of estimates of using the qualities and skills at work by the population of Vologda region in 2009 (in %)

Quality	I use				The level of implementation of quality of labour potential, %
	In full	More or less completely	In part	Very little	
Physical capabilities and health	35.8	45.7	14.9	3.6	<b>78.4</b>
Psychological stability	27.9	51.0	17.7	3.4	<b>75.9</b>
Knowledge, erudition, qualification	30.2	48.9	16.6	4.3	<b>76.3</b>
Creativity (inventive ingenuity, ability to solve previously unknown problems ets.)	21.1	41.6	26.5	10.7	<b>68.3</b>
Communicability, interpersonal skill	34.9	46.4	14.9	3.8	<b>78.1</b>
General culture (good manners, politeness, restrain etc.)	31.9	46.5	16.5	5.1	<b>76.3</b>
Moral qualities (honesty, truthfulness, sense of duty, moral rectitude, obligatoriness etc.)	31.4	47.0	17.2	4.5	<b>76.3</b>
Will to promotion, display of initiative and enterprise	22.7	42.5	22.6	12.2	<b>68.9</b>

Source: Monitoring of the quality state of the labor potential of the population of Vologda region; ISEDT of RAS.

Figure 1. Scheme of primitive interrelations between wage and labour potential implementation



The substantial meaning of the indices is the following: each index shows what percentage of the available quality is actually realized in the labor activity, i.e. if the index is 0.25 units, it means that a person realizes only a quarter of his potential. Multiplying the calculated indices by 100%, we have an indicator reflecting the extent to which (in %) is realized the quality of labor potential. That is a kind of analogue of the employment level showing the extent to which the amount of labor potential is implemented. The index calculated in such a way was provisionally called the implementation level of the labor potential quality. As a result of using the devised techniques, we calculated the following indices for each respondent: the implementation level of physical abilities, the implementation level of cognitive capacity, the implementation level of communicability etc. (eight indicators altogether). The implementa-

tion level of the labor potential quality of some group (whether it is the population as a whole or some part of it) was calculated as the average implementation level of the labor potential of the members of this group.

The calculated values show that the overall population uses its physical capacity (the implementation level – 78%; see table. 1) and communicability (78%) most of all. According to the population’s estimates the creativity (inventive ingenuity, ability to solve previously unknown problems etc.; 68%), will to promotion and display of initiative and enterprise (69%) are used least fully.

To estimate the wage within the monitoring of labor potential we used a direct question: “Please, indicate your average monthly wage.” It was assumed that as a reward for labor, the wage at the same time creates the motivation to work and to more fully implementation of

the labour potential (*fig. 1*). It means that we considered the simplest interrelations without going into the mechanisms of their realization and interaction with other functions of wages.

Further we used the adjacency matrix and the correlation-regression to analyze the statistical relationship between the implementation level of the labor potential and the wage.

### *The measurement results*

As it was shown by measuring, the implementation level of the labour potential quality varies significantly depending on the size of wages: the groups with larger wage have higher implementation level of the labour potential (*tab. 2*). So the workers with wages below the minimum wage are characterized by lower implementation level of all qualities of the labor potential in comparison with the workers who receive wages in the amount of five minimum wages or higher. For example, the implementation level of physical health – 72% against 84%, cognitive capacity – 63% against 84%.

So one can assume that the wage increase provides the employee with higher motivation to implement the labour potential.

One can observe an interesting result that those people whose wages are more than 5 minimum wages yield to the employees from the previous wage group in the respect of the

implementation level of most qualities, in particular, they realize their abilities in the creative, cultural, moral and communicative terms weaker. However, they have a significantly higher implementation level of the social pretensions (need for achievement), i.e. they are ambitious and motivated people who have big plans and try to fulfill them. Besides there is probably a certain threshold, after having been achieved it, the stimulating role of wages is reduced (by analogy with the theory of marginal productivity).

According to the results of monitoring, only 30% of workers believe that the existing wage encourages them to work effectively, or more likely than not. At the same time the workers with high estimation of stimulating role of their wages show a higher implementation level of the labour potential (*tab. 3*). The average wage encouraging the population to work effectively is 16 thousand rubles. And it is necessary to take into account that it accords with the data over the year of 2009.

Correlation of the received cash with the level of claims often makes an employee to be dissatisfied with the size of wages, and it has a negative effect on the labour potential implementation. Dissatisfaction undermines the motivational role of wages, stifles the desire to

Table 2. The implementation level of the labor potential (in %) in groups with different wage

Labour potential quality	Wage group					
	Below the minimum wage (up to 4430 rubles)	1 – 2 minimum wages (from 4430 to 8660 rub.)	2 – 3 minimum wages (from 8660 to 12990 rub.)	3 – 4 minimum wages (from 12990 to 17320 rub.)	4 – 5 minimum wages (from 17320 to 21600 rub.)	5 minimum wages and more (from 21600 rub.)
Physical health	71.9	78.8	80.0	80.4	85.8	84.1
Mental health	65.8	76.5	78.2	78.5	80.5	81.9
Cognitive potential	63.4	75.9	78.1	80.7	81.1	83.5
Creative potential	62.0	67.8	68.2	69.5	73.2	71.3
Communicability	69.1	78.6	79.3	82.5	85.0	83.0
Cultural level	68.1	77.6	78.4	78.1	81.1	78.1
Moral level	67.7	77.4	79.1	77.8	81.3	78.8
Need for achievement	61.1	67.7	69.5	72.9	73.2	79.1
<b>Average</b>	<b>66.1</b>	<b>75.1</b>	<b>76.4</b>	<b>77.5</b>	<b>80.1</b>	<b>80.0</b>

Source: Monitoring of the quality state of the labour potential of Vologda region; ISEDT of RAS, 2009.

Table 3. The implementation level of the labour potential (in %) in groups with different self-estimation of stimulating role of wages

Quality	Do you consider that your wage encourages you to work efficiently?				
	Yes	More likely yes, than no	I don't know	More likely no, than yes	No
Physical health	87.9	79.7	79.0	78.4	78.6
Mental health	80.8	77.6	77.8	74.8	76.7
Cognitive potential	81.8	80.4	77.7	74.8	74.2
Creative potential	74.0	70.0	69.4	66.8	65.6
Communicability	81.0	81.2	79.7	77.5	78.9
Cultural level	79.2	79.2	77.9	74.4	77.5
Moral level	80.8	77.5	78.3	76.1	76.3
Need for achievement	73.5	73.7	72.6	67.1	64.8
<b>Average</b>	<b>79.9</b>	<b>77.4</b>	<b>76.6</b>	<b>73.7</b>	<b>74.1</b>
Average wage, roubles	15910	13231	11619	10021	8963

Source: Monitoring of the quality state of the labour potential of Vologda region; ISEDТ of RAS, 2009.

Table 4. The implementation level of the labour potential (in %) depending on the level of wage satisfaction

Quality	Are you satisfied with your wage?				
	Yes	More likely yes, than no	I don't know	More likely no, than yes	No
Physical health	81.5	83.5	79.1	79.6	78.5
Mental health	80.1	78.4	79.5	76.1	75.5
Cognitive potential	82.5	81.7	78.0	75.5	74.5
Creative potential	71.3	71.9	69.7	68.6	64.9
Communicability	79.3	82.0	78.4	79.3	78.5
Cultural level	75.3	79.2	77.9	76.8	77.2
Moral level	75.3	78.6	77.7	77.0	78.1
Need for achievement	69.9	74.9	72.3	68.4	66.7
<b>Average</b>	<b>76.9</b>	<b>78.8</b>	<b>76.6</b>	<b>75.2</b>	<b>74.2</b>
Average wage, roubles	18354	13953	10952	10964	8793

Source: Monitoring of the quality state of the labor potential of Vologda region; ISEDТ of Academy of Sciences, 2009.

“flat out at work” i.e. to use their abilities more actively. Thus, the employees satisfied with their received wages show higher values of the implementation level of the labour potential for most qualities than the persons unsatisfied with their wages (*tab. 4*). The average wage which suits the population of the region is 18 thousand rubles. Interestingly, the group of people satisfied most with their wages has the lowest implementation level of the cultural and moral qualities. It results in the question of how to achieve higher salaries and to observe the cultural and moral norms simultaneously.

Formation of the employee’s motivation to improve the implementation of the labour potential is closely linked with a sense of fair-

ness to payment. The employees who feel that the payment is fair to the labor contribution, as compared with those who feel that the pay of their labour is injustice, have higher implementation level of most qualities of the labor potential (*tab. 5*). The sense of unfairness to wages and the non-compliance with their labor contribution reduce the implementation level of labour potential.

The availability of additional monetary rewards has a positive effect on the implementation level of the labour potential. Thus, the employees who received cash bonuses for their quality job, compared with those who did not receive such awards, show higher values of the implementation level of all qualities of labour potential (*tab. 6*).

Table 5. The implementation level of the labour potential (in %) depending on the sense of fairness to payment

Quality	Do you consider that the remuneration of your labor is fair with respect to your work?				
	Absolutely fair	More likely yes, than no	I don't know	More likely no, than yes	Completely no
Physical health	86.0	83.0	80.7	78.1	78.4
Mental health	78.8	79.4	77.4	76.4	76.0
Cognitive potential	81.7	81.2	77.0	76.9	74.1
Creative potential	72.0	73.1	69.0	68.2	64.6
Communicability	79.5	82.9	78.1	79.0	79.0
Cultural level	75.7	80.3	76.3	76.6	78.3
Moral level	76.1	79.6	77.1	76.8	77.9
Need for achievement	68.6	75.7	71.3	68.3	66.9
<b>Average</b>	<b>77.3</b>	<b>79.4</b>	<b>75.9</b>	<b>75.0</b>	<b>74.4</b>
Average wage, roubles	18321	14156	11178	10803	8520

Source: Monitoring of the quality state of the labour potential of Vologda region; ISED of Academy of Sciences, 2009.

Table 6. The implementation level of the labour potential (in %) depending on the availability of monetary awards for quality work

Quality	Did you receive any cash bonus for your quality work over last year?	
	Yes	No
Physical health	83.8	78.0
Mental health	80.0	75.7
Cognitive potential	80.7	75.5
Creative potential	72.6	66.6
Communicability	81.3	78.5
Cultural level	79.2	76.5
Moral level	79.7	76.4
Need for achievement	73.9	68.0
<b>Average</b>	<b>78.9</b>	<b>74.4</b>
Average wage, roubles	12410	11017

Source: Monitoring of the quality state of the labour potential of Vologda region; ISED of Academy of Sciences, 2009.

Along with the presence of additional measures for material incentives, the most important role in enhancing the implementation of the labour potential is played by the possibility to increase wage while improving the quality of work activities. The workers who are sure that if they work better, their wage will be increased, have higher implementation levels of the labour potential in comparison with those who believe that any increase in the intensity of their work will not change their wages (*tab. 7*). The realization that the wage remains the same regardless of the labour efforts undermines the motivational function of wages, reduces the employees' motivation to more intensive work, provokes a passive labour behavior accompanied by a minimum labour efficiency.

In order to estimate empirically the strength and the type of relationship between the wages

and the implementation level of the labour potential we hold the correlation and regression analysis. The analysis considered two variables:  $y$  - the average implementation level of the quality of labour potential (in percentage),  $x$  - wages (in rubles). It confirmed the existence of statistically significant relationship between the wages and the average implementation level of the labour potential ( $r = 0.161$ ; correlation is significant at the level of 0.01). The analysis resulted in the following relationship:

$$y = 0,0003065 \cdot x + 72,5 + \varepsilon,$$

where  $y$  - the average implementation level of the labour potential (in percent),  
 $x$  - wages (in rubles),  
 $\varepsilon$  - random component.

The resulting regression equation indicates that in modern socio-economic conditions

Table 7. The implementation level of the labour potential (in %) depending on the possibility to increase wages

Quality	Will your wage increase if you work better?				
	Yes	More likely yes, than no	I don't know	More likely no, than yes	No
Physical health	87.9	79.8	78.9	78.6	80.2
Mental health	81.9	76.9	78.0	74.6	77.3
Cognitive potential	83.0	78.9	78.1	76.0	75.4
Creative potential	73.2	72.6	68.6	66.9	67.2
Communicability	82.0	77.6	80.1	78.5	79.8
Cultural level	79.2	74.3	77.4	76.4	79.4
Moral level	78.8	73.7	77.9	77.5	78.9
Need for achievement	72.1	73.4	72.7	67.3	67.8
<b>Average</b>	<b>79.8</b>	<b>75.9</b>	<b>76.5</b>	<b>74.5</b>	<b>75.8</b>
Average wage, roubles	18042	12194	11768	10637	9451
Source: Monitoring of the quality state of the labour potential of Vologda region; ISEDT of Academy of Sciences, 2009.					

with one thousand roubles increase in the employee's salary, the implementation level of the labour potential quality increases by 0.3% on the average.

In order to improve the quality of the constructed model, we took into account a logarithmically normal form of the wage distribution. As a result of this the degree of tightness of the statistical relationship increased ( $r = 0,202$ ; correlation is significant at the level of 0.01) and the regression equation takes the form:

$$y = 5,1 \cdot \ln(x) + 29,1 + \varepsilon.$$

To interpret the resulting equation can be as follows: with  $e$  times increase in wages (approximately 2.7 times), the average implementation level of the quality of labour potential in the region increases by 5%. It can be assumed that 20% implementation of the

labour potential is due to wages. Relatively speaking, the current efficiency of wages as an instrument to enhance implementation of the labour potential is very small.

### Conclusions

The current practice of pay and its institutional features are such that wages are not an effective tool for higher implementation of the population's labour potential. The role of wages in enhancing the implementation of the labour potential is ambiguous. Along with the size of wages the important part for growing the implementation of labour potential is played by the following things: the possibility of wage increases depending on the accompanying labour efforts, fairness in wage, its compliance with the labour contribution of the employee, the availability of additional material remuneration for quality work.

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