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ECONOMIC MOTIVES AND THEIR INFLUENCE ON THE EFFICIENCY OF FORESTRY ENTERPRISES OF ZAKARPATTIA REGION

The development of modern economy is characterized by a rapid change of market environment and requires special attention to employees, who become a decisive factor in the formation of a successful company, creating the prerequisites for its economic growth, competitiveness and good reputation. The increase of labor productivity is possible only if the employee is interested and responsible for the results of his work. Among other challenges related to motivation, it should be noted that the decline in the level of labor motivation has caused the huge scale of labor migration flows from Ukraine [2]. Given the above, it becomes clear that the motivation of staff and their direct interest in the results of their work is one of the main management issues that requires more in-depth research and solutions.

There is no doubt that decent wages stimulate new jobs and attract new employees who contribute to the development of the forestry sector in the region and the country as a whole, to the growth of productivity and profitability of forestry enterprises. Comparison of the total amount of allocated structural components of labour remuneration in the TRAFH forest enterprises (Fig. 1) shows that: (1) there is a positive dynamic of labour remuneration amounts; (2) the share of additional wages and incentive compensations for the years considered are stable (at 36-37% of the total labour remuneration fund, which is quite acceptable, but usually can be increased up to 50% and more); (3) the share of incentives and

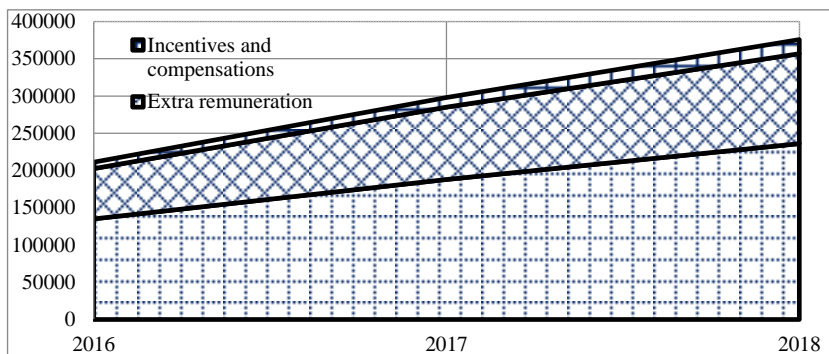incentive compensations is relatively small – at the level of 4-5%, which also has a potential to increase.

Figure 1. The dynamics and structure of wage components in TRAFH forest enterprises, 2016-2018, thousand UAH

Source: own elaboration on the basis of internal TRAFH's reports

At the first step, asymmetry and normality of distribution were checked, which are considered to be prerequisites for further parametric linear modelling. The obtained results showed that only the labour productivity index does not meet the requirements of regression modelling and requires special transformations in the data set of 2016-2018 period. Thus, the necessary transformations (2nd-degree root and logarithms) of indicators were performed, which proved to be sufficient at repeated verification of asymmetry coefficients and the Shapiro – Wilk test. At the second step, the correlation matrix was obtained that showed the strong correlation between some of used parameters in analysis (Table 1).

The regression model was formed as a dependence of enterprise income (I) of labour parameters (first and second equations, table 3), it meets high quality and reliability tests, index R^2 shows that calculations with model will cover 81% – 83% of the sample of enterprises at a high density of correlation (0.901, 0.910). Other regression coefficients (t, Sig, Durbin-Watson test) also indicate sufficient quality of modelling (Table 2).

Table 1

The correlation density between dependent and independent parameters of the forest enterprises, TRAFH, 2016-2018

Indicators[1]	VAR 03	VAR 05	VAR 07	VAR 09	VAR 011	VAR 0013	VAR 018	VAR 014	var14 sqr	var14 lg	VAR 016
VAR03	1	-,233	,950**	,973**	,397	,033	,397	-,203	-,169	-,132	,895**
VAR05	-,233	1	,058	-,131	,278	,532*	,394	,420	,460*	,494*	-,013
VAR07	,950**	,058	1	,947**	,525*	,179	,556*	-,066	-,015	,037	,931**
VAR09	,973**	-,131	,947**	1	,338	,056	,344	-,170	-,127	-,082	,896**
VAR011	,397	,278	,525*	,338	1	-,027	,974**	,117	,156	,193	,450
VAR013	,033	,532*	,179	,056	-,027	1	,202	,085	,095	,102	,068
VAR018	,397	,394	,556*	,344	,974**	,202	1	,134	,175	,213	,456*
VAR014	-,203	,420	-,066	-,170	,117	,085	,134	1	,993**	,969**	,192
var14sqr	-,169	,460*	-,015	-,127	,156	,095	,175	,993**	1	,992**	,242
var14lg	-,132	,494*	,037	-,082	,193	,102	,213	,969**	,992**	1	,287
VAR016	,895**	-,013	,931**	,896**	,450	,068	,456*	,192	,242	,287	1
* and **. The correlation is significant at the level of 0.01 and 0.05 (both bilateral).											

Source: *authors' developments, SPSS computations, a sample of 19 TRAFH's enterprises, 2016-2018*

In addition, the regression coefficients Beta (elasticity coefficient) in the developed formulas demonstrate that when considering two factors influencing income in formula 1, Table 2, the number of employees (0,847) prevails in its impact comparing with additional and co^{2}mpensatory parts of the wages (0,12).

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[1] VAR03 – average number of employees, persons; VAR05 – average monthly salary of regular employees UAH; VAR07 – average wage fund for regular employees, thousand UAH; VAR09 – average basic salary, thousand UAH; VAR011 – average additional salary, thousand UAH; VAR013 – average incentive and compensation payments, thousand UAH; VAR018 – average amount of a sum of additional salary and incentive and compensation payments, thousand UAH; VAR014 – labour productivity; var14sqr – labor productivity quadratic transformation; var14lg – labor productivity logarithmic transformation; VAR016 – average net enterprise income, thousands UAH

Table 2

Regression modelling of enterprise performance parameters and remunerations in forest enterprises, Transcarpathia, 2016-2018

Model[1]		Unstandardized Coefficients		Standardized Coefficients	t	Sig	R	R^2	Durbin-Watson	N
		B	Std. Error	Beta						
A) 2016-2018										
R	(Const)	1424,108	6677,827		,213	,834	0,901	,812	2,136	19
	VAR03	269,765	37,575	,847	7,179	,000				
	VAR018	1,004	,986	,120	1,018	,324				
$R_{net} = 1424,108 + 269,765* N_{emp} + 1,004 * Sal_{add. \& inc}$ (1)										
R	(Const)	4960,902	6133,366		,809	,430	0,910	,827	1,598	19
	VAR09	3,654	,482	,838	7,579	,000				
	VAR018	1,397	,925	,167	1,510	,150				
$R_{net} = 4960,902 + *3,654* Sal_{bas} + 1,397 * Sal_{add. \& inc}$ (2)										
LP*	(Const)	357,888	98,104		3,648	,002	0,460	.212	2,275	19
	VAR05	,024	,011	,460	2,136	,048				
$LP = (357,888 + 0,24* Sal_{a.m.})^2$ (3)										
LP**	(Const)	5,159	,144		35,77	,000	0,494	,244	2,315	19
	VAR05	3,799E-05	,000	,494	2,340	,032				
$Lg_{10} LP = 5,159 + 3,799E-05* Salary_{a.m.}$ (4)										

Source: developed and compiled by the authors based on SPSS computations, a sample of 19 TRAFH's enterprises, accumulated data, 2016-2018

Taking into account the regression indicators of the equations developed (Table 2), it appears that incentive and compensation

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[1] R_{net} – income, LP – labour productivity, LP* – labor productivity based on quadratic transformation, LP** – labor productivity based on logarithmic transformations, B – regression equation ratios, Beta – elasticity coefficients, t – Student's t-test, Sig – relevance, R – correlation coefficient, R^2 – determination coefficient, Durbin-Watson – Durbin-Watson test, N – sample size, N_{emp} – number of employees, $Sal_{bas.}$ – average basic salary; $Salary_{add. \& inc.}$ – average amount of additional salary and incentive and compensation payments, $Salary_{a.m.}$ – monthly salary.

payments, as components of wages, are not really in a regression relationship with income.

At the same time, regression modelling for labour productivity (LP) (3rd and 4th equations)has received much less reliable results, its calculation will be correct only for 21-24% of the sample of enterprises, while other regression indicators (t, Sig, Durbin-Watson test) show sufficient quality of modelling.

According to the results obtained we can state that, at the moment, there is a differentiated influence of structural components of labour remuneration on the results of enterprise activity in forestry in Transcarpathia, Ukraine, and it is also somewhat different in dynamics.
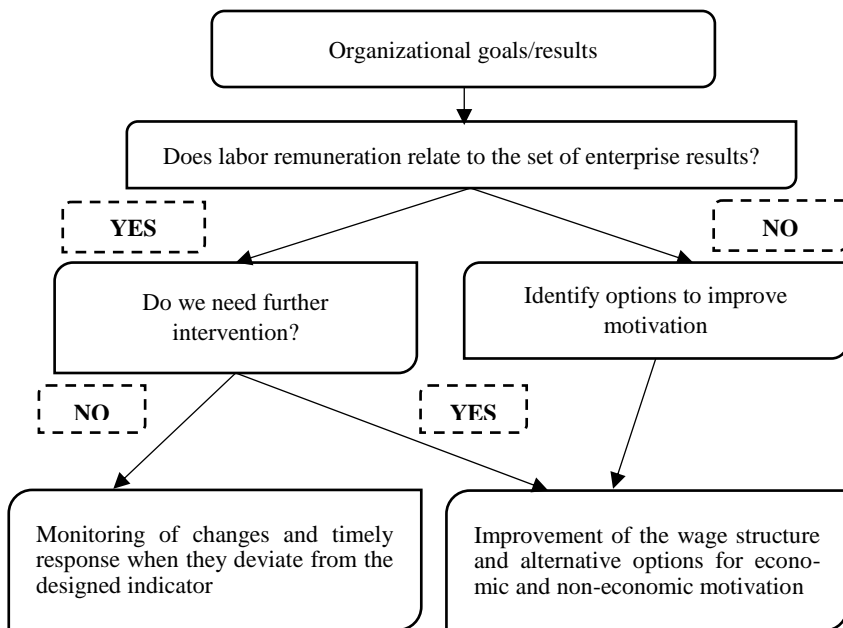

**Figure 2. Adaptive scheme
of relational enterprise goals linked pay**

Source: own elaboration

We observed that there is no significant correlation of either labour productivity or net enterprise income with the amount of incentive and compensation payments. This means that use of this type of employee motivation at the companies investigated, did not closely relate to the final results of the firm. Therefore, suggestions on restructuring of remuneration and increasing the share directly related to the enterprise's and employee's performance are quite obvious. As a generalized recommendation, an adaptive model of managerial motivational impact on performance can be suggested (Figure 2).

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