

# HR MANAGEMENT EFFICIENCY FACTORS AND THEIR IMPACT ON CREATION OF A COMMERCIAL INNOVATIVE PRODUCT

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## ABSTRACT

*Globalization and growing consumer needs regarding the quality of a commercial innovative product are making to look for new ways to improve the efficiency of HR management. The topic is urgent because one of the main aspects of the company's effective operation is assessing the factors of HR management, which include socio-economic, innovation and management, as well as internal groups of factors focused on modern economic needs of organizations operating in particular socio-economic conditions. Relevant issues underlie the study of key factors in the formation of company's HR management system. The aim of the research is realized in the article, the factors of effective functioning of HR management are assessed through key performance indicators, the objective and key results (OKRs), and their influence on creation of a commercial innovative product is revealed. This assessment takes into account the achievement of tactical and strategic goals of the organization, using different groups of factors, including the motivation of HR managers. Assessment through key performance indicators and selected goals and key results allows the company's management to control the cost of salaries, bonuses or increase company revenue by increasing labour productivity. It was determined as a result of the study that one of the main factors in the effective HR management is the motivational prerequisites. Prospects for further research involve finding effective ways to assess the factors that determine the effectiveness of management of human resources as company's strategic asset.*

**Keywords:** HR management; Human resources; Method of key performance indicators, OKR methodology; Personnel motivation.

## INTRODUCTION

Human resource management is associated with the establishment of organizational trust, motivation of HR managers determined on the basis of relevant factors of their performance. The

concept of trust in the organization has been popular in the scientific literature for about two decades. However, as traditional hierarchical management evolves into flexible, large-scale and increasingly automated systems, it has aroused considerable interest today.

Crisis situations such as the current crisis caused by the COVID-19 pandemic provide an incentive for managers to take more advantage of the innovative potential of their employees and HR managers. According to employees working in private and public companies in various industries to key changes, key changes in the organization of their work caused by the pandemic include: greater involvement in telework (through communication technologies); establishing a flexible work schedule (setting working hours more flexible to simplify a number of processes and procedures) (Bobrowska, 2020).

It is a question of creating an effective HR management model in the company, which directly influences the successful realization of a commercial innovative product. This is the relationship between the HR management efficiency factors and commercial innovative products. At the same time, the studies by Handscomb et al. (2021) show that this approach to innovation is sometimes particularly relevant in times of crisis, as it can significantly strengthen its competitive position, especially in the long run provided the improvement of the economic situation.

Thus, the creation of innovations depends on building an effective HR management model. In particular, continuous training of HR managers, as well as the ability of employees and managers to acquire new competencies, exchange views, use knowledge and learn from the experience of others builds an effective HR management model (Totterdill, 2015).

Ukraine has certain unsatisfactory rating on the indices: Innovation, Public Procurement of New Technologies and Products, and Technological Readiness, despite the significant number of scientists and people with higher education (Business Law, 2018).

Is it possible to assess the effectiveness of HR management? This aim will be fulfilled by presenting the results of literature review and empirical research on the factors of the company's HR management on the basis of evaluation using the methods of key performance indicators of HR management, as well as objectives and key results.

Today, not only the profitability level is important in the operation of a number of companies, but also the efficiency of each individual employee, the level of their motivation and professional qualities (Kaplan & Norton, n. d.).

However, given the level of reliability and solvency of business entities, it is also necessary to take into account the risk in various support programs for the implementation of an innovative commercial product by organizations (Bauer, 2017).

Given the world experience, it is not enough to find highly qualified personnel to ensure the effective operation of the company, it is also important to invest in human resources (Shoptenko et al., 2008).

Faced with the steady growth of artificial intelligence, cognitive technology and automation, 86% of respondents in this year's Global Human Capital Trends survey believe that they should focus more on advanced training.

There must be some relationship in the company's personnel policy, which will cover the areas of hiring, career management, training, job satisfaction, work schedule and employee motivation (Cania, 2014).

It is important for manufacturing companies to have systemic and clear information for management about the existing factors of the effectiveness of HR management and their impact on creation of a commercial innovative product for key decisions. The selected groups of factors

were assessed on the basis of statistical and internal reporting of both companies we study, which represents official information. Thus, in accordance with Art. 21 of the Law “On Information”, restricted information is confidential, secret and proprietary information. Relations related to the legal regime of such information are regulated by law (Verkhovna Rada of Ukraine, 2020).

Non-financial motivation, such as recognition and gratitude, play an important role as a factor in improving employee performance (Abdullah et al., 2016).

However, additional remuneration is also awarded to employees in other non-monetary forms (Fitrianingrum, 2019). Non-financial compensation refers to compensation awarded to employees not in cash, but for example in the form of leave or time off.

An empirical study by Hamzat et al. (2018) argues that it is important to develop attractive conditions for additional remuneration for employees that will effectively affect the quality of work.

Moreover, praise does not require any costs, it only takes a few minutes. Employees will significantly improve their performance if they receive enough praise from their employer (Podmoroff, 2015).

Employee assessment is the planned process of evaluating the competencies, behaviour, attitudes, motivation and effectiveness of the employee and the transfer of results to the employee and other authorized persons or managers (Kubów, 2008).

## METHODOLOGY

Table 1 presents the characteristics and list of factors of engineering companies selected for the research.

<b>TABLE 1</b>	
<b>HR MANAGEMENT EFFICIENCY FACTORS OF ENGINEERING COMPANIES</b>	
<b>Name of the group of factors</b>	<b>List of factors</b>
Socio-economic	Labour productivity
	Working conditions
	Employee competition Level
	Personnel training
	Social equality
Innovation and management	Organizational structure
	Management system
	Motivational prerequisites
	The level of competitiveness of the organization in creating a commercial innovative product
Internal factors	Demographic nature
	Trust and corporate value system

According to the method of key performance indicators, the weight of each indicator (group of factors) is determined first, the actual and expected planned value is taken as a basis. Evaluation of efficiency is a certain sequence that reflects the relationship of the studied indicator and the factors that determine its value by the formula:

$$EP = ((Aep * Fep))/Pep \quad (1)$$

Where Aep - specific weight of the group of performance indicators;

Fep - the actual performance of each indicator in the group, %;

Pep - the planned value of the group of performance indicators, %.

When using the method of objectives and key results, a certain achieved goal (realization of a group of factors) and certain costs (resources) for its achievement are determined. This effectiveness of objectives and key results is determined by the ratio of profit savings to costs:

$$E = e/S \quad (2)$$

Where E - economic efficiency of the chosen objective;

e - resource savings, %;

S - the cost of achieving the objective.

Since, in general, efficiency is the corresponding return on the incurred costs, it becomes expedient to use the method of objectives and key results.

## RESULTS

Calculation of methods of the objective and key results and key performance indicators is carried out on the example of HR management efficiency factors of engineering company VEEM - Metalavtoprom and TDV "Stryi Avto", following a certain algorithm, using socio-economic, innovation and management indicators, internal factors.

The assessment primarily begins with determining the weight of each indicator, for example: socio-economic - 0.70; innovation and management - 0.20; internal factors - 0.10. Table 2 provides definitions of the indicators of HR management efficiency of VEEM - Metalavtoprom. The next step is to calculate the performance indicator. Table 3 contains the results of the calculation.

Indicators (groups of factors)	Actual value ( <i>Fep</i> )	Planned value ( <i>Pep</i> )
Socio-economic	45	Increase by 20%
Innovation and management	35	Increase by 20%
Internal factors	20	Increase by 30%

Based on the data of EP indices (key performance indicators), the companies often calculate the share of bonuses.

According to the method of objectives and key results, we calculate the effectiveness of the achieved objective. For example, to achieve the first objective in the group of socio-economic factors 50% (50% savings) of allocated resources was spent, for the second - 25% (75% savings), and for the third - all resources, but the result was not achieved.

<b>TABLE 3</b>
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<b>KEY PERFORMANCE INDICATORS OF HR MANAGEMENT OF ENGINEERING COMPANY VEEM-METALAVTOPROM</b>				
<b>Indicators (groups of factors)</b>	<b>Wight of EP, (Aep)</b>	<b>Planned value, (Pep)</b>	<b>Actual value, (Fep)</b>	<b>Index (EP)</b>
Socio-economic	0.70	20	45	1.575
Innovation and management	0.20	20	35	0.35
Internal factors	0.10	30	20	0.06
Performance indicator (EP)				1.985

Thus, for the first group of socio-economic factors:  $E=50/50=1$ ; for the second group of innovation and management factors:  $E=75/25=3.0$ , for the third  $E=0/100=0$ .

For comparison, we give an example of evaluating key performance indicators of personnel management of an organization with a larger number of staff and a much larger HR department. If the first evaluated engineering company has the Department consisting of 6 employees, the second TDV "Stryi Avto" has the Department consisting of 10 HR managers. Calculation is carried out on the example of HR management efficiency factors of engineering company TDV "Stryi Avto" using key indicators - social and economic, innovation and management, internal factors. The weight of each indicator is determined, for example: socio-economic - 0.60; innovation and management - 0.35; internal factors - 0.15. Table 4 presents the determination of indicators of effectiveness of HR management. The next step is to calculate the performance indicator. Table 5 presents the results of the calculation.

<b>TABLE 4 DETERMINATION OF KEY PERFORMANCE INDICATORS OF ENGINEERING COMPANY TDV "STRYI AVTO"</b>		
<b>Indicators (groups of factors)</b>	<b>Actual value (Fep)</b>	<b>Planned value (Pep)</b>
Socio-economic	50	Increase by 25%
Innovation and management	35	Increase by 20%
Internal factors	15	Increase by 10%

<b>TABLE 5 KEY PERFORMANCE INDICATORS OF HR MANAGEMENT OF ENGINEERING COMPANY TDV "STRYI AVTO"</b>				
<b>Indicators (groups of factors)</b>	<b>Weight of EP, (Aep)</b>	<b>Planned value, (Pep)</b>	<b>Actual value, (Fep)</b>	<b>Index (EP)</b>
Socio-economic	0.60	25	45	1.08
Innovation and management	0.35	20	35	0.612
Internal factors	0.15	15	20	0.2
Performance indicator (EP)				1.892

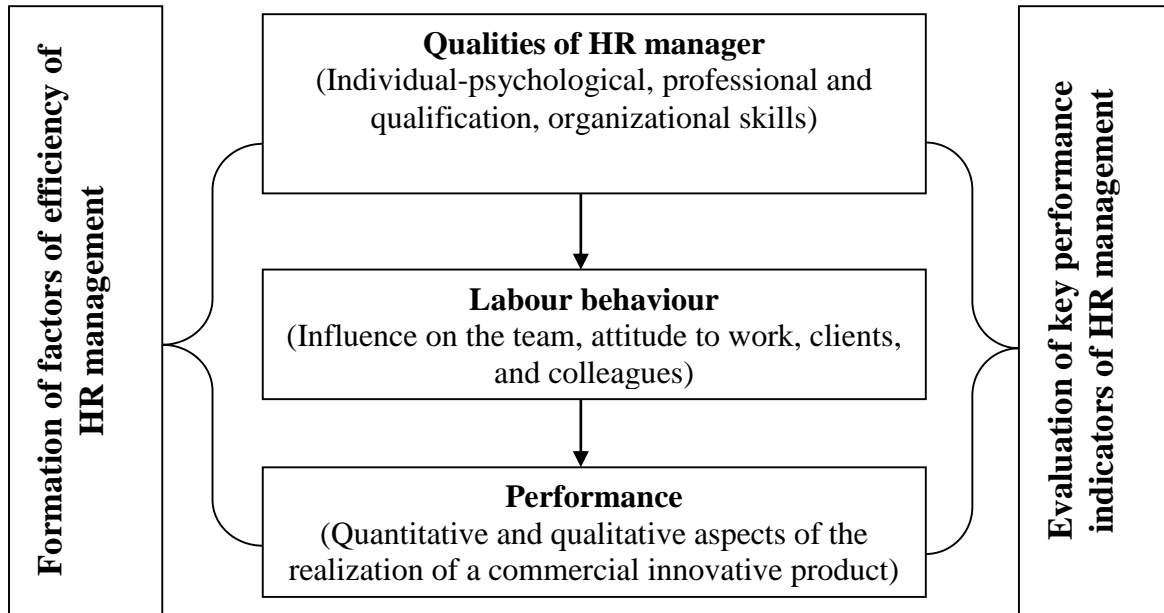
Using the method of selected objectives and key results, we calculate the effectiveness of the achieved objectives by groups of factors, as for VEEM-Metalavtoprom.

For example, 60% (40% savings) of allocated resources were spent to achieve the first objective in the group of socio-economic factors, the second - 30% (70% savings), and the third -

20% (80% savings). Thus, for the first group of socio-economic factors:  $E=40/60=0.66$ ; for the second (innovation and management factors):  $E=70/30=2.3$ , for the third:  $E=80/20=4$ .

Evaluation of key performance indicators of HR management together with monitoring of the recruitment effectiveness allows us to critically consider all communication channels used in the company and the budget allocated to them - to what extent these costs bring the measured result, allows building an effective model of HR management (Figure 1).

Professional qualities of staff are developed through continuous training, coaching and courses. Long-term evaluation of training effectiveness is the most difficult stage where the connection between HR managers and line managers is important (Kovalenko et al., 2019).



**FIGURE 1**

### **MODEL OF FUNCTIONING OF HR MANAGEMENT**

The chosen method of personnel evaluation in the company should be as effective as possible to ensure motivation for employees and, accordingly, positive results for management (Daniuk & Petiukh, 2004).

### **DISCUSSIONS**

Table 6 presents the results of evaluation of both companies by the method of key performance indicators of HR management and the method of selected objectives.

The calculated indicators for the HR departments of the companies show which of the group of factors will need further development. In both companies the least attention is paid to the group of internal factors, so the results for them are insignificant. More attention should be paid to building trust and the corporate value system, and this can be done through innovation and management factors, including non-financial motivation, group training, or the division of work into groups of individual employees.

**TABLE 6**  
**THE RESULTS OF THE EVALUATION OF COMPANIES BY THE METHOD OF KEY PERFORMANCE INDICATORS OF HR MANAGEMENT EFFICIENCY AND THE METHOD OF SELECTED OBJECTIVES**

Companies/groups of factors	VEEM-Metalavtoprom	TDV “Stryi Avto”
Method of key performance indicators		
Socio-economic, index (EP)	1.575	1.08
Innovation and management, index (EP)	0.35	0.612
Internal factors, index (EP)	0.06	0.2
Method of selected objectives		
Socio-economic, (E)	1	0.66
Innovation and management, (E)	3	2.3
Internal factors, (E)	0	4

Applying quantitative models when assessing company’s operation may entail the problem of their unevenness, and this requires the introduction of additional weights (Ivaschenko et al., 2017a, b).

Comparing our research with the conclusions of Ivaschenko et al. (2017a, b) we emphasize that, for example, the factor of labour productivity and social equality are not comparable values.

At the same time, the management of industrial enterprises is often associated with the control and measurement of efficiency, while the risks associated with the adoption and use of particular decisions should also be taken into account (Antoniuk et al., 2017).

Agreeing with Ivashchenko et al. (2018), the focus of the issue of companies’ operation is the solutions and procedures for the corrective motivational actions, etc., as well as problems arising from the need to integrate these solutions with existing conditions of business entity provided by law.

For example, Dar et al. (2014) proposed the HR management model that reflects the mediating role of employee motivation between HR management and organizational performance.

## CONCLUSIONS

Assessing the effectiveness of HR management through particular indicators is mostly impossible from the outside and is often formed within a particular company, as the data needed for calculations are often a trade secret and information that outlines the competitiveness and qualifications of each individual HR manager. This makes the study of selected groups - socio-economic, innovation and management, internal factors - topical.

Knowledge, skills, qualifications of HR managers often play a dominant role compared to the material resources of companies, and proper, effective human resource management can help improve operation of the organization and thus increase the effectiveness of the realization of commercial innovation product.

## REFERENCES

Abdullah, N., Shonubi, O. A., Hashim, R. & Hamid, N. (2016). Recognition and appreciation and its psychological effect on job satisfaction and performance in a Malaysia IT company: Systematic review. *Journal of Humanities and Social Science*, 21(9), 47 -55.

- Antoniuk, L., Gernego, I., Dyba, V., Polishchuk, Y. & Sybirianska, Y. (2017). Barriers and opportunities for hi-tech innovative small and medium enterprises development in the 4th industrial revolution era. *Problems and Perspectives in Management*, 15(4), 100-113.
- Bauer, K. (2017). *The search for a Holy Grail: Best practices for defining KPIs*. Retrieved April 21, 2021, from <https://silo.tips/download/the-search-for-a-holy-grail-best-practices-for-defining-kpis>
- Bobrowska, J. (2020). *Pracownicze innowacje społeczne w organizacjach w Polsce w kontekście pandemii COVID-19 [Employee social innovation in organizations in Poland in the context of the COVID-19 pandemic]*. Unpublished doctoral dissertation. SWPS University of Humanities and Social Sciences.
- Business Law. (2018). *Strategy for innovative development of Ukraine 2030*. Retrieved April 21, 2021, from <https://www.businesslaw.org.ua/strategiya-innovaciinogo-rozvtuku-ukrainy/>
- Cania, L. (2014). The impact of strategic human resource management on organisational performance. *Economia, Series: Management*, 17(2), 373-383.
- Daniuk, V. M., & Petiukh, V. M. (Eds.). (2004). *Personnel management*. Kyiv, Ukraine: Kyiv National Economic University.
- Dar, A. T., Bashir, M., Ghazanfar, F. & Abrar, M. (2014). Mediating role of employee motivation in relationship to post-selection HRM practices and organisational performance. *International Review of Management and Marketing*, 4(3), 224-238.
- Fitrianingrum, D. F. (2019). The effect of compensation and leadership style towards employee performance. *Manajemen Bisnis*, 9(1), 35-44.
- Hamzat, B. S., Bello, B. A., & Opele, A. M. (2018). Compensation, employee performance and organization performance in Guarantee Trust Bank (GtBank) Plc. *Business Excellence and Management*, 8(4), 14-28.
- Handscorn, C., Mahadevan, D., Schor, L., Sieberer, M., Naidoo, E., & Srinivasan, S. (2020). *An operating model for the next normal: lessons from agile organizations in the crisis*. Retrieved April 21, 2021, from <https://www.mckinsey.com/business-functions/organization/our-insights/an-operating-model-for-the-next-normal-lessons-from-agile-organizations-in-the-crisis>
- Ivaschenko, A., Sybirianska, Y. & Polishchuk, Y. (2017b). Theoretical aspects of implementation of the innovation component evaluating model for small business enterprises. *Marketing and Management of Innovations, Scientific Journal*, 2, 161-170.
- Ivaschenko, A., Sybirianska, Y., & Polishchuk, Y. (2017a). *Information and communication platform as a complex approach for solving information asymmetry problems*. Retrieved April 21, 2021, from <http://ceur-ws.org/Vol-1844/10000111.pdf>
- Ivashchenko, A., Britchenko, I., Dyba, M., Polishchuk, Y., Sybirianska, Y., & Vasylyshen, Y. (2018). Fintech platforms in SMEs financing: EU experience and ways of their application in Ukraine. *Investment Management and Financial Innovations*, 15(3), 83-96.
- Kaplan, F., & Norton, D. (n. d.) *Strategy maps*. Retrieved April 21, 2021, from <http://strategus.it/files/Strategy-Maps.pdf>
- Kovalenko, V. S.; Markova, S. V. Y Oliynyk, O. M. (2019). Development and evaluation of personnel as a system-forming element of improving the results of the enterprise in unstable conditions. *The Bulletin of the Classical Private University*, 1(12), 82-9.
- Kubów, S. (2008). Okresowe ocenianie pracowników biblioteki [Periodic assessment of library employees]. In J. Kamińska & B. Żołądowska (Eds.), *Zarządzanie kadrami w bibliotece [Human resources management in the library]*, (p. 81). Warsaw, Poland: SBP.
- Podmoroff, D. (2015). *365 ways to motivate and reward your employees every day: with little or no money. Revised, 2nd edition*. Ocala, FL: Atlantic Publishing Group Inc.
- Shoptenko, V., Kaysin, D., & Konanchuk, D. (2008). New abilities of business education. *Personnel Management*, 4, 28-34.
- Totterdill, P. (2015). Closing the gap: The fifth element and workplace innovation. *European Journal of Workplace Innovation*, 1(1), 55-74.
- Verkhovna Rada of Ukraine. (2020). *The law of Ukraine "On information"*. Retrieved April 21, 2021, from <http://zakon4.rada.gov.ua/laws/show/2657-12>