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Effectiveness of KPI implementation in the systems with unclear job responsibilities of employees

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Abstract. The lack of a clear division of employees' job responsibilities complicates task management, increases the risk of organizational errors, and negatively affects the financial results of the enterprise. The implementation of the KPI systems enables the quantitative assessment of labour productivity, predicting performance results, and ensuring the rational allocation of resources within organizational structures with the unclear roles. The **purpose of this paper** is to analyze the effectiveness of using the KPI to increase management efficiency, balance workload, integrate various types of reporting, and reduce business risks. **Methods.** In this paper we have performed the analysis of experience of the KPI application in the companies with unclear division of responsibilities, and assessedthe impact of the performance indicators on the transparency of work processes, the accuracy of supervision over task performance, the integration of management and financial reporting and optimization of the tax burden. **Results.** The study confirmed that implementing the KPI system leads to increased accuracy in predicting productivity, facilitates effectiveness of tasks distribution among the employees, and benefits to balance the workload equally. The KPI system helps to increase the transparency of work processes, reduce duplication of functions, and minimize errors, while also ensuring effective integration of management and financial reporting. The use of the KPI also reduces tax and operational risks, increases the economic security of the entity and creates conditions for more accurate strategic planning and forecasting of performance results. **Conclusions.** The use of the KPI system in the entities with unclear job responsibilities is an effective tool for enhancing management efficiency, establishing a transparent organizational structure, and ensuring the economic stability of the enterprise. The study's results can be used to optimize management processes in organizations with unclearly defined employees' roles.

Keywords: management efficiency, forecasting results, workload optimization, process transparency, performance, reporting integration, economic security.

Ефективність використання KPI у системах з розмитими посадовими обов'язками працівників

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Анотація. Відсутність чіткого розмежування посадових обов'язків працівників ускладнює управління виконанням завдань, підвищує ризик організаційних помилок та негативно впливає на фінансові результати підприємства. Впровадження систем KPI дозволяє кількісно оцінювати продуктивність праці, прогнозувати результати діяльності та забезпечувати раціональний розподіл ресурсів у межах організаційних структур із нечітко визначеними ролями. **Метою** статті є аналіз ефективності використання KPI для підвищення управлінської ефективності, балансування робочого навантаження, інтеграції різних видів звітності та зниження ризикованості бізнесу. **Методи.** Проведено аналіз практик застосування KPI у компаніях із нечітким розподілом обов'язків, узагальнено теоретичні дані щодо впливу показників ефективності на прозорість робочих процесів, точність контролю виконання завдань, інтеграцію управлінської та фінансової звітності та оптимізацію податкового навантаження. **Результати.** Дослідження показало, що впровадження KPI забезпечує підвищення точності прогнозування продуктивності, дозволяє більш ефективно розподіляти завдання між працівниками та рівномірно балансувати робоче навантаження. KPI сприяють підвищенню прозорості робочих процесів, зменшенню дублювання функцій і скороченню кількості помилок, а також забезпечують більш ефективну інтеграцію управлінської та фінансової звітності. Використання KPI також дозволяє знизити податкові та операційні ризики, підвищує економічну безпеку організації та створює умови для більш точного стратегічного планування та прогнозування результатів діяльності. **Висновки.** Використання KPI у системах із розмитими посадовими обов'язками є ефективним інструментом підвищення управлінської ефективності, формування прозорої організаційної структури та забезпечення економічної безпеки підприємства. Результати дослідження можуть бути використані для оптимізації управлінських процесів в організаціях із нечітко визначеними ролями працівників.

Ключові слова: управлінська ефективність, прогнозування результатів, оптимізація робочого навантаження, прозорість процесів, результативність, інтеграція звітності, економічна безпека.

Target setting. One of the key problems in modern personnel management is the unclear division of job responsibilities among employees, which complicates

supervision over task performance, increases the risk of organizational errors, and negatively affects the financial results of the entity. Many organizations still lack effective mechanisms for predicting performance results and rational workload distribution in the absence of clearly defined roles, despite having numerous approaches to assessing productivity. It creates a need to implement systems that allow measuring employees' performance, integrating various types of reporting and minimizing business risks.

The scientific significance of the problem lies in the need to develop theoretical approaches to assessing productivity and management efficiency in the conditions of vaguely structured organizational systems. The practical significance lies in providing management with effective tools to optimize task distribution, increase work process transparency, predict performance results, and reduce tax and operational risks. Determining and studying the effectiveness of key performance indicators (KPI) in such systems enables the establishment of specific management mechanisms that contribute to increasing the economic security and productivity of enterprises.

Analysis of recent research and publications. The problem of implementing KPI and objectives and key results (OKR) in enterprise management systems is actively considered in modern scientific research and analytical works. In particular, Y. Semenenko [1] examines the role of KPI and OKR in enhancing company efficiency, highlighting the importance of integrating them into strategic planning in order to ensure sustainable development. D. Pacheco-Cubillos, J. Boria-Reverter and J. Gil-Lafuente [2] consider the transition to flexible organizational structures based on the contingency theory and the implementation of KPI as a tool for increasing business adaptability. O. Shaleva [3] investigates the specifics of using KPI in the hotel business, emphasizing their role in improving service quality and process management efficiency. M. Holodynskyi [4] focuses on the characteristics of key indicators of human resource management effectiveness in the public sector, determining their importance for the transparency and effectiveness of government

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institutions. At the same time, V. Bondar, I. Synytsia, and N. Zachosova [5] analyze the relationship between KPIs, OKRs, and other methods of assessing project effectiveness, justifying a comprehensive approach to performance management.

On the other hand, O. Ali [6] focuses on the role of KPI in assessing employee performance, emphasizing the importance of setting the right targets to increase motivation and achieve strategic goals. The motivational aspect of using KPIs is highlighted by I. Melenchuk and I. Yaremko [7], who emphasize their impact on personnel engagement. O. Fedotova and V. Kudlai [8] draw attention to the role of information technologies in providing automated monitoring and KPI analytics, which significantly increases the accuracy of management decisions. The study by K. Kasianenko [9] highlights the impact of digital branding and media image on business results, which is essential in the context of integrating KPIs to assess marketing effectiveness. A similar approach is demonstrated by Y. Rybalchenko [10], analyzing the use of influencer marketing strategies in scaling a business through performance indicators. T. Petrushka, Y. Yukhman and K. Petrushka [11] focus on metrics for assessing human resources, which directly affect the economic security of the enterprise.

O. Budiakova and O. Svyatoslavova [12] presented an innovative approach to KPI in their work, they propose the concept of Smart KPI, which considers the flexibility and digitalization of management. Predicting relevant indicators for different roles within the organization is investigated by J. Vrieler [13], who emphasizes the use of analytical methods in establishingthe KPI systems. F. Petropoulos et al. [14] consider predictive models for making management decisions based on indicators, which increases the accuracy of planning. Finally, R. Galanti, B. Coma-Puig, M. de Leoni, J. Carmona and N. Navarin [15] focus on explicable predictive models in business process monitoring, which opens up new opportunities for automating KPI analysis.

Thus, modern scientific literature forms a comprehensive knowledge base for the effective implementation of KPIs and OKRs in management practice,

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emphasizing the importance of their strategic application, digitalization of processes and integration with predictive technologies to increase the competitiveness and economic security of enterprises.

Identification of previously unresolved aspects of the general problem. Despite numerous studies on labour efficiency and managerial productivity, certain aspects of applying KPIs in the systems with unclear job responsibilities remain unresolved in modern scientific and practical literature. In particular, methods for adapting KPIs to organizations with unclear role structure are not sufficiently developed, which complicates the forecasting of performance results and the effective distribution of tasks. The impact of KPIs on the integration of management and financial reporting, particularly in terms of optimizing the tax burden and reducing the risks of duplicate functions, has also been insufficiently studied.

Insufficient coverage of these aspects is caused by the complexity of modeling productivity in conditions of vaguely defined responsibilities, as well as the fragmentation of practical data, which complicates the formation of universal recommendations for different types of organizations. In addition, most studies are focused on clearly structured organizational systems and disregard the specifics of companies with a high degree of interchangeability of roles and functions.

The identification and analysis of these unresolved aspects are crucial for understanding the general problem, as they determine the effectiveness of management decisions, the transparency of work processes, and the economic security of the enterprise.

Formulation of the paper's objectives (task statement). The purpose of this study is to analyze the effectiveness of using the KPI systems in organizational structures with unclear job responsibilities of the employees and to determine their impact on managerial efficiency, workload balance, integrating various types of reporting, and reducing business risks.

To implement the above-mentioned purpose of the study, the following tasks are planned to be resolved:

1. To analyze the impact of the KPI systems on increasing the transparency of work processes and the accuracy of task performance supervision in organizational structures with unclear job responsibilities.

2. To identify mechanisms for integrating management and financial reporting based on KPI and assess their impact on optimizing the tax burden.

3. To investigate the role of KPI in reducing duplication of functions and increasing the efficiency of workload distribution between employees.

4. To assess the possibilities of predicting the productivity and results of an enterprise using KPI in conditions of unclear structuring of job responsibilities.

5. To provide scientifically based recommendations on the implementation of KPIs to improve the management efficiency and economic security of the enterprise.

The implementation of these tasks provides a systematic analysis of the effectiveness of KPIs, creating a basis for formulating substantiated conclusions and practical recommendations on management activities in conditions of unclearly defined employees' roles.

Statement of basic materials. Effective management of employee productivity is a key condition for the stable functioning and development of modern organizations. There is a lack of clear division of job responsibilities in many companies, it complicates supervision over task implementation, increases the probability of errors and creates additional risks to the financial results of enterprise. In such conditions, traditional methods of assessing the effectiveness of activity are not sufficient.

The KPI systems are a tool for measuring both quantitative and qualitative aspects of employee performance, which contributes to increasing the efficiency of personnel and resource management. KPIs enable the formalisation of the performance monitoring process, the establishment of task completion standards, and the assurance of transparency in management processes.

The use of KPI contributes to:

- measuring the efficiency of individual employees or teams;

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- optimizing the allocation of resources and workload;
- integrating management and financial reporting;
- forecasting performance results and assessing risks.

KPI is the basis for strategic planning and making managerial decisions, especially in companies with unclear job responsibilities, where the lack of a precise distribution of roles makes it difficult to monitor and assess productivity [1, p. 228].

The relevance of using KPIs is increasing in companies with unclear distribution of job responsibilities, where the lack of detailed, defined roles leads to risks of duplication of functions, workload imbalance, and reduced productivity. Examples of such structures include startups at the scaling stage, IT companies with flexible management methodologies, or service enterprises, where employees combine multiple functional roles. In such conditions, traditional methods of performance monitoring do not provide the proper level of accuracy, as they are primarily based on subjective assessments.

The use of KPIs in these organizations enables the standardization of approaches to assessing work results, increasing the transparency of processes and allowing for the timely identification of problem areas in task performance. In particular, based on the analysis of indicators, management can adjust the functional distribution, optimize the workload among teams, and make informed decisions on the redistribution of resources. In addition, the data obtained allows the formation of incentive systems based on the achievement of specific results, as well as determining areas for improving personnel skills.

Thus, KPIs are not only a tool for monitoring productivity, but also an element of strategic management that ensures the adaptability of the organizational structure to market dynamics and reduces the risks associated with the unclear functional responsibilities of the employees. It enhances the effectiveness of internal control and contributes to achieving the enterprise’s long-term goals [2].

Integration of management and financial reporting is one of the key factors of effective corporate management, especially in conditions of unclear distribution of job responsibilities. The use of the KPI system enables combining the assessment of employee productivity with the financial results of the enterprise, forming a comprehensive approach to monitoring and analyzing organizational processes. Such a mechanism creates a single information platform for making managerial decisions and ensures increased transparency of both operational and financial flows.

The integration mechanism involves the formation of the KPI system that simultaneously reflects the degree of task performance by individual employees and the impact of these results on the company's financial indicators. For example, in retail chains, a key indicator for the sales department may not only be the number of goods sold, but also the marginal profit indicator, which directly correlates with the enterprise's financial results. In the field of service provision, the KPI system may include customer satisfaction indicators along with revenue indicators, which allows for a comprehensive assessment of personnel performance and its economic effect.

The use of an integrated approach contributes to the timely detection of deviations in costs and revenues, allowing for the minimization of tax and financial risks. It also creates a basis for optimizing the tax burden by accurately tracking resources and allocating costs correctly between departments. In addition, combining management and financial indicators enhances the accuracy of strategic planning. It ensures a balance between employee productivity and company profitability, which is crucial for organizations with a complex organizational structure and blurred functional responsibilities [4].

Effective distribution of tasks among employees and avoiding duplication of functions are critical to increasing organizational productivity. In a structure with blurred job responsibilities, traditional control methods do not provide a sufficient level of transparency and accuracy of task performance assessment. Using KPIs allows formalizing the performance assessment process, create objective control criteria, and identify duplication of functions [5, p. 25].

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For quantitative analysis of duplication of functions (Df), the ratio of actually performed tasks (Ta) and unique tasks (Tu) is used:

$$Df = ((Ta - Tu) / Tu) \times 100\%$$

A decrease in the Df value indicates an increase in the efficiency of task distribution and a reduction in duplication of functions in the organization. KPIs enable tracking the performance of tasks by each employee, identify excessive operations, and pinpoint unfulfilled functions, ensuring more even workload for personnel.

The uneven distribution of workload is assessed using the Lr coefficient:

$$Lr = (\sigma(Ti) / \bar{T}i) \times 100\% ,$$

where Ti is the number of tasks performed by the i-th employee; $\bar{T}i$ is the average number of tasks per employee; σ(Ti) is the standard deviation.

The use of KPIs enables reducing Lr value by redistributing tasks from overloaded to underloaded employees, ensuring workload optimization at the departmental level.

In practice, the mechanism for using KPIs to control duplication of functions and evenly distribute tasks can be presented in the form of a diagram (fig. 1), which demonstrates the sequence of stages of KPI implementation and their interaction with management processes.

The use of such a system allows not only to identify duplication and load imbalance, but also to predict potential employee overloads in the future, which increases the overall efficiency of the organization. Thus, KPIs act as a comprehensive tool for monitoring, analytics, and strategic planning of workload.

In organizational structures with unclear job responsibilities, significant difficulties arise in planning and forecasting labour productivity. The lack of a precise distribution of functions complicates control over task performance, as well as the formation of reliable information on the performance of individual units and

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employees. It leads to a decrease in the validity of management decisions and an increase in the risk of financial losses. Under such conditions, implementing the KPI system becomes a necessary condition for formalizing the process of assessing productivity and ensuring transparency in work processes at all levels of management [6, p. 35-37].

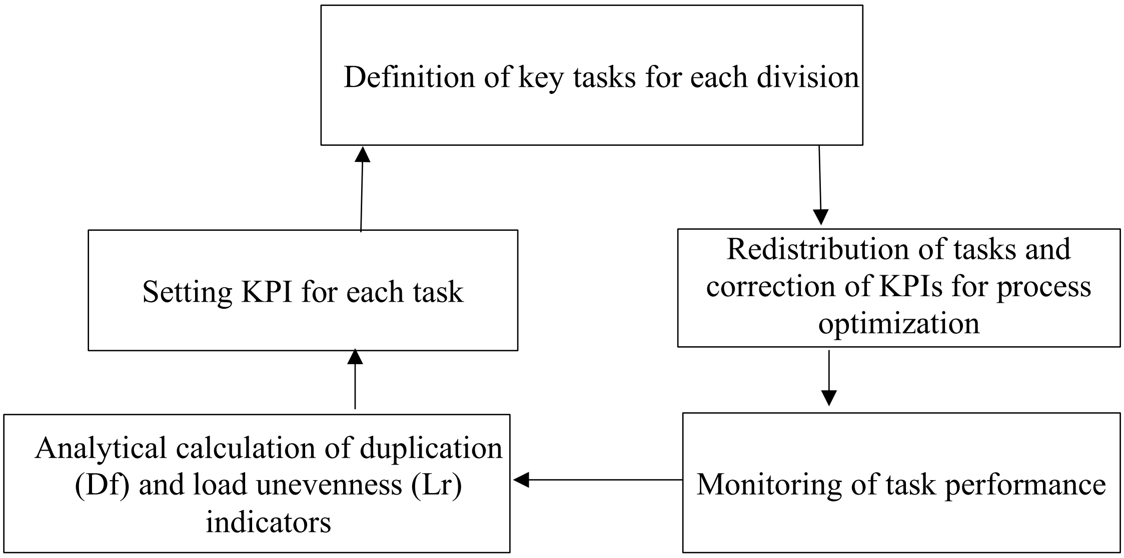

Fig. 1. Mechanism of KPI application to optimize workload distribution and reduce duplication of functions

Source: the author’s development

The use of KPIs for predicting performance results has a key advantage in the form of the ability to conduct a quantitative analysis of current indicators and develop scenarios for the organization’s growth. For example, in the IT services sector, where employees often perform several functions simultaneously (development, testing, customer support), the analysis of indicators such as Revenue per Employee (RPE), Task Completion Rate (TCR), Operational Cost Efficiency (OCE) and Employee Utilization Rate (EUR) allow assessing the team’s productivity, the level of personnel workload and the efficiency of resource use. A similar approach is used in companies with a project structure, where different stages of work require the involvement of specialists with different competencies, which complicates performance control.

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Based on the analysis of these indicators, management can make informed decisions on optimizing the organizational structure, redistributing the workload and determining the need for additional resources. Additionally, scenario modeling based on KPIs enables the prediction of productivity for both the short and medium terms, thereby increasing the accuracy of strategic planning. This approach also creates conditions for the formation of a personnel motivation system based on achieving specific indicators, which increases management efficiency in conditions of blurred functional responsibilities [13].

Table 1 represents a comparison of current KPI indicators with predicted values for various periods, allowing us to evaluate the potential dynamics of the enterprise's development.

Table 1

KPI forecast values for assessing enterprise productivity in conditions of unclear structuring of job responsibilities

KPI indicator	Current value	Forecast (3 months)	Forecast (6 months)	Forecast (12 months)
Revenue per Employee (RPE)	25 000 UAH	27 500 UAH	29 000 UAH	32 000 UAH
Task Completion Rate (TCR)	82 %	85 %	88 %	92 %
Operational Cost Efficiency (OCE)	0,78	0,80	0,82	0,85
Employee Utilization Rate (EUR)	70 %	73 %	76 %	80 %

Source: compiled by the author based on [14]

The forecast KPI values are calculated based on a linear trend model that takes into account current indicators and growth rates for previous periods. The RPE reflects the financial performance of employees and the overall efficiency of human resources use. The TCR indicates the level of task fulfilment, enabling to identify areas of responsibility distribution that require improvement. The OCE characterizes the efficiency of operational costs and the impact of managerial decisions on financial indicators. The EUR assesses the level of employee workload, which helps determine the balance between overloaded and underloaded employees.

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Analysis of forecast data shows that even in case of unclear structuring of job responsibilities, the use of the KPI system allows you to improve the efficiency of activities. An increase in RPE and TCR indicates an increase in labour productivity, while optimizing OCE and EUR contributes to more efficient use of resources and prevents employee overload [14].

The results obtained confirm that KPIs enable the prediction of an enterprise's productivity and financial outcomes in challenging organizational conditions. The use of KPIs provides an integrated approach to analysing activities, increases the accuracy of management decisions, and promotes strategic planning. In addition, KPI forecasting enables the timely identification of potential problems and the adjustment of work processes, thereby increasing the economic security of the enterprise and supporting its functional stability.

Effective implementation of the KPI systems in enterprises with unclear job responsibility structures requires a comprehensive approach that takes into account the specifics of the organizational culture, the nature of tasks, and the peculiarities of management processes. KPIs serve not only as a tool for assessing work results, but also as a mechanism for strategic planning, increasing process transparency and reducing risks. The scientifically sound implementation of KPIs is carried out in several stages [15].

The first stage involves a clear definition of the key objectives of the enterprise and their coordination with performance indicators. KPIs should reflect the strategic priorities of the organization, include financial, operational and managerial aspects, and be measurable and achievable. For example, in companies with a project structure, where employees simultaneously perform development, testing, and customer support functions, setting KPIs such as TCR and RPE allows aligning individual indicators with the goals of departments and the company as a whole. Such KPI formation helps to avoid discrepancies between expected results and actual achievements of the department.

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The next stage involves developing a methodology for collecting and analyzing data to calculate KPIs. The system must facilitate the integration of management and financial reporting, enabling the assessment of individual department and employee performance without excessive duplication of functions. The use of automated platforms for collecting data and building analytical panels allows for increasing the accuracy of measurements and the speed of decision-making. In real-world conditions, for example, in retail chains, the use of such platforms allows for the quick tracking of sales plan implementation at the level of specific stores and employees, which contributes to the timely adjustment of strategy and the optimization of resources.

Particular attention is paid to the motivational aspect of KPI implementation. Employees must understand the logic behind forming indicators and recognize their impact on the overall enterprise result. In the practice of IT companies, this is implemented through a transparent bonus system linked to the achievement of specific KPIs, which increases personnel involvement, promotes responsible corporate behaviour and reduces the risk of errors or deliberate disregard of duties.

From the standpoint of economic security, KPIs enable the identification of critical processes and potential sources of financial and operational risks. Regular analysis of indicators such as OCE and EUR enables the prediction of negative scenarios, facilitates preventive managerial decisions, and optimizes the tax and operational burden of the enterprise. Such a comprehensive approach ensures the stability of the organization's functioning, even in cases where job responsibilities are unclear and the management structure is complex.

Conclusions. As a result of the study, it was found that the implementation of KPI systems in enterprises with unclear job responsibilities is an effective tool for increasing the management efficiency and economic security of the organization. The analysis revealed that KPIs contribute to enhancing the transparency of work processes, ensuring the accuracy of task performance monitoring, and reducing the duplication of functions among employees.

The study also confirmed that integrating management and financial reporting based on KPIs enables the optimization of the tax burden and ensures a more rational allocation of resources. The use of KPI predictive models enables the prediction of an enterprise's productivity and results, even in conditions of unclear job responsibility structuring. It enhances the strategic flexibility of the organization and enables a timely response to changes in both internal and external environments.

The developed scientifically based recommendations for implementing KPIs include the formation of indicators that reflect the strategic goals of the enterprise, the integration of the KPI system with management and financial reporting, the automation of data collection and analysis, as well as the creation of a motivation system for personnel. The implementation of these recommendations will contribute to increasing the efficiency of managerial decisions, optimizing workload and reducing operational risks.

Further research shall focus on studying the adaptation of KPIs to specific industry conditions, as well as improving methods for quantifying their impact on economic security and the long-term efficiency of enterprises.

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