

INTEGRATED INDICATORS IN THE COMPLEX ASSESSMENT OF MANAGEMENT ACTIVITY EFFICIENCY IN BUSINESS ACTIVITY

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Modern market economy under the circumstances entrepreneurship of subject's effective activity management not only work to release volume or financial indicators with, perhaps their management system which to the extent to the goal oriented, stable and innovative to solutions justification with is determined. Therefore, management from integral indicators in the comprehensive assessment of efficiency use important is considered.

Table 1.

Integral index shaper main indicators

Internal organizational-social block (questionnaire results):	Economic and financial block (real indicators):
○ Security condition (coefficient) ○ Protection tools with security ○ Labor conditions and hygiene ○ In the team relationships ○ Worker satisfaction and encouragement	○ Income and benefit dynamics ○ Profitability coefficient ○ Work right policy (average) work right growth) ○ Management expenses efficiency ○ Export/import figures

"Integral index of efficiency of organizational and economic mechanism" for the toy production enterprise so we determine:

$$IK_{TSM} = \alpha * I_{ijtimoiy} + \beta * I_{iqtisodiy}$$

$$\alpha + \beta = 1, \alpha, \beta \in [0,1]$$

This on the ground I_{social} - questionnaire results based on formed social organizational index, I_{economic} - economic - financial from indicators calculated economic index. Organizational - economic mechanism efficiency integral index two from the block - social and economic from indicators consists of and their every both also to efficiency equal to the extent impact to show probably come out, weights as $\alpha = \beta = 0.5$ reception was done.

Social (survey- based) index indicators formed by:

Every one substance for answer scale to $[0;1]$ interval to normalize:

$$x \in \{1, 2, 3, 4, 5\} \Rightarrow s = \frac{x-1}{4} (1 \rightarrow 0; 3 \rightarrow 0.5; 5 \rightarrow 1)$$

Questionnaire their answers to the index the standard normalization method was used in the transfer: positive answer - 1, partially satisfaction - 0.5, negative The answer is set to 0 , the amplitude between the scales is 4. This method Lai Kert to the scale based and indicators in the interval 0–1 comparison possible gives.

$$I_{ij\text{timoiy}} = \sum_{i=1}^m w_i^{(soc)} * s_i \quad \sum w_i^{(soc)} = 1$$

Economic and financial index. The block of financial indicators is of particular importance in evaluating the effectiveness of the organizational-economic mechanism. This block belongs to the enterprise stability and from resources effective use complex reflection of the level It will make you laugh.

All indicators comparable enterprises in the interval $[0;1]$ in the section is normalized . In this case, the Min –Max method is applied.

“Positively oriented indicators” are indicators whose increase in value indicates an increase in the efficiency of the enterprise. A high value in such indicators corresponds to high efficiency. As indicators such as profit margin, profitability, or labor productivity increase, the financial stability and economic efficiency of the enterprise are considered to have increased. Therefore, the following formula is used to normalize them:

$$S_{ij} = \frac{S_{ij} - \min (S_j)}{\max (S_j) - \min (S_j)}$$

where S_{ij} is the j -indicator of the i -object, $\min(S_j)$ and $\max(S_j)$ are the minimum and maximum values of this indicator in the observation interval.

“Negatively biased indicators” are indicators whose increase in value indicates a decrease in efficiency. In this type of indicator, a low value corresponds to high efficiency. An increase in the ratio of administrative expenses or the ratio of the wage fund to income indicates inefficient use of resources and high costs. Therefore, the following formula is used to normalize them:

$$S_{ij} = \frac{\max(S_j) - S_{ij}}{\max(S_j) - \min(S_j)}$$

The normalized values are then combined into a single financial index through weighting:

$$I_{iqtisodiy-moliyaviy} = \sum_k w_k^{(fin)} z_k$$

$$\sum_k w_k^{(fin)} = 1, w_k^{(fin)} \geq 0$$

the weights are calibrated taking into account the influence (correlation/regression) of the indicators on the outcome metric Y (for example, ROI, or historical value of integral efficiency):

$$w_k^{hybrid} = \lambda w_k^{expert} + (1 - \lambda) w_k^{empirik}, \lambda \in [0, 1]$$

Here w_k^{expert} is the weight resulting from AHP/Delphi, $w_k^{empirik}$ is the weight resulting from data. The parameter λ expresses the degree of confidence in the expert's conclusion: $\lambda \rightarrow 1$ - strong reliance on the expert, $\lambda \rightarrow 0$ - strong reliance on data.

Accordingly, the appearance of the financial index will be as follows:

$$I_{iqtisodiy-moliyaviy} = \sum_k w_k^{hybrid} z_k$$

Each step can be written in expanded form, combining it with a single written formula:

$$IHEI = \alpha \sum_{j=1}^{n_1} w_{1j} \frac{S_{1j} - \min(S_{1j})}{\max(S_{1j}) - \min(S_{1j})} + \alpha \sum_{j=1}^{n_2} w_{2j} \frac{S_{2j} - \min(S_{2j})}{\max(S_{2j}) - \min(S_{2j})}$$

here, if these indicators have a "negative" character, the above "inverted" normalization formula is used instead of the name.

The proposed methodology for integrating social-organizational and economic-financial indicators into a unified Integral Index of Efficiency (IK_{tsm}) provides a comprehensive approach to assessing the management performance of business entities. This model bridges the gap between subjective perceptions (employee satisfaction, safety, teamwork, motivation) and objective data (profitability, cost efficiency, export–import dynamics), enabling a multidimensional evaluation of managerial effectiveness.

By applying normalization procedures (Likert-scale transformation for social indicators and Min–Max standardization for financial indicators), the study ensures comparability and statistical robustness of heterogeneous data. The hybrid weighting mechanism, which combines expert (AHP/Delphi) and empirical (correlation/regression-based) weights, allows the model to adapt flexibly to both expert knowledge and real-world data patterns.

The results demonstrate that the integrated index not only reflects the current efficiency level of an enterprise but also serves as a diagnostic and forecasting tool, helping to identify managerial weaknesses and guide strategic improvements. In the context of industrial sectors such as toy production, the proposed approach contributes to the development of adaptive, data-driven management systems that support innovation, competitiveness, and sustainable growth.

Overall, the integral assessment model provides a solid methodological foundation for evaluating and improving organizational-economic mechanisms of enterprise management within the modern digital economy.