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**INDUSTRY HETEROGENEITY AS A METHODOLOGICAL CONDITION
FOR VERIFYING THE ASSESSMENT OF MANAGERIAL DECISION
QUALITY IN AN ENVIRONMENT OF RISK AND UNCERTAINTY**

The assessment of managerial decision quality in modern management is associated with the need to develop analytical instruments capable of ensuring a correct interpretation of the outcomes of managerial choice under conditions of an unstable business environment. In strategic management practice, such assessment is increasingly carried out using integral indicators that combine the characteristics of the decision-making process with the results of their implementation. At the same time, the application of such instruments generates a methodological problem, since integral assessments may reflect not only the outcomes of managerial actions but also the structural parameters of the environment in which an enterprise operates. Under such conditions, there arises a need to verify the methodological invariance of evaluation frameworks, that is, their ability to preserve the structure of criteria and the logic of assessment when sectoral and macroeconomic parameters of the environment change.

In management theory, the decision-making process has traditionally been examined through the lens of the rationality of managerial choice and the alignment of managerial actions with the strategic objectives of the organization. H. A. Simon formulated the concept of bounded rationality, according to which managerial decisions are formed under conditions of incomplete information and cognitive limitations of decision-makers [1]. The strategic dimension of this issue was further developed in the works of I. Ansoff, who emphasized the necessity of aligning managerial decisions with the parameters of the external environment and the long-term objectives of the enterprise [2]. In the studies of R. J. Lempert, S. W. Popper, and S. C. Bankes, an approach to decision-making oriented toward maintaining the acceptability of outcomes under changing environmental conditions is proposed, which involves evaluating managerial alternatives across a set of possible future scenarios [3].

A methodological prerequisite for analysing the quality of managerial decisions is the distinction between risk and uncertainty. F. H. Knight considers risk as a situation in which the probabilities of events can be determined, whereas uncertainty is characterized by the absence of a reliable probabilistic structure and by limited information about future states of the environment [4]. Under conditions of risk, the evaluation of decisions

may be carried out through expected outcomes and their variability, whereas under uncertainty the assessment focuses on maintaining the acceptability of outcomes across a range of possible scenarios. The formalization of decision-making under risk was proposed in the theory of expected utility developed by J. von Neumann and O. Morgenstern, in which decisions are interpreted through the maximization of expected utility given a specified probability distribution of outcomes [5].

In applied research on the evaluation of managerial decision quality, integral indicators constructed through the normalization of primary indicators and their subsequent aggregation have become widely used. The methodological guidelines developed by the Organisation for Economic Co-operation and Development and the Joint Research Centre of the European Commission emphasize that the results of integral assessments depend not only on the values of the indicators themselves but also on the parameters of the evaluation procedure, including the choice of weighting coefficients, normalization rules, and aggregation methods, which necessitates testing the stability of integral assessments when methodological parameters vary [6]. In the works of A. Saltelli it is also noted that linear aggregation within composite indicators may produce trade-offs between the components of the index, as a result of which the outcomes of integral assessment may vary depending on the structure of weighting coefficients even when the underlying data remain unchanged [7].

Under such circumstances, the problem of methodological invariance of the evaluation instrument arises. In this context, methodological invariance should be understood as the ability of an assessment methodology to preserve the structure of criteria and the logic of evaluation when sectoral parameters of the economic environment change, given that enterprise performance is determined both by managerial decisions and by the configuration of external constraints. If an integral index systematically changes its values or the ranking of objects depending on the sectoral structure of economic activity, this indicates that the index reflects not the quality of managerial decisions but the characteristics of the environment in which the enterprise operates.

Industry heterogeneity, in this context, creates natural variability in the profiles of risk and uncertainty, since different types of economic activity differ in cost structures, operating cycle duration, the balance between tangible and intangible assets, dependence on imported resources, demand elasticity, and access to financing. As a result, the industry determines not only the economic parameters of enterprise activity but also the nature of uncertainty within which managerial decisions are formed. This natural variability makes it possible to consider sectoral differentiation as an empirical mechanism for testing the methodological invariance of the evaluation framework, that is, as a form of stress test for the assessment methodology.

In this framework, the evaluation of managerial decision quality may be implemented through two interrelated dimensions. The first dimension encompasses the characteristics of the decision formation process, including the structural clarity of the problem, the completeness of alternatives, the coherence of criteria and constraints, and the alignment of decisions with the strategic objectives of the enterprise. The second dimension reflects the outcomes of decision implementation, including the achievement of target performance parameters, the nature of deviations, the stability of results over time, and the preservation of acceptable outcomes under changing operational conditions. The integral assessment of managerial decision quality is therefore formed through the integration of results from both dimensions.

Within the proposed approach, sectoral verification of the evaluation methodology involves examining the correspondence between the set of criteria and the mechanisms of value creation as well as the structure of risks within a given industry, analysing the differentiation of the significance of criteria depending on sectoral characteristics in order to avoid the mechanical application of universal weighting coefficients, and assessing the preservation of acceptable results across a range of industry-specific scenarios, which enables testing the stability of the integral assessment under conditions of uncertainty.

The generalization of the conducted analysis makes it possible to formulate the proposition that the methodological correctness of the integral assessment of managerial decision quality in an environment of risk and uncertainty is determined not only by the justification of the set of indicators but primarily by the ability of the evaluation framework to preserve methodological invariance under changes in sectoral configurations of the environment, when the integral index should reflect the outcomes of managerial actions rather than the structural characteristics of economic activity.

The scientific novelty of the study lies in the formulation of the methodological task of verifying the integral assessment of managerial decision quality through the use of industry heterogeneity as a control condition for testing the invariance of the evaluation framework. This approach shifts the emphasis from improving individual indicators toward verifying the structural validity of the assessment methodology itself. In such a formulation, sectoral differentiation acts not only as a characteristic of the economic environment but also as a methodological tool that enables distinguishing situations in which an integral index reflects the quality of managerial decisions from those in which its values are determined by the sectoral structure of risk and uncertainty.

Further research should be directed toward the formalization of indicators of the intensity of sectoral regimes of risk and uncertainty on the basis of empirically observable proxy indicators, including demand volatility, the share of imported components in cost structures, the duration of operating cycles, capital intensity of

production, and the availability of external financing. Another promising direction involves expanding the empirical basis for testing the methodological invariance of integral assessments in both intersectoral and international comparative contexts, which would allow evaluating the stability of the assessment framework across different institutional and macroeconomic environments. Particular attention should also be devoted to deepening the analysis of the stability of integral assessment results with respect to changes in methodological parameters, including variations in normalization rules and weighting structures in accordance with the recommendations of the contemporary methodology of composite index construction [6–7].

References:

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