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HARRINGTON'S DESIRABILITY FUNCTION AS INSTRUMENT OF INTEGRAL ASSESSMENT OF INNOVATION, SCIENTIFIC AND TECHNOLOGICAL COMPONENTS OF ECONOMIC POTENTIAL

Summary

Formation of strategy of innovative development of agro-industrial complex requires consideration of environmental factors, in particular national characteristics of economic structure of the country, the level of its economic development, the availability of material, technical and financial resources, the state of science, technology and production bases, innovation priorities and so on.

Purpose: to justify the application of extended profitability function of E.K. Harrington with integral assessment of evaluation use of innovation, scientific and technological components of economic potential.

Since 1960's the idea of using the E.K. Harrington's profitability function has been spread in scientific literature, which, despite a certain complexity of calculations, scientists recommend to use it in assessing of economic potential with purpose of making optimal decisions on innovation policy under uncertainty and risk.

Practicability of E.K. Harrington's desirability (profitability) functions with integrated assessment of using innovation, scientific and technological components of

economic potential has been justified. The systematic analysis of research showed that the formation of integral indicator of the impact of economic potential by using psychophysical "scale of desirability", which formalizes an assessment through the comparison of incompatible quantitative and qualitative indicators.

It’s been argued that the use of Harrington’s desirability functions as a tool of evaluation of economic potential effectiveness, where each index is appropriate to absolute and relative terms, certain calculations and expert evaluation does not complicate the final conclusion. It’s been proposed to domestic entities of agro-industrial complex to reduce assessed by E.K. Harrington interval values of scale of integrated parameter of innovation, scientific and technological development, including deleting «very high» and selecting «satisfactory and unsatisfactory" levels.

It’s been mentioted that integrated approach to effectiveness assessment is based on the definition of synthetic (integral) index, which in turn accumulates partial disparate signs. The integrated approach, as opposed to alternative reflects effectiveness in general and in individual blocks at the same time. The calculation of synthetic indicator solves the problem of evaluating the effectiveness of the use of innovation, scientific and technological potentials of the institution (department, system).

It’s been determined the boundary numerical scale intervals of integral index, proposed above-mentioned Ukrainian and Belarusian scientists in their developed methods of integrated evaluation of innovative, scientific and technological potential, on which base we have the optimum scale and the average of these limits.

It’s been reasoned that for domestic entities of agrarian sphere determined by E.K. Harrington interval values of standard scale of integrated parameter should be lower, particularly eliminate "very high" and isolate "satisfactory" and "unsatisfactory" levels of effectiveness of economic potential.

The study proved practicability of the Harrington’s profitability function as a tool of adequately integrated assessment of the level of innovation, scientific and technological potentials of agricultural sector. Thus, the use of this approach in the development of methodology of comprehensive evaluation of the impact of the use of

scientific and technological potential of the National Academy of Agrarian Sciences of Ukraine allowed to transform incompatible indicators to dimensionless scale, enabling determination of the impact of scientific and technological potential of the network of research institutions of agricultural profile of the country as a whole and for blocks (personnel, publishing and information, organizational); indicative planning for the medium term. We calculated the integral index by reflecting the success of the planned by the National Academy of Agrarian Sciences of Ukraine measures and achieved its scientific and technological level in retrospect.

Conclusions. As a result of analysis of using the E.K. Harrington's profitability function as a tool of integral evaluation of the use of economic potential, including its innovative scientific and technological components, has been found that the results of this approach by academic research institutions will provide: 1) obtaining their objective assessment of installing development trends; 2) identification of ways of increasing efficiency in the financial, personnel, publishing, information and organizational aspects; 3) identification of factors, reserves and areas of improvement of organizational and economic mechanism of the use of components of economic potential in agriculture.

Keywords: *economic potential, scientific and technological potential, innovative potential, E.K. Harrington's desirability (profitability) functions*.