

SIMULATION MODEL OF ENVIRONMENTAL FACTORS OF ORGANIZATIONS USING FUZZY LOGIC

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Rezumat. În contextul actual al crizei economice mondiale se impune tot mai mult descoperirea de noi abordări ale proceselor și fenomenelor economice, astfel încât să fie posibilă analiza acestora din punct de vedere dinamic și nu static cum sunt realizate în prezent. Modelele matematice utilizate în economie sunt bidimensionale, cu grade diferite de complexitate, care nu depășesc analiză vectorială tridimensională. Modelul propus presupune introducerea de noțiuni matematice recente (fuzzy logic), utilizarea de soft matematic (Matlab) și soft grafic 3D (Catia) pentru vizualizarea dinamică în 3D a evoluțiilor și efectelor fenomenelor.

Abstract. In the context of the current global economic crisis, it is essential to discover new approaches to economic processes and phenomena, so as to enable their dynamic analysis instead of the static one that is currently conducted. The mathematical models used in economics are two-dimensional, with varying degrees of complexity that do not exceed three-dimensional vector analysis. The model submitted in this paper introduces recent mathematical concepts (fuzzy logic), the use of mathematical software (Matlab) and 3D graphic software (Catia) for a dynamic 3D visualization of trends and effects of various phenomena.

Keywords: strategies, fuzzy logic, fractal, marketing mix, 3D modeling

1. Introduction

Currently, most research, especially in the economic field, materializes in theoretical and mathematical models. Putting the results into practice is difficult and incurs major errors. So far, nobody assembled several results in order to be analyzed as a whole (unification). Because during the analysis corrections are made to some results, it becomes difficult to visualize the whole and the interdependencies between them and to deliver and implement the right decision. In most cases, logic or foresight guide the making and implementing of the decision. For example, researchers who sought to determine the mass of the universe have not taken $+\infty$ into account because it was considered too large a number or $-\infty$ because it was considered too small (insignificant); the result was as follows: 80 % of the mass of the universe is missing (the mass between galaxies had been neglected, "neglecting the singularities at infinity" - the unsolved part of A. Einstein's non-linear field equations [1].

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