OPTIMIZATION OF COMPETITION BETWEEN TWO NON-PUBLIC UNIVERSITIES OPERATING IN THE CITY OF VLORA THROUGH GAME THEORY

Llambrini Sota

University Pavarësia, Vlora, Albania. E-mai: llambrini.sota@unipavaresia.edu.al

Abstract

There are two non-puplic universities in Vlora. Strengthening the position of non-puplic universities in the Republic of Albania in the actual conditions is a complicated problem involving several variables: profit, risk, individual goals and preferences, teaching and scientific levels, financial support, competitors, social and legal rules, corruption, etc. In a competitive universitary market with random demand, monitoring is more difficult and complicated. In this study, using Game Theory, Probability and Mathematical Statistics, we will try to find an optimal strategy in the non-puplic universities of Vlora during the academic years. We play a Bayesian game with enrolled students in non-puplic universities.We apply Nash equilibrium, Bayes-Nash-Harsanyi equilibrium, and subjective equilibrium. The notion of subjective equilibrium considered in our study emerges in a dynamic learning process of two players engaged in a strategic game. Each player in the model chooses a strategy to maximize the mathematical expectation of utility function, given his subjective beliefs about the strategies of his opponent. We assume that each player is fully informed about the strategy sets and utility functions of opponent player. We apply the definition of subjective probability (according to Mizes, Hinchin and Kolmogorov). It is important to study the behavior of the players induced by these subjective equilibria, and to compare it to the better-known counterparts, objective Nash equilibrium.

Keywords: non-puplic universities, scholarship, optimization, game theory, Nash equilibrium.