Analytical Study of Technical, Allocative and Economic Efficiency for Broiler Farms in Fayoum Governorate

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ABSTRACT

The poultry industry is characterized by a high Feed conversion coefficient, high returns And the need for poultry projects for a Small Area, as well as the reduction of capital required to invest in this industry compared to other productive projects, which made this sector one of the most attractive for investments, However, it faces many of the risks and productive challenges that affect it, such as the high prices of inputs and the weak infrastructure of supporting services, Which prevented their access to the appropriate economic efficiency Which commensurate with the size of existing investments on it.

The study aimed at measuring the economic efficiency of Broiler poultry Farms in Fayoum Governorate, The study depend on quantitative and descriptive analysis to achieve its Objectives, The study used Stepwise Regression to analysis of production functions and costs, profitability indicators such as net of revenue, Revenue per Egyptians pound, and measuring the economic efficiency by Data Envelopment analysis (DEA).

The most important results of the study were: Technical efficiency was determined by Constant Return Scale CRS, Variable Return Scale VRS: (0.757, 0.832), (0.809, 0.864), (0.900, 0.902), (0.981, 0.984), (0.993, 0.994) for the five production capacities respectively, Allocative efficiency (0.694, 0.721), (0,881, 0.817), (0.900, 0.845), (0.969, 0.957), (0.994, 0.992) for the five production capacities respectively, While the economic efficiency by CRS, VRS: (0.611, 0.600), (0.739, 0.705), (0.810, 0.762), (0.953, 0.943), (0.988, 0.986) for the five production capacities respectively.

The most important elements affecting in the production Function of Broiler Farms for the first production capacity were: the number of chicks, the quantity of feed, the number of workers, the Mortality and the Vaccines, the production elasticity for all previous elements were: 0.111, 0.107, 0.102, -0.147, 0.088 and the total elasticity estimated at: 0.261, That reflects the decreasing Economic of Scale, The most important elements affecting the second production capacity were: the number of chicks, the quantity of feed, the number of workers, the Mortality and the Vaccines, the production elasticity for all previous elements were, the production elasticity for all previous elements were: 0.113, 0.104, 0.107, -0.117, 0.086, while The most important elements affecting the third production capacity were: the number of chicks, the quantity of feed,

the number of workers, the Mortality, the quantity of electricity, the Vaccines, and the quantity of fuel, the production elasticity for all previous elements were: 0,133, 0,088, 0.171, -0.100, 0.055, 0.077, 0.014, The total elasticity estimated at about: 0,438, That reflects the decreasing Economic of Scale, The most important elements affecting the fourth production capacity were: the number of chicks, the quantity of feed, the number of workers, the quantity of electricity, the Vaccines, and the quantity of fuel, the production elasticity for all previous elements were:0.311, 0.466, 0.069, 0.137, 0.131, 0.059 The total elasticity reflects the increased Economic of Scale, which was estimated at 1.173, while the most important elements affecting the fifth production capacity were: the number of chicks, the quantity of feed, the number of workers, the quantity of electricity, the Vaccines, and the quantity of fuel, The production elasticity were at: 0.322, 0.501, 0.058, 0.159, 0.144, 0.066 and The total elasticity reflects The increased Economic of Scale was estimated at 1.264.

the optimal size minimizing the costs was nearly 5.216, 27.10, 66.89, 128.8 and 154.6 tons in the five capacities respectively, The optimal size maximization profits in the five capacities was nearly 7.189, 29.78, 69.34, 134.75 and 160.816 tons respectively.

estimating the profitability indicators of the five production capacities, the net of Revenue of the Broiler farms was about 13, 69, 275, 665, 679 thousand pounds for the five productive capacities respectively, while the return on investment for the Broiler poultry farms amounted to 0.14, 0.15, 0.28, 0.37, 0.32 pound,

the study recommends the use of appropriate preventive and curative programs to reduce mortality rates, technical courses and guidance for farmers in order to raise the levels of technical efficiency of production, attention to small production capacities with less than 60% technical efficiency, reduce the Cost of Feed and the Cost of chicks, which increase in most of the farms about 90% of the total production costs.

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