辽宁地区农业区域差异分析

摘 要

农业是食物的最主要来源，是人类赖以生存的基础，也是一切生产活动的前提。如果农业不能提供必要的粮食，人民的生活将不稳定，该地区的其他产业也就无法发展。中国的农业主要包括种植业，林业，畜牧业和渔业。对于中国来说，农业是其基础，同时中国也是农业大国。

本文首先对辽宁省农业区域差异进行了分析，运用了聚类分析、主成分分析对辽宁省 14 个地市的种植业、林业、牧业、渔业进行分析。最终将辽宁地区分为了三类，第一类包括营口、丹东、辽阳等这样的小城市；第二类为沈阳、铁岭等种植业发达的地区；第三类为大连，渔业和种植业都很发达。并在此结果上提出相应的办法与建议。接着用 Deap2.1 软件和数据包络分析（DEA）对全国 31 个省、自治区、直辖市的相对总技术效率、相对纯技术效率、相对规模效率进行分析，最后对其进行曼奎斯特指数分析，并进行排序，系统的分析辽宁省农业生产效率。结果表明北京、福建等地在各方面的生产效率很高，而且都是有效的，排在全国前列；辽宁地区则处于中上游水平，很多地方还需要改善。最终合理、客观的对辽宁农业的发展提出一些看法以及措施。

关键词：多元统计分析；聚类分析；DEA；曼奎斯特指数

ABSTRACT

Agriculture is the main source of food, the basis for human survival, and the prerequisite for all production activities. If agriculture cannot provide the necessary food, people ’s lives will be unstable and other industries in the region will not be able to develop. China's agriculture mainly includes planting, forestry, animal husbandry and fishery. For China, agriculture is its foundation, and China is also a major agricultural country.

Firstly, this paper analyzes the regional differences of agriculture in Liaoning Province, using cluster analysis and principal component analysis to analyze the planting, forestry, animal husbandry and fishery of 14 cities in Liaoning Province. Finally, Liaoning area is divided into three categories. The first category includes Yingkou, Dandong, Liaoyang and other small cities. The second category is Shenyang, Tieling and other areas with developed planting industry. The third is Dalian, which has developed fishery and planting industry. And put forward corresponding methods and suggestions on this result. Then using deap2.1 software and data envelopment analysis (DEA) to analyze the relative total technical efficiency, relative pure technical efficiency and relative scale efficiency of 31 provinces, autonomous regions and municipalities directly under the central government in China. Finally, it carries out the manquist index analysis, and makes a systematic analysis of agricultural production efficiency in Liaoning Province. The results show that Beijing, Fujian and other places have high production efficiency in all aspects, and they are all effective, ranking in the forefront of the country. Liaoning is in the middle and upper reaches, and many areas need to be improved. Finally, some reasonable and objective views and measures are put forward for the development of Liaoning agriculture.

Keywords: multivariate statistical analysis; cluster analysis; DEA; malmquist index

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