

Sirima Yaowasit 2012: A Comparison of Statistical Method and Goal Programming for Classification of Agricultural Cooperatives. Master of Science (Statistics), Major Field: Statistics, Department of Statistics. Thesis Advisor: Associate Professor Apinya Hirunwong, Ph.D. 113 pages.

This research has a purpose to study the financial performance of Agricultural Cooperatives by comparing the three classification methods: Discriminant analysis, Logistic regression analysis, and Goal programming by Goal programming mean (GPMEAN) and Goal programming median (GPMED) models.

The data were 12 financial ratios of Agricultural Cooperatives since 2008-2010 which are operating at the end of year 2010 from Cooperative Auditing Department. The samples consist of 216 Agricultural Cooperatives, of these, 185 earned profit for three continuous years and 31 suffered losses for three continuous years.

The study results reveal that Discriminant analysis gives 100% of classification and regarded as the most percentage accuracy. It classifies the groups by 7 financial ratios: debt to equity ratio, reserve fund to assets ratio, growth rate of debt, savings per member, cost operating profit before operating expenses, net profit margin and the short-term loans with repayment schedules. For Logistic regression analysis, Goal Programming by Goal Programming Mean (GPMEAN) and Goal Programming Median (GPMED) models, these methods give the percentage accuracy for classification of 96.88%, 89.06% and 85.94%, respectively.

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Thesis Advisor's signature