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PANYA TERMVEJSAYANON : DEVELOPING A FORECASTING EXPERT SYSTEM USING THE EXPONENTIAL SMOOTHING TECHNIQUE : AGRICULTURAL EXPORT DATA. THESIS ADVISORS: SARANYA SUCHARITAKUL M.S. (Applied Statistic), OPART PANYA Ph.D. (Human Geography), KASEM KULPRADIT M.Sc. 136 P. ISBN 974-664-504-8

The main objective of this research was to develop an expert system for forecasting agricultural export data, by employing the exponential smoothing technique. The forecast is based on quantitative data, including the export data and export values of six (6) agricultural items. These are rice, maize, rubber, frozen shrimp, canned food and sugar.

The program was designed to calculate and to show forecasting data, which can be run on windows 98. The program was evaluated by using questionnaires of 20 users, who worked an on organization involving export activities. Results show percentage and average of speed and accuracy satisfaction.

In this research, 4 models of the exponential smoothing techniques were tested: a single, double and triple exponential technique, and lastly a seasonal exponential smoothing. They were all developed using the Visual Basic 6.0. Criteria used for determining the best possible model include ones that : 1) provide the best answer, 2) are most appropriate to the type of data available, and 3) yield the minimum mean square error.

Research found that:

1. The single exponential smoothing technique is good for forecasting the quantity of agricultural export crops.
2. The double exponential smoothing technique is suitable for only forecasting the quantity of maize for export.
3. The single exponential model is appropriate for forecasting the export values.
4. The model developed proved to save time and to provide more accurate results in calculation.

Finally, it was recommended that further development and research should aim at integrating additional models, namely regression and other econometric packages