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KEY WORD : DECISION SUPPORT SYSTEM/STATISTICAL METHOD/EXPERIMENTAL DESIGNS/ ANALYSIS OF VARIANCE

SUPAPEN KOONSAENG : A DECISION SUPPORT SYSTEM FOR STATISTICAL METHOD SELECTION FOR EXPERIMENTAL DESIGNS AND ANALYSIS OF VARIANCE.
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This thesis presents a decision support system for selection of statistical methods. The system is formulated in two levels, one for the selection of the types of statistical analysis under the guidance of research objectives and then use the decision support system for statistical method selection. The other for the selection of statistical methods within each type of analysis. The system is limited to the problems of experimental designs, analysis of variance and multiple comparisons; by using assumptions and statistical theories. The system is developed to guide the users into the statistical selection methods through choices made upon messages displayed on the monitor. The program is written in TURBO PASCAL 5.5.

The developed system is a decision support system for selection of statistical methods using statistical criteria and the objectives of research. Besides the selection of appropriate statistical methods, the details, advantages, disadvantages and assumptions are also provided for treatment randomization, experimental unit arrangement and data examples.

This system can be used with the hercules monochrome monitor microcomputer. The system differs from the other statistical packages, which mostly emphasize data analysis, in that it does not provide calculation of analysis. Instead it complements the other software in terms of serving the users' need for selecting appropriate statistical method for different research.

The system is advantageous for users with less statistical knowledge in selecting statistical method. However this group of users will have to learn about the methods. For users with more advanced statistical knowledge, the advantage of using this system is to use as a tool for assuring the appropriateness of the tentatively selected statistical method.