

# INTERNATIONAL STATISTICAL EDUCATION NEWSLETTER

Volume 10, No. 2.

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## NEWS AND ANNOUNCEMENTS

Plans for the 48th Session of the ISI, which will be held in Cairo, Egypt, from 9-17 September, 1991, are under way. Two of the sessions in the scientific program will be devoted to papers on statistical education. Details on the topics and the session organisers will appear in a forthcoming issue of ISEN.

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ISEN has received an announcement of the establishing of a new center for Mathematics and Statistics which will handle information on computer-based teaching materials. The center will be located at both the University of Birmingham in England and the University of Glasgow in Scotland, the latter being the site for Statistics. We hope to carry more information on this center in a future issue of ISEN.

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The December 1989 issue of Statistical Software Newsletter, which is published by the Statistical Computing Section of the ISI, contains a descriptive article on statistical computing courses that many readers of ISEN would find interesting and useful. The article is titled "Normal courses in statistical computing using computer packages: What kind and for whom?" and authored by H. Sahai and N. Gorwaney. Copies may be obtained by contacting: SSN-Redaktion, GSF-Medis- Institut, Ingolstadter Landstr. 1, D-8042 Neuherberg, FRG.

## REPORTS FROM AROUND THE WORLD

### *THE ARAB INSTITUTE FOR TRAINING AND RESEARCH IN STATISTICS*

In the 13 years since it was first established, this Institute has been responsible for the training of well over 2000 statisticians from all over the Arab world. Located in Baghdad, Iraq, it was initially the result of the joint effort of 9 Arab states and 6 international and Arab organisations. Since then, its group of sponsors has grown to include all of the Arab countries as well as 8 non-governmental organisations. Support from the United Nations Development Program, which came during the first five years of the Institute's operations, was particularly useful in providing experts and technical assistance to the fledgling organisation.

Typically, a trainee at the Arab Institute would be an employee in one of his country's government offices. Holders of a university degree may enrol in a year's program leading to a "higher diploma" in Applied Statistics or Demography. Training programs of shorter duration are also offered at different levels of sophistication and in such areas as Vital Statistics, Agricultural Statistics, Economic Statistics, Sample Surveys, the use of computers, etc. These programs are run either at the Institute of Baghdad or at an alternative location in any Arab country, as the need arises, with the ultimate aim of providing the necessary assistance in realising proper standards in statistical practice among workers in government service. Also furthering this aim are courses designed at preparing participants for the role of training other statistical workers in their own countries.

In addition to its statistical training programs, the Institute carries out a wide spectrum of statistical services designed to meet the particular needs of the region. This includes providing consultants, participating in the field studies and research projects, the convening of conferences, and the publication and distribution of relevant material. Special attention is paid to those countries in which statistical practice is still in its early stages of development, according to the stated policy of the Institute.

Further information may be obtained from:

Mr. Abdul-Rahman Al-Jubouri, Director  
Arab Institute for Training and Research in Statistics  
P.O. Box 553, Baghdad, IRAQ.

## MATERIALS AND METHODS

### *The Expert System CADEMO as a Tool in the Teaching of Statistics*

At the Research Centre of Animal Production in Dummerstorf-Rostock, introductory courses in (bio)statistics have been offered for well over 20 years to research workers engaged in animal breeding, animal nutrition, and technology. In the last two years these one-week courses have made use of PC's and an expert system for statistical modelling and experimental design called CADEMO.

CADEMO is an acronym for Computer  
Aided  
Design of  
Experiments and  
MOdelling

written in Turbopascal 4.0 and supported by IBM-compatible PC's under MS DOS. CADEMO is a modular system. It is already available for commercial distribution, but is also undergoing constant development. It is available in German and English and will soon become available in Spanish, Hungarian and Russian. Negotiations are under way for a commercial distribution of CADEMO in English.

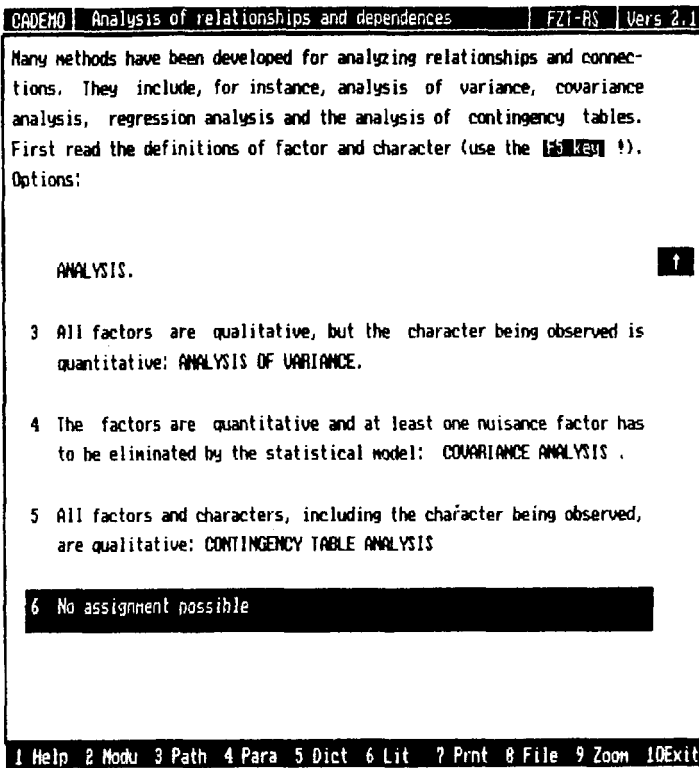
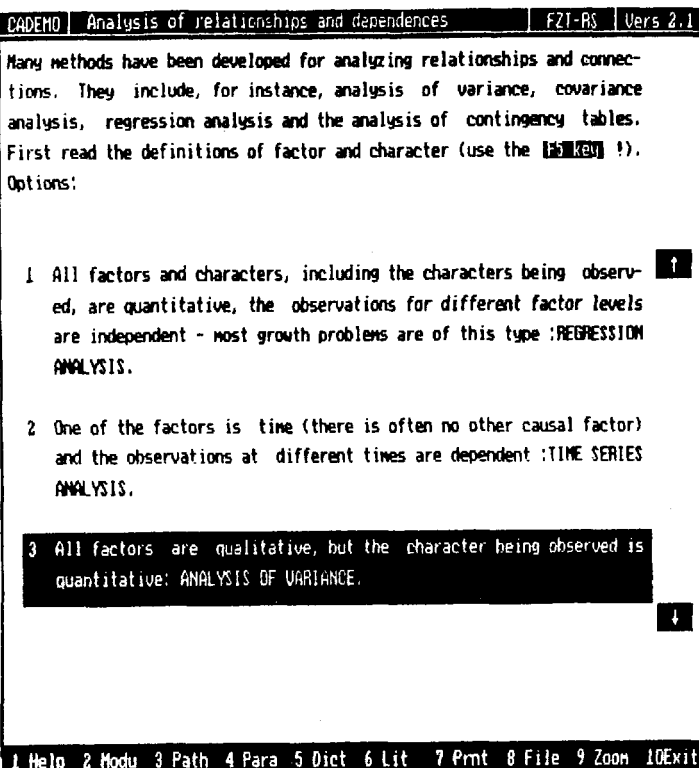
It should be noted that CADEMO is not meant to compete with statistical software packages, as it was developed mainly for modelling and for finding the optimum experimental plan, e.g. the smallest experiment for a given purpose. As such, it can be used by a physician who wishes to carry out a clinical study, or a pharmacist who wants to test a new drug, a plant breeder who wants to run a variety test, or an engineer who wants to develop a plan for statistical quality control - to mention only a few examples.

The pedagogical value of CADEMO lies mainly in its dialogue system which includes many help functions. For instance, if at any stage of the dialogue the user comes across an unfamiliar term, he can seek an explanation for that term by pressing F5, upon which a menu of explained terms especially designed for the text most recently on display is presented. The user would then pick out the explanation for the unfamiliar term. Alternatively, an alphabetical list of words explained in all parts of CADEMO can be called by pressing Alt-F5 or Ctrl-F5. The desired explanation could then be ordered from this list.

The dialogue system also provides instruction by offering "long ways" for interaction, with additional information. Let us consider, for instance, the problem of choosing an appropriate model for a relationship. Five possible models are offered in one menu, as can be seen in Figure 1 and - after scrolling - Figure 2.

Figure 1

Figure 2



If, after viewing the five alternatives, the user is still unable to decide on an appropriate model, he is assisted in subsequent screen displays by being provided with examples of cases in which the different models are used. In this case, the text appearing on the screen would read:

We shall now try to establish what problems can be solved by which branches in the preceding menu: THE REGRESSION ANALYSIS branch is selected to study, for instance, the relationship between yield and amount of fertilizer, between weight and age, or between shoe size and chest measurement. The branch ANALYSIS OF VARIANCE should be selected to find out, for example, whether different levels of fertilizer application lead to different yields or whether people with different blood groups have different weights. The branch COVARIANCE ANALYSIS should be selected, for instance, if differences in rainfall at different sites have to be taken into account when finding out whether different levels of fertilizer application lead to different yields (REGRESSION WITHIN GROUPS is contained in the module complex REGRESSION IN ONE ADJUSTABLE CAUSE VARIABLE).

CONTINGENCY TABLE analysis should be chosen if it is necessary to find out, say, whether there is some relationship between colour of hair and colour of eyes, whether social status affects performance at school, or whether the incidence of certain diseases is influenced by sex.

If you still can't make up your mind, you had better consult a statistician.

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