MASTERAL THESIS ABSTRACTS

AN ALTERNATIVE DIETARY ASSESSMENT METHODOLOGY FOR ENERGY AND PROTEIN ADEQUACY LEVELS OF SELECTED REGIONS IN THE PHILIPPINES: AN APPLICATION OF MULTIVARIATE ANALYSIS

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An attempt to develop a methodology for a rapid dietary assessment of energy and protein adequacy levels using only a set of regional core foods was tried and validated using the 1993 National Nutrition Survey data from three regions in the Philippines. Shortlisting of the food items was based on the frequency distribution with the aid of Pareto charts. Since intake data are nonnormal, rank transformation was employed. Food items further trimmed down through stepwise discriminant analysis on the ranked intake data showed lower cross-validated error rates from a partitioned regional sample of households than when the original data were used. Nonparametric rank discriminant analysis (the normal kernel and 2 nearest neighborhood) was found to yield the least misclassification rate of households relative to their energy and protein adequacy levels even when validated with the test data using half of the regional sample.

Stepwise logistic regression using the adequacy levels for both nutrients as logit generated a correct classification rate of 82 to 94% for the full model and 80 to 91% for the reduced model using only significant food items from the set of candidate core foods based on results from discriminant analysis. Correct classification was improved with the inclusion of significant socio-demographic variables, food peso value and socio-economic class, with rates of 86 to 95% for the full model and 81 to 92% for the reduced model.

Results using only the set of regional core foods in determining nutrient adequacy as against the conventional method based on all food items consumed showed significant similarity of classification between the two methods.

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EVALUATION OF SCALING PLOTS USED IN CORRESPONDENCE ANALYSIS AS APPLIED TO A 6X5 CONTINGENCY DATA

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The study focused on the evaluation of six post-decomposition methods of correspondence analysis as applied to particular 6x5 contingency data. Basis for evaluation is a form of distance measure used in procrustes analysis, called M^2. From the samples and based on the computed M^2, the best post-decomposition method is DAD-DBD.

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EFFECT OF IGNORING THE SAMPLING DESIGN IN ESTIMATING A LOGISTIC MODEL FOR POVERTY INCIDENCE IN THE AUTONOMOUS REGION OF MUSLIM MINDANAO AND BICOL REGION

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The standard logit modelling of categorical data known to many researchers is based on the assumption of simple random sampling (SRS), hence, not appropriate for complex design. To evaluate the effect of sampling design, two logit models were fitted: one model ignoring the design and the other was adjusted accordingly. The 1994 FIES data on the ARMM and Bicol Region were used with the categorical variables: agricultural indicator (AGIND), highest educational attainment of household head (EDUC), total number of household members (TNHH), presence of children one to six years old (AGE16), class of workers (CWORK), and major source of income (MAJSR).

Logit models were fitted for both sampling designs after each household in the surveys was classified as 'poor' or 'non-poor' using the official regional per capita poverty thresholds in 1994. The best model was selected based on the stability of the estimator variance of the estimated proportion.

Results show that unstable estimator variance of the estimated proportion consequently increased Type I error. The estimated standard error of the statistics under SRS were underestimated making the estimated deffs to be greater than one on the average.

There was no significant interaction found among variables in the estimated logit models of poverty incidence in the ARMM and Bicol Region. Specifically, the highly significant variables, with p-values greater than 0.05, found were AGIND(0), TNHH(0) and AGE16(0) for the ARMM, and AGIND(0) and AGE16(0) for the Bicol Region – all were said to be good indicators of poverty.

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