Using a Multivariate Accommodation Model to Study a Mixed Population

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Abstract: When modeling human variation using anthropometric data is important to develop meaningful statistics models. As processing large data sets become easier there is a tendency to increase the number of subject sampled as well as the number of measurements taken on each subject. Since many anthropometric variables presents very strong correlations, approaching the analysis of anthropometric variables from a univariate perspective can result in poor accommodation models. An alternative approach is to use multivariate accommodation models (MAM) that take into account the correlation between variables and that in many cases can result in simple and meaningful models. It is well known that when our population is a mixture of subpopulations, the accommodation problem becomes even more complicated. In this paper we explore how MAM can be used with a mixed population using a sample of an Ecuadorian population of males and females.

Keywords: Anthropometry, ergonomics, multivariate accommodation models, mixed populations, Ecuador