

Analysis of Covariate Profiles with an Application to Behavioral Patterns of Male Sex Workers

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Standard regression analyses are often plagued with problems that occur when one tries to make meaningful inference using datasets that contain a large number of correlated variables. In this manuscript, we propose an inferential data analysis method that uses, as its basic unit of inference, a profile, formed from a sequence of covariate values. The model presented is a Bayesian extension of the well-established Grade of Membership (GOM) Model. Our Bayesian method extends the standard GOM model in a number of important ways, such as, a) allowing number of clusters to be random, b) performing variable selection, and c) utilizing a set of post-processing procedures to provide an examination and comparison of different partitions of the data. An analysis of behavior patterns related to male sex workers in a south-Asian country is provided.