# Sparse Nonparametric Discrete Choice Model for High Dimensional Data

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# Abstract

We postulate a discrete choice model with high dimensional predictors. Principal component analysis with sparsity constraint is used as dimension-reduction strategy to induce interpretability of the model using the high-dimensional predictors. Simulation studies illustrate the comparability of the predictive ability of the model to the one using ordinary principal components. The postulated model is advantageous in terms of sparsity of the predictors that facilitates interpretability of the resulting model.

*Keywords*: discrete choice model, sparsity, generalized additive sparse-principal component analysis