

Heirarchical Bayesian Methods in Conusumer Behavior (Grant Number SES-0437251)

Summary

Psychologists and marketing experts have different theories about why people make the choices they do. While psychological theories more accurately describe individual human choice behavior in simple circumstances, they do not typically consider the range of variables, such as product features, consumer factors, vendor strategies, that marketing theories must be able to handle. Nor do they consider the fact that individuals' behaviors interact to form and influence marketplace demand. In this project, psychologists, marketing experts and statisticians will collaborate to merge these theories. This collaboration will result in a deeper understanding of consumer behavior through better marketing theories and more complete psychological theories of human choice. Statistics is at the heart of the research, providing the unifying conceptual instrument for combining the varied theories and data sets through models such as the hierarchical Bayesian model. The hierarchical Bayesian structure allows one to describe simultaneously and coherently individual and aggregate behavior and to combine the disparate psychological and marketing theories and data. The Bayesian nature of these models allow one to adjust for known effects, even in experiments of modest size. The models also allow one to move from experimental settings to forecasting behavior in the marketplace.

Human behavior reflects a complex, multi-stage process that begins with the allocation of an individual's resources to affect his or her environment and to improve his or her state of being. This research will improve understanding of human behavior both in the marketplace and in general. The research will take place at the nexus of the three disciplines, statistics, marketing and psychology, with benefits to all three fields. The project has a strong educational emphasis and will provide the many students involved with a unique opportunity for cross-disciplinary training. This will aid them in their careers in academics, industry or government.