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**Choice Models in Marketing:  
Economic Assumptions,  
Challenges and Trends**

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# Choice Models in Marketing: Economic Assumptions, Challenges and Trends

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## Choice Models in Marketing: Economic Assumptions, Challenges and Trends

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### Abstract

Direct utility models of consumer choice are reviewed and developed for understanding consumer preferences. We begin with a review of statistical models of choice, posing a series of modeling challenges that are resolved by considering economic foundations based on constrained utility maximization. Direct utility models differ from other choice models by directly modeling the consumer utility function used to derive the likelihood of the data through Kuhn-Tucker conditions. Recent advances in Bayesian estimation make the estimation

of these models computationally feasible, offering advantages in model interpretation over models based on indirect utility, and descriptive models that tend to be highly parameterized. Future trends are discussed in terms of the antecedents and enhancements of utility function specification.

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# 1

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## Introduction and Scope

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Understanding and measuring the effects of consumer choice is one of the richest and most challenging aspects of research in marketing. Choice comes in many varieties and forms. It can be discrete in the sense of the selection of just one item, or it can be continuous when multiple items are purchased or selected. Choice can reflect careful deliberation, habit, or a consumer's spontaneous reactions to marketing variables. It need not always result in purchases in the marketplace, or be driven by standard concepts of utility. It can represent trade-offs that may or may not be continuous or compensatory. Most interestingly, it relates to all marketing control variables (the 4 P's), as these variables enter into the decision-making process.

In this issue of "Foundations and Trends in Marketing" we examine recent developments in the modeling of choice for marketing. Choice in marketing differs from other domains in that the choice context is typically very complex, and researchers' desire knowledge of the variables that ultimately lead to demand in marketplace. The marketing choice context is characterized by many choice alternatives. Moreover, the number of attributes and features characterizing choice alternative

## 2 *Introduction and Scope*

is often large. Identifying the variables that drive choice is challenging because consumers are heterogeneous in their use of these variables.

Researchers in marketing are also interested in understanding processes that drive preference. It is often not possible to assume the existence of a well-defined preference ordering for all product attributes and brands, and the use of simple descriptive models can mask important variables, such as the “must haves” for a product. Marketing’s role within an organization is to guide management in what to offer in the marketplace, which can be incompatible with the assumption that a preference structure already exists.

As consumers encode, process, and react to marketplace stimuli, numerous opportunities exist for identifying relevant variables, and the means by which these variables combine to form aspects of consideration, evaluation, and choice. Advances in statistical computing and the development of new hierarchical Bayes models have enabled researchers in marketing to make significant inroads to quantifying aspects of choice. These inroads, however, are merely initial steps along a path to understand and characterize how consumers make choice decisions.

The aim of this issue is to lay out the foundations of choice models and discuss recent advances. We focus on aspects of choice that are, and can be quantitatively modeled. Moreover, we only consider models that can be directly related to a process of constrained utility maximization. Thus, we discuss a portion of a large stream of research currently being developed by both quantitative and qualitative researchers in marketing. Our hope is that by reviewing the basics of choice modeling, and pointing to new developments, we can provide a platform for future research.

Marketing models of choice have undergone many transformations over the last 20 years, and the advent to hierarchical Bayes models indicate that simple, theoretically grounded models work well when applied to understanding individual choices. Thus, we use economic theory to provide the foundation from which future trends are discussed. We begin our discussion with descriptive models of choice that raises a number of debatable issues for model improvement. We then look to economic theory as a basis for guiding model development. Economic theory assumes the existence of preference orderings for which

utility can be parameterized and used to understand aspects of choice. This theory, however, is somewhat silent on how utility arises, or is constructed.

Utility construction is critical to the marketing discipline because marketing's role is to provide guidance to firms on offerings that are responsive to the needs of individuals, and to provide specifics as to how best to sell these goods. As a result, researchers in marketing have an expanded domain of study beyond traditional economics. We believe that future trends of choice models comprise elements that precede, and are implicated by, formal economic models. We briefly discuss some of these interesting areas of research.

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