

Green P E & Rao V R. Conjoint measurement for quantifying judgmental data.

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Conjoint measurement is a recently developed technique (drawn from mathematical psychology) used to measure the joint effects of a set of independent variables on the ordering of a dependent variable. Its potential applications to marketing research are discussed in this article. [The *Social Sciences Citation Index*® (SSCI)® indicates that this paper has been cited in over 130 publications.]

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This paper, coauthored with Vithala Rao (now at Cornell University), represented a first attempt to explore the potential of conjoint-analysis techniques to preference measurement and utility estimation in marketing research. At the time the paper was written, multidimensional-scaling (MDS) techniques had already been applied on a limited basis to the representation of products in consumers' perceptual spaces.<sup>1</sup>

Vithala and I had participated in the early application of MDS methodology to product positioning and market segmentation.<sup>2</sup> We were excited by the possibility that conjoint analysis could provide a set of analytical tools for complementing the more diagnostic features of perceptual and preference-mapping techniques. Jerry Wind, another colleague and close friend, became enthusiastic about our work and soon joined us in a variety of research projects. Jerry and I summarized some of this joint research in book form.<sup>3</sup>

Conjoint analysis came of age in a subsequent review paper by Seenu Srinivasan and me.<sup>4</sup> Meanwhile, industry-marketing researchers and consulting firms

were hard at work, resulting in hundreds of applications of conjoint methodology to consumer-choice problems in business, government, and nonprofit institutions.<sup>5</sup> Currently, conjoint analysis is generally recognized as the most widely applied set of techniques for measuring consumers' and industrial buyers' trade-offs among product and service attributes.

Recent developments in conjoint modeling include Richard Johnson's Adaptive Conjoint Analysis Software package for the microcomputer and extensions of conjoint methodology to the design of optimal products and product lines.<sup>6</sup>

It has been exciting to see (and to participate in) the development of a methodology that has posed interesting problems for scholarly research. Equally satisfying is the fact that applications researchers have found the methodology relevant and useful in dealing with strategic questions of new product design and brand positioning. Further innovations in this area are still to come, as present techniques are adapted to new developments in data collection (such as optical scanning) and microcomputers.

Of course, many researchable problems remain, including the development of new utility-estimation models (such as hybrid-conjoint techniques), new kinds of choice simulators, and models that combine MDS and conjoint analysis in ways that exploit the advantages of each. Model validation and measurement reliability are also important areas to be studied.

Still, it is rare to find a methodological area that provides both intellectually demanding research and, at the same time, spawns important practical applications; conjoint analysis is one set of techniques that seems to have met both desiderata.

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