

Alternative Non-market Value-Elicitation Methods: Are the Underlying Preferences the Same?¹

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We advocate a more formal structural approach for comparing WTP for non-market or pre-test-market goods conveyed by fundamentally different preference elicitation mechanisms. Seven independent samples of respondents were asked to value the identical good. Elicitation methods include one actual purchase and six widely used hypothetical choice formats. Using a common underlying indirect utility function (and stochastic structure) allows data for different elicitation methods to be used independently, compared pair-wise (as in much of the earlier literature) or pooled across all samples in one unified model with heteroscedasticity across elicitation methods. Our differences in estimated WTP for the individual models are typical of earlier findings. However, pooled-data models that allow for heteroscedasticity reveal that while there are substantial differences in the amount of noise in the different samples, a common underlying systematic component of the preference structure cannot be rejected for at least four (and possibly five) of these seven elicitation methods.

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1. INTRODUCTION

Stated preference information is employed by researchers using conjoint analysis (in the marketing and transportation literatures) and contingent valuation methods (in the environmental and health literatures). A longstanding observation in both these contexts is that different methods of eliciting values often appear to provide systematically different value estimates for the pre-test-market or non-market good in question. Furthermore, these stated preference values are frequently at odds with the values implied by revealed preferences—the preferred source of value information where markets exist.

Each of a number of commonly used non-market value elicitation methods is intended to elicit the same underlying preferences.² It would be reassuring if different elicitation formats led to statistically indistinguishable estimates of the systematic parameters of the assumed preference function. The early empirical literature addressing this issue is somewhat fragmented by a reliance mostly on pair-wise, and often ad hoc, comparisons. It is also incomplete because of the tendency of such comparisons to focus on differences between the estimates of mean willingness to pay (WTP) from unrelated models, rather than the structure of underlying preferences.

In this paper, we argue for a more formal structural approach to comparing preferences across samples. We employ a unique survey, designed specifically to allow simultaneous comparison of choices elicited by seven alternative preference elicitation methods (one revealed-preference and six stated-preference) that have been employed elsewhere in the literature. The type of elicitation method is randomly assigned across respondents, which provides an opportunity to directly test the statistical equivalence of the implied preference functions for respondents in each group. Although a telephone survey medium was used for the revealed-preference elicitation and a mail survey medium for the other six, the instruments were otherwise almost identical except for the elicitation method, so we can be reasonably confident that any differences in values across methods do not stem from different descriptions of the good, from distinctly different time frames for the survey, or from different populations being sampled.³

In this paper, we first consider the various threads that have been evolving in the expanding literature that addresses apparent systematic differences in willingness to pay implied by different valuation methods. This review highlights the tendency toward pair-wise comparisons of methods, where each member of the pair is one of the seven methods we consider in the present paper. Many of the earlier pair-wise comparisons also employ separate ad hoc specifications for either utility functions or WTP functions and hence are not able to offer formal statistical tests of the comparability of the preferences elicited by each method. The review also draws attention to growing concerns about heteroscedasticity across methods (sometimes referred to as “different scale factors”).

A brief description of our own survey instrument, with its seven different elicitation methods, is followed by a discussion of how one might formulate appropriate empirical models, for each type of data, that are based on the same

² This has been termed “procedural invariance” (Tversky *et al.* [48], Kahneman and Tversky [33]).

³ One other minor feature shared by the telephone survey and one of the six mail surveys (but not the others) will be discussed later.

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