PROPOSAL ABSTRACT: Describe the main issues you plan to address, including goals, methodology and expected outcomes. A good summary facilitates an understanding of what you intend to achieve and the proposal review process. The abstract of funded proposals may be published on CONICYT website. The maximum length for this section is 1 page (Use Verdana font size 10).

Compensatory choice models assume that consumers make trade-offs among different attributes. That is, a high performance in an attribute can compensate poor performance in other attributes. Noncompensatory models, in contrast, assume that such compensation is not possible.

There are different noncompensatory processes. One of them corresponds to a lexicographic preference process. A consumer using a lexicographic rule orders alternatives over attributes by first evaluating on the most important attribute and then, if there are ties, on the second most important attribute, and so forth. Previous research has specified mathematical representations and inference procedures of lexicographic rules. However, these methods assume that subjects make deterministic decisions when using a lexicographic rule. In particular, these methods assume deterministic attribute orderings, unerring consumer judgments and the absence of measurement error. In the compensatory choice model literature, however, these aspects have been already incorporated.

In this research, we propose to relax those assumptions in an individual-level model that permits uncertainty in attribute ordering and error in choices due to either misjudgment or preference measurement. Accordingly, we propose to develop a model where subjects are allowed to probabilistically choose an alternative in a choice set when using the lexicographic rule. The model permits assessing the degree of use of the lexicographic rule, and obtains a probabilistic ordering of the attributes at the individual level. To overcome the usual lack of sufficient information from choice data and develop an individual-level model we propose to use a hierarchical Bayesian methodology that pools the data across subjects.

Thus, the general goal of this study is to develop a non-compensatory model that relaxes the assumptions of the existing approaches. We propose to develop and analyze the performance of the proposed model in the context of a lexicographic model and then extend the approach to other non-compensatory models such as lexicographic trade-offs and screening-then-choice rules.

We propose to validate the developed approach by first simulating data to analyze model identification and parameter recovery and then implementing the model in a conjoint-based dataset of digital cameras. We propose a MCMC methodology to estimate the model's parameters.

The expected results would show that the developed approach can recover better consumer preferences which is fundamental for designing new products and services. This approach would also help to identify consumer segments and to construct aggregate market structures. In sum, with this project we expect to contribute to the development of the area of non-compensatory modeling which since Tversky (1972a, 1972b) has not been able to propose and estimate an individual-level model that incorporates uncertainty or error.

1