

Understanding choice through response latency

Abstract

Advances in the area of information technology have led to the development of web-based interviewing software that seamlessly captures response time data along with the choice data. Until recently, response time data was primarily used as a measure of survey data quality. Response time is a new dimension that contains valuable and interesting information about the choice process. The amount of information that is perceived, when the decision is made, is linked to the amount of time that the decision takes. The author proposes that response time can be used to infer information received by the perceptual system and selective attention. By fitting choice with response time, the authors investigate the role of selective attention in perception formation. Attribute specific attention thresholds are incorporated in a model of response time and choice. A choice based conjoint study of television set purchase is used to calibrate the model. The results show that, at the aggregate level, close to half of the information contained in choice tasks were filtered out. In addition, we find that the estimated diligence of respondents falls sharply as a consequence of the introduction of information selection. Thus, not accounting for information selection would overestimate the processing capabilities of respondents and lead to inferences based on information that did not contribute to the decision. The model also differentiates between respondents who select a lot of information and process it lightly (less diligently) and respondents who select lesser information but process it thoroughly (even though both might take the same amount of time). The implications for product design, positioning, communication and targeting are also demonstrated. The process oriented model is also applied to choice scenarios where the No-Choice alternative is present. Respondents may select the "No-Choice" alternative if all the alternatives are inferior to the respondents existing alternative or if the trade-off between alternatives is difficult. Response time plays a key role in differentiating between the two types of selections. The author proposes that an easy choice situation (all alternatives are inferior) takes lesser time as compared to a difficult choice scenario where considerable effort is spent on trying to trade-off between good alternatives. Not being able to account for the selection of the No-Choice alternative points to biased estimates. The research looks to infer the reason for selection of the NC alternative using the response time models of choice.