



Controlling Response Bias in the Measurement of Consumer Knowledge

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Abstract

Many market research studies are subject to response biases because they ask only about real items. The signal-detection based Over-Claiming Technique (OCT) allows for independent assessment of recognition (accuracy) and the indiscriminant tendency to claim familiarity (bias). Here we applied the OCT to the assessment of product knowledge in consumer survey data and evaluated its validity when subject to specified response strategies (honest, exaggerate, sabotage). Even when participants were instructed to exaggerate or sabotage their responses, OCT was able to recover information about actual product knowledge. The OCT approach should prove valuable in market research.

Introduction

Studies of product familiarity typically ask only about real items. For some purposes, such as comparing mean differences in product recognition, this approach is useful. However, when exploring individual differences in product familiarity this approach is problematic. Research into response sets indicates that individuals vary in *acquiescence*, the tendency to say "yes" to survey items (Krosnick, 1999).

One solution is to include fictitious items (foils) along with real ones. This approach has been used in personality research as the signal-detection based Over-Claiming Technique (OCT) (e.g., Paulhus et al., 2003). OCT allows for the simultaneous but independent assessment of accurate product recognition and a general familiarity bias. Although such an approach has been advocated by market researchers (e.g., Ye and van Raaij, 2004), there is little research using this approach.

Here, our focus was the effect of response strategies on the validity of familiarity scores. We were particularly interested in two response strategies that threaten validity, namely exaggeration and sabotage.

Method

Participants. Participants were 145 undergraduates at a large Western Canadian university (65% female). Each student received course credit for participation.

Method. Participants completed a 165 item questionnaire with 11 categories (e.g., food, magazines, perfumes) and 15 items per category. Within each category there were 12 real items (e.g., Guinness, Harper's Magazine) and three foils (e.g., Atlantic Ice, Shakers).

Familiarity ratings were collected on 5-point Likert scales (1 = 'never heard of it' to 5 = 'completely familiar'). Accuracy and bias indexes were computed using standard signal detection formulae.

Participants were randomly assigned to one of three conditions: *Respond honestly* (n = 49), *Exaggerate your product knowledge* (n = 48), or *Sabotage the survey* (n = 48). These instructions applied only to their product familiarity ratings

Accuracy scores were validated using a concrete measure of product knowledge. Participants were asked to provide details about a selection of products on the initial measure. Their knowledge was scored on a 3-pt index.

Results

Table 1 shows the means of product recognition and product over-claiming for the three condition. Accuracy was highest in the honest condition and lowest in the sabotage condition. Although the high over-claiming in the exaggerate condition (.44) confirms that respondents are following instructions, their accuracy is still substantial.

Mean intercorrelations among the 12 recognition scores within conditions were moderate (honest: $r = .21$; exaggerate: $r = .41$; sabotage: $r = .38$), suggesting that it generalizes across product areas. Table 2 shows the validities of product recognition. Product recognition in the honest and exaggerate conditions significantly predicted actual knowledge (honest: $r = .51$; exaggerate: $r = .56$, both $p < .05$, one-tailed).

Table 1. Mean product recognition and over-claiming

Condition	Accuracy (d')	Bias (H+FA)/2
Honest	.28	.24
Exaggerate	.22	.44
Sabotage	-.05	.47

Table 2. Validating the product recognition index.

	Product knowledge
Honest	.51*
Exaggerate	.56*
Sabotage	-.22

* $p < .05$, one tailed

Discussion

Our results support the value of the Over-Claiming Technique for studying consumer product recognition. Even when exaggerating their knowledge, respondents' ratings are valid indicators of their actual knowledge. It is notable that, on average, saboteurs chose to present themselves as ignorant in recognizing products. The negative correlation with actual knowledge suggests that knowledgeable saboteurs are intentionally rating foils higher than reals.

The sizable mean intercorrelation of product recognition runs counter to the notion of market segmentation. Instead, these results suggest that the same people are aware of all consumer products. This 'consumer g-factor' may be explained by overall ad exposure, materialism, or even cognitive ability.

In short, our results support the use of the Over-Claiming Technique for obtaining bias-free indexes of product recognition. Even when respondents attempt to distort their answers, they reveal how much they know about a product.

References

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