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Are there gambling effects in incentive-compatible elicitations of reservation prices? -

An empirical analysis of the BDM-mechanism

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Abstract

Pricing research suggests incentive compatible evaluations of separate products in so-called monadic designs when consumers' situation-specific WTP is to be elicited in a monopolistic purchase setting. In our study, the lottery-based BDM-mechanism is applied for measuring subjects' WTP for a fast moving consumer good in binding one-on-one interviews at the point of purchase. In previous studies, the validity of elicited WTP measures is commonly checked within subjects with respect to indicators of face and criterion validity (such as interest in buying, preference ratings, compliance rates). In addition, we observed real purchases of a separate validation sample at the point of purchase, thus checking external validity between subjects. As a result, the BDM-based WTPs reveal a sufficient degree of internal face validity. However, the external validity in terms of a goodness of fit between WTP-based predictions and purchases of the validation sample is significantly reduced. Specifically, we observed a substantial underestimation of shares of non-buyers. Hence, a potential bias is indicated, leading to an overrating of consumers' true WTP in the lottery-based BDM-mechanism in the setting of our survey.

Keywords

Pricing, Willingness to Pay (WTP), BDM-mechanism, Validation

1. Introduction

Measuring consumers' willingness to pay (WTP) has been one of the central issues in marketing literature during recent decades. The WTP or reservation price denotes the maximum price a consumer is willing to pay for a given quality of a product, hence determining the value (utility) a particular product delivers to the consumer (Kalish and Nelson, 1991). According to the reservation price concept, WTP represents an internally memorized evaluation standard in terms of an upper price threshold that consumers have in mind and to which they compare selling prices of a specific product (Fibich et al. 2005). As for buying decisions between alternatives in shopping environments, consumers are assumed to construct a preference order of products in terms of decreasing positive differentials (net utilities or consumer surplus) between reservation and selling prices, and choose the product with the highest consumer surplus.

Concerning the broad variety of methods applied in interview-based WTP measurements at an individual level; research literature basically provides two different types. First, there are competitive designs such as the numerous conjoint analysis-based techniques in which subjects are simultaneously presented with several competing profiles (i.e. products which are described by a set of different attribute levels including prices) of an individually composed consideration set. As for the evaluation, participants state their preference over the set of profiles using ratings, rankings, or choices between profiles (Green and Srinivasan, 1990; Kalish and Nelson, 1991; Voelckner, 2006b). Subjects' WTP has to be indirectly derived from preferences in statistical analysis. Apart from that, monadic designs in terms of direct evaluations of separate options of the consideration set are frequently used in pricing research. In monadic designs, subjects are presented with only one particular alternative X. In a standard wording, the individual WTP is stated either in an open-ended approach (e.g. "Which is the highest price you are willing to pay for X?") or derived from the maximum price a subject accepted in several binary choices (e.g. "Would you buy X at € or not?"; "And would you buy X at € or not?" etc.) in multistage closed-ended approaches (Gabor and Granger, 1966).

In general, literature on pricing research recommends monadic designs for eliciting subjects' true WTP for low-involvement categories, innovative products, or in monopolistic purchase settings (Hofstetter and Miller, 2009; Rutström, 1998; Voelckner, 2006b; Wertenbroch and Skiera, 2002). To avoid hypothetical biases and overstatements of product values, binding extensions of open-ended approaches such as incentive compatible second-price auctions or BDM-lotteries which require real

economic commitments of subjects have been introduced (Becker et al., 1964; McAfee and McMillian, 1987; Murphy et al. 2005, Vickrey, 1961). As for the widely-used BDM-based elicitations of consumers' WTP, subjects are directly asked to indicate the highest price they would be willing to pay for a single product. The actual selling price is determined at random in a specific lottery. Subjects are obliged to buy the product when the stated WTP is higher than or equal to the selling price, whereas the product cannot be purchased if the selling price exceeds the WTP. Thus, subject's best strategy is to reveal the true product value.

However, as for the applicability of the BDM-mechanism in surveys, a particular concern is whether participants understand the procedure (Harstad, 2000; Kagel and Levin, 1993; Voelckner, 2006b). Moreover, from the perspective of consumers, a mechanism in which monetary evaluations of options are linked to a lottery must be considered artificial to some extent compared to real purchase decisions, thus inducing a potential bias. Therefore, researchers typically check the face validity of results within subjects by comparing the elicited WTPs to behavioral-based indicators e.g. buying intention or craving for items. However, to assess whether particular elicitation techniques provide subjects' true product values in the specific evaluation situation, external validity tests in terms of the goodness of fit between WTP-based predictions and real purchases of separate validation samples are basically required.

In this context, the main objective of this paper is to contribute to the generalization of research findings on WTP measurements in accordance with the widely accepted paradigm of replications with extensions (Hubbard and Armstrong, 2003; Pechtl, 2009). More specifically, we examined whether BDM-based evaluations of product values provide consumers' true willingness to pay for a low-involvement consumer good at the point of purchase. In addition to standard checks of face validity, significance of results was explicitly tested by comparing choice predictions based on elicited WTPs with real purchases of a matched validation sample.

2. Literature review, research questions, and contribution of the paper

While consumers' true willingness to pay has been an important issue in pricing literature for some time, empirical examinations of valid measurement procedures are still encountering various conceptual and practical difficulties. For instance, consumers' true WTP is basically assumed to be an unobservable construct. Thus, two crucial problems are measuring consumers' WTP as well as testing face validity in terms of determining the extent to which the WTP elicited with particular methods can be considered a sufficient approximation of consumers' true product values. Moreover, due to the varying needs and

wants of consumers at the particular time of purchase, it is suggested that the WTP be regarded as a function of the utility delivered in the specific value elicitation situation (Voelckner, 2006b). In addition, recent research suggests the proposition that the reservation price is more accurately represented as an individual range than as a single price point due to consumers' limited capacity for processing information as well as the induced uncertainty about the true product performance and individual preferences (Gregory et al., 1993; Wang et al. 2007).

As a result, pricing literature still stresses the importance of comprehensive further research on both conditions under which particular methods come at least as close as possible to consumers' true WTP as well as adequate procedures for testing validity of WTP estimates (Voelckner, 2006b; Wertenbroch and Skiera, 2002). As for particular methods, competitive designs such as the conjoint analysis-based techniques are generally suggested for measuring consumers' WTP in limited or extensive buying decisions such as expensive high-involvement goods e.g. cars, PCs, TVs, stereo systems, DVD players and others (Voelckner, 2006a). Purchase decisions of this kind are characterized by a thorough cognitive trade-off between perceived overall product values and prices of several competing options. Hence, consumers are assumed to undertake considerable efforts in seeking and processing information about a bundle of relevant product features before a particular option is chosen.

In contrast, monadic WTP measurements are proposed whenever the individual degree of information processing is assumed to be reduced such as in habitual buying decisions. More specifically, researchers frequently examined incentive compatible open-ended approaches such as the BDM-mechanism especially when consumers' situation-specific true WTP for established low-involvement products (e.g. telephone cards, mulled wine, doughnuts; Voelckner, 2006b), innovative products (e.g. cleaning product for high-tech equipments; Hofstetter and Miller, 2009), or for separately offered options without substitutes in monopolistic purchase settings is to be elicited (e.g. soft drinks, pound cake offered on a ferry/beach; Wertenbroch and Skiera, 2002). Researchers widely agree on the main advantages and disadvantages of the BDM-mechanism. It can be administered in any kind of one-on-one interviews and it elicits consumers' WTP in a single stage design (one-shot measurement). In addition, it ensures incentive compatibility for it penalizes subjects for lying and rewards them for truthfully telling the real WTP due to a segregation of the stated WTP and the actual selling price of the test product (Wang et al., 2007). Moreover, in contrast to monadic Vickrey auctions, a potential overbidding bias is assumed to be avoided in BDM-mechanisms since choosing a product is not linked to any kind of contest between competing

bidders (Kagel et al., 1987). However, similar to second-price Vickrey auctions, a particular concern is whether BDM is behaviorally incentive-compatible, meaning that participants understand the underlying procedure (Harstad, 2000; Kagel and Levin, 1993; Voelckner, 2006b). Therefore, detailed instructions for participants about the best strategy in BDM-mechanisms in terms of truthfully stating the WTP are typically required at the beginning of the interviews. Moreover, it is occasionally argued in literature that direct statements of consumers' WTP induce increased attentions to the pricing question. As a consequence, subjects' price sensitivity is expected to increase, thus potentially lowering the stated willingness to pay (Chernev, 2003; Lyon, 2002). Finally, from the perspective of consumers, the underlying BDM-mechanism in which monetary evaluations of options are linked to a lottery must be considered artificial to some extent compared to real purchase decisions in natural shopping environments (Mitchell and Carson, 1989).

While research on the validity of particular WTP measurements has a long tradition in pricing literature (see e.g. Frykblom, 2000; Noussair et al., 1998; Sattler and Nitschke, 2003; Voelckner 2006b; Wertenbroch and Skiera, 2002), our study differs from the bulk of papers in the validation procedure and in the survey environment. As for the latter, we deliberately elicited subjects' situation-specific WTP in experimental interviews at the point of purchase instead of laboratory environments as proposed by other researchers in the field (Wertenbroch and Skiera, 2002). Regarding validity tests in most previous studies, elicited WTPs are typically correlated with ex post-evaluations of subjects' decisions and indicators of buying behavior such as satisfaction with transactions, preference ratings for products under test, subjects' craving for items, interest in buying test products, or subjects' willingness to fulfill buying obligations (see e.g. Voelckner, 2006b, Wertenbroch and Skiera, 2002). In contrast, only a very few studies derived validity of WTP estimates from real buying decisions. As an example, in a study by Bhatia and Fox-Rushby (2003), a sub sample of all participants of a survey was presented with the test product at a particular price four weeks after the experiment was conducted.

In general, since elicited information about subjects' product values is meant to provide substantial support for managerial pricing decisions, a check of WTP estimates elicited in binding designs (real choices) against purchases of matched consumer samples observed in real markets or at least in market-like settings is recommended. Therefore, validity checks in our study have been deliberately focused on real purchase decisions. Since we were interested in eliciting subjects' product values in the specific evaluation situation, assessing the validity of elicited WTP measures by using real market shares

could be misleading due to a differing demand of regular consumers. Moreover, real market data do not include any information about non-buyers. Therefore, separate validation samples were used to validate elicited WTP between subjects.

3. Design of the study

A non-convenience sample of 99 subjects (termed hereafter: condition BDM) was interviewed over a two-week period in a local store of a national retail chain. Only regular buyers of a low-involvement fast moving consumer good category (chocolate hazelnut spreads) with sufficient buying experience were considered. Based on real in-store purchases observed over a four-week period before the survey was conducted, we selected the two top-selling brands Nutella (market share: 65%) and Nusspli (17%) as predefined test products for reason of ensuring sufficient response among participants (see table 1).

Table 1 Market-based number of sales (observation period: 4 weeks)

	Regular price	Calendar week 32	Calendar week 33	Calendar week 34	Calendar week 35	Total sales	Absolute share	Relative share
Nutella (400g)	1.79€	144	149	120	120	533	65%	79%
Nusspli (400g)	1.49€	32	34	37	41	144	18%	21%
Nudossi (400g)	2.69€	8	12	16	12	48	6%	
Gut&Günstig (400g)	0.99€	17	30	15	34	96	12%	
Total		201	225	188	207	821	100%	100%

As for the general procedure of the interview, computer-assisted personal one-on-one interviews (CAPI) using virtual shelves on a screen were conducted. Recruited subjects received no money for participating to avoid endowment effects (Thaler, 1985). The survey was realized at a sales stand located near of the entrance of the local retail store before subjects did their regular shopping at the point of purchase. After formal instructions including a detailed standard briefing about the procedure, best strategy, and potential commitments in terms of buying obligations (see e.g. Wertenbroch and Skiera 2002, p. 239), we started with a trial run with respect to the applied payoff-mechanism. Note, that the actual interview did not start until the respondent succeeded in understanding both the mechanism of the particular elicitation technique under test as well as the best strategy in terms of truthfully stating the WTP. Moreover, subjects were explicitly assured that they would not have to spend any more for the spread than they really wanted to.

At the start of the actual interview, subjects had to indicate which of the two predefined brands, if any, they would prefer when spreads would be offered for sale (narrow consideration set). Afterwards,

subjects had to evaluate this preferred brand in a monadic, that is, a monopolistic purchase situation. Participants were asked to indicate the highest price they would be willing to pay for the preferred spread in that specific evaluation situation. After the product evaluation, sample demographics, indicators of preferences and the situation-specific demand for the preferred brand were gathered (see e.g. Wertenbroch and Skiera 2002, p. 231). Specifically, participants rated whether they were interested in buying the preferred spread at this moment, and how much they liked the item on an eleven-point Likert scale. Moreover, subjects had to estimate the regular market price of the preferred brand in the local store. In addition, consumer profiles with respect to general indicators of buying behavior were gathered. That means that subjects had to indicate most frequently purchased brands in the category, the propensity to seek bargains, and whether their purchase decisions between spreads are primarily price- or quality-driven.

As for the economic commitments, potential buying obligations and selling prices of the preferred brand were determined by a standard BDM-mechanism after the survey. The interviewer drew a price tag from an urn containing several prices. Prices were uniformly distributed within a category-specific market price range. While characteristics of the price distribution were not reported to subjects during the survey, they were told that they could check the content of the urn at the end of the experiment. Participants were obliged to buy the brand with their own pocket money at this selling price, provided the stated WTP exceeded or was at least equal to the selling price. Otherwise, the product could not have been purchased. Any transactions were realized immediately at the end of the interview.

In order to check external validity, a validation sample of about 160 consumers (termed hereafter: control condition) was interviewed over the two-week survey period at a separate sales stand. Note that subjects of this matched validation sample neither participated in the survey of the BDM condition nor knew that a different survey was conducted simultaneously. Again, only experienced consumers of spreads were recruited. In a first step, participants were asked to state the preferred option of the two predefined brands. After that, the preferred brand was separately presented on a virtual shelf. Subjects had to indicate in a one-shot measurement whether they would buy the brand at a particular test price or not. As for the test prices of the preferred spread, either a bargain price in terms of a substantial price cut (split I: Nutella 1.49€ split II: Nusspli 0.99€ or the regular store price (split III: Nutella 1.79€ split IV: Nusspli 1.49€ was selected at random. After gathering sample demographics and consumer profiles, subjects who indicated to buy immediately had to pay with their own pocket money for receiving

the chosen product. Hence, the decision setting in the control condition incorporates basic conditions of real purchases.

Note, that subjects were assigned at random to the control condition and the BDM condition during the recruiting procedure. As a consequence, no systematic differences in the situation-specific demand of subjects of both conditions are to be expected. Therefore, the matched validation sample can reasonably be considered an adequate benchmark for testing external validity of elicited WTP measures.

4. Results of the study

In a first step, homogeneity of the matched samples was tested. As for demographic characteristics and consumer profiles, we found no significant differences between the BDM condition and the control condition (for each tested combination: $\chi^2 < 3.4$, n.s.). In addition, further pre-analysis confirms consistency of our results. For instance, relative shares of most frequently purchased brands are almost identical under the BDM condition (77% Nutella vs. 23% Nusspli) and the validation sample (70% vs. 30%). The observed frequencies reveal a sufficient fit to long term relative market shares of the brands being tested as based upon regular in-store purchases (see table 1 79% vs. 21%).

As for subjects' product evaluations under the BDM condition, results consistently indicate a lower (higher) mean WTP for the brand Nusspli (Nutella) that is offered at a lower (higher) price level in the retail test store (see the upper section of table 2). As for the face validity of the elicited WTPs, we tested several preference and demand measures as commonly suggested by researchers in the field (see e.g. Hofstetter and Miller, 2009; Wertenbroch and Skiera, 2002). Hence, we correlated subjects' WTP with stated preference ratings, subjects interest in buying and estimations of the regular market price of the preferred spread. As shown in the middle section of table 2, correlation coefficients have the expected positive signs and turn out to be significant, meaning the larger the stated ratings and price estimations the higher subjects' WTP. In addition, we checked plausibility of segment-specific WTP distributions with respect to particular indicators of buying behavior (consumer profiles). Consistently, willingness to pay is significantly higher (lower) for quality-seeking (price conscious) subjects and consumers who accept regular prices in general instead of buying chocolate hazelnut spreads only when substantial price cuts are offered (see the lower section of table 2). Therefore, with respect to this commonly used indicators, the WTP measurements based on the BDM-mechanism reveal a sufficient degree of face validity.

Table 2 WTP, correlation with measures of face validity, and segment-specific differences

		Preferred Brand	
		Nutella (n = 78)	Nusspli (n = 21)
Willingness to Pay	Market price	1.79€	1.49€
	Mean WTP	1.75€	1.13€
	s	0.56	0.27
Correlation (r) of WTP and Preference / Demand Measures	How much do you like spread X? (11-point scale)	r=.467***	r=.527**
	Are you interested in buying spread X now? (11-point scale)	r=.417***	r=.493**
	Please state the price you normally pay for spread X!	r=.705***	r=.464**
Differences (d) in mean WTP (€) of consumer profiles	Price-oriented subjects	n=26	n=09
	Quality-oriented subjects	n=52 d =0.75***	n=12 d =0.38***
	Subjects who are searching for bargains	n=21 _a d =0.59 **	n=08 _a d =0.35***
	Subjects who are willing to accept regular prices	n=41 _a	n=08 _a

++ p<0.05 that r=0; *** p<0.01 that r=0

** p<0.05; *** p<0.01 in a Kolmogorov-Smirnov Test

^a 16 (5) subjects who preferred Nutella (Nusspli) indicated mixed answers and were excluded

For assessing criterion validity of the elicited WTP values, we checked whether subjects were willing to fulfill their buying obligations after the experiment. In contrast to the sufficient performance of the BDM elicitation technique with respect to indicators of face validity, we observed a notable percentage of participants who refused to buy the preferred brand although they were committed to purchase. More specifically, 11% (6 of 52) of the participants did not comply with their obligation and refused to realize transactions, although the individual WTP exceeded or was at least equal to the drawn selling price. Note that the observed refusals are unlikely to be induced by subjects' not fully understanding the economic commitments, the applied procedure, and the best strategy since a high percentage of participants (more than 85%) indicated they understood the mechanism in the first trial run at the beginning of the experiment. However, compared with rates of rejection observed in previous studies e.g. below 7.5% (3 of 40) in the field study of Wertenbroch and Skiera (2002), the reduced compliance rate has to be considered substantial. Thus, the reduced criterion validity must be considered a first indicator of overestimations of subjects' WTP under the BDM condition in the specific evaluation situation. In sharp contrast, each non-buyer stated to be satisfied with the outcome of the lottery-based procedure, hence indicating no substantial understatement of WTPs by subjects.

For determining external benchmarks of subjects' true situation-specific WTP in the particular evaluation situation, purchases of brands at the test prices (regular or bargain price) in the splits of the control condition were used. As for predictions of choice shares based on the WTP elicited under the BDM condition, a standard reservation price model was applied. To determine test price-dependent proportions of demand, each participant was considered a buyer of the preferred spread as long as the individual brand-specific WTP was larger than or at least equal to the regular price, and the bargain price of the spreads, respectively ($p \leq WTP$). As shown in table 3, the fit between observed benchmark shares and WTP-based predicted shares have to be considered underperforming to some degree. As a consequence, substantial absolute deviations (AD) of predictions are detected. The mean AD (17.6%) is striking and indicates a limited external validity of the WTP measurement based on the particular open-ended BDM-approach under test. Further, as for the fraction of non-buyers, the predicted shares of spreads are overstated in general, whereas shares of a no-buy option are considerably underestimated compared with the percentage of purchase refusals observed in the splits of the validation sample. For example, the observed share of non-buyers in split I is 45% (100-55%), whereas the predicted share based on the WTP elicited under the BDM-mechanism is only about 25%. Thus, subjects' stated WTP for the preferred brand must be considered excessive to some extent. However, the correlation between observed and predicted choice shares turns out to be notably high ($r=0.926$, $p<0.10$), hence indicating at least a strong linear relationship in general.

Table 3 WTP-based predictions vs. observed share of buyers

Brand	Split	Test prices	Control Condition (n=162)		BDM Condition (n=99)	
			n	Observed share	Predicted share	AD
Nutella	III	1.79€	55	25.5%	46.2%	20.7
Nutella	I	1.49€	60	55.0%	74.4%	19.4
Nusspli	IV	1.49€	16	24.9%	23.8%	1.2
Nusspli	II	0.99€	31	51.6%	81.0%	29.3

5. General discussion

The general objective of this study was to examine the validity of WTP measurements based upon the widely-used BDM elicitation technique. Specifically, we investigated evaluations of real products in binding experimental one-on-one interviews at the point of purchase. In sharp contrast to previous studies in the field, we observed real purchases of a separate validation sample to assess the external validity of

WTP measures. According to our results, several issues concerning both the applicability of lottery-based techniques for eliciting consumers' WTP at the point of purchase as well as the assessment of the validity of product values elicited under the BDM-mechanism become apparent and should be discussed briefly.

Firstly, regarding the limited predictive validity of WTP estimates in our study, an inadequacy of the lottery-based monadic elicitation technique under test is detected. While the BDM-mechanism proves to elicit adequate product values with respect to commonly used indicators of face validity (e.g. stated preferences, interest in buying, consumer profiles), WTP-based predictions significantly underestimate the share of non-buyers in the matched validation sample. Therefore, elicited WTPs must be considered overrated to some extent. Note that in contrast to Vickrey auctions, lottery-based mechanisms such as the BDM-mechanism are generally assumed to avoid a potential overbidding bias since choosing a product is not linked to any kind of contest between competing bidders (Kagel et al., 1987). Hence, an impact of a perceived competitive pressure is avoided (Voelckner, 2006b). However, a question arises whether the overrating of WTPs is promoted by so-called *gambling effects* in terms of subjects feeling attracted to chance, hence reaping a valuable utility of the tension provided by the lottery-based framing and determination of economic commitments. As an example, according to empirical studies on risk research, there is evidence that the BDM-mechanism significantly biases estimates of so-called certainty equivalents (i.e. a stated sure payoff for which a subject is indifferent between receiving a gamble or the sure amount of money) under particular conditions (Albers et al., 2000). Hence, on the assumption that gambling effects hold true for the BDM-mechanism in the setting of our survey, subjects indicate to be willing to pay a particular price for a product in the lottery-based evaluation situation, although they are unwilling to buy the product when it is offered in the market-like setting under the control condition. Thus, the induced underestimation of shares of non-buyers in the validation sample could be reasonably explained. However, because the efficacy of an attraction to chance is rather a new hypothesis in pricing research on lottery-based WTP elicitations, both the occurrence as well as the magnitude of gambling effects should be investigated in replication studies under controlled conditions in laboratory environments.

On the other hand, as proposed by other researchers in the field, the high measures of correlation between WTPs elicited under the BDM-mechanism and subjects' estimations of market prices (i.e. prices subjects normally pay for the preferred brand) may imply that subjects tend to anchor their evaluations on an internally memorized standard (reference price). As a consequence, subjects are expected to proceed a

heuristic memory- or experience-based evaluation of products in the interview in terms of stating prices they are normally willing to pay in real buying decisions at the point of purchase. However, the anchored WTP might be different from the situation-specific true WTP at which subjects are willing to buy the test product in the specific evaluation situation (Blatter et al., 2009; Chernev, 2003; Wertenbroch and Skiera, 2002).

Secondly, compared to other studies in the field, we observed somewhat decreased compliance rates hence indicating a reduced criterion validity of elicited WTP measures. Note that purchase rejections are unlikely to be induced by subjects' not fully understanding the economic commitments, the applied lottery, and the best strategy since the actual survey under the condition BDM started only when subjects proved to comprehend the procedure. From our point of view, this finding might be explained by the survey setting in our study. The majority of previous studies tested and verified the applicability of binding monadic designs such as the BDM-mechanism in monopolistic purchase settings in which options' are separately evaluated without available substitutes e.g. in lab-based experiments or field surveys without competing alternatives. As for these monopolistic contexts, the observed rate of rejection in terms of subjects who did not comply with buying obligations turns out to be considerably low. However, as for the particular survey location in our study (a sales stand in front of a retail store), a question arises as to what extent the number of fulfilled buying obligations was downsized because particular subjects expected an in-store-bargain price which is even lower than the drawn experimental selling price. Again, subjects indicate a high willingness to pay in the specific evaluation situation during the experiment although they are unwilling to buy the product afterwards. However, because the *efficacy of consumers' price expectations* and the induced effect on situation-specific WTP elicitations is rather a tentative conclusion based on subjects' statements after the survey, further research should take the influence of different survey locations and environments on the significance of WTP measurements into account.

Finally, it should be noted that the results reported in this paper are based upon an experimental field study of a single product category only. Hence, significance of our findings could be limited and might not generalize to other categories such as consumer durables or high involvement products, and other framings e.g. different survey locations. However, future research should further investigate the efficacy of potential gambling effects in lottery-based WTP measurements, and the applicability of binding monadic approaches in WTP elicitations at the point of purchase where substitutes are available.

Moreover, according to our results, standard within subject validations of elicited WTPs in terms of face validity and criterion validity measures should be supported by market-like decisions of matched validation samples, if procurable. Taking into account that information about consumers' WTP elicited in laboratory-based or field experiments is basically supposed to give substantial support for pricing decisions of managers in retailing and manufacturing industries, the importance of this issue is stressed.

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