# The Long-Term Effect of Material Incentives on Participation in Online Panels

ANJA S. GÖRITZ
*University of Erlangen-Nürnberg, Nuremberg, Germany*

*A five-wave experiment examined the influence of incentives on response in online panels. One group of panelists was sent an advance gift after registering with the panel; the other group did not receive a gift. For participating in the studies, half of the panelists were repeatedly offered redeemable loyalty points. The others were offered inclusion in cash lotteries. At the outset, the advance gift significantly increased participation, but this effect dwindled linearly throughout the waves of the study. Initially, there was no difference in response between people with loyalty points and those offered to be included in the cash lottery. Over time, however, loyalty points relative to the cash lotteries became more attractive. In wave 1, the advance gift was especially useful when combined with the lottery. This effect faded in the course of the longitudinal study. Low-income panelists were more susceptible to the advance gift.*

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Although online panels are now widespread (Couper 2000; Göritz, Reinhold, and Batinic 2002; Batinic and Moser 2005), little is known about the long-term effect of material incentives on participants' willingness to take part in studies run in online panels (Göritz In press). An online panel is a pool of people who have signed up to occasionally take part in Web-based studies (Göritz 2007). In contrast to ad hoc recruitment for unrestricted Web studies, online panels ensure the immediate availability of respondents. With the costs for ad hoc recruitment of respondents on the Web skyrocketing (Batagelj, Korenini, and Vehovar 2002; Batinic and Moser 2005),

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prerecruitment of respondents such as in online panels may be helpful in keeping data collection via the Web affordable. Online panels may also facilitate identification of key sample segments, higher response rates, augmented response quality, and shorter field times. Moreover, on the basis of previously collected data, respondents' answers can be validated and questionnaires can be limited to relevant items.

There are also disadvantages associated with the use of online panels. For example, unless random sampling from a defined population is done (instead of asking for volunteers), there is no scientific basis for generalizing results from online panels to any larger population. Furthermore, panel conditioning (i.e., changes in respondent answers to later surveys) might occur through panelists' repeated survey participation (see Kalton and Citro 1993; Dennis 2001). Moreover, panels that offer lucrative rewards for study participation may face the challenge of identifying respondents who lie about themselves to fit into the target sample.

Some evidence has been accumulated on the impact of incentives on participation in Web surveys—mainly in cross-sectional studies. A meta-analysis of thirty-two Web studies, of which some were unrestricted and some had been conducted in online panels (Göritz 2006), has revealed that material incentives increase response (odds ratio = 1.19). Göritz (2004) compared three types of promised incentives (redeemable loyalty points, cash lottery, and gift lottery) that were used in an online panel study: Loyalty points yielded a slightly but significantly higher response rate (82.4%) than both the cash lottery (78.0%) and the gift lottery (78.6%). Bosnjak and Tuten (2003) found a promised electronic payment of $2 to be less effective than a cash lottery: 27.3% versus 35.9% of contacted people went to the survey's welcome page and 73.6% versus 79.7% of people on the welcome page entered the survey.

Because this evidence stems from cross-sectional online experiments, the generalizability of these findings to repeated online surveys is questionable. Knowledge of how to motivate people to participate in the long run is required because in online panels participants are usually requested to take part in surveys repeatedly. Some insight might be gained from offline longitudinal incentive experiments.

For example, Rudy, Estok, and Kerr (1994) found that money was somewhat but not significantly more effective than gifts in inducing women to enrol in a three-wave study (79.2% vs. 71.3%). Money was significantly more effective than gifts in retaining the women until the study was completed (78.6% vs. 65.9%). However, the latter might be because the money was awarded only after the study was completed, whereas participants received one of three consecutive gifts after participation in each wave of the study.

Arzheimer and Klein (1999) included a phone card with the initial mailing in a two-wave experiment. In the first wave, the return rate with the incentive (61.7%) was significantly higher than without (49.4%). However, the incentive had no effect on the reinterview rate. Finally, six different incentive situations were used to examine diary completion in a longitudinal study by Norman and colleagues (1982). Phone follow-up, postcard reminders, and no follow-up were combined with mailings of lottery tickets during a 3-week period. When the phone call, reminder card, and no follow-up were used with the lottery ticket, completion rates were 93%, 80%, and 72%, respectively. When the phone call, reminder card, and no follow-up were used without the lottery ticket, completion rates were 74%, 52%, and 72%, respectively. Thus, the lottery alone did not increase completion, but it was effective in combination with the two follow-up techniques.

The only longitudinal incentive experiment conducted in an online panel so far (Göritz and Wolff 2007) examined the influence of a lottery of gift certificates on response and retention in a four-wave study. Independent of the lottery, people who responded in a given wave were more likely to respond in the next wave. This process was characterized to follow a first-order Markov chain. There was a direct positive effect of the lottery on response only at the first wave of the study. However, mediated by the Markov process, the positive effect of the lottery on response at the first wave was carried over into later waves. The lottery did not have any effect on retention.

To learn more about the long-term impact of incentives on participation in online panels, an experiment consisting of five waves was conducted. This experiment allowed (1) an examination of the hitherto unknown effect of a prepaid incentive and (2) a comparison between the two most commonly used types of incentives in online studies: loyalty points and cash lotteries (Musch and Reips 2000; Peden and Flashinski 2004; Göritz 2006). In the experiment, one randomly selected group of panelists received an advance gift; the other group did not. For participation in the five individual surveys, panelists were randomly assigned to be offered either redeemable loyalty points or inclusion in a cash lottery.

The following hypotheses were tested.

*Hypothesis 1:* Panelists who have received an advance gift are more likely to participate in the first wave of the longitudinal study than those who have not received an advance gift.

This nonmonetary advance gift is expected to invoke the norm of reciprocity (i.e., to return a favor if someone else does you a favor; Gouldner 1960); that is, participants are stimulated to enter a process of social exchange

(Thibaut and Kelley 1959; Blau 1964). Church (1993) found a nonmonetary prepaid incentive to be significantly more effective than no incentive. The average increase in nonmonetary prepaid incentive versus control response rates was 7.9%. Edwards et al. (2002) demonstrated that offering a nonmonetary incentive increased response rates over not offering any incentive, and prepaid incentives (they did not differentiate between prepaid monetary and prepaid nonmonetary incentives) were more effective than promised incentives. Finally, Yu and Cooper (1983) found that monetary incentives increase response rates over not offering any incentive. Thereby, prepaid monetary incentives were more effective than promised monetary incentives. They also showed that offering a nonmonetary incentive increased response rates over not offering any incentive. Although these authors did not contrast a prepaid nonmonetary with a promised nonmonetary incentive directly, provided that prepaid incentives are generally more effective than promised ones, it can be assumed that promised nonmonetary incentives—such as the one used in the study at hand—are also effective.

*Hypothesis 1a:* Over successive waves of the longitudinal study, the response-enhancing effect of the advance gift fades.

First, panelists are likely to gradually forget about the gift. Second, their impression of the panel will increasingly be based on more recent and tangible experience with the panel derived from their participation.

*Hypothesis 2:* At the beginning of the longitudinal survey, the cash lottery incentive generates more responses than loyalty points.

What seems to challenge this hypothesis at first sight is that in offline surveys, lotteries generally result in lower response rates than individual payments (McDaniel and Jackson 1984; Dillman 2000:169–70). However, obtaining loyalty points in the context of an online study does not compare to receiving a cash incentive offline because electronic payment via intermediaries or in the form of redeemable points is not "money in hand" (Bosnjak and Tuten 2003), and collecting or redeeming these kinds of monetary incentives is cumbersome and possibly risky in terms of data security. Second, there often exists a threshold in redeeming loyalty points (e.g., only a minimum amount of 20 loyalty points may be cashed in). For these reasons, on a one-time occasion or in the first wave of a longitudinal study, offering a few loyalty points is expected to generate fewer responses than a cash lottery.

*Hypothesis 2a:* In the course of the longitudinal study, loyalty points relative to cash lotteries increase in attractiveness.

With repeated lotteries, panelists might get bored or discouraged, especially if they have never won anything, which is true for most panelists. With loyalty points, participation is expected to become more attractive over time because panelists can accumulate points and eventually exchange them for something more valuable, whereas lotteries are one-time opportunities that generate a perception of the panel studies as being independent of each other. Moreover, loyalty points are distributed by a continuous reinforcement schedule. That means that each time a panelist participates, she or he gets a guaranteed reward, which is more attractive than the uncertainty of winning an incentive of equal expected value (Kahneman and Tversky 1979). Furthermore, receiving loyalty points after completing each survey might also serve as a feedback that a person has achieved something. Hypothesis 2a receives indirect empirical support from a cross-sectional online panel study, where most panelists had already collected some loyalty points in earlier studies run in this panel. In this study (Göritz 2004), loyalty points yielded a significantly higher response rate (82.4%) than cash lotteries (78.0%).

*Hypothesis 3:* In the first wave, there is an interaction between the advance gift and the type of incentive (loyalty points or cash lotteries), in the form that the response-enhancing effect of the advance gift is smaller with loyalty points than with lotteries.

With lotteries, panelists cannot usually find out whether a drawing exists or will be run fairly. Thus, trust is needed on the part of the panelists. People who have received a gift in advance have more trust in the panel than people who have not received a gift, and this trust difference will also encompass the lottery. With loyalty points, there is less need for trust because panelists easily find out if they are not paid the promised number of loyalty points.

*Hypothesis 3a:* Throughout the panel waves, the interaction between advance gift and type of incentive dwindles.

Panelists' trust in the panel will increasingly be based on more recent and tangible experience than the remote experience of having received a prepaid gift.

*Hypothesis 4:* The overall pattern of participation follows a Markov chain. That means, all other things being equal, panelists who have taken part in a survey wave are more likely to take part again compared to those who have not taken part.

A Markov chain implies a memory effect from earlier into subsequent waves. This stability reflects individual panelists' general inclination to

participate. This is a commonly encountered phenomenon in both offline (Brennan and Hoek 1992) and online panel studies (Göritz and Wolff 2007).

In addition to testing these hypotheses, it was explored whether age, sex, education, and income of the panelists, which were known from the sign-up with the panel, influenced the effect of advance gift and type of incentive on participation in wave 1.

## METHOD

### Participants

A total of 455 panelists enrolled in a newly built German market research online panel, which was owned by a car manufacturing company. The panelists had been recruited through banners, search engines, links on other Web sites, newsgroups, and word of mouth. In the terminology proposed by Couper (2000), this panel was a volunteer opt-in panel, the most common type of online panel (Göritz, Reinhold, and Batinic 2002; Batinic and Moser 2005). The sample consisted of 134 women (30%) and 321 men; mean age was 31 years ($SD = 11$).

### Procedure

After signing up, all panelists were randomly assigned to one of two conditions. The advance gift group ($n = 198$) received an unconditional prepaid gift (a mousepad featuring the logo of the panel). The pad was accompanied by a note that welcomed the person to the panel and mentioned that the panelist would soon be invited to take part in the first survey. The control group ($n = 257$) received nothing.[1] Over the next 5 months, panelists were successively invited to five panel surveys. Independent of gift reception, panelists were randomly assigned to one of two incentive conditions. One-half ($n = 226$) were offered a particular number of redeemable loyalty points for participation in each of the first four surveys. One loyalty point was worth 0.25 euros (€) or U.S. dollars. Once 20 loyalty points were accumulated, they could be redeemed against a voucher for a popular online shop. Besides, any number of loyalty points could at any time be donated to charity. The other half of the panelists ($n = 229$) were repeatedly offered to be included in a cash lottery for participation in the first four surveys.

The invitation e-mails sent to both groups contained varying incentive information but were otherwise identical. The variable text segment in the lottery condition read: "We are going to raffle *X* times *Y* euros among the participants (the maximum number of respondents is *Z*)." The analogous

segment in the loyalty points condition read: "For your participation, *X* loyalty points will be credited to you." The expected value of both incentive types was about the same. As can be seen from the text segment in the invitation, in the lottery condition participants were told their minimum odds of winning.

Survey 1 was dubbed "virtual and real mobility." It was about the personal usage of both the Internet and different means of transport. It was a one-page survey with three grid questions, six stand-alone questions, and one open-ended question. People in the lottery condition were offered to be included in a drawing of six prizes at €50 each and three prizes at €15 each. Each person in the other group was offered 6 loyalty points.

Survey 2 was titled "travelling habits" and dealt with the personal use of trains and aircraft. It was a five-page survey with two grid questions, twelve stand-alone questions, and one open-ended question. In the lottery, four prizes of €100 each and five prizes of €50 each were raffled. People in the loyalty points condition were offered 10 points.

Survey 3 was a feedback survey for panelists. Panelists could state what they liked and disliked about the panel. It consisted of four pages with two grid questions, eight stand-alone closed, and two open-ended questions. In the lottery, four prizes of €100 each and five prizes of €50 each were raffled. People in the loyalty points condition were offered 10 points.

Survey 4 was called "traffic and mobility." It explored the usage of different means of transport and several sociodemographic variables. It consisted of one welcome screen and sixteen consecutive survey pages with six grid questions and twenty-nine stand-alone questions. In the lottery, eight prizes of €100 each and one prize of €50 were raffled. People in the loyalty points condition were offered 12 points.

Survey 5 was conducted to update and extend panelists' profile data. It consisted of one welcome screen and eight consecutive pages with three grid questions and twenty-one stand-alone questions. In Survey 5, the type of incentive offered for participation was no longer manipulated. Instead, all panelists were offered 8 loyalty points.[2,3]

The dependent variable at each wave was response status of the participant (responded vs. refused). All analyses were carried out with the program LEM (Vermunt 1997).

## RESULTS

The overall response rate was 82% in survey 1, 84% in survey 2, 83% in survey 3, 68% in survey 4, and 69% in survey 5 (see Table 1). This decline

TABLE 1
Participation Rates at the Five Waves of the Incentive Experiment

| *Advance Gift (Mousepad)* | *No* | | *Yes* | |
|---|---|---|---|---|
| *Type of Incentive* | *Loyalty Points* | *Cash Lottery* | *Loyalty Points* | *Cash Lottery* |
| *n* | 132 | 125 | 94 | 104 |
| Wave 1 | 78.8 | 80.0 | 78.7 | 91.3 |
| Wave 2 | 80.3 | 83.2 | 84.0 | 88.5 |
| Wave 3 | 78.8 | 80.8 | 85.1 | 88.5 |
| Wave 4 | 70.5 | 67.2 | 69.1 | 65.4 |
| Wave 5 | 67.4 | 70.4 | 70.2 | 68.3 |

in response rate is typical for longitudinal studies (Hiskey and Troop 2002; Lee, Hu, and Toh 2004).

Hypotheses 1, 2, and 3 were tested with a logit analysis. The analysis started with the saturated model; that is, response status (responded or refused) at wave 1 was the dependent variable and advance gift (yes or no) and incentive type (loyalty points or cash lottery) and their interaction were entered as independent parameters. The likelihood-ratio statistic $L^2$ was used for model evaluation. It follows asymptotically a chi-square distribution with degrees of freedom equaling the number of restricted parameters. Through stepwise restrictions of conditional probabilities, more parsimonious models were evaluated. Conditional $L^2$ tests were used to examine whether a more complicated model fit significantly better than a more parsimonious model.

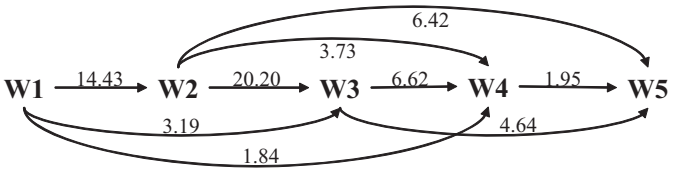
In testing hypotheses 1, 2, and 3, the most parsimonious model resulted from removing the effect of incentive type while retaining the Advance Gift × Incentive Type interaction as well as the effect of the advance gift, $L^2 = .06$; $df = 1$; $p = .81$. The multiplicative dummy-coded parameter of the effect of the advance gift was $\tau = 2.74$ and of the Advance Gift × Incentive Type interaction $\tau = 2.85^{-1}$. Thus, with the effect of incentive type eliminated, the odds of panelists who were sent an advance gift responding was 2.7 times as large as the odds of participants responding without the advance gift. Transforming this odds ratio into the standardized mean difference using the method by Cox (1970), which is recommended by Sánchez-Meca, Marín-Martínez, and Chacón-Moscoso (2003), yields $d = 0.61$. Moreover, the odds of panelists with advance gift responding was 2.9 times as big if they were offered the lottery than if they were offered loyalty points ($d = 0.64$). Therefore, hypotheses 1 and 3 were confirmed, whereas hypothesis 2 was not supported.

Hypotheses 1a, 2a, and 3a were tested with a random-effects logistic regression analysis with three latent classes that takes the repeated time points into account. The model with linearly declining effects of (1) the advance gift relative to no gift, (2) the cash lottery relative to loyalty points, and (3) the advance gift and incentive type on participation across the five waves of the survey fit the data, $L^2 = 129.45$; $df = 109$; $p = .09$. Trying to render this model more parsimonious by eliminating the declining interaction effect resulted in a significantly worse fit than the original model, $\Delta L^2 = 7.71$; $df = 3$; $p = .05$. Furthermore, testing for quadratic rather than linear declines of the two main effects and the interaction resulted in a nonfitting model, $L^2 = 134.55$; $df = 106$; $p = .03$. Therefore, the model that represents the data best confirms hypotheses 1a, 2a, and 3a. Across the survey waves, the advance gift lost its effect on participation at a slope $\beta$ of –.05; loyalty points became more attractive relative to the lottery at $\beta = .05$; and advance gift and cash lottery lost its attractiveness at $\beta = .07$.

Hypothesis 4 was tested with a modified log-linear path analysis. The modeling starts with the fourth-order Markov model, in which participation at each wave is influenced by participation in each wave before, $L^2 = 19.75$, $df = 16$, $p = .23$. Through a stepwise decrease in the order of the Markov model, more parsimonious models are evaluated. First, the original model was restricted to a third-order Markov model by removing the effect of participation in wave 1 on participation in wave 5. This model fit the data well, $\Delta L^2 = 1.20$; $df = 1$; $p = .27$. Next, a second-order instead of a third-order Markov model was tested by removing the effect of participation in wave 2 on participation in wave 5 and the effect of participation in wave 1 on participation in wave 4. This model no longer fits the data, $\Delta L^2 = 29.52$; $df = 3$; $p < .01$. Thus, the data can best be characterized by a third-order Markov model, in which a person's participation in a given survey wave is more likely if he or she has taken part in either of the three earlier waves. The dummy-coded multiplicative parameter estimates are depicted in Figure 1. For example, the odds of responding in wave 2 were 14.4 times as large with panelists who had taken part in wave 1 than with those who had failed to take part in wave 1 (see Figure 1). The remaining parameters can be interpreted accordingly. It also becomes apparent that the carryover effect is largest between adjacent waves and gets smaller the more waves lie in between.

Another logit analysis explored whether panelists' age (younger vs. older), sex (male vs. female), education (lower vs. higher), and income (lower vs. higher) influenced the effect of advance gift, incentive type, and their interaction on participation in wave 1. The only identifiable effect was that the

FIGURE 1
Log-Linear Path Model with Multiplicative Parameter Estimates: Influence of Participation in Earlier Survey Waves (W) on Participation in Later Waves




odds of responding among panelists who had received a mousepad were 2.9 times as large with low-income compared to high-income people.

## DISCUSSION

This longitudinal experiment on the influence of an advance gift and two different types of incentives on participation in online panels has revealed that panelists who have received an advance gift are more than twice as likely to respond to the first survey wave as those who have not received an advance gift. According to criteria put forward by Dillman (2000:153), the mousepad as an advance gift was an appropriate token of appreciation to evoke reciprocal behavior: It was inexpensive; thus participants could hardly perceive it as a payment, and it was not marketable because of the imprinted panel logo. This outcome is in line with established response-enhancing effects of prepaid nonmonetary incentives in offline surveys (Yu and Cooper 1983; Church 1993; Edwards et al. 2002). Over successive waves of the longitudinal study, as expected, the response-enhancing effect of the advance gift faded. Thus, both hypothesis 1 and 1a were confirmed. It should be noted, however, that in the study at hand, the gift went along with a welcome note, whereas the control group got neither. Thus, the response-enhancing effect might have been due to the mousepad, the note, or both.

There was no support for hypothesis 2, which posited that the cash lottery would initially elicit a higher response rate than loyalty points. What might have rendered loyalty points somewhat more attractive than expected was the fact that any number of loyalty points could be donated to charity, thus alleviating the problem with the threshold of redeeming points. Another idea is that with the first survey wave, panelists—regardless of the incentive offered—might have been curious what it would be like to take part in a study in this

panel. Consequently, their strong motivation to participate might have blotted out the differences in attractiveness of one incentive type over the other. This ceiling effect seems to be confirmed by the high overall response rate of 82%.

Over time, however, loyalty points relative to cash lotteries increased in attractiveness, which substantiates hypothesis 2a. The superiority of loyalty points over lotteries in the long run might be due to three mechanisms. First, guaranteed loyalty points might be more attractive than the uncertainty of winning a reward of equal expected value (Kahneman and Tversky 1979). Second, loyalty points might serve as a feedback that a person has effectuated something, whereas lotteries lack this property. If this feedback was the only cause for the superiority of loyalty points, future studies should reveal that the response rate is independent of the number of loyalty points on offer. A third difference between the two types of incentives is that panelists can accumulate points, whereas lotteries might generate a perception of panel studies to be independent of each other. This idea can be further examined by studying the effect of altering the lottery: Each time participants take part, besides the chance to win a small price in the lottery at hand, they receive a higher order lottery ticket for a big drawing that takes place once or twice a year. Thus, similarly to loyalty points, the more often panelists participate the more tickets they could accumulate and the greater are their chances to win something valuable.

Hypothesis 3 was supported as well, which postulated that at the outset, the response-enhancing effect of the advance gift would be smaller with loyalty points than with lotteries. The odds of panelists who received a mousepad responding was more than twice as large if they were offered the lottery as if offered loyalty points. Having received a mousepad might have convinced panelists of the benevolence and reliability of the panel operators, which in turn increases their trust in the fair running of the lottery. As assumed in hypothesis 3a, throughout the panel waves, the interaction between advance gift and type of incentives diminished. Presumably, panelists' trust in the panel was increasingly based on more recent and tangible experience from their participation in the studies than on the remote experience of having received the mousepad.

Finally, the overall pattern of participation followed a third-order Markov chain. Panelists who have taken part in a survey wave are more likely to take part in any of the three consecutive waves compared to those who have not taken part in the first place. Thus, predicting participation in a later wave from participation in an earlier wave works better the closer the predicted wave is to the wave of reference. Because a panelist who has taken part at all is more likely to take part several times, it is crucial to make each survey, especially the first one, as attractive as possible for panelists.

With regard to possible interaction effects between the incentives and age, sex, education, and income on panelists' probability of responding to the first surveys, low-income people who had received an advance gift were more likely to respond. Researchers may take advantage of this finding by awarding an advance gift only if the poverty rather than the nonpoverty stratum is to be surveyed. However, this finding has to be considered incidental and needs to be confirmed in further studies.

This study is not without limitations and it raises new questions. Meta-analyses on incentive effects in more traditional survey modes (Church 1993; Singer et al. 1999) have revealed that a monetary prepaid incentive is far more effective than a nonmonetary prepaid incentive—such as the advance gift used in this study. Future research needs to explore whether this is also true for online surveys. It would also be interesting to study the effect of loyalty points versus cash lotteries in absolute terms. However, as this requires a no-incentive control group, such experiments would need to be conducted in online panels whose policies allow noncompensation of panelists, which was not the case with the panel at hand. Furthermore, the study at hand was conducted in an opt-in online panel. Although there are no a priori reasons why results should not apply to probability-sampled panels, the actual generalizability needs to be established in an empirical manner. Finally, it needs to be examined whether incentives have long-term effects on other facets of data quality such as item nonresponse (see Heerwegh 2006).

To sum up, it is useful to give panelists an advance gift when they register with the panel. However, the effect of this advance gift fades as more and more studies are run. Of course, awarding such an advance gift is more profitable the less expensive the advance gift and its delivery are (e.g., a voucher for an online shop sent via e-mail). An advance gift is especially useful if cash lotteries are to be used as a standard incentive for individual studies afterwards. With regard to whether to use cash lotteries or redeemable loyalty points as long-term incentives—expected values being equal—loyalty points elicit higher response rates than lotteries. Therefore, especially if one's panel management software allows for comfortable accounting of loyalty points, it is advisable to use loyalty points rather than cash lotteries as standard incentives.

However, not only the type but also the amount of incentives determines the costs of collecting data. Consequently, future studies need to determine whether the response rate depends on the expected value of the lottery or on the number of loyalty points offered. In this study, the minimum odds of winning cash in the lotteries were announced to the panelists. Also, the odds were quite high: In the course of the study, approximately 15% of the people in the lottery conditions won a prize. A lottery might be less effective if the odds

of winning are not disclosed or if the odds of winning are markedly lower. In contrast, in two cross-sectional panel surveys, response rates were independent of the expected value of several cash lotteries (Göritz 2004). Likewise, Porter and Whitcomb (2003) found no difference in response rates elicited by a $50, $100, $150, or $200 lottery. If that holds with longitudinal studies as well, research costs can be saved if only small amounts of money are raffled. Similarly, the number of loyalty points might not or might only loosely affect the response rate. In Göritz (2004), response was linearly independent of the number of loyalty points. However, the more loyalty points were offered, the fewer people dropped out of the study. Consequently, the relationship between amount of incentives used and response rate needs to be investigated before more detailed recommendations can be made.

## NOTES

1. The slight discrepancy in the number of participants assigned to the gift and no gift condition was because of directives by the company owning the panel that a maximum of 210 mousepads be distributed.

2. At this stage, seeing that loyalty points work better than cash lotteries (see Results section), the panel-owning company decided to switch everyone to loyalty points to ensure that a maximum number of people update and extend their profile data, which was indispensable for future surveys.

3. From an experimental purist's point of view, there might be concern about lumping the results from wave 5 in with waves 1–4. Inclusion of wave 5 can be justified on grounds that wave 5 is the final wave in the analysis—and as such it does not influence the results of any future waves. If wave 5 was discarded, the remaining results concerning waves 1–4 would be sparser but not more accurate. In practice, it might not be untypical that after some time of experimenting with different incentives, a panel operator decides to switch everybody to the same incentive.

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*ANJA S. GÖRITZ is a professor of Work, Industrial, and Organizational Psychology at the University of Würzburg in Germany. Her research focuses on Web-based data collection, especially online panels, mood induction, and incentive effects. In 2000, she built and has since maintained Germany's first university-based online panel (www.wisopanel.uni-erlangen.de). She programmed several open-source tools for Web-based data collection (e.g., www.goeritz.net/brmic and www.goeritz.net/panelware). She has regularly been an instructor in the Advanced Training Institute "Performing Web-Based Research" of the American Psychological Association. Recent publications include "The High-Hurdle Technique Put to the Test: Failure to Find Evidence that Increasing Loading Times Enhances Data Quality in Web-Based Studies" (with S. Stieger,* Behavior Research Methods*, 2008); "Lotteries as Incentives in Longitudinal Web Studies" (with H.-G. Wolff,* Social Science Computer Review*, 2007); and "Web-Based Mood Induction" (with K. Moser,* Cognition & Emotion*, 2006).*