

# Effects of Immediate Versus Delayed Notification of Prize Draw Results on Response Behavior in Web Surveys:

## *An Experiment*

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Many online surveys offer the chance to win prizes as a primary incentive for respondents. One researcher found that prepaid monetary incentives were the most effective technique for increasing response rates, however, other researchers showed that a prize incentive outperformed other incentive types in a web-based survey. Using the immediacy effect and supporting theories as a base, this study extends the research on using prize draws as an effective incentive for web surveys by investigating the effects of immediate versus delayed notification for prize draw winners. Results indicate that the immediate notification of prize draw results did significantly increase response rates to the survey over the delayed notification, receipt of results, and control groups.

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**A**lthough web-based surveys have many advantages over other modes, the difficulty in securing participation from potential respondents remains a challenge. Research on mail surveys demonstrated consistent and positive effects on response rates with techniques such as personalization and prepaid monetary incentives (Church, 1993). Bosnjak and Tuten (2003) examined the effectiveness of prepaid monetary incentives, promised monetary incentives, and prize draws in a web-based survey and found that prize draws resulted in a significantly higher response rate than the other conditions. They went on to suggest that the effect may have been the result of a culture of Internet surveys. Individuals may be socialized to expect prize draws as incentives rather than a guaranteed incentive regardless of whether that incentive is prepaid or promised.

Regardless of the reasons for the positive effect, the practicality of using prize draws over any form of guaranteed incentive is unarguable. The use of prize draws is critical as survey researchers seek to maintain budget restrictions while pursuing large sample sizes. Consequently, this article seeks to investigate how the prize draw can be further enhanced as an incentive technique for increasing response rates. One possibility is the use of immediate

notification of prize draw results. We investigated this question experimentally in the context of a web-based, self-selected banner survey.

## HYPOTHESES AND RESEARCH QUESTIONS

Although most of the web surveys conducted to date operate with various kinds of prize draws to attract potential participants, the empirical evidence concerning their effectiveness to influence nonparticipation is largely inconsistent (Brennan, Rae, & Parackal, 1999; Cook, Heath, & Thompson, 2000; Frick, Bächtiger, & Reips, 2001; Lozar Manfreda, 2001; MacElroy, 2000). However, Bosnjak and Tuten (2003) found that prize draws outperformed prepaid monetary incentives in web-based surveys, which suggests that the prize draw should be further developed as an incentive.

The concept of prepaid and promised incentives in mail surveys is grounded in two concepts: cognitive dissonance (Hackler & Bourgette, 1973) and social exchange (Dillman, 2001). The act of providing an incentive sets in motion the reciprocal action of participation on the part of the respondent or the treat of a feeling of guilt for noncompliance. Prepaid incentives are thought to be more effective than promised incentives because of utility maximization. In other words, people may seek to maximize utility by responding to immediate (and guaranteed) incentives of lesser value rather than larger but promised incentives (Paolillo & Lorenzi, 1984; Stigler, 1965). For prize draws, however, these concepts do not readily apply. By definition, not every respondent will receive a prize, and even those who do cannot be chosen in advance of participation. To develop the prize draw as an incentive tool, some other theory base must be applied.

The immediacy effect (e.g., Read, Loewenstein, & Kalyanaraman, 1999) refers to the tendency for individuals to choose immediate but short-lived gratification over delayed but extended forms of gratification. For instance, in an experiment of the type of lottery ticket people would pick when given a choice between an instant-win ticket and a prize draw ticket in which winners were announced several days later, Read et al. (1999) found that there was a clear preference for the immediate. This result occurred despite a manipulation check in their study that showed that 77% of participants felt the instant-win tickets provided the most pleasure immediately after purchase while 82% felt that the prize draw provided the most pleasure in the long run. Why might an immediacy effect occur? Economic decision-making models suggest several possible explanations including the tendency to maximize utility, discount future values, minimize risks from uncertainty, and respond to anticipatory emotions (see Frederick, Loewenstein, & O'Donoghue, 2003, for a thorough review of this literature). These explanations are briefly described below.

According to the standard discounted utility model (Samuelson, 1937), the utility of future events is discounted by a constant rate, which motivates people to prefer immediate over delayed rewards (Herrnstein, 1990; Herrnstein, Loewenstein, Prelec, & Vaughan, 1993; Herrnstein & Prelec, 1991). Loewenstein (1987) developed a modification of discounted utility model that incorporates the role of anticipatory emotions. Including anticipatory emotions can explain why people sometimes delay desirable outcomes (such as a kiss from a movie star of participant's choice) and try to get unpleasant outcomes over with quickly (such as receiving an unavoidable electric shock). For instance, Read et al. (1999) surmised that the period of anticipation associated with the prize draw offered more rewards overall than the instant win.

The usefulness of the immediacy effect to explain decisions influenced by incentives is also corroborated by literature on consumer sales promotions (Diamond & Johnson, 1990; Rothschild & Gaidis, 1981). All sales promotions offer some incentive to induce some

behavior, typically a purchase, by the target audience; though, sales promotions can be either immediate (such as a bonus pack) or delayed (such as a contest outcome or coupon to use on a consumer's next purchase). Although not extensively examined empirically, immediate rewards are thought to be more effective than delayed rewards.

Applied to prize draws in web-based surveys, the immediacy effect suggests that respondents tend to prefer instant gratification despite the notion that greater long-term enjoyment could be gained from anticipating the potential for winning a prize. Instant-win lottery tickets do not actually provide the prize immediately, however, rather the tickets provide immediate notification of a win or loss. Prize draw lottery tickets delay notification of the result. This is a similar situation to prize draws in web-based surveys. Consequently, we compared immediate notification and delayed notification of prize draw results to a control group (no prize draw) in a web-based survey. In addition to testing the application of the immediacy effect to the perceived value of incentives for potential respondents, the current study examines a unique method of reducing nonresponse in self-administered web-based surveys as "immediate" prize draws cannot be accomplished via traditional data collection modes.

Based on the immediacy effect (Read et al., 1999), we expect that participation will be higher when respondents expect immediate notification of prize draw results as compared to delayed notification of prize draw results.

*Hypothesis 1:* Willingness to participate will be significantly higher for the "immediate notification" group than for the "delayed notification" incentive group.

*Hypothesis 2:* Willingness to participate will be significantly lower for the control group than for the "immediate notification" group and the "delayed notification" group.

As illustrated by Bosnjak and Tuten (2001), one major advantage in web-based surveys is the fact that incomplete participation patterns can be traced. For example, people prematurely terminating the survey process (dropouts) as well as those viewing all of the questions without answering any questions ("lurkers") are, in principle, detectable. This enables the survey researcher to test the effect of different types of incentives using incomplete participation as an additional independent measure.

*Hypothesis 3:* Incomplete participation will be significantly lower for the "immediate notification" incentive group when compared to the "delayed notification" incentive group.

*Hypothesis 4:* Incomplete participation will be significantly higher for the control group than for the "immediate notification" and "delayed notification" groups.

## METHOD

The experiment was implemented within an online survey on psychological consequences of unemployment in Croatia. The survey was advertised via banners on the two major Croatian job-search sites. The banner contained only a general invitation to the survey ("Psychological consequences of unemployment—Fill in the questionnaire—Click here"). Clicking on the banner opened a web page with one randomly chosen version of 12 possible introductory texts. At the bottom of the introductory page there was an "Entrance" button that led to the actual survey. In total, 4,565 persons clicked on the banner and entered the introductory page, and 3,176 entered the survey. Of those who entered the survey, 1,307 stated that they were unemployed and were invited to complete the main part of the questionnaire.

The experiment utilized a completely randomized one-factorial design<sup>1</sup> with four types of incentives (none, exclusive right to receive the first results, 1,000 Kuna (Kn) (about

U.S.\$170, the average weekly salary in Croatia) prize draw with delayed notification of the winner, and 1,000 Kn prize draw with immediate notification). Although in the immediate notification condition the respondents were informed about the results of the prize draw immediately after finishing the questionnaire, in the delayed notification condition they were informed 1 month later. The uniqueness of the respondents' identity was ensured by analysis of each respondent's IP address, time of starting and finishing the survey, e-mail address, and 10 other questions chosen from different parts of the survey.

### *Materials*

The questionnaire included a total of 177 questions on psychosocial aspects of unemployment—from behavioral questions on frequency of different job-searching activities to psychological scales and attitude items. Although everyone who clicked on the invitational banner was allowed to enter the survey, respondents who were currently employed were filtered out after the demographic items. The unemployed respondents were allowed to proceed with the survey, and they received the remaining questions in random order.

### *Dependent Measures*

The dependent constructs considered in this study were operationalized in accordance with the typology of participants in web surveys proposed by Bosnjak and Tuten (2001). Unit nonresponders clicked on the banner and came to the introductory page but did not enter the actual survey. Complete respondents answered all questions required within the specific time condition. Conversely, the share of participants accessing the survey without answering all of the questions was used as a measure for incomplete participation. Overcompleters (a category specific to the current study) were those respondents who answered even more questions than necessary to receive the incentive. Item nonresponders viewed all of the questions but provided answers to only some of them. Item-nonresponding dropouts viewed some of the questions, answered some of the questions viewed, and quit before the end of the survey. Answering dropouts viewed only some of the questions but answered all that were viewed. None of the participants could have been labeled as a true lurker (i.e., participants who view all of the questions but answer none) because several questions at the very beginning were mandatory and thus prevented any progress through the survey without answering at least some questions. Lurking dropouts were those participants who viewed only the first page and quit before answering any of the questions.

## **RESULTS**

### *Willingness to Participate*

The first hypothesis proposed that participation in the web survey would be higher for those individuals in the immediate notification group than for those in the delayed notification group. The second hypothesis anticipated that the delayed and immediate notification groups would outperform the receipt of results and control (no incentive) groups. Both hypotheses were examined using chi-square tests that confirmed that participation was significantly higher among those in the immediate notification group ( $\chi^2 = 33.32, p < .01$ ) compared to all other groups and that participation in the control group was significantly lower than the immediate and delayed notification groups ( $\chi^2 = 54.43, p < .01$ ). Of those invited to

**TABLE 1**  
**Willingness to Participate by Experimental Group**

<i>Experimental Group</i>	<i>Participation Rate in % (n per experimental condition)</i>
Control	62.3 (722 of 1158)
Receipt of results	69.3 (813 of 1174)
1,000 Kuna (Kn) delayed notification	70.6 (804 of 1140)
1,000 Kn immediate notification	76.6 (837 of 1093)

NOTE: Willingness to participate significantly lower in the control group, overall  $\chi^2(3) = 54.43, p < .01$ . When immediate prize draw was compared to all other groups, willingness to participate was significantly higher overall,  $\chi^2(1) = 33.32, p < .01$ .

participate, 76.6% responded in the immediate notification group compared to 70.5% in the delayed notification group and 62.3% in the control group (see Table 1). Thus, we find support for Hypotheses 1 and 2.

### *Incomplete Participation Patterns*

Hypothesis 3 and 4 investigated the prevalence of various incomplete participation patterns by experimental group. As shown in Table 2, the percentage of completes (defined as answering all questions required to receive the incentive) was significantly higher in the immediate notification group than in any other group ( $\chi^2 = 17.93, p < .00$ ). Although all incomplete participation patterns were examined (with the exception of lurkers), only the pattern of item-nonresponding dropouts showed a significant difference between groups. The percentage of item-nonresponding dropouts was significantly higher in the delayed and control groups than in the immediate notification group ( $\chi^2 = 7.67, p < .05$ ). There was no significant difference between the delayed notification and control groups.

Thus, we find support for Hypothesis 3, which proposed that complete participation is significantly higher in the immediate notification condition but only partial support for Hypothesis 4, which proposed that incomplete participation patterns would be more prevalent in the delayed, receipt of results, and control groups than in the immediate notification group and that a significant increase in the presence of incomplete participation would occur between the delayed and control conditions.

## **CONCLUSION AND RECOMMENDATIONS FOR FUTURE RESEARCH**

The results of the current study illustrate that the use of prize draws as incentives in web-based surveys can indeed be improved to increase response rates and minimize some types of incomplete participation. We've shown the value of immediate notification as a practical and theoretically sound enhancement to the prize draw in web-based surveys.

The results illustrate that social exchange theory and cognitive dissonance are not the only suitable theory bases for understanding response patterns in web surveys. Rather, theories of economic decision making appear (see, e.g., Birnbaum, 2001) to be a preferable theory for explaining participation in Web surveys.

On a practical note, the results add further support to the popular method of utilizing prize draws as incentives in web surveys. Bosnjak and Tuten (2003) showed that only prize draws significantly increased willingness to participate and the number of sample units starting the

**TABLE 2**  
**Participation Patterns by Experimental Group in % (n)**

Complete	
Control	21.1 (56)
Results	25.7 (87)
1000kn delayed	19.3 (68)
1000kn immediate	32.1 (112)
Overcompletes	
Control	31.6 (84)
Results	28.0 (95)
1,000 Kuna (Kn) delayed	36.3 (128)
1,000 Kn immediate	29.5 (103)
Item nonresponders	
Control	4.9 (13)
Results	5.6 (19)
1000kn delayed	2.3 (8)
1000kn immediate	5.7 (20)
Answering dropouts	
Control	2.6 (7)
Results	1.8 (6)
1000kn delayed	2.3 (8)
1000kn immediate	1.4 (5)
Item-nonresponding dropouts	
Control	39.8 (106)
Results	38.9 (132)
1000kn delayed	39.9 (141)
1000kn immediate	31.2 (109)
Total	
Control	100.0 (266)
Results	100.0 (339)
1000kn delayed	100.0 (353)
1000kn immediate	100.0 (349)

NOTE: Immediate notification prize draw incentive group had significantly more complete responses than all the other experimental groups,  $\chi^2(1) = 17.93$ ,  $p < .01$ . Immediate notification prize draw incentive group had significantly fewer item-nonresponding dropouts than all other experimental groups,  $\chi^2(1) = 7.67$ ,  $p < .05$ . No other significant differences in participation patterns appeared by group.

survey over prepaid and promised monetary incentives. Prize draws also increased actual participation and reduced the presence of incomplete participation patterns. The current study illustrates that the prize draw can be refined further. The immediacy effect in Web survey incentives also represents a differential advantage for web surveys over other modes of data collection as only web surveys provide the ability for immediate notification on survey submission.

### NOTE

1. The study also included a manipulation of announced duration (10 minutes, 20 minutes, and 30 minutes, respectively). Because the results related to the immediate or delayed notification occurred across all duration groups, they were collapsed for this article.

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