

**Research Paper for the Mita Festival(2019)**

**THE HYBRID OF CERTAIN AND  
UNCERTAIN INCENTIVES:  
THE REINFORCING-UNCERTAINTY  
EFFECT REVISITED**

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## THE PURPOSE OF THE RESEARCH

In general, there are two kinds of incentives that can be provided by firms for their customers when they conduct a sales-promotion: one is the certain incentive, with which customers gain a certain amount of utility (for example, if you buy five, you can get two more for free), whereas the other is the uncertain incentive, with which customers win the utility with a certain probability (for example, if you buy five, you may get two with a 50% possibility). Most researchers have claimed that certain incentives are preferred to uncertain incentives because uncertain incentives are psychologically associated with risks, and typical consumers are risk averse about gains (Holt and Laury, 2002; Kahneman and Tversky, 1979). Recently, it has been claimed that uncertain incentives can be preferred though their expected utility is less than that of certain incentives (Shen, Hsee, and Talloen, 2019). According to the prior research, it is because uncertain incentives provide customers with not only the outcome acquisition utility, but also the uncertainty resolution utility. However, in the real world, there is another kind of sales-promotions with a hybrid incentive that integrates certain and uncertain incentives (for example, if you buy five, you can get one more for free and, in addition, you may get another one with a 50% possibility). Then, is the hybrid incentive more effective than classical alternatives? Previous research has compared certain incentives to uncertain incentives and no research has considered hybrid incentives. In this research, we compare hybrid incentives to certain and uncertain incentives.

## LITERATURE AND HYPOTHESES

In the *Journal of Consumer Research*, Shen, et al. (2019) conducted some experiments and found that certain incentives were preferred to uncertain incentives by consumers in case of initial purchase, whereas uncertain incentives were preferred in case of repeat purchase because they provided customers with the uncertainty resolution utility in addition to the outcome acquisition utility. Moreover, they pointed out that it was true only if the uncertainty was resolved immediately after the customers react the sales-promotion. However, like prior studies, they neglected hybrid incentives, which combine certain and uncertain incentives.

In case of initial purchase, it can be assumed that consumers gain only the outcome acquisition utility and therefore, as found by Shen, et al. (2019) and their prior studies, the amount of utility derived from certain incentives ( $U$  in Fig.1) is higher than expected utility from uncertain incentives ( $EU_1$  in Fig.2) because  $EU_1$  is discounted by the winning rate,  $p$  ( $0 < p < 1$ ), while  $U$  in Fig.1 is not. However, expected utility derived from hybrid

incentives is higher. As described in Fig.3, hybrid incentives are perceived as a combination of certain and uncertain incentives, which determine the outcome acquisition utility separately. Therefore, even though EU ( $EU_1'$  in Fig.3) is partly discounted by the winning rate,  $p$ , the total amount can be higher even than that in case of certain incentives ( $U$  in Fig.1). Thus, we propose Hypothesis 1.

H<sub>1</sub>: In case of initial purchase, consumers prefer in the following order; hybrid incentives, certain incentives, and uncertain incentives.

In case of repeat purchase, it can be assumed that consumers gain the uncertainty resolution utility ( $U_{ur}$  in Fig.2) in addition to the outcome acquisition utility discounted by winning rate,  $p$  ( $EU_1$  in Fig.2) when they react a sales-promotion with uncertain incentives. Therefore, as claimed by Shen, et al. (2019), the total amount of expected utility derived from uncertain incentives ( $EU_2$  in Fig.2) can be higher than utility derived from certain incentives ( $U$  in Fig.1) (the reinforcing-uncertainty effect). However, expected utility derived from hybrid incentives is higher. Again, as described in Fig.3, certain and uncertain incentives in the hybrid incentives determine the outcome acquisition utility separately and, therefore, even though the uncertain resolution utility is not derived from certain incentives, the total amount of EU ( $EU_2'$  in Fig.3) can be higher even than that in case of uncertain incentives ( $EU_2$  in Fig.2). Thus, we propose Hypothesis 2.

H<sub>2</sub>: In case of repeat purchase, consumers prefer in the following order; hybrid incentives, uncertain incentives, and certain incentives.

Previous research claimed that in case that the uncertain incentives are offered in repeat purchase, the reinforcing-uncertainty effect occurs only if the uncertainty is resolved immediately after each repetition and disappears if the uncertainty is not immediately resolved. Like the uncertain incentives, the hybrid incentives result in a higher amount of expected utility if and only if the uncertainty is resolved immediately and the reinforcing-uncertainty effect occurs. Thus, we propose Hypothesis 3.

H<sub>3</sub>: If the uncertainty is not immediately resolved, the total amount of expected utility derived from hybrid incentives is lower than if it is resolved immediately.

## EXPERIMENT 1: INITIAL AND REPEAT PURCHASE

To test Hypotheses 1 and 2, we conducted a laboratory experiment using a series of advertisement evaluation survey with reference to the experiment conducted by Shen, et al. (2019).

First, we informed participants that the points given through the experiment were fictitious and that one survey had four questions per an advertisement; (1) whether they paid attention to the endorser in the advertisement, (2) whether they paid attention to the contents in the advertisement, (3) whether they were attracted to the endorser in the advertisement, and (4) whether they were attracted to the contents in the advertisement. After evaluating each advertisement, they received points immediately and were asked to decide whether to continue evaluating another advertisement.

Second, we randomly divided the participants into three groups. Participants in the first group (Group 1) were assigned to the certain-point condition and were told that after evaluating each advertisement, they would receive 500 points for sure. Participants in the second group (Group 2) were assigned to the uncertain-point condition and were told that after evaluating each advertisement, they would receive either 200 points or 500 points with a 50% possibility. Participants in the third group (Group 3) were assigned to the hybrid-point condition and were told that after each answer, they would receive 200 points for sure, and further may receive additional 300 points with a 50% possibility.

Then, we asked all participants to reply the willingness to answer the survey on a 7-point Likert scale (1: I don't want to participate-7: I want to participate). As a result of a multiple comparison analysis, the average of the willingness to answer was high in the following order; Group 3, Group 1, and Group 2. Thus, Hypothesis 1 was supported. This result implies that the participants determined their willingness to answer based on the outcome acquisition utility because they were not exposed to the resolution of uncertainty and did not experience the uncertainty resolution utility.

Finally, we also measured the number of surveys that each participant completed. As a result of a multiple comparison analysis, the average total number of surveys completed was high in the following order; Group 3, Group 2, and Group 1. Thus, Hypothesis 2 was supported. This result implies that participants in Group 2 and Group 3 were exposed to the resolution of uncertainty and experienced the uncertainty resolution utility in addition to the outcome acquisition utility, both of which drive the repetitions.

## EXPERIMENT 2: IMMEDIATE RESOLUTION

To test Hypothesis 3, we conducted another laboratory experiment using a 10 minutes calculation test with reference to the experiment conducted by Shen, et al. (2019).

First, we informed participants that the points given through the experiment were fictitious. Participants who answered a question correctly received 200 points for sure and further 300 points with a 50% possibility. For 10 minutes, the participants answered as many questions as they wanted.

Second, we randomly divided the participants into two groups based on the timing when they would be exposed to the resolution of uncertainty (i.e., the timing when they would know whether they could receive the additional points). Participants in the first group (Group 1) were exposed to the resolution of uncertainty immediately. They were informed of whether additional points were given immediately after they answered a question correctly. On the other hand, participants in the second group (Group 2) were not exposed to the resolution of uncertainty immediately. They were informed of whether additional points were given only after the entire preparation period (10 minutes) had passed.

As a result of a t-test, the average of the total number of answers in Group 1 was higher than that in Group 2. Thus, Hypothesis 3 was supported.

## GENERAL DISCUSSION

Comparing uncertain incentives to certain incentives, previous research has found that certain incentives are preferred in case of initial purchase, whereas uncertain incentives are preferred in case of repeat purchase even if the level of expected utility derived from uncertain incentives is lower than certain incentives. These findings are valuable, but they have neglected hybrid incentives, i.e., the combination of certain and uncertain incentives. This research compared hybrid incentives to the two other alternatives. The results show that hybrid incentives are most preferred both in case of initial and repeat purchase if and only if uncertainty is resolved immediately after the customers react the sales-promotion. With these findings, this research contributes to the research in the type of incentives for customers as a sales-promotion.

For sales managers who try to choose one out of certain and uncertain incentives, this research implies that they should take the hybrid type of incentives into account. Typically, the hybrid incentive is a more effective tool of sales-promotion than certain and uncertain incentives. Note that to avoid miscommunications, some managers in the real world replace the announcement as to who-get-what by letting the winner receive the prize. In

such cases, hybrid incentives as well as uncertain incentives are not effective than certain incentives. Hybrid incentives should be adopted by sales managers only if they are able to inform customers of who are winners immediately after the customers react the sales-promotion.

## MAIN REFERENCES

- Holt, C. A., & Laury, S. K. (2002), Risk Aversion and Incentive Effects. *American Economic Review*, 92(5), 1644-1655. doi: 10.1257/000282802762024700
- Kahneman, D., & Tversky, A. (1979), Prospect Theory: An Analysis of Decision Under Risk. *Econometrica*, 47(2), 263-292. doi: 10.2307/1914185
- Shen, L., Fishbach, A., & Hsee, C. K. (2015), The Motivating-Uncertainty Effect: Uncertainty Increases Resource Investment in the Process of Reward Pursuit. *Journal of Consumer Research*, 41(5), 1301-1315. doi: 10.1086/679418
- Shen, L., Hsee, C. K., & Talloen, J. H. (2019), The Fun and Function of Uncertainty: Uncertain Incentives Reinforce Repetition Decisions. *Journal of Consumer Research*, 46(1), 69-81. doi: 10.1093/jcr/ucy062

