

# Financial incentives, personal information and drop-out rate in online studies

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Whereas in a classical laboratory setting participants often feel compelled to stay and finish the experiment, participants in online studies can leave the session at any time.

Though, from an ethical point of view this is an advantage of online studies, it might pose methodological problems. Of course, web experimenters would like their participants to stay until the end of the experiment. To ensure this they use special techniques.

One such technique is to make web pages shorter and more attractive the further the participant gets. If a web page has a long loading time at the beginning participants with small interest or little time leave right away without even starting the experiment. This “high hurdle technique” is particularly effective in combination with a warm-up phase (Reips, 1996, 1999).

A second frequently used technique to prevent participants from leaving is to initially announce a lottery with prizes, in which only those who finish the experiment can take part. Whether or not this procedure is a successful method to reduce the drop-out rate has never been examined experimentally. One might argue that promising financial incentives is negligible in reducing drop-out or might even reduce the intrinsic motivation of the potential participant (Deci, 1975).

A survey among 21 web experimenters recently conducted by Musch and Reips (in press) suggests that this is not the case. In contrast to the expectation of a purely intrinsic motivation to participate in online studies they found a clear link between lack of financial incentives and drop-out rate. A monetary prize might diminish drop-out tendency whenever intrinsically motivating factors are not sufficient. The web experiment at hand has been conducted to further investigate the causal nature of the relationship between financial incentives and drop-out.

The experiment was also designed to test the hypothesis that asking participants for personal information early in the experiment would lead to increased drop-out as well as different answering behavior in questions that are likely to be influenced by social desirability. Participants' answers might be more strongly influenced by social norms, if they believe they could be identified (e. g., by their e-mail address). Or they might discontinue participation in the experiment if they realize that their behavior would force them to answer contrary to what is usually desired or accepted. The question whether personal or demographic data should be assessed at the beginning

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of an experiment is of high relevance in online research, if the perceived anonymity would affect the participants' answers.

## Design

The experiment was conducted in the Web Experimental Psychology Lab at Zürich University<sup>2</sup>. At the lab, and again on the first page of the experiment, the participants had the option to choose between a German and a comparable English version.

On the first page of our experiment the participant was informed that all collected data would be used for scientific purpose only, that all the information would be treated confidential, and that the results of the study would be published on the WWW.

A Common Gateway Interface program (CGI) randomly assigned the participants to one of two versions of the first page. One of the two groups received additional information about a lottery in which those participant who answered all questions could take part and win either 40\$, 25\$, or 15\$.

From these starting pages, another randomizing CGI would lead the participants to one of the four experimental conditions. In each of these four conditions three forms where presented in a different order (see Figure 1).

One form assessed personal information (PI) like gender, age, e-mail address or telephone number, and nationality. In two of the four conditions this personal information was assessed at the beginning of the experiment, and in two conditions it was assessed at the end.

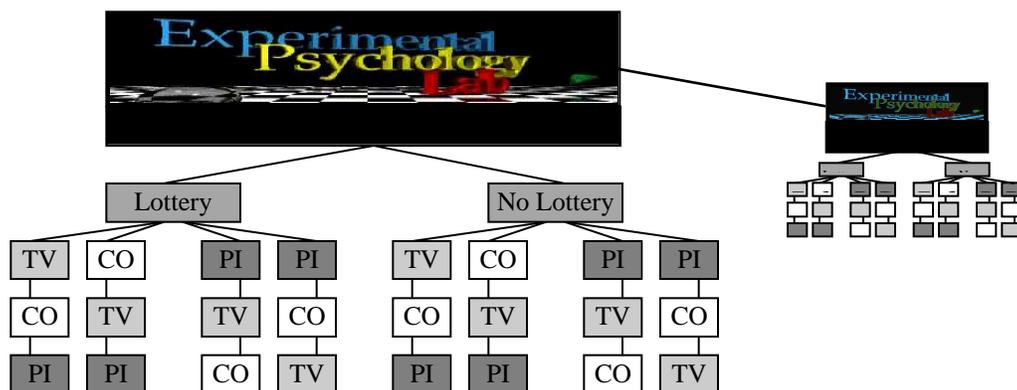


Figure 1: Experimental conditions.

The remaining two forms (TV and CO) contained two questions that are likely to be influenced by social desirability: “How many hours per week do you watch television?” (TV); “How many hours per week would you work free of charge for a charitable organization?” (CO). The order of these two questions was manipulated.

The independent variables were:

- information about the lottery: provided or not provided
- personal information (PI): assessed at the beginning or at the end
- order of presentation of TV and CO
- the language of the completed version: German or English

The dependent variables were:

- the answers to the two questions concerning television (TV) and charitable organization (CO) and
- number of participants leaving the experiment before finishing it completely (drop-out rate)

## Participants

804 visits from unique IPs were reported on the first page of the experiment, 482 in the English version, and 322 in the German version. 61.4% of responders to demographic questions (n=686) reported they were female, 33.8% reported they were male, 4.8% did not report their gender. 3.2% did not report their age. Figure 2 shows the indicated age of the remaining 96.8%.

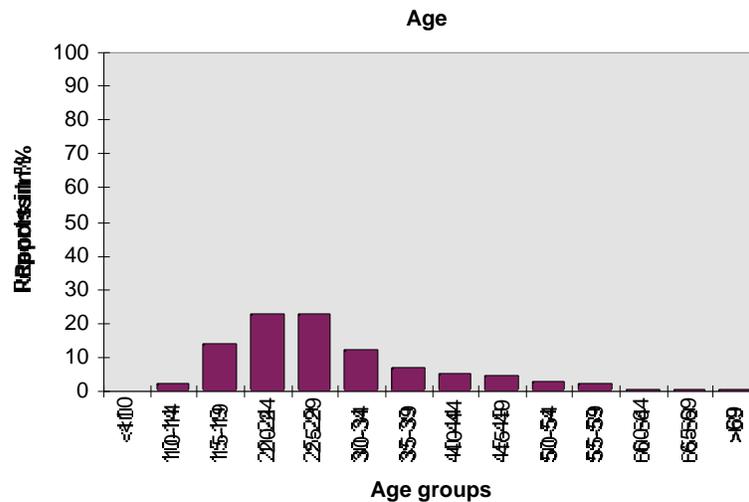


Figure 2: Reported age.

8.9% of those participants who *did* request the page with demographic questions did not report their nationality. The most frequently indicated nationalities (reported by 4 or more participants) were as follows:

Table 1:

Nation	Reports	Nation	Reports
USA (american)	275	Australia / New Zealand	8
Germany	173	India	7
Switzerland	29	“hispanic”	6
Canada	24	Netherlands	5
“white”	18	Africa	5
England	13	China	5
Austria	9	Italy	4
Ireland	9	Korea	4
“caucasian”	9	“black”	4

## Results

### *Incentives*

Data supported the hypothesis that announcing a lottery at the beginning of a study results in a reduced drop-out rate. As in the Musch and Reips study, drop-out was found to be about twice as large in the non-lottery information condition than in the lottery information condition (18.5% versus 9.5%). This differing drop in number of participants was not immediately after the first page (with the lottery information) but rather distributed over the whole length of the experiment. This suggests that the lottery information does not result in additional motivation to start with the experiment, but diminishes drop-out tendency caused by other factors.

The overall drop-out was relatively low, supporting the notion that with the proper design even in online studies without financial incentives, drop-out rates should not pose much of a methodological problem.

We conducted a 2 (lottery) x 2 (PI) x 2 (order) x 2 (language) ANOVA with the data. Except for an unexpected three-way interaction between lottery, PI, and order, none of the interactions were significant. Incentives did not significantly affect the answers to the two questions concerning television (TV) and charitable organization (CO).

Main effects for other factors than incentives will be reported in the sections below.

### *Personal Information*

Asking participants for personal information (PI) early in the experiment did not increase drop-out. Surprisingly, drop-out within the condition with PI at the beginning was even less (10.3% versus 17.5%). Apparently, the tendency of leaving the experiment when PI is requested is higher after the experiment has already been finished.

Asking participants for personal information early in the experiment did not lead to different answering behavior in the questions about television and charitable organization.

A detailed analysis was conducted to see how many questions were not answered by those who *did* request the page with questions about demographic data. The results showed that, on average, the group with PI at the beginning did not answer to 4.2% of the demographic questions, whereas the group with PI at the end left 11.8% of the demographic questions unanswered. E. g., when the e-mail address was requested at the beginning, 9.5% (33 out of 349) did not give that information, whereas 20.5% (69 out of 337) did not give their e-mail address when it was requested at the end of the experiment. (The corresponding figures for the other demographic questions were: gender: 2.1% (7) to 7.7% (26), age: 0.6% (2) to 5.9% (20), nation: 4.9% (17) to 13.0% (44).)

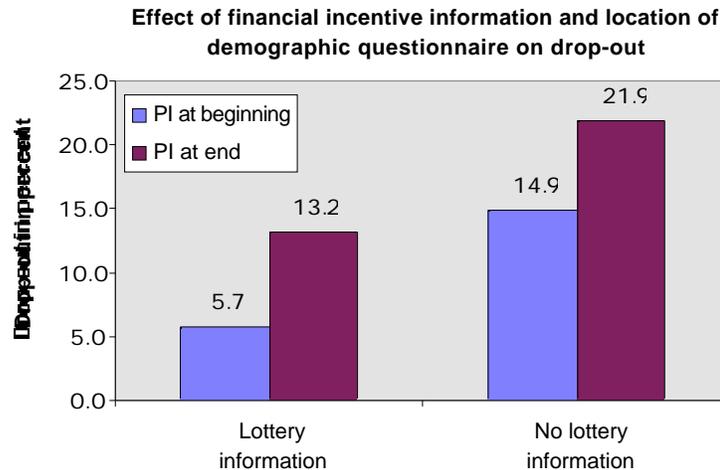


Figure 3: Effect of financial incentive information and location of demographic questionnaire on drop-out.

*Order*

The order of the two questions (TV/CO vs. CO/TV) had a significant effect on the answers to the TV question  $F(1, 664) = 5.00, p < .05$ . Those participants who answered the question about their weekly television consumption first, reported to watch more television ( $M = 679$  minutes per week,  $SD = 31.2$ ) than those who answered the question about the charitable organization first ( $M = 580$  minutes per week,  $SD = 31.5$ ).

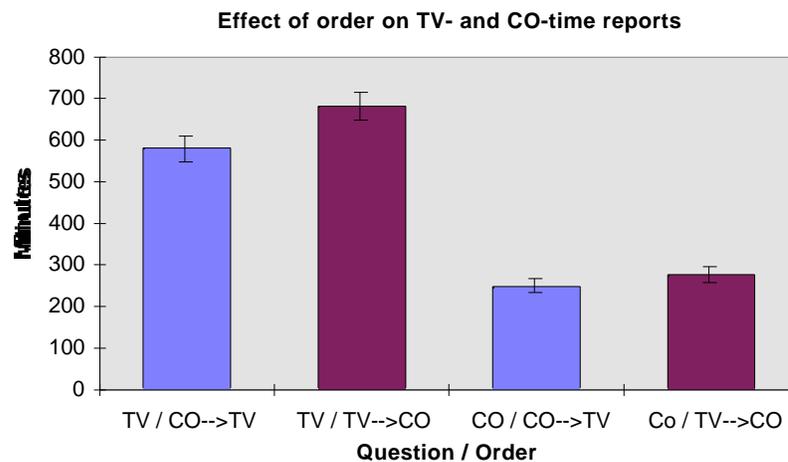


Figure 4: Effect of order on answers to TV- and CO-questions.

*Language*

There was also a significant effect of language on the answers about the charitable organization,  $F(1, 664) = 22.78, p < .05$ . Those participants who completed the German version showed less readiness to work free of charge for a charitable organization ( $M = 203$  minutes per week,  $SD = 15,1$ ) than those who completed the English version ( $M = 321$  minutes per week,  $SD = 19,6$ ).

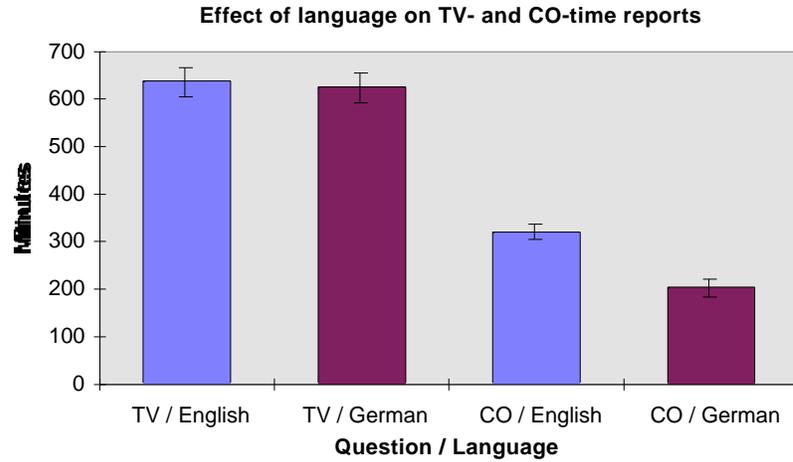


Figure 5: Effect of language on answers to TV- and CO-questions.

Language had another significant effect on the drop-out rate. Drop-out in the English version was less than in the German version (20.4% versus 9.7%).

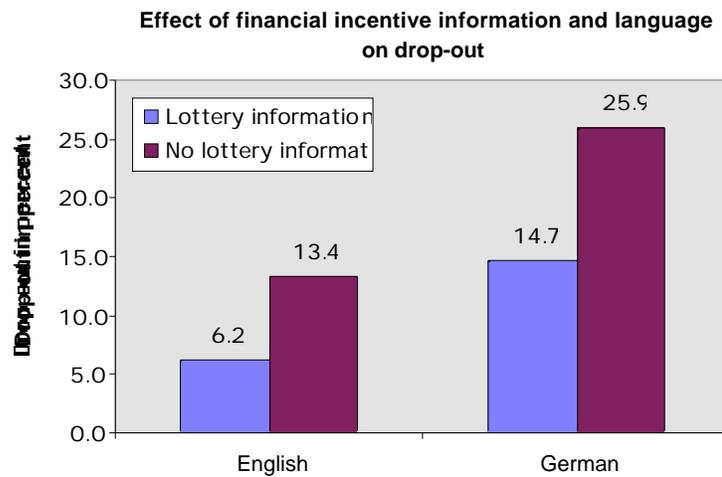


Figure 6: Effect of financial incentive information and language of completed version on drop-out.

## **Discussion**

### *Incentives*

The fact that the presence of incentives did affect the number of participants leaving the experiment before finishing it but *not* the answers about TV and CO shows that this procedure might be a very promising means to reduce general drop-out in online studies. Other factors potentially influencing drop-out in online studies are: the design of the web pages, loading time, and impression of the institution conducting the online study. These factors should also be studied experimentally.

### *Personal Information*

The results suggest that whether demographic data or personal information is requested at the beginning or at the end of an experiment does not seem to systematically influence data. This result is quite pleasing because, if demographic data is indispensable for a study, it may be better to put the request at the beginning. As our results have shown, chances are much higher for participants not to provide that information if it is assessed at the end of the experiment.

### *Order*

A possible explanation for the order effect in the results of the two answers (TV and CO) would be that those who answered the TV question first rated their consumption more appropriately. Participants who answered the CO question first probably reported a rather small value first, and then adjusted their rating in the TV question. This supports the assumption that the answers to this questions are influenced by social desirability.

### *Language*

The significant difference between the German and the English version might imply that, on average, in English speaking societies people show a higher devotion to social volunteer work while in German speaking societies the social welfare system is more professionally organized.

Of course, an alternative explanation would be a slight difference in the meaning of German and English terms. 'Charitable organization' in both languages is not a clearly defined term – and even within one language or culture people might interpret it differently.

### *Conclusions*

This experiment has shown that (1) financial incentives can reduce drop-out; (2) assessing participants' personal information at the beginning of an experiment can reduce drop-out and may lead to more complete demographic data about the participants; (3) these positive effects can be reached without biasing the data; (4) the order and language of presentation of items can play a significant role.

## References

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