

A Study on the Immediate Impacts of Product Placement on Consumer Choices

Abstract:

This study was designed to discover whether there is an immediate impact of product placement in a television show on the choice a person makes between that product and another similar product. We wanted to see if there was a difference in a person's preference for Coke over Sprite after watching a clip in which one of the characters was holding a Coke (experimental group) compared to a person's preference after watching a clip with the same characters but no Coke (control group). No significant difference was found. Our next question focused on whether subjects in the experimental group noticed the product placement. We asked subjects in both groups whether or not they had noticed a soft drink in their assigned video clip. We then analyzed whether the subject's choices would be different between groups if they consciously noticed the placement of Coke. Again, no significant difference was found.

Background and Significance:

The contemporary world of media consumption depends on the advertisement revenue that hundreds of companies across the world invest in to influence the global consumer. With an estimated 240 billion dollars to be spent on media advertising in 2019's fiscal year in the United States alone, overtaking all other forms of investment in advertising (*eMarketer*, 2018), the economic impact of media advertising is in itself a staggering amount. These billions of dollars go to commercials on television or websites such as YouTube, product placements in our favorite shows and films, and digital events hosted on various websites. Advertising dollars also influence the most popular search engines. Clearly, companies have invested their money into media advertising for a reason. The vast majority of studies conducted on advertisements show that, in the long-term, advertising influences the decisions we think we make on our own (Heath, 2018). Even in the short-term (defined as within twelve weeks), the results indicate an effective influence by the end of those twelve weeks (Wood and Poltrack, 2015). Therefore, it seems that over time, there is a significant impact of product placement on the choices a consumer makes regarding that product. However, there is little information on the immediate effects of advertising and whether it would shape the decisions of a potential consumer a mere five minutes after a product is subliminally advertised.

This study is an attempt to not only answer whether there is an immediate effect on the decisions someone believes they are making on their own but additionally to test whether consciously noticing a product's placement has any impact on product consumption. Consumers, often unaware of the influence advertisements have on them (Heath, 2018), ought to understand whether there is an immediate effect imposed on conscious decisions regarding product placement and product consumption. Based on this potential, we are searching to reveal how effective the immediate means for advertising and product placement are.

Methods

Data Collection:

To collect data for the study, 34 college students, ages 18-22, were asked to participate in a short survey. In order to get participants, a free soft drink was advertised as a reward for completing the survey. The subjects were first randomly assigned to either the experimental group or the control group using a coin flip. This determined which video clip subjects were to watch. Both video clips were from the popular television show, *Friends*, and were approximately two minutes each. The experimental video clip came from Season 4 Episode 2 (2:21-4:05) and the control video clip came from Season 4 Episode 16 (18:19-20:19). Both video clips featured an interaction between the characters Ross and Rachel, and in both clips, Ross was holding a beverage. In the experimental clip, this beverage was a Coke can and in the control clip, this beverage was an unmarked beer bottle.

The subjects were asked to watch their assigned video clip and then complete a short survey about the scene after watching. This survey was used to distract participants from the true meaning of our study. It included questions about the scene such as, "What was the color of Rachel's shirt?", "How old do you think Ross is?" and "Which character do you think is in the position of power?" Once the survey was complete, the participant was offered the choice of a Coke or Sprite. After they had chosen one, we followed with the question, "Did you notice a soft drink in the video clip?" and recorded their decision and response. If the subject did not want a soft drink, they were asked which they would choose if they wanted one.

Variables and Analytical Methods:

The first research question we asked was, “If there is a Coke in a video clip, are people more likely to choose Coke than Sprite shortly after watching the video than if there was no Coke in the clip?” The explanatory variable was whether or not there was a Coke can in the video clip (experimental or control clip) and the response variable was the drink they picked after watching the video clip (either Coke or Sprite). To analyze these data, the Multiple Proportions Applet was used to run a one-sided simulation-based test of significance.

The second research question we asked was, “If there is a Coke in a video clip, do people consciously notice its placement, and, if so, does that influence their choice between Coke and Sprite?” The explanatory variable was whether or not subjects in the experimental group noticed the Coke in the video clip (noticed or did not notice) and the response variable was the drink the subject picked after watching the video clip (again, either Coke or Sprite). The data were analyzed in the same way as the first research question, except with a two-sided test.

Results of Test One: Experimental vs. Control Video Clip

We first tested to see which product the students would choose after watching the experimental clip (with the Coke) and the control clip (without the Coke). We found that 8 of 21 students (38%) chose Coke in the experimental group and 3 of 13 students (23%) chose Coke in the control group. (See Figure 1.) Considering picking Coke as a “success”, the observed difference in proportions was 0.15. After 150,000 shuffles of the 34 responses, a one-sided p-value of 0.3028 was obtained.

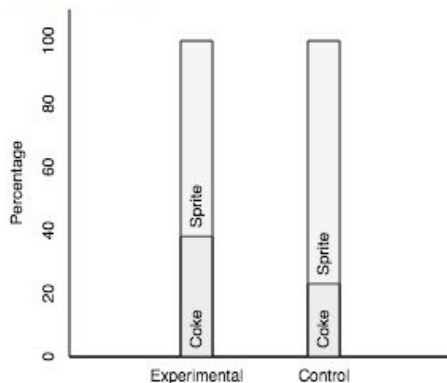


Figure 1: A segmented bar graph representing the proportion of students who chose Coke and who chose Sprite in the experimental and control groups. The bar graph indicates there is little difference in the proportion of those who chose Coke between the experimental group and the control group.

Results of Test Two: Noticing vs. Not Noticing in the Experimental Group

Our next test involved only the subjects from the experimental group. We wanted to see if the proportion of those who consciously noticed the Coke in the video clip and chose Coke was different than the proportion of those that did not consciously notice the Coke and chose Coke. We found that 4 of the 12 (33%) that noticed the Coke actually chose Coke and 4 of 9 (44%) that did not notice the Coke chose

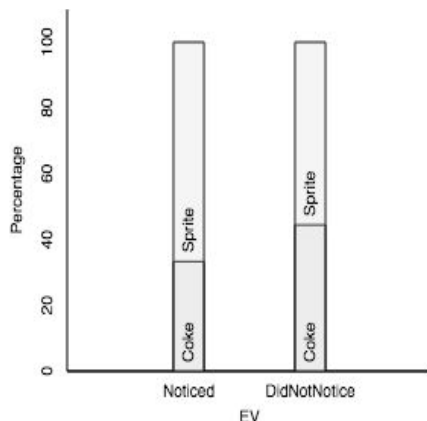


Figure 2: A segmented bar graph representing the number of students in the experimental group who consciously noticed the Coke in the video clip and picked Coke, compared to those who did not notice the Coke in the video clip and picked Coke. The bar graph indicates there is little difference between those who noticed and those who did not notice and chose Coke.

Coke. This gave us a difference in proportions of -0.11. After a simulation test of 150,000 shuffles of the 21 responses, a two-sided p-value of 0.6733 was obtained. Interestingly, two students in the control group that watched the clip without the Coke thought they saw a Coke can in the clip even though it was not there.

Discussion/Conclusion:

We were unable to show that product placement of a popular soft drink in a TV show has an immediate impact on the decision of a student to choose that soft drink over another. Therefore, while there seems to be a long-term effect of product placement (Heath, 2018) and short-term window for influence (Wood and Poltrack, 2015), we did not find enough evidence in support of an immediate effect of product placement on a consumer's decision. What this suggests is that long-term and short-term effects, as studied by several researchers (Heath, 2018; Wood and Poltrack, 2015), are the main point of concern because they are the more noticeable means for influencing consumers. Having little evidence for an association between product placement in television shows and the choice of consumption, there is little we can conclude in support of that idea. What it highlights is the long-term investment that companies must make in order to receive a payoff for their media advertisements or product placements. For the consumer, it is a similar story. As we have discussed, advertising is already shown to significantly influence one's purchasing choices. So, while there is little evidence against the initial influence after watching an advertisement, that does not mean ads will have no effect on our choices over time. It simply reinforces the notion that we often cannot resist these advertisements' influences, however conscious we are of their addition in our media since immediate effects have little power compared to the longer term.

This study had some limitations that could have been addressed. First, the time of day that the study was conducted was at night only. Since Coke has caffeine but Sprite does not, this may have had an impact on the students' choices between the two given the time of day. Next, in order to get participants, we advertised that they would receive a free soft drink after participating, which may have affected how they interpreted our study. Still, despite the advertising, many of the participants were people we know, so our sample was not very random. Another limitation was that we only conducted the study at one location, making our sample of students less diverse. Finally, the largest limitation was our sample size. We were only able to get 34 students to participate in our study. If there is an immediate impact of product placement, it is likely to be very small, and therefore could only be determined from a very large sample size.

To better understand the immediate effects of product placement on consumers' decisions, future research should be conducted. Perhaps there is a greater immediate impact linked to product placement when the product is of higher quality or more expensive, such as electronics or longer lasting items. A future study could examine these effects. Additionally, we only had our participants watch approximately two minutes of the TV episode. However, it would be appropriate to ask whether product placement has more of an effect after the entire episode has been watched. This is another question that can be explored in future research to broaden the idea of the immediate impacts of product placement.

References:

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Appendix:

Test One: Experimental vs. Control Video Clip

For our first research question, our hypotheses were:

H_0 : There is no association between whether Coke is included in the video clip and a person's choice of Coke or Sprite after watching the video clip. ($\pi_{\text{InVideo}} = \pi_{\text{NotInVideo}}$)

H_a : There is an association between whether Coke is included in the video clip and a person's choice of Coke or Sprite after watching the video clip; when a person is shown the video clip with Coke, they are more likely to choose Coke after watching.

$$(\pi_{\text{InVideo}} > \pi_{\text{NotInVideo}})$$

The results of our first test were:

Table 1: Two-way table of results for research question 1

	Experimental	Control	Total
Coke	8 (0.38)	3 (0.23)	11 (0.32)
Sprite	13 (0.62)	10 (0.77)	23 (0.68)
Total	21	13	34

To perform tests of significance for our data, we used the Multiple Proportions applet that is associated with the textbook, *Introduction to Statistical Investigations*, (www.rossmanchance.com/ISIApplets.html). The data from table 1 were entered into the applet and choosing Coke was considered a success. Since we did not have at least 10 people in each cell of the two-way table, we chose to do a simulation-based test of two proportions. We used 150,000 shuffles of the 34 responses to come up with a one-sided p-value. Any simulated difference in proportions that was greater than or equal to the observed difference of 0.150 (experimental - control) was used to determine the p-value. Since there were 45,424 simulated statistics greater than or equal to this value, a p-value of 0.3028 (45,424/150,000) was obtained (figure 3). Based on this large p-value, we concluded that we did not have strong evidence that a person who is shown a video clip with Coke is more likely to choose Coke than Sprite after watching compared to someone who watched a video clip without Coke; we failed to reject the null hypothesis. Therefore, we did not find any evidence of an immediate impact of product placement on a consumer's decision between that product and a similar product.

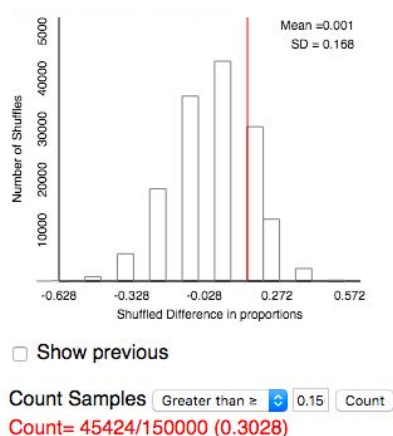


Figure 3: The graph of the simulated differences in the proportion of students who chose Coke in the experimental versus the control group.

Test Two: Noticing vs. Not Noticing Coke in the Experimental Group

For our second research question, our hypotheses were:

H_0 : There is no association between whether a person notices a Coke in the video clip and their choice of Coke or Sprite after watching. ($\pi_{\text{Notice}} = \pi_{\text{DidNotNotice}}$)

H_a : There is an association between whether a person notices a Coke in the video clip and their choice of Coke or Sprite after watching. ($\pi_{\text{Notice}} \neq \pi_{\text{DidNotNotice}}$)

The results of our second test were:

Table 2: Two-way table of the results for research question 2

	Noticed	Did Not Notice	Total
Coke	4 (0.33)	4 (0.44)	8 (0.38)
Sprite	8 (0.67)	5 (0.56)	13 (0.62)
Total	12	9	21

Again, we used a Multiple Proportions applet associated with the textbook to analyze our data. The data from table 2 were entered into the applet and choosing Coke was considered a success. Similar to the first test, the validity conditions for a theory-based test were not met, so we decided to use a simulation-based test to determine the significance of our results. The observed difference in proportions (notice - did not notice) was -0.11. Any simulated statistic from the 150,000 shuffles that was beyond the observed difference was used to find the p-value, which was 0.6733 (100,999/150,000) (figure 4). Since our p-value was much greater than 0.05, we concluded that we did not have strong evidence that a person who notices a Coke can in a short video clip is more likely to choose Coke over Sprite than a person who watches the same clip but does not notice the Coke. Thus, we failed to reject the null hypothesis. Therefore, we did not find any evidence that noticing a product's placement on TV has an immediate impact on a consumer's decision between that product and another similar product.

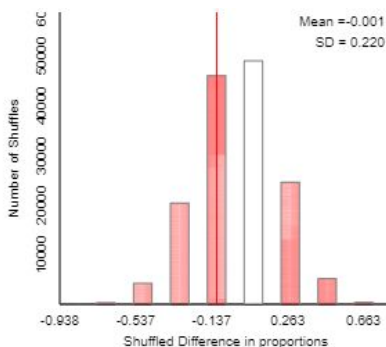


Figure 4: The graph of the simulated differences in the proportions of students in the experimental group who noticed the Coke can and picked Coke and those who did not notice the Coke can but picked Coke.

☐ Show previous

Count Samples

Count= 100999/150000 (0.6733)