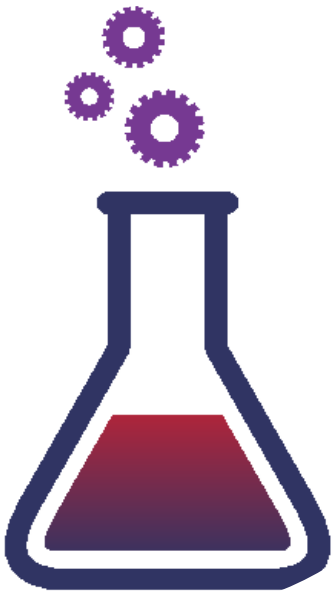
The placebo effect – experimenting on consumers



It is well established that information from other consumers (social information) is now an important input in purchasing decisions, maybe even more so than the one provided by suppliers or experts themselves. This Insight explores how different types of social information can influence consumer behaviour, using a laboratory experiment.

Social information is ubiquitous – people commenting, tweeting, "liking" pictures online, and giving star-ratings to the restaurant / exhibition / performance they have just attended. "Man is by nature a social animal", and as such, it is important to understand how we are influenced by this information. Not only due to recent controversies around "false comments" from paid-for reviewers, undermining the credibility of such information, as well as competition and regulation authorities being ever more concerned about consumers have the "right" information to enable them to make the "right" choices.

However, relatively little research has been done around how such information influences buying patterns. Traditional stated preference studies have been undertaken, but they do not give us the same insight into consumer behaviour as experimental economics. This is an approach that applies the principles of scientific disciplines to real world commercial decisions – allowing you to test otherwise untestable ideas in a laboratory environment. In this Insight we present the results from an experiment we undertook in partnership with the University of Oxford.

The question(s)

Our experiment was designed to simulate an online purchasing environment. It is important to note that we did not use real social media platforms – instead, to mimic social media platforms, we incorporated features of social media that are likely to be most relevant to consumers' choices, such as preference ratings, comments about the products and an online chat forum, into the experimental design.

We set out to answer the following questions:

- Is the 'stated preference' on social media a good predictor of consumers' purchasing behaviour?
- What type of social information is the most effective at influencing people's decision to purchase a product?
- Which channel of social media is most effective at conveying preferences amongst consumers?
- Does the effect of social information through social media on consumers' behaviour depend on product type?

The benefit of using an experiment is that you can test otherwise untestable hypotheses and "strip out" all the noise which is present in the real world. For example, here we are able to test the effects of social information alone, without conflating it with other "noise", such as price or volume promotions, loyalty schemes or any other type of information.

The experiment

The experiment was run at the Centre for Experimental Social Science (CESS) at Oxford University between 12 January 2016 and 18 February 2016.

Subjects received a £4 show-up fee and got endowed with a further £5, which they could choose to spend in the course of the experiment. All subjects viewed 6 products, which were divided into two categories: trendy (hats) and ordinary (umbrellas) products. Each category consisted of 3 products, as illustrated in the following figure.

Figure 1. Products

The experiment worked like a clinical trial. A **control group** of subjects which were given the retail equivalent of a **placebo** - in this case no social information - were required to undertake the following tasks:

» ***Stage 1***: Subjects viewed all six products and completed three tasks:

(i) *Like rating*: subjects indicated whether they 'like' the product or not, by clicking on a 'heart' icon.

(ii) *Star rating*: subjects were asked to state their preference for each product on a 5 point star scale

(iii) *Willingness to pay (WTP)*: subjects stated the maximum amount of money they were willing to pay for each product

» ***Stage 2:*** Subjects decided whether to buy a product. They did not have to buy anything if they did not want to.

» ***Stage 3:*** Subjects who purchased a product received it and were asked to write a comment about how satisfied they were with their purchase.

» ***Stage 4:*** Subjects were asked to fill in a post-experimental questionnaire

Then, we had **treatment groups**, who were exposed to a change, or a '**drug**' - in this case social information. We had four treatment groups, where the first stage was exactly the same as for the control group, i.e. subjects viewed 6 products and completed the three tasks above. Then, in the second stage, before deciding whether to buy or not, subjects were randomly assigned to one of the following groups:

» ***Like treatment:*** subjects in this group were given information about the proportion of subjects (from a focus group) who liked the products.

» ***Star treatment:*** subjects in this group were given information about the star ratings of subjects (from a focus group) i.e. number of people for each star rating.

» ***Comment treatment:*** subjects in this group were shown ten comments provided by the subjects from the focus group for each product (anonymous).

» ***Chat treatment:*** subjects were given the opportunity to chat with other subjects in the same session i.e. other potential buyers (anonymous).

We sourced the likes, star ratings and comments from a focus group of 20 subjects, who received £6 to like/not like, rate, and comment on all the products. We only showed subjects positive likes, star ratings and comments and we used external reviewers[1] to rate the comments and to categorise the chat content.

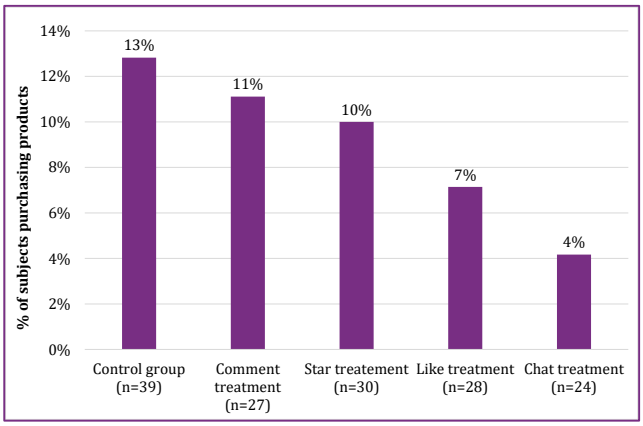
The results

We had a total of 148 subjects – 39 in the control group, 28 in the like treatment, 30 in the star treatment, 27 in the comment treatment, and 24 in the chat treatment.

» ***Finding 1:*** Social information has a strong effect on purchasing behaviour in this experiment.

The following figure illustrates the overall purchase rates across the different treatments groups.

Figure 2. Purchase rates by treatment group



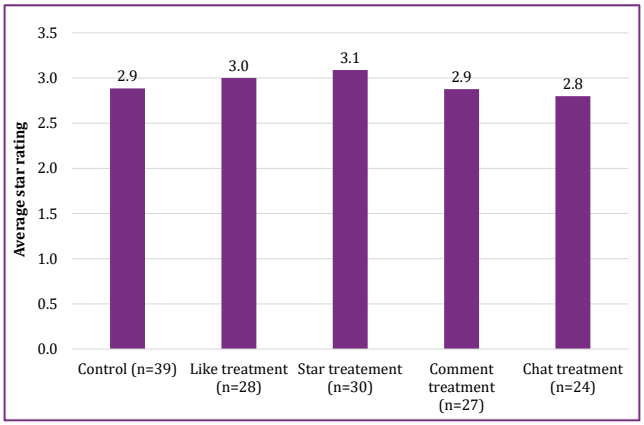
The results show that 13% of subjects in the control group bought a hat or umbrella. This figure fell by over two-thirds to 4% in the chat treatment.

» ***Finding 2:*** Subjects across all treatment groups gave the products similar star ratings out of 5, which rules out changes in preferences driving the reduction in purchase rates.

The figure below shows the average star ratings (out of 5) across the treatment groups.

[1] *We have used Amazon Mechanical Turks (MTurks) to perform this task. This is a crowdsourcing Internet marketplace enabling individuals and businesses to coordinate the use of human intelligence to perform task that computers are currently unable to do and is one of the sites of Amazon Web Services.*

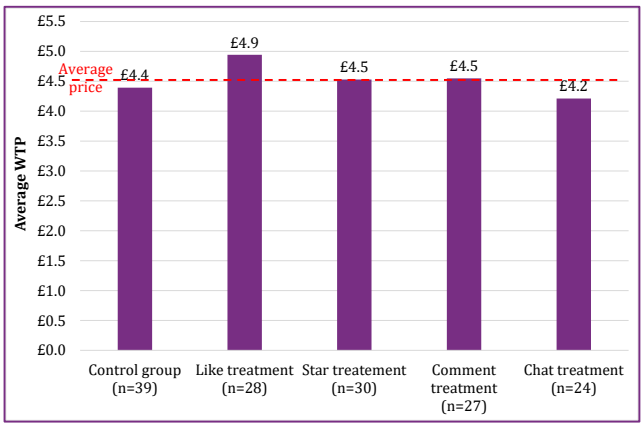
Figure 3. Average star ratings by treatment group



» ***Finding 3:*** Subjects across all treatment groups had a similar WTP for the products, which rules out differences in valuations of the products driving the reduction in purchase rates.

The following figure illustrates average WTP across the different treatment groups, as well as the average price of the products - £4.5 (the red dotted line).

Figure 4. Average WTP and average price by treatment group

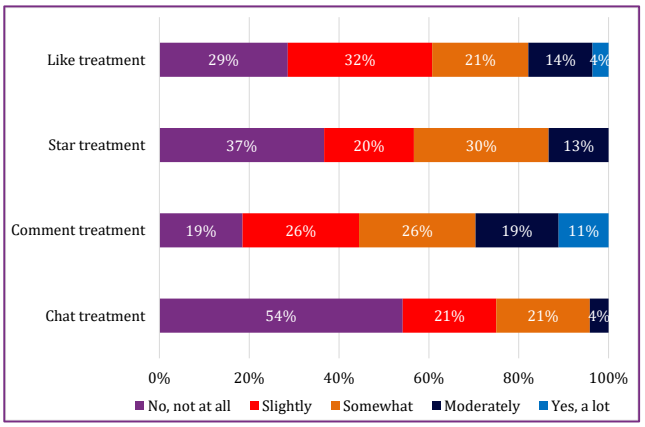


Although the average WTP in the chat treatment is below the average price of the products, it is only £0.2 below the control group.

» ***Finding 4:*** subjects that are most influenced are not aware of this.

The figure below, demonstrates what subjects in the treatment groups answered when questioned as to how influenced they felt by other people's comments / star ratings / likes.

Figure 5. How much do you think that other people's comments influenced your purchase decision?



Interestingly, when subjects in the treatment groups were asked how much they thought the social interactions had influenced their purchasing decision, 54% of those in the chat treatment felt they had not at all been influenced. This compares to 19% in the comment treatment, 29% in the like treatment and 37% in the star treatment not feeling at all influenced.

On the other hand, 11% of subjects in the comment treatment felt a lot of influence, as well as 4% of those in the like treatment.

Conclusions

We draw the following conclusions from our first experiment:

» Social interaction can have a strong effect on individual buying behaviour, and as such, understanding it really matters for the bottom line.

» The experiment suggests that what customers say and do are often different, which suggests there are opportunities for experimental research methods to help predict customer behaviour.

» It also suggests that different types of interaction / information have different effects on customers / serve different purposes. This is important for advertising platforms, who want to show prospective customers the information that is most likely to "convert" them, as well as for competition and regulation authorities, in determining when practices could be "misleading" or beneficial by leading to better, worse or different consumer outcomes, for example.

Finally, these results suggest that the opportunity for social interaction materially influences buying behaviour, even when the products in question are not especially emotive – and this effect can be quantified using the experimental method set out in this Insight.

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