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Journal of Economic Behavior and Organization

journal homepage: www.elsevier.com/locate/jebo

Does winning an experimental auction change people's behavior? An application to e-cigarettes[☆]



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ARTICLE INFO

Article history:

Received 16 March 2018

Revised 27 June 2018

Accepted 11 August 2018

JEL classification:

C90

Keywords:

Experimental auctions

E-cigarettes

Cigarettes

ABSTRACT

Experimental auctions allow researchers to estimate demand for products like e-cigarettes in a non-hypothetical environment where participants face real and immediate consequences for their bids. However, because auction winners actually purchase the product they bid on, participants may be introduced to a product they otherwise would not have discovered. Based on an experimental auction where 432 participants bid to buy e-cigarettes, we found that auction winners are significantly more likely to be using e-cigarettes two weeks, six weeks, and six months after the study but are no less likely to be daily cigarette smokers. This result holds even after controlling for prior e-cigarette use, strength of participants' initial demand for e-cigarettes, and demographic characteristics.

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1. Introduction

People behave differently when being observed by researchers. The lighting experiments at the Hawthorne Works in the 1920's and 30's (Mayo, 1933) are the most famous example of this phenomenon. And though the causes of this "Hawthorne effect" are still debated (e.g., Levitt and List, 2011), researchers continue to find ways in which participating in a study changes participants' behavior. Sherman (1980), for example, finds early evidence of a "question-behavior effect," where asking participants to predict how they will behave changes their future behavior. Sherman asked a control group if they would volunteer three hours of their time for a well-known charity; only 4% agreed. Sherman asked participants in a treatment group to predict if they would be willing to volunteer; nearly half said they would. When subsequently asked to actually volunteer, 31% of participants in the treatment group agreed. In a more recent study, Chandon et al. (2004) found that completing a survey on intent to make an online grocery purchase increased the likelihood of making a purchase.

The "survey effect" is closely related but more general. Here, asking participants questions on a topic changes their future opinions or actions even when the original question did not involve predicting future actions. Zwane et al. (2011), for example, found that Kenyan households surveyed more frequently about their use of home drinking water disinfectant actually used the disinfectant more regularly and reported better health outcomes.

[☆] Declarations of interest: O'Connor has received consultant fees and travel reimbursement from the Food and Drug Administration, the National Institutes of Health, and the World Health Organization.

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We propose an “auction effect,” where winning a good in an experimental auction changes the likelihood a participant will continue to use the good in the future. The auction effect is of special concern in studies dealing with addictive substances or harmful behaviors. Experimental auctions, traditionally used to estimate willingness to pay for ordinary consumer goods (Lusk and Shogren, 2007), have recently been used in a series of studies focused on tobacco products, including labeling differences between cigarettes (Rousu and Thrasher, 2013), novel smokeless tobacco products (Rousu et al., 2014), and e-cigarettes (Rousu et al., 2017). A potential concern with this design is that exposing users to a tobacco product that is new to them, as well as allowing them to win it via auction, could encourage further use of that product or forestall quit attempts.

Until now, this has been difficult to assess since auction studies are typically one-session affairs with little to no follow-up. A study by Shogren et al. (2000) is one exception. The authors asked participants to bid on goods in a series of auctions spread over two weeks. Those who won a good in early auctions tended to decrease their bids in later auctions. The authors attributed this to the participants’ desire to learn about their preferences for unfamiliar goods. The authors did not, however, present evidence about whether winners are more likely to continue using a product after the two-week study period.

Our study proposes to fill this gap in the literature by building on recent work examining willingness to pay for e-cigarettes (Rousu et al., 2017). Our goal is to assess whether winning an e-cigarette in an experimental auction affects participants’ use of e-cigarettes and cigarettes two weeks, six weeks, and six months after their study session. We find that participants who won e-cigarettes were significantly more likely to use e-cigarettes at follow up but were no less likely to use cigarettes.

2. Methods

Institutional Review Boards at Roswell Park Comprehensive Cancer Center and Susquehanna University approved these procedures.

2.1. Sample

Four hundred thirty-two smokers from the Buffalo, NY, and Selinsgrove, PA, areas took part in experimental auctions in 2014 and 2015. Participants were 18 or older, were not currently using e-cigarettes, and had no major medical issues. Participants received \$80 for participating in the study with the understanding that they might win, and have to pay for, up to one tobacco product. According to Harrison and List’s (2004) taxonomy, this would be considered an artefactual field experiment – a laboratory experiment with a non-student population.

2.2. Products

Three products were offered in an nth-price auction – Blu single-use e-cigarettes, Blu rechargeable e-cigarettes, and Camel cigarettes. Both e-cigarettes contained the nicotine equivalent of two packs of cigarettes. At the time of the study, both e-cigarette products were widely available at traditional cigarette retailers (e.g., convenience stores) as well as online (Haardörfer et al., 2017). Twenty-eight percent of participants won one of the e-cigarettes at their auction sessions.

2.3. Experimental design

The experimental auction had six steps.

Step 1: When participants arrived, we checked their identification to ensure they were 18 or older. Participants then completed a consent form and pre-auction questionnaire, and received \$80 for their participation.

Step 2: Participants received detailed oral and written instructions on the random nth-price auction (Shogren, 2001) and asked any questions they might have about the auction.

Step 3: Participants bid on two candy bars in two potentially binding practice rounds. After collecting bids from both rounds, we randomly selected the binding round and the binding nth price for that round. While the practice rounds were hypothetical, we emphasized that the auctions for tobacco products would be real.

Step 4: Participants saw e-cigarette advertisements based on their information group. Participants in the Control Group ($N=97$) saw no ads, participants in the Print Group ($N=115$) read a print ad for e-cigarettes, participants in the Video Group ($N=118$) watched a television commercial for e-cigarettes, and participants in the Print + Video Group ($N=102$) saw both the print ad and the TV commercial. Both ads were being used by Blu at the time of the experiment. See Rousu et al. (2017) for further discussion of the ads.

Step 5: Participants bid on the three tobacco products in three potentially binding auctions, only one of which would be realized. (While we randomized the order in which participants bid on e-cigarettes, participants always bid on the cigarettes last.) After collecting bids from all auctions, we randomly selected which of the three products would be auctioned and the binding nth price for that product. High bidders purchased the product from the binding auction.

Step 6: Participants completed a post-auction questionnaire.

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