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Abstract

I conduct a field experiment at a charitable bookstore to provide evidence for the role of identity under "pay-what-you-want pricing". When subtly reminded of their participation in the store's membership program members paid significantly more per book then without a reminder, while this nudge had no effect on non-members. Making an individual aware of its close social connection to the seller can thus, in a charitable setting, increase voluntarily paid prices.

Keywords: Field experiment, Pay-What-You-Want, Charitable contributions, Identity

1. Introduction

"Pay what you want" (PWYW) pricing has been successfully used to show that non-selfish behavior exists in markets. In a number of experiments and real-world situations customers have paid above zero on average for a service or product which they could have gotten for free. Prominent examples are the online music sales by Radiohead, restaurants such as Wiener Deewan or Panera Bread, souvenir photos in Disneyland, Humble Bundle video games, Magnatune music or Lyft car sharing (see for example Gneezy et al. (2010), Kim et al. (2009), Regner and Barria (2009), and Riener and Traxler (2012)). Gneezy et al. (2012) attribute part of this non-selfish behavior to the desire for a positive self-image. People want to perceive themselves as fair and altruistic individuals and derive positive utility from self-signaling these traits through generous behavior. In Akerlof and Kranton's model on identity and self-image behavior that is in line with an individual's perceived identity increases his utility from payoffs, while acting against his own identity decreases utility (Akerlof and Kranton (2000)). Moreover, a large number of studies on self-image have shown that a feeling of identity can be intensified by

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reminding individuals that they belong to a group with certain characteristics (see for example Benjamin et al. (2010), Charness et al. (2007)).

If it is true that higher PWYW amounts are driven by self-image concerns, then individuals who are part of a group which feels closely connected to the seller should react more pro-social when they are reminded of their group identity compared to individuals who do not have a close relationship with the seller.

In a field experiment I analyze the difference in PWYW pricing for membership card holders and non-membership card holders of a charitable bookstore by reminding them of their in-group status through a gentle nudge before they decide on the price they want to pay for a book. While all customers are made aware of the charitable component of the transaction, which should increase prices as shown by Gneezy et al. (2010), the identity effect of being a member should only affect membership card holders and should have no effect on the pricing decision of other customers.

In line with my hypothesis I find that reminding members of their membership status by asking them whether they are a member of the bookstore or not before they make a pricing decision significantly increases the average price paid per book. This effect is even stronger when it is their second PWYW purchase, when the novelty of the pricing mechanism has worn off. As expected, I find no effect of the nudge on non-members and no effect on the number of books bought.

My results support the reasoning by Gneezy et al. (2012) that PWYW prices are indeed influenced by self-image concerns. I further show that emphasizing group identity can make self-image more salient and thus increase prices in a charitable setting.

2. Experimental Design

The experiment was conducted from July 7th to September 1st at a charitable bookstore in downtown Chicago. Open Books is a nonprofit social venture that operates a bookstore based on donated books, provides community programs, and mobilizes volunteers to promote literacy in Chicago and beyond. While the store has around 50,000 books for sale the experiment concentrated on two large bookshelves where the books were priced as "pay-what-you-want". The books in these shelves are general interest fiction or non-fiction, which the bookstore would otherwise price at around 1 dollar. Over the period of the experiment, books to fill up the shelves were randomly drawn from a pile in the storage room. The store attracts customers from all groups of society in Chicago. Around 60 percent of the customers are repeated buyers and many of them have membership cards for the store. Some of these membership cards come with a yearly membership fee and some are without a fee. As a member of the charitable bookstore people receive birthday presents, discounts and are invited to special events, thus it resembles more a club than a frequent buyer card.

In order to buy a book from the PWYW shelf, customers had to fill out a small price card, which was supplied in a box visibly attached to the bookshelves. The experiment has a Nudge and a no-Nudge treatment. In both treatments the customer had to fill out: "I want to pay $X per book. Number of books X." Also in both treatments there was a sentence on the card stating: "All purchases help support literacy programs in Chicago." However, in the Nudge treatment the top line of the card prompted customers to cross off: "I am a member of Open Books Yes / No?". The no-Nudge treatment did not have this first line. Once the customer had filled out the card he could walk up to the register, hand the card to the cashier and pay for the books. There was no interaction with the sales people before the customer walked up to the register. Members automatically received a 10% discount off each book. This deduction was taken at the register.

In order to avoid any trend effects the treatments were randomized by week. The cards were switched every Saturday night right before closing by the manager of the store. Since the customers were only nudged after having decided to purchase a book, it is unlikely that the nudge itself had an impact on the decision to buy or not.

3. Results

140 transactions were made in order to purchase 319 PWYW books over the 8 weeks of the experiment. Total proceeds were 480 dollars. This leads to an average price per book of 1.50 dollars.[1] The average number of books sold per week was 40 books. A Chi2 test shows that the distribution of books sold is not significantly different from a uniform distribution (p-value = 0.25). Figure 1 shows that there are no trend effects.

In order to test whether members were influenced by reminding them of their member status I conduct tests on members and non-members separately. As expected, there is no effect of the nudge on the number of books bought by members or non-members. A Wilcoxon-Mann-Whitney ranksum test shows that the difference between the number of books bought per person in each treatment is not significantly different from zero (Nudge/No-Nudge p-values = 0.98/0.67). When it comes to the price paid non-members are not affected by the nudge (WMW-test

[1] During the experiment the manager became aware of two friends, who, after finding out that they could get away with paying 1 cent per book, came several times to buy as many books as they could carry. The treatment results are still significant after including these two outliers, but I drop these two individuals for a more representative analysis. Detailed data is available upon request.

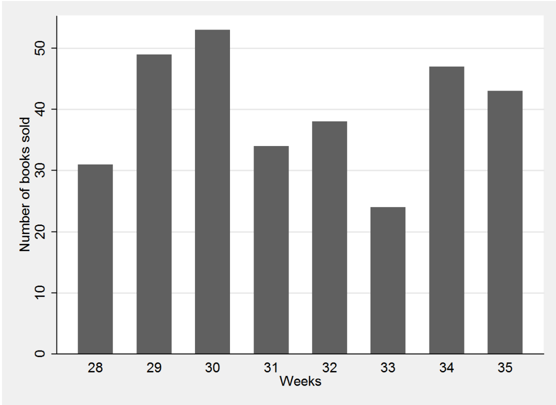

Figure 1: Number of books sold in each week over both treatments

p-value = 0.34) while members paid significantly more when the nudge was present (WMW-test p-value = 0.03). Since members received a discount of 10% of each book, the actual price paid is used for the analysis. This might slightly downward bias the average price as it is not clear if customers already included the discount when writing their price on the slip and were then surprised by a further reduction at the register. There is no significant difference in the average price paid between the first transaction of members and non-members overall (WMW-test p-value 0.42).

In order to determine the effect sizes of the nudge, the number of books bought, a repeated purchase and whether the member has a paid membership on the price paid per book I run OLS regressions for members and non-members separately (see Table 1).

For members, buying books from the PWYW shelves for a second time leads to significantly lower prices. On average members pay 87 cents less per book when they make a further purchase within the 8 week period compared to the average first time purchase. However, reminding them of their member status significantly increases prices by 75 cents, almost canceling out the effect of the repeated purchase. This is an increase of 61 percent compared to the price paid without a nudge. Not surprisingly, the more books are bought in one transaction, the lower the price per book. Members pay on average 19 cents less for each additional book and non-members 13 cents. There is no significant difference between the members who pay for their membership and the members with the free membership.

Table 1: OLS Regressions, Dependent Variable: Price Paid

	Members	Non-Members
Nudge	0.754**	0.082
	(0.331)	(0.365)
Nr of books	-0.188**	-0.130**
	(0.087)	(0.062)
Repeated Purchase	-0.866**	
	(0.339)	
Member with Fee	0.563	
	(0.345)	
Observations	43	96
R^2	0.35	0.05

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

4. Conclusion

I use a field experiment at a charitable bookstore to show how subtlety reminding members of their connection to the store leads to increased prices in a pay what you want setting. My results support the self-image hypothesis suggested by Gneezy et al. (2012) to explain non-selfish behavior in the market. Gentle nudging has no negative effect on the number of books sold, thus leading to a true increase in profits for the seller. Since the seller is a charitable organization it is likely that the identity effect is especially strong in this setting in comparison to say, a supermarket where one has a bonus card. It would be interesting to see if the group identity effect can also be induced in non-charitable settings such as in stores for soccer or baseball merchandise, fan memorabilia or other identity related products. The great success of Radioheads PWYW online sales can perhaps be attributed to the identification of the fans with the band, while a boat company selling pictures might not induce the same feeling of group identity in the buyers.

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