Auctions versus Posted Price in Experiments: Comparisons of Mean and Marginal Effect

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The views expressed are those of the authors and should not be attributed to ERS or the USDA. This research was conducted while Fooks and Li were at the University of Delaware.

Overview

Economic experiments have been widely used to elicit individuals' valuation for various commodities and non-market goods. Common elicitation methods include auctions and posted price mechanisms. Experimental auctions are theoretically incentive compatible so are assumed to give an unbiased estimate of individuals' evaluation including willingness to pay (WTP). However, the vast majority of purchasing decisions are not made in auctions but in market settings, such as grocery stores, where consumers make yes/no decisions in response to a set price. In this research, we carefully design an experiment to compare homegrown-value WTP estimates, specifically for honey presented in a variety of jars, between an auction and a posted price elicitation format. This design enables us to make both within- and between-subjects comparisons of WTP.

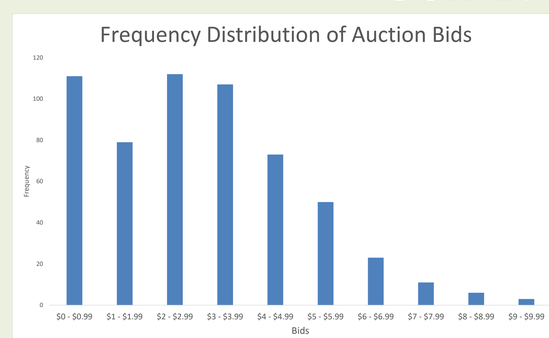
Design

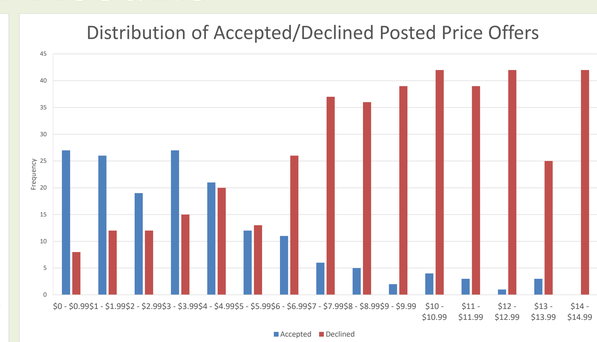
Subjects	115 adult participants recruited through newspaper ads and community events.
Sessions	15 one hour sessions held in lab
Payment	$5 show up fee, plus an additional $15 in bidding money
Goods	Three types of honey in five different style of jars
Format	1. Sealed-bid, second-price auction 2. Posted-price, dichotomous-choice mechanism Actual good sold randomly chosen after all decisions were made Order of format and jar offer varied between sessions. Bids placed in an Excel Spreadsheet

Hypotheses

Question	Hypothesis	Result
1. Is there a difference in WTP between the posted-price mechanism and second-price auction?	H_0: $WTP_{Posted\_Price} = WTP_{Auction}$	Reject - There is a difference between measured WTP.
2. Is the evidence of a cross-task effect?		
2.1 Is there a difference only comparing the first task completed?	H_0: $WTP_{Posted\_Price \mid Posted\_Price\_First} = WTP_{Auction \mid Auction\_First}$	Reject – There is a difference even for the first tasks completed
2.2 Is this difference due to anchoring effect?	H_0: $\beta_{p,\ Auction\_first=0} \neq 0$ H_0: $\beta_{p,\ Auction\_first=1} = 0$	Fail to Reject - No evidence of anchoring
3. Is the difference due to behavioral factors?		
3.1 Is this difference due to asymmetric inconsistent preferences?	H_0: Pr(Accept=1|ShouldAccept=0) =Pr(Accept=0|ShouldAccept=1)	Fail to Reject - no evidence of asymmetric inconsistent preferences
3.2 Is this difference due to a lack of familiarity with an auction setting?	H_0: $\beta_{Auction,\ RoundNumber} = 0$ H_1: $\beta_{Auction,\ RoundNumber} \neq 0$	Reject - There is evidence that the difference decreases with learning

Central Results





Parametric Assumption	$WTP_{Auction}$ (std. dev.)	WTP_{PP} (std. dev.)	Z (p-value)
Normal	**2.4889**	**4.0587**	7.5838
	(2.0898)	(4.5021)	(<0.0001)
Logistic	**2.4579**	**4.0570**	7.5199
	(1.1698)	(2.5562)	(<0.0001)