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Abstract

This article presents an evaluation approach for alternative electronic market designs and examines the impact of introducing an IT-enabled innovation (a social communication tool to support group coordination) in an online group-buying market in terms of group decision-making and economic performance. Drawing on theory from economics, decision theory, and information systems, we present a competitive arousal model for a social buying setting that posits that introducing competitive arousal among buyers reduces buyer profits and that social facilitation can mitigate these costs through better task completion and time to completion rates. Using an economic experiment, we found that rivalry has a negative effect on buyer profits but also that pressure increases the efficiency of social communication in terms of group formation. We discuss the implications of these results.

Keywords: Online market design, experimental economics, competitive arousal, electronic group buying, IT-enabled group coordination.

1. INTRODUCTION

Our research presents an evaluation of a specific IT-enabled market mechanism for electronic group-buying platform. We argue that experimental economics offers a useful approach to systematically design and evaluate new electronic market mechanisms and technology features that is applicable for a large range of research problems. This research explores specifically the impact of competitive pressure and social communication on group buying performance in terms of buyer profits and task completion time. We conducted experiments in the laboratory using a variation of the buyer-initiated intra-auction group buying model (Chen et al, 2009). The basic experimental environment was the same as the one used in Pelaez (2012).

Social buying platforms may facilitate social communication that help buyers set up groups and coordinate group decision tasks (negotiating a common offer among the group members with an agreed upon price and submitting it to the seller). Group buying is different from individual buying in standard business-to-consumer electronic commerce. First, buyers organize into groups to aggregate demand and thus leverage increased bargaining power to obtain price discounts from the seller. Second, group buying sites could offer features that facilitate social interactions among buyers. Using an electronic group buying setting is interesting for theoretical reasons, too. First, buyers no longer act independently as they need to coordinate with others in order to get together a joint offer for a deal with a seller. This creates bid interdependency group auctions. Second, social buying platforms may adopt tools to facilitate social interaction among buyers at different levels, which could affect group coordination and performance. The literature on individual auctions generally finds that competitive pressure leads to overbidding and profit loss and that more social interaction can increase competitive motivation.

However, we should also point out that the platform owners need to be aware that offering too much social facilitation (and communication support for the buyers) could enable buyer collusion and present a risk to sellers, and in that case sellers could simply decide to defect and leave the platform. We present a model for decision-making under competitive pressure on a group-buying platform that is based on Ku et al (2005). However, we offer two critical extensions to Ku's model. We extend the decision-making problem from an individual to a group setting and we introduce an online communication channel as a social communication feature. Our experiment replicated the established finding from the auction literature that inducing competition (by introducing rivalry among buyers) lowers buyer profits. But more importantly, we also tested for effects of social communication on task completion rate and the time to completion. Interestingly, and consistent with Ku et al. (2005) and Malhotra (2010) social communication actually reduced the efficiency of decision-making.

Importantly, though, we show that there are also significant interaction effects between competitive pressure and social communication that offset some of costs from competition with more efficient group coordination in terms of task completion rate and time to completion when buyers are competitively motivated. Our study contributes to the auction and e-commerce literatures. We show that while buyers under competitive pressure develop bidding behaviors that violate predictions of rational choice theory, buyers also obtain some benefits when they act as a cohesive group with communication capabilities.

2. THEORETICAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

We borrow from two streams of research to theoretically ground our study and develop specific hypotheses. For one, we use economics to theorize the relationship between buyer group size and surplus generated in the market. Second, we borrow from the decision making theory in psychology to theorize the effects of competitive arousal and use information systems work to theorize the effect of communication capability on group performance in terms of buyer profits, task completion, and time to completion. Research on competitive interaction has shown that time pressure is a critical driver for competitive arousal as it increases the need to make quick decisions and decreases the consideration of the consequences (Porter, 1980; Scherer & Ross, 1990). Therefore, all the hypotheses we develop below assume the presence of time pressure.

2.1 Impact on task completion rate

There is a long tradition in economics in studying competitive behavior, the competition for limited and contested resources. Generally, competition increases efficiency in market settings (Hirshleifer, 1978) Thus, we hypothesize:

- H1: Increasing competitive pressure in buyers in a group-buyer model will tend to reduce the failure rate for task completion.

2.2 Impact on buyer profits

While rational choice theory generally views competitive behavior as advantageous to the individual regarding the achievement of goals, behavioral research argues that competitively motivated individuals tend to abandon rationally determined (optimal) decision rules when emotional factors (like competitive feelings) are present, and this holds especially under time pressure when quick judgments and decisions need to be made and when outcomes depend on others' decisions as well. In those circumstances competitive behaviour can have negative consequences for the individual (Garcia et al, 2006; Guth et al, 1982). The desire to win can overpower original goals, which could have been based on utility maximization, and individuals may pay more than they initially planned and accept losses just to beat the opponents (Cox et al, 1992; Malhorta et al, 2008; Jones, 2011). Hence we theoretically predict the following.

- H2: Increasing competitive pressure in buyers will tend to reduce buyer profits.
- H3: Increasing competitive arousal in buyers will tend to reduce buyer profits more strongly in buyer groups with more peer buyers.

Recent research in social commerce also suggests that the social embeddedness of market transactions, like facilitating social interactions on a market platform, can mitigate the effects of competitive pressure (Malhorta 2010; Takac et al, 2011).

- H4: Increasing competitive arousal in buyers will tend to reduce buyer profits less strongly in buyer groups that have access to a communication channel where buyers can exchange private messages.

Pelaez et al. (2012) found that communication in group settings is most effective in smaller groups. In large groups cognitive demands on information processing can offset the benefits of having access to more information. Hence we propose the following.

- H5: Providing access to a communication channel where buyers can exchange private messages will save more profits in buyer groups with a smaller number of co-actors.

2.3 Impact on time to task completion

Researcher indicates that when people feel competitively pressured they tend to shift from focusing on original goals (e.g. profit maximization) to others like winning an auction and getting what they wanted in the first place. This effect is known as reversal of preferences, which can lead to a more aggressive pursuit of secondary goals (Bazerman et al, 1992). Hence we propose:

- H6: Increasing competitive arousal in buyers will tend to accelerate time to task completion.

However, Pelaez et al. (2012) found that offering more communication capabilities may distract users as they spend more time on exchanging messages, which can decrease the time to completing the set task. Their study also indicates that group size negatively affects group coordination. Thus, we predict the following two hypotheses.

- H7: Providing access to a communication channel where buyers can exchange private messages will tend to decelarate the time to task completion.
- H8: Increasing the number of peer buyers in groups will tend to decelerate the time to task completion.

Increasing social presence and facilitating more social interaction can heighten the effects of competitive pressure and increase dominant responses and improve task performance (Ku et al, 2005; Zajonc & Sales, 1966). Bigger social groups, exhibit this effect more strongly than smaller ones (Guerin, 1986). Hence, we posit the following.

- H9: Increasing competitive arousal in buyers will tend to speed up the time to completion more strongly in buyer groups with a higher number of co-actors.

Increasing communication capacity should allow buyers to share more information and should help them coordinate better with the peer members of their buyer group in comparison to groups without such a communication mechanism (Dennis et al, 2008). Enhanced communication should make it easier for groups to form and easier for them to complete their tasks. When individuals are competitively motivated and rely on others for achieving the desired outcome, more information and increased communication should result in more efficient group formation (Rusbult & van Lange, 2002). Thus, we expect that relationships form more readily in the presence of an additional communication channel.

- H10: Increasing competitive arousal in buyers will tend to accelerate the time to completion more strongly in buyer groups that have access to a communication channel where buyers can exchange private messages.

Finally, Chen et al. (2009) have shown that technology provides effective communication in intra-auction bidding clubs but coordination becomes more difficult as the member base increases. Hence, we similarly theorize the following.

- H11: Providing access to a communication channel where buyers can exchange private messages will slow down the time to task completion more strongly in buyer groups with a higher number of co-actors.

3. METHODOLOGY

3.1 Experimental design

We designed an economic experiment that created an electronic market in the laboratory where human subjects were asked to organize group purchases of a single product offered by a monopolistic seller. We adopted the basic experimental environment as discussed in Pelaez (2012). Each individual group buyer gets a private, pre-assigned value for the product. Consumer valuations, which define how much a product is worth to a buyer and thus how much they are willing to pay for it, vary across buyers. Each buyer needs to buy exactly one unit of the product. The subjects were recruited from an undergraduate student subject pool and were compensated with course credit. For the purpose of our specific study, we also had to make some important modifications and additions to the basic design which we describe next.

We used a 2×2×2 design in which we manipulated three variables at two levels, competitive pressure, group size (number of peer buyers), and social communication (presence of communication channel). In addition to competitive pressure, we further induced time pressure by limiting the auctions to two-and-a-half minutes each. This was held constant across all treatments. The specific time limit was determined after several rounds of pilot runs. This time window was sufficient for groups to complete their given tasks but short enough to make them feel that they needed to make decision quickly.

Competitive pressure (CP) was induced by creating rivalry. In one treatment (CP=no) a single group was present to negotiate bids with the seller. In another (CP=yes) two rival groups were created. Buyers could either place an opening bid (proposed purchasing price offered to the seller) or join an existing bid within the group. With competition, only the buyers who are willing and quick enough to join a common offer with an agreed bid price have the chance to become the actual buyers (if the bid is successful). For the groups without the competition, all buyers are in the same group, and therefore, there is no competition from a rival group.

Group size was represented by the number of peer buyers (GS) and social communication was introduced as a communication channel (CC). First, we compared the presence of a small number of peer buyers (GS=2) with the a larger number (GS=4). In other words, in the former treatment the buyer groups were of size two, and in the

latter groups were of size four. Our operationalization of large and small groups is similar to those in prior research [5, 21].

The third manipulation compared low with high communication capacity among buyers. At the high level (CC=yes) we included a communication channel as a feature on the buyer screen while no such communication channel was offered at the low level (CC=no). We implemented the communication channel with a standard communication box, similar to an Internet chat box, where buyers could post and receive private messages from their fellow group members.

3.2 Procedure

Each session consisted of groups with 1 seller and 2, 4 or 8 potential buyers. When coming to the lab, the subjects were randomly assigned to computer terminals with a seller screen for the seller and a buyer screen for the buyers. Once the participants were seated, they were asked to review a set of instructions [see Appendices 7.1 and 7.2] that provided information about the group buying mechanism and their assigned roles and tasks. Each session consisted of a practice period followed by ten additional periods, where buyers worked to organize group offers with the seller through bidding. Each round lasted two and a half minutes.

The buyer and seller tasks were similar in all eight treatments, except for the following important differences. In the treatments with communication channel buyers could use a chat box to exchange private messages, which was not available in treatments without the communication channel. The manipulation of group size changes the number of other buyers required for a group, but it did not affect the interface of the buyer screens or their principle tasks. In treatments without competition, participants were assigned to a group before the round. In treatments with competition rival groups were created dynamically and buyers could join and switch groups depending on currently posted bids.

Buyers could increase their joint offer or join a different offer if their bid was not accepted. The buyer screen was more complex. First, it showed them the assigned valuation of the product. Each buyer had a unique, private product valuation that was randomly selected from a uniform distribution (25,100). To reduce the potential for learning effects, the product valuation values were rotated every period. Bids could only be changed in one dollar increments. Once bids were placed, the other buyers could "join" the bid if the bid price was below their product value, thus preventing overbidding. Once the requisite number of buyers joined, group formation occurred and the bid would be submitted to the seller (task completion).

In the treatments with competition, buyers could join any bid, thus allowing for dynamically forming groups. E.g., a buyer could choose a bid for 25, but then decide to join another offer at 23, created by a different group of participants. By allowing buyers to join different offers, we establish competition and rivalry between buyers. The interface only tells the buyer the number of buyers in the group but it doesn't indicate who the other buyers are. In the treatment with a private communication channel buyers were able to exchange messages via an instant message type of communication box. There were no limitations on the kind of information buyers could exchange.

The tasks and interface for the seller remained basically unchanged across treatments. The seller only saw the bids once a group formed and made a joint offer. The seller's screen showed the bid price, the number of people who joined in the bid and the total amount of the offer. The seller then had the opportunity to accept the bid, terminating the current session, or to do nothing and leave the bid active, thus allowing time for other bids to form. Sellers only saw the highest bid that meets the requisite number of buyers, therefore, only one bid at a time was visible to the sellers at any given time in the experiment.

When a transaction occurred, that is, when a seller accepted an offer from the buyer group, both the seller's profit and buyer's profit were calculated and shown to the participants. Buyer profits (buyer surplus) were computed for each buyer as product valuation minus transaction price, that is, the difference between the worth of the product to the buyer and what she paid for it. No profits were earned by anyone when a round ended with no bids being accepted. The cumulative profit over all ten periods was used to compare how each buyer performed in the experiment.

3.3 Experimental variables

In Table 1, we summarize our independent, dependent, and control variables that we modeled for our experiment.

IV	Competitive Pressure (CP = no, yes); Communication Capacity (CC = no, yes) Group Size (GS = 2 or 4)
DV	Buyer Profit task completion rate (completing purchase) time to task completion
CV	Experimental Periods (P1, P2, …, P10 = 0 or 1)

Table 1. Experimental variables

4. DATA ANALYSIS

4.1 Descriptive analysis

The experiment was done out with 77 groups. A group included one seller and, depending on the treatment, two, four or eight potential buyers. Data were collected from each group over 10 repeated rounds of group buying, for a total of 770 rounds of bidding. The experiment represents a 2x2x2 design with repeated measures.

Out of the 770 rounds, task completion occurred in 573. Those bids were successful and accepted by a seller, yielding a 74.5% success rate. Table 2 shows the number of successful bids and the groups that generated them. Manipulating the three treatment variables competitive pressure (CP), group size (GS), and presence of communication channel (CC) at two levels each yields a total of eight treatments.

#bids (#groups)		Communication Channel	
		CC=yes	CC=no
CP=no	GS=2	85 (11)	94 (13)
	GS=4	75 (12)	42 (8)
CP=yes	GS=2	69 (8)	68 (8)
	GS=4	70 (8)	70 (8)

Table 2. Successful task completion

We offer a summary of our descriptive analysis regarding the group bidding activities and outcomes in table 3. We removed the rounds that ended without producing a joint group bid from the correlation analysis because for unsuccessful group biddings task completion could not occur and hence time to completion could not be measured. We then conducted a nonparametric Spearman's rho correlation analysis (which is summarized in table 4) to investigate the correlations between the three main treatments and the two dependent variables, buyer profit and time to task completion (successful group offer coordinated and submitted to seller). The correlation analysis shows that competitive pressure is positively correlated with both buyer profit and the time for task completion, and both correlations are significant at the 0.01 level. The group size is positively correlated with the time for task completion, and the correlation is significant at the 0.05 level.

		# Bid	Buyer Profit		Time to Completion	
			Mean	SD	Mean	SD
CP	no	296	43.1	13.5	23.2	22.7
	yes	277	36.7	12.9	9.4	5.5
CC	No	299	40.1	14.1	15.2	14.4
	Yes	274	39.9	12.9	18.0	21.5
ACT	Small	316	40.6	15.2	14.3	14.2
	Large	257	39.3	11.2	19.3	21.7
Grand Total		573	40.0	13.6	16.5	18.1

Table 3: Descriptive Statistics

	Profit	Time	Period	CPT	CM
Profit					
Time	-.084*				
Period	-.061	-.210**			
CPT	-.231**	-.504**	-.033		
CM	-.009	.056	.018	.039	
GS	-.046	.104*	.032	.111**	-.077

Table 4. Correlations

4.2 Hypothesis testing

4.2.1 Main test 1—Logistic regression.

When rival groups were created, increasing competitive arousal, the failure rate, *p*, for successfully completing the task of making a joint group offer significantly decreased from 0.342 when competitive pressure was low to 0.134 when it was high. The odds ratio of competition arousal (0 /1) is 0.298.

- Odds ratio = [p0/(1- p0)]/[p1/(1- p1)]

A simple logistic regression test shows that introducing competition pressure can significantly reduce the failure rate for completing the task (table 5). This supports H1.

	B	S.E.	Wald	df	Sig.	Odds Ratio
CA	-1.19	.19	37.82	1	.00	.30
α	1.86	.16	129.16	1	.00	6.44
pseudo R-squares: Cox & Snell R Square=0.056 Nagelkerke R Square=0.082						

Table 5. Logistic regression

The unsuccessful bidding attempts were excluded from the remaining analysis, yielding an unequal sample size for our 2×2×2 design with repeated measures. To control the effect of repeated measures for the unequal sample size, we applied two sets of statistical examinations, a multiple linear regressions as the main test, followed by a mixed model analysis with maximum likelihood estimation as a robustness test.

4.2.2 Main test 2—multiple linear regression.

We used dummy coding to convert the categorical variables competitive pressure (CP), group size (GS) and communication capacity (CC) into dichotomous variables. More specifically, for the treatment with smaller group size GS was coded as "0", and for the larger group treatments (group size of four) GS="1". Similarly, for the treatment without the availability of a communication channel CC was coded as "0", and with communication channel CC="1"; and for the treatment without competitive pressure, CP was coded as "0", and with competitive pressure, CP was "1". Additional dummy variables were generated to indicate the experimental periods. Two

different regression tests were conducted separately to analyze the proposed hypotheses about the two dependent variables (buyer) profit and on time (for task completion).

We show the results of the two separate test combined, in table 6. We did one test for buyer profits, aggregated across buyers and rounds, and another for time for task completion. In order to examine the contribution of main effects and interaction effects, we applied a hierarchical multiple linear regression in three stages (indicated as models 1, 2, and 3). We aslo added the control variable to account for possible effects from the experimental periods. Again, the main effects were from competition, communication, and group size, and we considered additionally three two-way interaction effects. The 9 dummy variables, P1 through P9 are included in the test in order to control the effect of repeated measurement (round effects). The coefficients of P1 through P9 indicate the differences in profit or time between a specific period and the remaining reference period 10. By statistically controlling for the effects of repeated measures, we obtain more valid results regarding the treatment effects in the experiment.

	Model 1		Model 2		Model 3	
	Profit	Time	Profit	Time	Profit	Time
α	34.9**	15.3**	38.4**	17.6**	39.9**	13.9**
P1	.4	10.5**	.1	10.6**	-.0	11.2**
P2	7.0**	1.7	7.0**	2.4	7.0**	3.2
P3	9.2**	3.2	9.2**	3.7	9.1**	4.6
P4	4.2†	-.8	4.3†	-.1	4.3†	.5
P5	4.3†	-.3	3.9†	-.5	3.7	.2
P6	11.4**	.1	10.9**	-.5	10.9**	-.5
P7	12.1**	.7	11.6**	.1	11.7**	.3
P8	3.2	-1.9	2.8	-2.7	2.7	-2.2
P9	-.7	-2.1	-1.3	-3.1	-1.3	-2.4
CP			-6.3**	-15.0**	-9.9**	-5.0*
CC			-.1	4.1**	-2.8†	6.0**
GS			-.4	7.1**	-.1	10.8**
CP*CC					7.3**	-9.3**
CP*ACT					.6	-13.3**
CC*GS					-2.1	7.2**
ΔR^2-Profit	.111		.055		.017	
ΔR^2-Time		.038		.196		.049

Table 6. Multiple linear regression with Unstandardized coefficients.

†. significant at the 0.1 level (2-tailed). *. significant at the 0.05 level (2-tailed).

**. significant at the 0.01 level (2-tailed).

4.2.3 Buyer profit (H2 – H5).

Regarding buyer profit, the only significant main effect is from the competition mechanism, which manipulated competitive pressure. The only significant two-way interaction effect is contributed by competition mechanism and communication. The results in "Model 2" show that the buyer profit of the groups with competitive pressure is $6.3 less than the buyer profit of the groups without it, which is significant at the 0.01 level, and which

contributes 5.5% of explanatory power. In other words, introducing competitive pressure among buyers reduces buyer profits, benefiting the seller. This result supports H2.

The results in "Model 3" show that the interaction of competition and communication are positively related to group profit (at 0.01 level), contributing 1.7% of explanatory power. Figure 1 illustrates the interaction effects of competition and communication on group profit. Introducing competition, we observed the expected profit loss, but we also found that making a communication channel available to buyers plays a positive role in mitigating the profit loss that results from the competitive pressure. This supports H4. Our hypotheses H3 and H5, on the other hand, were not supported.

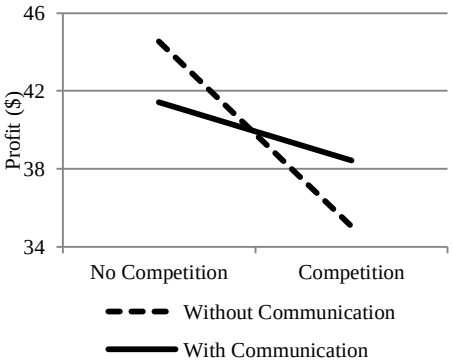

Figure 1. Interaction effects of competition and communication on buyer profit

4.2.4 Time to Task Completion (H6 – H11)

With regard to time for task completion, all three proposed main effects are significant, supporting H6-H8. According to the results in Model 2, competitive pressure reduces the time to task completion, making a group purchase, making it about 15 seconds faster (significant at the 0.01 level). Making a communication channel available to buyers slows the time for task competion down by about 4 seconds while increasing the size of the group slows it down by about 7 seconds (both effects are significant at the 0.01 level). The three main effects together contribute 19.6% of predictive power.

The two-way interaction effects of competition and communication and those of competition and group size are negatively significant at the 0.01 level. The interaction effects of communication level and group size are significantly positive at the 0.01 level. These two-way-interaction effects together contribute 4.9% of explanatory power. These results support hypotheses H9 to H11.

Our results indicate that competition can reduce the time for task completion and that offering communication channels can significantly enhance this effect. The interaction effects of competitive pressure and group size indicate that competitive motivation helps groups with peer buyers to become more efficient than groups with fewer (figure 3). The interaction effects of communication level and group size indicates that the two treatments could reinforce each other in slowing down the time for task completion.

Finally, we also report that the three-way interaction, CP*GS*CC, was also statistically significant, but because of the general complexity of three-way interactions we refrain from attempting to offer a theoretical explanation for the effect in this paper.

4.2.5 Robustness tests.

To check the robustness of the main tests, we also conducted a mixed model analysis on the two dependent variables. The test results for the two dependent variables, were highly consistent with the results of the main test.

5. ROLE OF THE SOCIAL COMMUNICAITON CHANNEL

To put the role of communication channels under closer scrutiny, we performed some additional analysis, through which we will find out who the most motivated users of the information sharing tools were, and how different types of information sharing affect group performance differently.

We had a total of 370 bidding rounds with a communication box, among which only 299 rounds successfully made a transaction. Among these 370 rounds, only in 208 rounds did the buyers choose to use the communication channels. These buyers posted a total of 1606 messages, while the others did not post any messages. To count the average message posted differentiated by level of willingness-to-pay (WTP), successfulness, and competition, we plotted the column chart, shown as figure 5. It suggests, first, that posting messages does not guarantee the success of bidding, and in fact in failed rounds buyers tend to post more messages on average. Second, under competitive pressure, buyers tend to post less than the buyers without competitive pressure. And third, the groups with low WTP tend to post more messages than those with higher WTP values.

The high failure rate for the group sharing more messages suggests that inappropriate usage of communication tool will result in substantial information overload, which might compromise the ongoing bidding process. The fact that the groups under competition tend to share less information among group members might imply that competition created the tension among buyers and induced the lower level of trust within group. Consequently, buyers in a group without enough trust tend to share less information than in the group with high trust. For the groups with different levels of WTP, we conjecture that low WTP will induce higher level of perceived uncertainty of the group buying market, which in turn will motivate buyers to search and share information in order to reduce the uncertainty and make better decision.

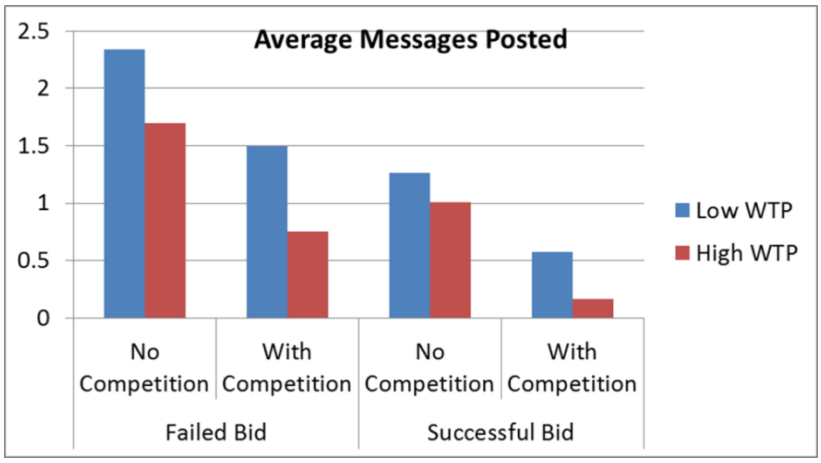

Figure 5. Message Data Summary.

6. CONCLUSIONS

This study has a number of limitations. While the experimental design was tested in some early pilot tests and subsequently refined and improved several times, a number of potential design limitations became only apparent after data collection had been under way or completed. The following are the most critical ones. (1) Level of time pressure was held constant across all treatments. Manipulating time pressure could yield additional insights on the

effects of competitive arousal (2) The bidding mechanism that was implemented (bid changes in one dollar increments only) may have complicated price negotiation among buyers in case where the valuation spreads were high. (3) A small, linear time cost was incurred to buyers and sellers in each round that may have had an effect on some bidding decisions. (4) Participants were compensated with course credit, which may not have been sufficient to induce economic behavior in every case. (5) The experiment only implemented one specific type of (buyer-initiated) group-buying model, which limits generalization beyond this particular model. (6) It is unclear how robust our results are with respect to changes in the pre-assigned demand schedules (product valuations) for the buyers. (7) We did not analyze seller data in the present study. Finally, (8), as with all experimental work, we need to be cautious to generalize the results from a single study done in a simplified laboratory setting to the much richer and more complex real world setting (of electronic group buying markets).

Our study contributes a novel approach of employing methods from experimental economics for the purpose of designing and evaluation electronic market mechanism and platform designs and applied it to an example case from electronic commerce, using a bidding mechanism in an electronic group buying setting as a specific example. The study also offers an elaboration on Ku et al.'s (2005) competitive arousal model for decision making. We offer two novel features, the setting of a group-decision making problem the addition of communication level as an antecedent. The present research adds to our understanding of group decision-making under pressure by considering the mitigating effects of offering communication capabilities on decision outcomes. Finally, the study has also some practical implications for designers of group buying platforms and operators of group buying sites. Our findings suggest that introducing competition among buyers and offering communication tools that support group coordination can help speeding up inventory turnover and also help to protect profit margins for sellers. We also suggest that group size matters and needs to be determined carefully, depending on the levels of competition and communication support.

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