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EXAMINING EFFECTIVENESS OF PARTITIONED-PRICING STRATEGIES AND ITS TRANSPARENCY IN ONLINE AUCTION MARKETPLACES

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ABSTRACT

The current study offers insights into how a pricing strategy called partitioned pricing and its transparency can influence auction success variables. In the online auction environment, auction sellers have to make several surcharge decisions such as whether or not to omit surcharge information from their auction listings or how much the surcharge should be, etc. We found that auctions that did not provide surcharge information generally received lower final prices. This lack of surcharge information transparency however did not affect number of bids. We also found that, contrary to the traditional wisdom in the area of partitioned-pricing, online bidders can accurately adjust their bids according to an auction's surcharge amount. In addition, we found that the strategy of charging a higher S&H surcharge in an attempt to avoid commission fees did not help promote auction sellers' revenue, nor the number of bids. Practical guidelines are later offered in the study.

Keywords: Online Auctions, Price Transparency, Partitioned Pricing, Surcharges, ANCOVA

INTRODUCTION

In the past few decades, business researchers have rigorously studied the change in online pricing strategies through information technology (IT) (e.g. [3, 5, 6, 11, 29, 38]). Pricing is a complex task that involves decision-making at both strategic and operational levels. One aspect of pricing strategies is to decide how transparent a marketplace should be regarding its pricing policy and practices. Transparency of electronic markets, its benefits, and drawbacks have recently become an emerging research topic in e-business research. The growing interest in this research domain is largely driven

by the use of Internet technologies to promote market transparency. Most believe that IT, for the most part, will push markets across different industries to be more transparent which will in turn lower product prices [3].

A recent study however found that IT alone does not explain the transparency movement in electronic marketplaces [13]. The study pointed out that different industries are experiencing different paces of such a transparency movement. Despite such findings, many researchers seem to agree that online buyers enjoy benefits from market information transparency (e.g. product and shopping process transparency) [8], while online sellers generally benefit from an opaque market

where information asymmetries exist among buyers (e.g. [38, 50]).

Although many researchers claim that online sellers are by and large more partial toward electronic marketplaces with less price transparency [38, 50], we argue that online sellers can at times benefit from improved price transparency. To the best of our knowledge, no empirical evidence of price transparency benefits incurring to the sellers – at least in financial forms – is offered by prior literature. The first goal of our study is therefore to offer just that by investigating how transparency of price information can affect online auction success factors (auction prices and number of bids).

To demonstrate some benefits of price transparency to online sellers, the current study applies the information transparency concept to a pricing strategy called partitioned pricing – a strategy that divides prices into at least two components, including a base price and surcharges. Although partitioned pricing was used by businesses before the emergence of the Internet, one may argue that the continued popularity of E-Commerce has exposed partitioned prices, especially shipping and handling fees (S&H), to a larger consumer body. Despite its popularity, it seems rather unclear how online bidders process such information – which has become the second goal of this study.

In short, the prime objectives in this study are 1) to investigate the role of price transparency on online auction success factors and 2) to investigate how S&H surcharges help shape online auction success. Four online auction success factors were identified, including number of bids, final prices, total prices, and net prices. Our results showed that while surcharge information transparency does not help promote the number of bids, it helps increase auction final price (winning bids). We also found that online bidders can accurately adjust their bids according to S&H surcharges. Auction total prices are generally the same, regardless of their S&H surcharges. These findings indicate a negative influence of S&H surcharges on auction final prices and an insignificant relationship between S&H surcharges and auction total prices. Auction sellers therefore cannot easily generate higher revenues (net prices) by manipulating the amount of S&H surcharges. The impact of S&H surcharge on the number of bids that an auction received was not observed. Theoretical and practical implications are offered at the end of the study.

THEORY DEVELOPMENT AND RESEARCH HYPOTHESES

Transparency in Price Information and Its Impacts on Online Auction Marketplace

Transparency of information refers to visibility of information, information flows, accuracy, completeness, and the ability to observe transactions [13, 21, 39]. It embraces the extent to which information regarding the trading process is disseminated among market agents through the trading mechanism [21]. Information transparency, such as clarity of product information, can reduce market inefficiencies through reduced buyer's perceived uncertainty and their needs to monitor transactions [8].

In the business context, information transparency has often been applied to the pricing concept. In general, price transparency is defined as “the degree to which market participants know the prevailing prices and characteristics or attributes of goods or services on offer” [11]. Others define price transparency as the degree to which consumers clearly and easily understand a company's or item's price [33]. Price transparency has been found to correspond positively with consumers' overall rating of price satisfaction [32, 33]. In a series of studies, Matzler and his colleagues found that students and bank customers' rating of price transparency help predict their overall price satisfaction rating [32, 33]. Pricing failure was reported as an element of service failure found in the online auction business and it was considered a relatively severe problem when compared to other types of failures [24].

E-marketplace generally has been believed to increase price transparency which in turn induces lower prices of products and services [13, 50]. Its benefits have been assumed to be mostly on the buyer side. Some of the benefits are lower search costs, increases in the purchase values, and lower product prices [13]. As a result, online merchants are generally claimed to favor low transparency in prices [50] while consumers generally prefer otherwise [13].

With their preference for a market with low price transparency, several online merchants raise their prices marginally so that consumers will have a difficult time to track and find the true prices [38]. This effort is one example of strategies that online sellers adopt to produce information asymmetry among informed and uninformed buyers [31]. Oh and Lucas suggested that price opaqueness may benefit online sellers only for a short time [38]. Marketplaces with price opaqueness generally

have to offer incentives for consumers to offset the unclear information [50].

Soh and her colleagues argue that electronic marketplaces currently tend to offer a market environment that promotes price transparency [50]. It is important to note that while these marketplaces provide their buyers and sellers with IT functions that enable price transparency (e.g. bid history in auction markets), the participants, such as their sellers, may neglect or choose not to fully utilize these functions. It is imperative for a firm to align their business activities with their value propositions in order to enhance their bottom-line [50]. When online sellers attempt to conceal their price information in a price transparent market, their performance (i.e. revenues) can suffer [50].

An example of a situation where sellers choose not to clearly reveal price information to their buyers can be found when partitioned-pricing strategy is employed. With the exorbitant growth of sales in electronic markets, businesses and researchers have recently directed their attention to developing several pricing strategies that help maximize gains for businesses (e.g. [7, 27, 28, 51]). Partitioned pricing is a pricing strategy that divides prices into multiple components. When there are two price components, the price component that directly relates to the item being sold is referred to as the base price and the other price component is referred to as the surcharge. Surcharges come in many forms such as taxes, transaction fees, etc. Shipping and handling fees (S&H) are perhaps the most prevalent form of surcharge found in the online shopping environment.

In general, surcharge information is provided to consumers in a separate location from the base price. McDowell posited that not providing surcharge information in a salient format can mislead consumers [34]. It is at times regarded as unethical when businesses attempt to hide surcharge information by using fine print or presenting surcharge information temporally distant from the base price [35]. Such practices drive our study to explore the role of surcharge information transparency in the online auction environment.

In this section, we investigate the impact of price transparency on two auction success factors, the number of bids and auction final price (the final winning bid). Later in the study, two additional auction success factors, total price (total cost of purchase incurring to the auction winner which includes final price and S&H fee) and net price (total amount received by the sellers after commission fee), will be included in the analysis. We argue that including four auction success factors, especially the three auction prices, provides a fuller description of auction performance than including only

one factor. While the number of bids and final prices have repeatedly been used to measure auction success in prior research [12], total price and net price have rarely been studied. Cheema investigated the impact of seller's reputation on auction final price and total price, and encouraged future research to examine auction net price [9]. By incorporating these auction success factors into our analysis, we hope to provide more comprehensive insight into how sellers' surcharge strategies can affect different members in the online auction marketplace.

Our study proposes that surcharge information transparency can affect number of bids and auction final prices. We argue that sellers who clearly indicate their surcharge information can draw more attention from bidders in online auction marketplaces. In the online auction platform, it is common that buyers will find base price at a separate location from surcharges [25]. Several online auctioneers such as eBay and Amazon auctions however decidedly promote surcharge information transparency by providing a template for sellers to enter their S&H information. Despite such an effort, some sellers omit surcharge information either on purpose or by accident.

The omission of surcharge information from the auction listing page can cause consumers to attach a higher risk to the transaction and lower their trust in the seller [36]. Munger and Grewal stated that the clarity of price structure presented by an online merchant can promote consumer's perceived value and trust in sellers [36]. When experiencing higher surcharge information transparency, consumers/bidders can develop a better understanding of and reasons for the surcharges, positively influencing purchase intention [48]. With such support from previous studies, we propose the following hypotheses:

- H1: The presence of surcharge information will increase number of bids.*
H2: The presence of surcharge information will increase auction final prices.

Sellers' Strategies and Reputations as Covariates

Besides information transparency, previous research in the online auction domain suggested other factors that can affect auction successes. To fully examine the role of surcharge information transparency, we argue that sellers' reputations and strategies should be taken into account. Among several sellers' strategies, setting a low opening bid is one of the avenues that auction sellers employ to attract bidders [19]. It was purported that lower

opening bids can draw a larger group of bidders [42]. Numerous online auction studies have found a negative relationship between an auction's opening bid and the number of bids that an auction receives [42]. Sellers who are more risk averse can however set their opening bids higher to have a guarantee of higher auction final prices [16]. Our study however focuses on commodity auctions that allow us to rule out the signaling effects and investigate the negative relationship between opening bids and final prices.

In addition to the sellers' strategies, there is a constellation of works in the area of how sellers' reputation affects auction success [19]. Several online auction marketplaces such as eBay provide their users with a feedback/reputation system that allows their members to leave feedback scores to indicate their experiences with sellers and/or buyers. It is important to note that when sellers and buyers do not have a personal relationship, sellers' reputation is an important element that engenders trust to buyers [53]. Previous studies found that less than one percent of feedback left by eBay users is negative [14, 40]. This negative feedback can however be a good indicator of seller's future performance [14]. In addition, research has found that sellers with higher reputations draw more bidders and receive higher price premiums [20]. Such sellers were reported to receive an average 7.6% price premium when compared to sellers with minimal feedback scores [41].

In the light of partitioned pricing research, very few studies have investigated how seller's strategies and reputations work in conjunction with S&H surcharge strategies. Among these few studies, Hossain and Morgan reported that when setting high S&H costs with low opening bids, sellers can draw a larger number of bidders and gain higher revenues as long as the S&H fees are not excessive [18]. Conversely Cheema did not find a significant effect of surcharge on total price for low-reputation sellers but discovered an opposite result for medium and high reputation sellers [9]. The above discussion suggests that our previous hypotheses should be further augmented by incorporating the auction seller's strategy and reputation. Hence, we propose:

H3: The presence of surcharge information will increase number of bids, regardless of the sellers' strategies and reputations.

H4: The presence of surcharge information will increase auction final prices, regardless of the sellers' strategies and reputations.

How Bidders/Consumers Process Surcharges Information

The above hypotheses attempt to test the impact of surcharge information transparency on online auction success factors. Another prime objective of this study is to revisit the affect of surcharges on buyer's decision-making. When auction sellers choose to provide S&H information, they have to decide how much the S&H surcharges will be. Our study endeavors to examine the impact of S&H on auction success factors when surcharge information is clearly presented to bidders. Several theoretical frameworks have been proposed to study how consumers process surcharge information. One of which is the use of a cost-benefit framework [4, 22, 47] by Morwitz and her colleagues [35]. This framework posits that consumers can adopt one of three strategies to process surcharge information. These strategies include a) calculating a total cost as the mathematical sum of the base price and the surcharge b) using a heuristic to combine the base price and surcharge and c) ignoring the surcharge to reduce their cognitive effort.

Sheng et al. suggested that when a surcharge is low relative to a base price (e.g., ten percent), consumers do not view the surcharge as an impediment to viewing an offer favorably [45]. By contrast, when the surcharge is high relative to a base price (e.g. 50 percent), consumers view the surcharge negatively, rendering an adverse effect on their perception of the offer [45]. A more recent study, however, seems to contradict this finding. Clark and Ward examined the relationship between the shipping price listed in an auction and the auction's winning bid [10]. They found that shipping price and winning bid were not significantly related. It is however important to note that the surcharge amounts in their study was relatively small, ranging from US\$0.55 to US\$4.20.

Despite the above findings, traditional wisdom in this domain suggests that separating surcharges from the base price would increase consumers' demand since they are likely to underestimate their recalled total cost by either using heuristics or simply ignoring the surcharges. It is worth noting that a majority of previous research in this area was conducted in experimental settings where consumers cannot revisit the published base price and surcharges [35, 44]. Such a notion can however be challenged when partitioned-pricing strategies are implemented in an online auction context. Hou and Blodgett argued that there exists many inconclusive evidence of how online auction prices are formed [19].

Kim posited that consumers' price perceptions in the Internet environment are more stimulus-driven than recalled-driven [23]. Consumer's perception of price

saving was claimed to be an influential factor that shape their satisfaction [26]. It was further said that errors in consumers' total price recall can be reduced when consumers engage in stimulus-driven price situation [23]. With the stimulus-driven nature of consumers' online price perception, one can expect that online bidders will adjust their bids according to the S&H amounts, rendering an insignificant relationship between surcharge amount and auction total price. This expectation can be further supported by the fact that online bidders can acquire more external reference prices on their own.

In the online auction setting, online bidders can navigate auction sites to find more information of S&H surcharges offered by different sellers. They can additionally enter different auctions into their watch list for future reference. Many online auction marketplaces offer a knowledge repository function where users/bidders can search for past/ended auctions. Such a function allows bidders to be equipped with more information and use the information as external price references to devise their bidding strategies. In other words, we argue that bidders in online auction marketplaces can engage in a more precise calculation of transaction total cost than buyers in traditional marketplace. They can use price and surcharge information found in other ongoing and past auctions as external reference prices.

S&H surcharges in several online auction websites, when available, are generally presented temporally close to the auction current price (See eBay for an example). This web design practice ties closely to the transparency concept discussed earlier. When the S&H surcharge information is presented in a clear manner, the transparency of external reference prices is enhanced. With such readily available S&H information on online auction sites, it is more difficult for consumers to adopt heuristics and/or to ignore S&H surcharges, facilitating an accurate calculation of total cost as the mathematical sum of the base price and the surcharge. Hence, we can expect that bidders will adjust their bids and participation according to the S&H surcharges and auctions with higher S&H surcharges should receive lower winning bids.

Another stream of research provides support for the argument above. It was postulated that the majority of online consumers conduct intentional searches for product/price information when shopping online by visiting websites that help them more easily engage in comparison shopping [46]. Cheema [9] suggested that consumers may pay more attention to S&H surcharges than traditional research has estimated. A recent study indicated that 46% of consumers interviewed named shipping costs as the biggest factor discouraging online purchases [52]. The effect of S&H surcharges was twice

as strong as that of the base price in online book shopping environments [49].

This emerging research all points in the same direction - online buyers are more sophisticated and likely to perform a more accurate summation of base price and surcharges. Hence, we expect a negative relationship between S&H surcharge and auction final prices. Auction total prices and net prices should however remain stable, despite the S&H amount. We also propose that auctions with lower S&H surcharges will draw more participation than those with higher S&H amounts. We adopt this proposal and incorporate it into the previous online auction success model.

After reviewing different online auction success models (e.g. [2, 12, 30]), we decided to adopt and adapt the model proposed by Ba and Palvou [2] as our base model. Their model used auction price premium as a dependent variable and employed sellers' positive and negative feedback scores, discussed in the earlier section, as independent variables. We further enhanced their models by including S&H surcharge and an auction's opening bid as additional independent variables and tested our model with four different auction success factors as dependent variables. We used sellers' strategies and reputation variables as control variables. Thus, we propose:

H5: S&H surcharges are negatively associated with the number of bids an auction receives.

H6: S&H surcharges are negatively associated with auction final prices.

H7: S&H surcharges do not have a significant association with auction total prices.

H8: S&H surcharges do not have a significant association with auction net prices.

RESEARCH METHOD

This study is a part of a larger project conducted on a global scope. We adopted a field study as our underlying methodology. To test the proposed hypotheses, data from eBay websites were collected. Two spider programs were developed to automatically collect data from eBay auction websites. The first program helped find new auction listings that fit a provided keyword by searching auction websites every two hours. Once the program found matching auction items, it downloaded and stored the auction listing information in HTML format on an SQL server database. Information such as listing number, start date, start time, end date, and end time were later extracted and kept in the database. The other program used the extracted information to monitor the

websites and downloaded additional information such as sellers' feedback scores, final price, etc after the auction ended, providing us with accurate and almost real-time information.

Online auction data of new identical iPod Nanos were collected over a two-month period, producing an initial sample size of 2,745. We chose this product mainly because electronics are one of most popular product categories on eBay. Data cleaning was then undertaken. The cleaning process helped filter out 1,126 auctions, rendering an immediate sample of 1,619. The majority of the auctions that were eliminated were auctions in which used iPods, iPod accessories, bundled items, and non-iPod products etc were being sold. The 1,619 auctions were derived from two eBay websites, the U.K. eBay website (445) and the U.S. eBay website (1,174). Upon closer examination, we found that only among the U.K. samples were there a sufficient number of auctions that did not have shipping fee information and a majority of these samples were 3-day auctions. Thus, we limited our attention to only 3-day auctions to ensure a fair comparison in our data analysis. Focusing only on 3-day auctions had two implications. First, it reduced the number of control variables in our base model. Second, it further reduced our sample size. Thus, the final sample includes a total of 525 auctions (201 U.K. and 324 U.S. auctions).

In the data preparation process, we followed the guidelines of Ba and Palvou [2] and performed a log transformation on sellers' feedback scores. Opening bids also underwent a log transformation as suggested by other online auction researchers [30]. Auction final prices were the final bids made by the auction winners in each auction. It was directly retrieved from the HTML files. Auction total prices are the sum of the auction final prices and S&H fees. To calculate the auction net prices, we deducted commission fees from the auction total prices. Using the fee schedule provided on eBay, two commission fees were included in the calculation process - a listing fee and a final value fee. It is important to note that eBay calculates its final value fees based on the winning bid amount and it excludes S&H surcharges from this calculation process. The data was later migrated from the SQL Server database to an SPSS file for analysis.

DATA ANALYSIS AND FINDINGS

The current study employed two sets of data (U.K. and U.S.) to test the two sets of hypotheses. The first set of hypotheses (H1 – H4) addressed the impact of

information transparency on online auction success factors. The U.K. sample was used to test this group of hypotheses mainly because it had a sufficient number of auctions with no S&H information. Conversely a majority of the U.S. sellers (99.2%) provided S&H information. Thus, we decided to use the U.S. sample to test the second set of hypotheses (H5- H8). Only 48.75 % of the U.K. auctions listed their S&H information (103 out of 201 auctions).

An ANOVA test was performed to test H1 and H2. It is important to note that only the number of bids and auction final price were included in this analysis. Total price and net price were not included due to the lack of the S&H information in some of the auctions. They cannot be calculated with the S&H fee information. The ANOVA test revealed that S&H information transparency did not affect the number of bids ($p = 0.33$). Auctions with S&H surcharge information had 19.29 bids on average while auctions that did not have S&H surcharge information had an average of 18.15 bids.

Another ANOVA test revealed a different story. It showed that auctions with clear S&H information had significantly higher final prices ($p = 0.00$). We found an average final price of £ 84.67 and £ 77.22 in the auctions with and without S&H surcharge information, respectively. It is important to note that the final prices of auctions with S&H surcharge transparency were £ 7.45 (on average) higher than those without S&H surcharge information. This result confirms the important role of information transparency in the online auction environment and renders support for H2.

In the subsequent analysis, sellers' strategy and reputation variables were included as covariates in an ANCOVA test. The purpose of including sellers' strategy and reputation variables in the analysis is to ensure the results found in H1 and H2. Testing H3 revealed that the opening bid is a significant factor in shaping the number of bids an auction receives. The H4 result also confirmed that the difference found earlier in H2 stemmed from the difference in S&H information transparency. Adding the sellers' strategy and reputation into the analysis enlarged the gap in average auction final price between the two samples. The difference in average final price between the two groups increased from £ 7.45 (9.64%) to £ 10.42 (13.49%). We further conducted a test of homogeneity of regression and found that our data did not violate the assumption of parallelism in ANCOVA ($p > 0.10$). A summary of the hypothesis testing results is provided in Table 1.

Table 1: Summary of Hypothesis Testing

Hypotheses	Test	p-Values	Beta of S&H	Interpretation
H1:	ANOVA	0.33	n/a	<i>Not Supported</i>
H2:	ANOVA	0.00**	n/a	Supported
H3:	ANCOVA	0.16	n/a	<i>Not Supported</i>
H4:	ANCOVA	0.00**	n/a	Supported
H5:	Regression	0.00**	-0.02	<i>Not Supported</i>
H6:	Regression	0.00**	-0.19	Supported
H7:	Regression	0.00**	-0.01	Supported
H8:	Regression	0.00**	-0.04	Supported

**Significant at $p \leq 0.05$

The results described above showed that S&H surcharge transparency has significant impact on auction final prices but not on the number of bids that an auction receives. The current research also strived to examine how S&H surcharges work in conjunction with other auction variables. Four regression models were developed and each was used to explain different auction success variables. The four regression models were augmented versions of the model proposed by Ba and Palvou [2]. A summary of the regression results is provided in Table 1 and Table 2.

The results of the regression analyses revealed interesting insights into the role of S&H surcharges. All

four regression models were significant ($p = 0.00$) with F values ranging from 14.80 to 46.62 and R^2 values ranging from 0.16 to 0.37. We found that all the proposed variables had significant effects on the number of bids that auctions received, except S&H surcharges. This result is consistent with the findings in H1 and H3. Of the three significant factors, the opening bid had the strongest effect (See H5 in Table 2). The opening bid however did not play a significant role in shaping the other three auction success variables (final prices, total prices, and net prices). It is interesting to observe that sellers' reputations (positive and negative feedback scores) had significant effects on all four auction success variables.

Table 2: Summary of Regression Analysis

Dependent Variables	F Values	R^2	Independent Variables	Beta	p-values
H5: Number of Bids	46.62	0.37	Ln (Opening Bids)	- 0.50	0.00**
			Ln (Feedback +1)	0.26	0.00**
			Ln (Negative Score +1)	- 0.10	0.05**
			Shipping	- 0.02	0.61
H6: Final Prices	16.29	0.17	Ln (Opening Bids)	- 0.01	0.83
			Ln (Feedback +1)	0.45	0.00**
			Ln (Negative Score +1)	- 0.21	0.00**
			Shipping	- 0.19	0.00**
H7: Total Prices	14.80	0.16	Ln (Opening Bids)	- 0.01	0.83
			Ln (Feedback +1)	0.45	0.00**
			Ln (Negative Score +1)	- 0.21	0.00**
			Shipping	- 0.01	0.94
H8: Net Prices	15.98	0.17	Ln (Opening Bids)	- 0.04	0.93
			Ln (Feedback +1)	0.45	0.00**
			Ln (Negative Score +1)	- 0.21	0.00**
			Shipping	- 0.01	0.94

Note: All regression models were found significant at $p = 0.00$ and VIF values of independent variables were in the range of 1.06 – 1.49.

** Significant at $p \leq 0.05$

Special attention should be given to the relationship between S&H surcharges and auction success. Our analysis indicated that S&H surcharge does not have a significant effect on the number of bids that an auction receives (H5). We also found that online bidders adjust their bids according to S&H surcharges. S&H surcharges were reported to have a significant negative relationship with auction final prices (H6). In addition, S&H surcharges did not have a significant impact on total prices (H7) and net prices (H8). These findings provide support for the concept of the stimulus-driven nature of online consumers and the use of S&H surcharges in ongoing and past auctions as external reference prices. Discussions of these findings are offered in the subsequent section.

DISCUSSION AND IMPLICATIONS

This study demonstrated that information transparency is critical to achieving higher auction final prices. The ANOVA and ANCOVA tests indicated that online auction sellers can gain a higher price premium when they clearly present their surcharge information, in spite of their reputation and their opening bid strategy. Such a difference can be derived from the fact that bidders may have perceived higher risks in the auctions that did not disclose the surcharge information and they may have been concerned that the total price may exceed what they were willing to pay.

We conducted a further examination and found that eBay gained an average of £ 0.40 more per auction when S&H surcharge information was clearly listed. Auctions with clear S&H information generated a final value fee of approximately £ 5.49, while auctions with no S&H surcharge information produced an average final value fee of £ 5.09. An ANOVA test indicated a significant difference in the final value commission fee at $p = 0.00$. This difference accounts for 7.28% of the loss in revenues to the auctioneer. To prevent such losses, eBay and other online auctioneers should consider making S&H surcharge required for each auction listing.

While many researchers may direct their attention to the risk faced by online bidders, we argue that online sellers also face certain risks when they neglect to provide S&H surcharge information. Auction winners may refuse to pay for an item when S&H surcharge information is finally disclosed in an invoice. This disagreement between a seller and a buyer can lead to non-materialized auctions which waste the seller's time and financial resources.

The ANOVA and ANCOVA tests performed for H2 and H4 provide additional insight. H4 indicated a

£10.42 difference in auction final prices between the groups of auctions with and without S&H surcharge information. Our analysis additionally indicated an average S&H fee of £ 8.15. The results showed that auction sellers who omitted the S&H surcharge information have to charge £ 2.27 more for their S&H to meet the total price average. This higher S&H surcharge may however be deemed unfair in the eyes of the bidders and later generate transaction conflicts.

Although our study showed that S&H surcharge transparency is critical to an auction's final price, we found that it does not have a significant impact on the number of bids that an auction receives (H1). A closer examination (H3) revealed that the number of bids is largely explained by an auction's opening bid. The ANCOVA test produced a p-value of 0.00 for the opening bid variable. This observation is further supported by H5 and is consistent with prior findings (e.g. [42]). Opening bids have a very dominant role in shaping this auction success factor. Thus, auction sellers may consider adopting a low opening bid strategy if one of their goals is to sell their product (or to clean up their inventory), instead of maximizing their price premium.

Our regression analysis revealed additional interesting findings for research in online auctions. First and foremost, we found that online bidders seem to be more sophisticated than what we originally thought. They lowered their bid amount in auctions with higher S&H surcharges (H6). It is also important to note that auction winners paid similar amounts regardless of the different S&H surcharges in different auctions (H7). Therefore, auction sellers did not gain a premium by charging higher S&H surcharge in an attempt to avoid final value fees (H8).

Such findings contradict traditional wisdom that argues that consumers generally underestimate total prices when partitioned pricing is implemented. This argument is based on the assumption that consumers are more likely to use heuristics to calculate the total cost or simply ignore the surcharges [35]. It is important to note that Morwitz's study was conducted in an experimental setting where consumers were not able to revisit surcharge information and therefore they were unable to devise a complex pricing comparison strategy [35]. Online bidders however are equipped with more sophisticated tools (such as the watch-list option that most online auctions offer) that allow them to accurately calculate the total cost. This finding renders greater support for H6, H7, and H8.

Our findings are partially in agreement with those reported by Clark and Ward [10]. Their study indicated that "very low" posted shipping fees (\$0 - \$0.99) lead to higher winning bids. They however did not

find a significant relationship between S&H surcharges and winning bids. We argue that the differences in these results are derived from different product selections in the two studies. While their study used a variety of Pokemon cards, we adopted a standard iPod Nano as our product of interest. Xia and Monroe suggested that product categories can be related to different levels of acceptable S&H surcharges [54]. Further, researchers observed that some product characteristics may impact bidder behaviors [15, 37]. Our auctions contain S&H surcharges ranging from £ 0.00 to £ 15.99 in the U.K. dataset and \$0.00 - \$28.50 in the U.S. dataset. We believe that our data has a much broader range of S&H surcharges compared to the S&H surcharges reported in the study by Clark and Ward (\$0.55 - \$4.20) [10]. It was argued that smaller surcharges can encourage buyers to adopt cognitive simplifying heuristics or ignoring strategies [35]. The wider range of S&H surcharges in our dataset allowed us to observe and examine the effects of S&H surcharges on auction success factors at a more granular level.

With such results, we suggest that online auctioneers should encourage their sellers to adopt a lower S&H surcharge strategy. Such a strategy can result in higher winning bids, rendering higher revenues to the auctioneer from higher final value fees. Online auctioneers can also promote the fact that S&H surcharges are generally not refundable if the products received by auction winners do not meet their description. Lower S&H surcharges can therefore reduce consumers' perceived risk in the transaction process. Online bidders, especially eBay users, are protected by either eBay or PayPal when they purchase items from sellers whose feedback scores meet certain requirements. Promoting this protection policy can encourage bidders to participate in auctions with lower S&H surcharges which in turn will enhance the use of low S&H surcharges by auction sellers as a whole.

To fully understand the relationship between S&H surcharges and auction net prices, one should pay attention to the role of the eBay commission system. The commission fee system on eBay can be considered an external variable and was only used in this study to calculate auctions' net prices. The relationship between S&H surcharges and auction net prices may change if eBay modifies its commission fee rates. Thus, it is important for sellers to understand where their potential final prices stand in the auctioneer's final value fee system. If their potential final prices are in between two ranges (<http://pages.ebay.com/help/sell/fees.html>), auction sellers may consider adopting a higher S&H surcharge strategy to avoid a higher commission fee. All of our observations however had their final prices fall within the

same range. This limited a more thorough examination of the role of this external variable.

According to the regression analysis results, one can find a consistent pattern where sellers' feedback scores are influential in shaping all four auction success variables. The findings signified the role of a seller's reputation and experience in the online auction marketplace. Roth and Ockenfels used overall sellers' feedback as a surrogate measure of sellers' experiences [43]. Our findings indicated that experienced sellers can gain a price premium in the online auction marketplace.

In terms of the explanatory power of our models, we found that our models produced R^2 values in an acceptable range when compared to prior research. Our models explained approximately 16% to 37% of the variances in auction success variables. Other studies explained 2% to 53% of the variances in auction success variables (e.g. [1][30][42]), depending on different products and different sets of independent variables. Since we adopted and adapted the model proposed by Ba and Pavlou [2], it is logical to compare the two studies in greater detail.

In comparing the two studies, we found that the study by Ba and Pavlou produced a similar R^2 value of 0.13 [2]. We found a higher R^2 value (0.53) reported by another study [30]. The difference in the R^2 values may be attributed to a larger set of independent variables and the difference in sample selection – i.e., the product selection. Their models used up to twelve independent variables. In addition, we argued that the difference in explanatory power stems from several heterogeneities in the data collected in the two studies. In their research, collectible coins were selected as their subjects. Thus, the difference in R^2 values can perhaps be attributed to product types across the studies. While most online auction research has employed auction final prices as the primary dependent variable, we found few studies that investigated how the number of bids that an auction receives is formed. Among these studies, Reynolds and her colleagues examined how an auction's opening bid and duration influence this success variable [42]. The authors reported an R^2 ranging from 0.26 to 0.59 for inkjet cartridge and collectible figurine. Our R^2 of 0.37 fell into the middle of their range.

LIMITATIONS AND DIRECTION FOR FUTURE RESEARCH

Our study faces some constraints and limitations. First, the field study methodology gave us limited control over the availability of data. For instance, we were unable to include auction duration as a covariate in H2 and H4

mainly because the majority of auctions with no S&H surcharges information were 3-day auctions. In addition, the selected product in our study had a time-sensitive nature. Thus, expanding the data collection period was not a feasible option. By extending the time horizon to enlarge our sample size, our data would have suffered from price-reduction due to product obsolescence. Our result may also hold only within the group of electronics and those that have similar price range. As suggested by Hayne and his colleagues, bidder behaviours may vary according to the product of their interest [15]. For instance, bidders of digital products (such as coupon codes, etc) that mostly have free shipping may have different way to process S&H information.

The primary goals of our study were to examine the effects of price transparency, to investigate how S&H surcharges influence four auction success factors, and to maintain our model's parsimony. Thus, we excluded some auction variables such as variables that represent the use of a buy-it-now option, the use of a reserve price option, etc. We encourage future studies to develop more complex models, perhaps by exploring the mediating role of these variables in the relationship between surcharge information transparency and online auction success.

In this line of research, several researchers focus their attention on the use of a free-shipping strategy, also known as all-inclusive pricing. Due to the nature of field studies, we had limited control over the proportion of auction listings that adopted this strategy. We however examined our data more closely and found that a free-shipping policy was not a popular approach in our sample. We found only 2 (1.9%) and 8 (2.4%) auction listings that employed this tactic in our U.K. and U.S. eBay samples, respectively. Despite these limited numbers, we found a large difference in the final prices across the groups that did and did not adopt all-inclusive pricing strategy. In the U.K. market, auctions that offered free shipping gained approximately £ 14.10 higher on their final prices. A similar finding was found in the U.S. market. U.S. auction listings with free shipping gained on average of \$ 19.79 higher in their final prices.

Last but not least, we recommend that attention be given to how S&H surcharge information is presented. Xia and Monroe studied the effect of surcharge presentation (i.e. absolute value versus percentage value) in a traditional shopping environment [54]. They found that surcharges that are presented as a percentage of the product price were preferred by consumers in some situations. In the online auction environment, auction prices can change as more bids are placed. Using the percentage format would therefore require more

processing work for bidders and it might impact the auction success variables.

CONCLUSION

This study reveals that the omission of S&H surcharge information can negatively affect auction final prices, but not the number of bids that an auction receives. Its negative impact on auction final price in turn reduces the auctioneer's revenue generated from the final value commission fee. Our data indicates a 7.28% loss in the auctioneer's revenues from auctions that do not clearly provide S&H surcharge information. We additionally revisited the relationships between S&H surcharges and auction success factors. The results show that contrary to previous partitioned pricing research in non-online settings, online auction bidders appear to fully process S&H amounts and accurately adjust their bids. We also found that the seller strategy to charge higher S&H fee in an attempt to avoid final value fees does not necessarily help generate higher revenue. We hope that these findings will encourage researchers to further investigate the impact of different pricing strategies on different auction success factors as E-auctions continue to evolve in the online marketplace.

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