



A Literature Review on the Application of Anchoring Effects in Online Auctions

Yixiao Hao¹, Luxin Liu², Bowen Sheng³, and Jianping Yao⁴(✉)

¹ Beijing Royal School, Beijing 102209, China

² School of Economics, Zhejiang Gongshang University, Hangzhou 310018, China

³ International College, Guangxi University, Nanning 530004, China

⁴ Cambridge International Exam Center in Shanghai Experimental School, Shanghai 201210, China

1920040133@pop.zjgsu.edu.cn

Abstract. Online auctions have seen a tremendous transformation as online functions developed over the past decades. This paper aims to explore the background, state quo, and current problems of online auctions through a deep analysis of literature reviews and case studies. Using the examples of Mobile Internet in China and Sotheby's and Christie's, we provide insights about online auction nowadays and further highlight problems such as incomplete information and low buyer trust. The paper focuses on how to use the anchoring effect to solve the problem of online auctions. We put forward two hypotheses, (1) a Low starting price boosts popularity, and (2) a Reasonable online auction process raises the final transaction price. We discuss the implications of this research with respect to our understanding of the key determinants of consumer behavior and the stakeholders in this increasingly important arena of purchase decisions.

Keywords: online auctions · anchoring effects · decision-making

1 Introduction

An auction is a bidding mechanism that determines who is the winner and the amount to pay for a purchased item (Wolfstetter, 1996) [1]. They have long been used to sell valuable items, such as art paintings, antiques, or natural resources in offline auction venues. In recent years, with the growth of the Internet, auctions based on Internet platforms have begun to emerge. Some economists have pointed out that online auctions have the advantages of removing geographic restrictions, flexibility, and low operating costs, which have allowed them to grow extensively (Ariely & Simonson, 2003) [2]. At the same time, with the rapid development of online auctions, some scholars found that there are some problems with online auctions and then they came up with some solutions (Galinsky et al., 2006; Galinsky et al., 2009) [3, 4].

However, so far, there is limited research that systematically and comprehensively summarizes the underlying problems of online auctions. Therefore, this paper aims to

Y. Hao, L. Liu, B. Sheng and J. Yao are contributed equally.

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clarify the recent progress on the problems and solutions of online auctions by organizing and analyzing the pieces of literature. This review is necessary for the healthy and sustainable development of online auctions in the future.

After reading and analyzing some existing literature, this review found that the two main problems in current online auctions are some auction items have low popularity and the final transaction price lower than expected. Moreover, based on the anchoring effect and the reversal of the anchoring effect, online auction sellers can effectively deal with low traffic and low transaction prices by setting a low starting price and adjusting the auction process. The main contribution of this review is that both sellers and buyers can refer to the suggestions in this paper to make effective strategies in online auctions.

The review proceeds as follows. In the first part, we describe the background of online auctions, and in the second part, we describe the status quo of online auctions. In the third part, we provide the current problems of auctions, and in the last part, we make suggestions.

2 The Background of Online Auctions

The definition of an online auction is an auction that is held over the Internet (Wiggins & Katok, 2006) [5]. Similar to traditional offline auctions, online auctions include four types: ascending English auctions, descending Dutch auctions, first-price sealed-bid auctions, and second-price sealed-bid auctions (Michael & Ignatov, 2019) [6].

Although the concept of the Internet did not begin to emerge until the mid-20th century, Ariely and Simonson (2003) made the point that the origins of online auctions can be traced back to 10% distance auctions by mail in the United States in the 1870s [2]. At the end of the 20th century, with the continuous development of Internet technology, more and more people began to try to use the Internet as a medium to conduct auctions. The first web-based online auction site was Onsale.com, established by Jerry Kaplan in May 1995 (Lewis, 1995) [7]. Four months later, eBay, one of the largest online auction platforms, was established by French-Iranian computer scientist Pierre Omidyar (Cohen, 2002) [8].

Compared to traditional offline auctions, online auctions mainly have the following four typical characteristics. First, unlike offline auctions, online auctions are not limited by space, which means there is no upper limit on the number of people participating in auctions. Second, the entire process of an online auction can last for a relatively long time, such as more than one week. In contrast, the whole process of most offline auctions only takes one day. Third, there are many different types of auction items in online auctions. Some online auction platforms even auction some virtual goods, which is impossible for traditional offline auctions. At last, individual sellers play a significant role in online auction platforms. Nevertheless, in offline auctions, some famous auction houses, such as Sotheby's or Christie's, usually dominate.

3 The Status Quo of Online Auctions

Online auction procedures are considered by most to be different from the offline auction. In an offline auction, because potential buyers are keen to view the subject matter on-site,

collectors can have their own consulting teams, so the auction companies only need to do a simple introduction about the targets (Chen, 2021) [9]. In an online auction, the advertising is inexpensive and the time is sufficient; also, its coverage is vast, and the information provided by the auction company is abundant, which can be referred to by more buyers. Given the extended nature of online auctions, buyers have an abundance of time to judge and think about their overall decisions (Guo, 2022) [10].

The development of Mobile Internet in China is at the leading level in the world, which brings new opportunities to the development of the art auction industry (Liu, 2017) [11]. Shanghai Jiahe Auction set up an “online bidding platform” with some third-party online auction platforms to conduct online and offline auctions at the same time. Taobao has set up an online auction channel—Ali auction. Its auction objects include not only traditional arts and crafts, antiques, cars, and luxury goods, but also real estate sold by the government and seized or mortgaged by the court, shops, office buildings and other real estate sold in bankruptcy. These rich targets are attractive to Taobao’s substantial user groups, and thousands of people watched the targets. The online auction can therefore be favored by buyers and has great development potential moving forward.

For the international auction giants Sotheby’s and Christie’s, the development of online auctions has become an essential choice for their internationalization strategy. They use the advantages of online trading channels to develop international customers. Sotheby’s keeps up with the trend in online auctions and cooperates with major e-commerce platforms. In recent years, Christie’s has made more online auctions of Chinese artworks, focusing on expanding the domestic market (Liu, 2016) [12]. Christie’s set out to build an independent auction platform and developed it step by step. After nearly ten years of development, Christie’s has formed unique competitiveness in the field of online auctions.

During the COVID-19 pandemic, almost all fields of personal finance have been affected by the pandemic. This economic shock has affected desirable goods, such as paintings, cars, watches, and wine (Sullivan, 2020) [13]. Social distancing is required to stop the spread of the virus, leading to difficulties in holding offline auctions, which has accelerated the transition from offline to online auctions.

4 Current Problems with Online Auctions

Despite having extensive potential and a wide range of customer interest, the online auction still has plenty of issues. Although offline auctions have rapidly shifted to online auctions in recent years due to the impact of COVID-19, some limitations of online auctions have affected their popularity, such as a series of unavoidable problems, including incomplete information and low buyer trust in specific contexts. It will affect online auctions (Babaiouff et al., 2008) [14]. However, these problems do not exist in traditional offline auctions. As these issues affect online auctions, some auction companies still set high starting prices like traditional ones. In contrast, consumers are more inclined to choose traditional offline auctions. There are also novice auctioneers who want to gain some experience in online auctions but are discouraged by the high starting prices of some online auctions, which reduces the popularity of online auctions. At the same time, the platform does not have a group of high-quality buyers and cannot guarantee

high purchasing power. Even the best collectibles at times fail to auction at the expected price, let alone command a premium. As a result, online auctions tend to sell for less than expected. A set of properties with an estimated value of nearly 120,000 US dollars was auctioned through an online judicial auction, and the transaction price was only about 88,000 US dollars (Zhao & Chen, 2015) [15]. This is a set of judicial auction properties auctioned by Shanghai First People's Court on the Taobao website on April 17, 2015. Through the auction, the bidder acquired the property for nearly \$120,000 below market value (Zhao & Chen, 2015) [15]. It is not a destructive phenomenon in real estate, but it tends to backfire for individual sellers who, of course, want their items to be auctioned off at high prices. The inability to auction items at the right price will discourage individual sellers from participating in online auction, leading to less supply in the auction market, which creates a vicious cycle resulting in lower demand for online auctions as more sellers and bidders shift back to offline auction. Nevertheless, there are ways to avoid several of the problems mentioned above. The anchoring effect in behavioral economics can be used to increase the price and popularity of online auctions.

5 Using the Anchoring Effect to Make Suggestions

The anchoring effect is one of the most significant and robust biases in laboratory experiments. The anchoring effect was first proposed by Tversky and Kahneman (1974) in their study of biases in judgments revealing some heuristics of thinking under uncertainty [16]. They defined the anchoring effect as a human behavior where people estimate by starting with an initial value, which is adjusted to arrive at the final answer based on the initial estimation (Tversky & Kahneman, 1974) [16]. To demonstrate the anchoring effect, Tversky and Kahneman (1982) designed an experiment in which each participant was instructed to estimate the percentage of African countries in the United Nations with reference to a random number between 0 and 100 generated by spinning a wheel of fortune. Participants were required to indicate whether the reference number was higher or lower than the precise quantity before making the final decision. In the end, the subjects showed a bias towards the number given initially in their final estimate [17]. After that, to further prove the effectiveness and universality of the anchoring effect, some economists began to study real-life decision-making or value-estimating tasks. They set their sights on auctions. Many studies have discussed the use of the anchoring effect in offline auctions (Dodonova & Khoroshilov, 2004; Wolk & Spann, 2008) [18, 19]. Most of those studies proved that the anchoring effect could profoundly affect the decision-making of sellers and buyers in auctions.

After introducing the potential of online auctions and the current problems, this paper will make suggestions to improve the popularity and the final transportation price of online auctions based on the anchoring effect in this part.

5.1 Low Starting Price Boosts Popularity

In most auctions, the starting price is usually determined by the previous price of similar items (Beggs & Graddy, 2009) [20]. Some famous offline auction companies, such as

Sotheby's and Christie's, are willing to improve the starting price appropriately to obtain greater profits in traditional offline auctions.

Under the influence of offline auctions, many individual sellers of online auctions nowadays also hope to obtain greater profits by increasing the starting price (Kim, 2006) [21]. However, some scholars have realized that in online auctions such as eBay, uBid, and CowBoom, high starting prices do not allow individual sellers to make greater profits (Galinsky et al., 2006; Galinsky et al., 2009) [3, 4]. They discovered a phenomenon in online auctions and named its reversal of the anchoring effect, which means that low starting prices (low anchors) will lead to high-end transaction prices. There are two reasons for this phenomenon. First, compared to offline auctions, online auctions have few barriers. As mentioned in the background part, online auctions are not limited by time and space. People all over the world can learn about auction information and participate in auctions on the online auction platform at any time. Moreover, most online auctions do not require asset verification. Therefore, when the starting price is low, more and more people will be attracted and participate in the online auction, even if they do not know the auction items clearly. Eventually, a low starting price will increase auction traffic and boost auction popularity. Second, if the starting price is low, most people are likely to put more time and energy into the auction and create sunk costs. In this case, buyers will influence the people around them to follow and participate in the online auction through their actions; that is, traffic generates more traffic. Based on the reversal of anchoring effects in online auctions, individual sellers in online auctions can lower the starting price appropriately, which will reduce barriers to entry and allow more and more people to pay attention and participate in the online auction. Nevertheless, buyers should be careful not to be deceived by the low starting price when they want to participate in online auctions.

5.2 Reasonable Online Auction Process Raises the Final Transaction Price

The auction process can significantly affect the final transaction price in some traditional offline auctions (Shneyerov, 2014) [22]. Some economists have demonstrated that the same is true in some online auctions. After conducting online auction experiments, Katok and Kwasnica (2008) found that the slower the clock speed in online Dutch auctions, the higher the final transaction price. The anchoring effect could explain this phenomenon as well. A Dutch auction is a drop-off auction where the price bid will continue to drop over time [23]. Katok and Kwasnica (2008) believed that time is a precious resource for buyers in a Dutch auction. Therefore, time can serve as an anchor to affect buyers' decision-making in a Dutch auction [23]. For example, when the Dutch auction clock slows down, more time spent in auctions will provide buyers with a high anchor, finally leading to higher transaction prices. Based on this situation, sellers in online Dutch auctions should slow down the auction clock when setting the auction process so that buyers will accept higher bids. However, Katok and Kwasnica (2008) also pointed out that the situation is entirely different in the online sealed bid auction [23]. It is because buyers in online sealed bid auctions have no idea about other buyers' decision-making and can only decide their submission price. Therefore, they might be affected by some irrelevant anchors on the website. In this case, sellers can prevent buyers from making fine

adjustments to irrelevant anchors by shortening the price submission time. Eventually, it is easy to generate a high maximum bid.

Furthermore, online auctions can also increase the final transaction price by repeating high anchors during the auction process compared with traditional offline auctions. Wu et al. (2008) simulated online auction scenes through experiments. Finally, they found that when multiple anchors are embedded in the process of online auctions, buyers are more susceptible to the anchoring effect [24]. Based on anchoring and adjustment theory (Kahneman & Tversky, 1974), when anchors occur continuously during the auction process, it is difficult for buyers to make adequate adjustments to anchors [16]. As a result, they tend to provide a final bid biased towards anchors. Nevertheless, there is another problem that deserves attention. When the online auction process is too sophisticated, people's willingness to participate in the online auction will also decrease. Therefore, sellers can embed multiple high anchors on their web pages to simplify the online auction process. Thus, the anchoring effect will significantly influence the buyers' value estimate, increasing the final transaction price. On the other hand, buyers should be careful about the anchoring effect and avoid letting irrelevant information in the auction process affect their value estimate of auction items.

Based on the anchoring effect and the reversal of the anchoring effect, after analyzing the relevant literature, this paper suggests that online auction sellers can set a low starting price and formulate a reasonable auction process to deal with the problems of low popularity and low final transaction prices in current online auctions.

6 Conclusion

Online auctions have a long origin and have gained better development opportunities with the progress of network technology. The COVID-19 pandemic has further boosted the development of online auctions. However, online auctions still have problems, such as low buyer trust and unreasonable price setting. These problems are affecting online auction transactions, which leaves a massive gap in the literature on how to this issue should be addressed. Through in-depth looks at the discussion, lower starting prices could be set in online auctions and taking advantage of the low barriers for buyers to enter online auctions to attract more buyers with artful combinations of low anchors and high anchors, streamline the auction process, create more transaction possibilities and achieve a better transaction price. For buyers, understanding the anchoring effect used by auction companies in online auctions can help them make more rational consumption decisions, avoid the auction companies' routine as much as possible, and obtain desirable items at acceptable prices.

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