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訂價策略之於賣家利潤影響效果探討:

實驗室設計&田野調查

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The effect of different price strategy impacts the seller profit:

Laboratory experiment & Field study

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中文摘要

網路購物的市場前景看好,但是相較於2001年,台灣雅虎奇摩網站開始提供線上購物平台服務的情況,現在線上賣家的數量和商品數量不同往日而語, 買家只要輸入關鍵字,便可以搜尋相關產品資訊,而賣家要如何在競爭激烈的線 上購物戰況中求勝,也變成一個耐人尋味的問題。

本研究主要使用實驗室法和田野調查,探討賣家的訂價策略(競標和直購價),造成賣家營收的多寡,並且分析消費者觀點,提出管理建議。研究提出的假設一:直購價比起競標,給賣家帶來較多的營收,在實驗室法的實驗結果得到支持,田野調查的結果則是部分支持;本研究的假設二:直購價的成交數量會多於競標,在實驗室法的實驗結果得到支持,田野調查的結果也是部分支持;假設三:公開的保留價格資訊相較於隱藏的保留價格資訊,給賣家帶來較多的營收,在實驗室法的驗證過後,也是部分支持。

The effect of different price strategy impacts the seller profit: **Laboratory experiment & Field study**

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ABSTRACT

Online business is a potential market, comparing with online auction function

first provided by Yahoo! in the 2001, nowadays online seller and product amount are

growing to a magnificent quantity. In addition, buyers can use strong search engine to

search the product information they require. Online seller's business strategy turns

into an interesting topic in this chaotic background.

The main object of this study was to explore seller's pricing strategy

(fixed-price& bidding) which leads to different profit with laboratory experiment and

field study, and analyze consumer's aspect and propose managerial suggestion.

Hypothesis 1 proposed in this research:" When seller chooses fixed-price strategy, his

profit would be more than bidding way" was supported by laboratory experiment, but

partially supported by field study. Hypothesis 2:" When seller chooses fixed-price

strategy, the transaction amount would be more than bidding way" was supported by

laboratory experiment, but partially supported by field study. Hypothesis 3:" When

seller chooses bidding strategy, the more price information (opened reserved price)

would lead more earnings for seller than less price information (hidden reserved

price)" was partially supported by laboratory experiment.

Ш

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Chapter 1 Introduction

1.1 Research Background

In recent years, online auction has become a magnificent business way, and consumers have also changed their preferences. They would buy products retail, and search product information, such as price, product function and product feature, through the Internet simultaneously(Rohm & Swaminathan, 2004). As the convenience provided by Internet(Anderson & Srinivasan, 2003), product information could be obtained more quickly and easily for customer's need. The growing online businesses have changed buyer's shopping preference, and offered sellers a great chance to earn their own profit.

More and more traditional retailers choose to use the online model system, such as the tsannkuen 3C retailer store which builts their own online shopping channel.

Besides, the famous Japan clothes brand "Uniqlo" (Fast Retailing) also provided online shopping service. As traditional retailer stores try to create more opportunities, the single online selling channel is also growing afire. For instance, the yahoo online shop, ruten online shop (pchome), rakuten online market and many other online shops exist simultaneously. In this condition, the amateur seller's and personal (not company) seller's impacts became weaker than before. This research is trying to find out the best

way for seller to make maximum profit.

Online business is related to two parts, one is seller's pricing strategy, and another is buyer's preference. The buyer's preference is influenced by gender(Hou & Elliott, 2010; Omar, 2008), age, education, income(Hou & Elliott, 2010), risk-proneness,(Omar, 2008), different product types(Hsee, Yang, Gu, & Chen, 2009), product information precision level(Chernev, 2006), different trade conditions(win or lose)(Johnson, Tellis, & MacInnis, 2005), and buyer's need for uniqueness(Simonson & Nowlis, 2000; Tian, Bearden, & Hunter, 2001).

The seller's pricing strategy could be separated into two different strategies, one is the original online auction function: bidding, and another is the progressive business function: fixed-price. Later we will review the previous studies which were related to our research.

1.2 Research Objectives

The online auctions pricing issues have been investigated a lot. Previous research had indicated that online bidder would be influenced by other bidders, and then the final price would be higher than the product's current value(Ariely & Simonson, 2003). Besides, Haws and Bearden(2006)pointed out the online shopper would think it's more fair if the product price is determined by themselves, not by sellers. Chandran and Morwitz(2005) demonstrated when seller's pricing strategy is

fit for the online buyer(high perceived control buyer with the participative pricing strategy), then buyer's purchase intention would be higher. Suter and Hardesty(2005) investigated the relationship between starting bid price and final price, and concluded the higher starting bid price would lead to higher final price. Reynolds, Gilkeson et al.(2008)proposed a moderated mediation model to investigate the effect of different product categories and three kinds of seller's strategy on the final price of auction. Shehryar(2007)examined the effects of different genders, different risk-proneness, and time pressure on consumer's buying decision(bidding or buy-it-now).

Although they have contributed to this issue so much, the pricing strategy of auction (bidding or fixed-price) which is better for seller's profit hasn't been explored. The aim of this research is to find out whether the sellers' selling strategy (bidding or fixed-price) would lead to different profit outcomes, and investigate other related issues in online auction. In addition, this is the main contribution of our study to associated subject research.

The main questions of this research are:

- 1. Which seller's pricing strategy (bidding or fixed-price) would make more money for seller?
- 2. Would buyer's behavior change with different seller's pricing strategy?

Price strategy Bidding Profit Seller Profit

Fig. 1.1 Research Structure



1.3 Research Flow

The research process of this study is shown in the following figure

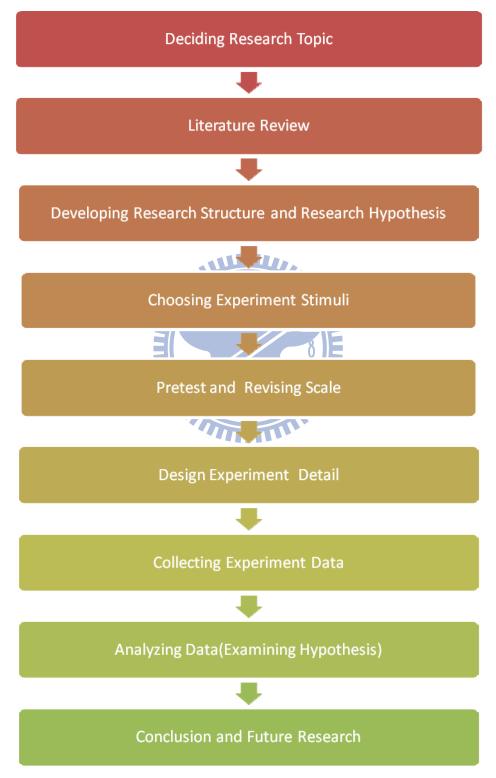


Fig. 1.2 Research Flow

Chapter 2 Literature review

2.1 Online auction

Taiwan's biggest online auction website: Yahoo! showed up in 2001. As time goes by, the function of online auction also changes from selling old unnecessary goods to selling whole new products. Not only the product character changed, but also the buyers' intention changed. Online buyers start to seek cheaper and better-Quality goods through the powerful search engine. Some buyers also enjoy the auction transaction process, and some buyers take online shopping as the ordinary shopping routine work.

2.2 Price strategy

Online auction provides seller with pricing choices, which are mostly ordinary English type bidding and fixed-price. We will review pros and cons of these different pricing strategies later.

2.2.1 Bidding

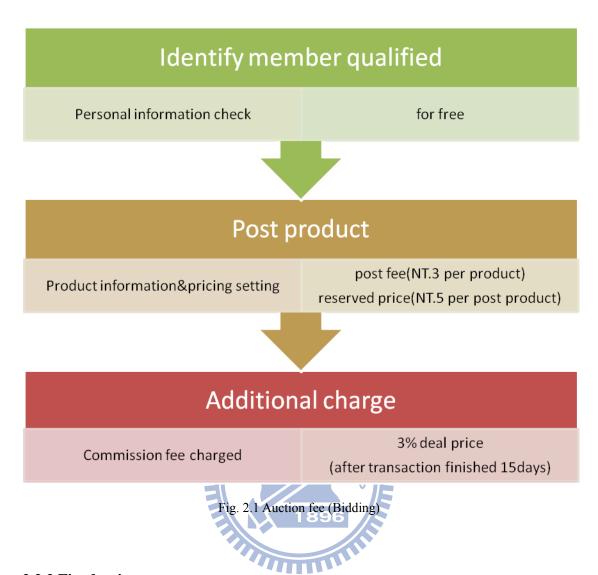
There are many types of auction. McAfee and McMillan (1987) generalized auction to four simple types, which included English, Dutch, sealed-bid first-price, and sealed-bid second-price. The most common auction type is English auction way,

because the English auction is the easiest way for buyer to understand and use. The basic rule of English auction is all buyers bid in an open circumstance, and the second bidder has to bid over the former bidder's bidding price. The main rule of Dutch auction is also to bid in an open circumstance; however, the bidding price is proposed by the auctioneer, and the bidding price is going lower and lower till one buyer accepts the price. Sealed-bid first-price is a kind of auction which is more private. All buyers write down their highest willing-to-pay prices and seal, and the highest price proposer wins this bid. Sealed-bid second-price auction is almost similar to sealed-bid first-price auction, but the bid winner of sealed-bid second-price auction is the second highest price proposer. There might be executive limitation in online auction, so the most common online auction type is English auction.

Auction Type	Bidding price trend	Price Information	Reserved price	Minimum price
English auction	Up	Open	V	V
Dutch auction	Down	Open	X	X
Sealed-bid first-price auction	Mix	Sealed	X	X
Sealed-bid second-price auction	Mix	Sealed	X	X

Table 2.1 Auction type

Yahoo! mainly uses English auction mechanism and lets sellers choose their own price settings, such as the reserved price and minimum starting price, then bases on the setting of auction rules to charge auction fee. If you want to post a product for sale in Yahoo!, first you have to confirm your qualified membership, and sign in the auction website. Next, choose the selling function, and then base on Yahoo!'s product categories to choose the product type and upload the product picture. Finally, set your pricing mechanism- reserved price or not (NT.5 per post product), and then finish the product transaction detail setting. You have to pay the post fee(NT.3 per product; maximum charge NT.90 per seller) and additional pricing option fee. After the product has been sold for fifteen days, you have to pay the commission fee (3% of deal price).



2.2.2 Fixed-price

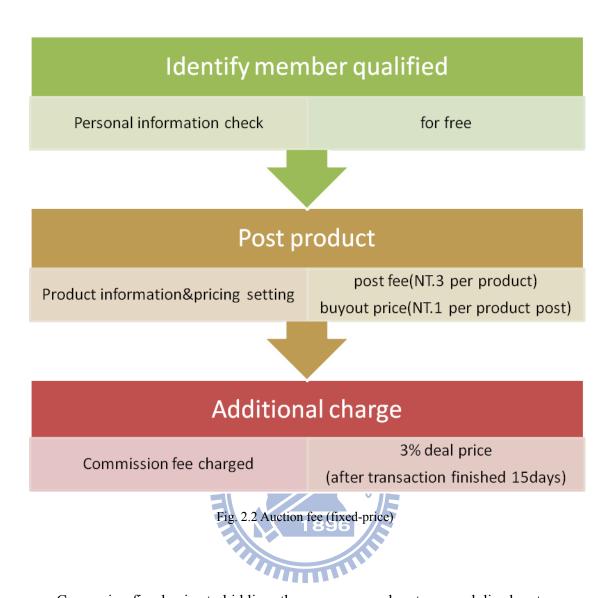
There are some titles for fixed-price pricing strategy in different auction websites, such as "buyout" or "auction stop". The main rule of fixed-price pricing strategy is seller sets an open willing-to-sell price, and if buyer accepts this price, the deal is done. Timothy(2004) indicated fixed-price is more valuable and workable for buyers who are impatient. As the business property of auction changes, the fixed-price choosers become much more.

Auction Type	Bidding price trend	Price Information	Reserved price	Minimum price
English auction	Up	Open	V	V
Dutch auction	Down	Open	X	X
Sealed-bid first-price auction	Mix	Sealed	X	X
Sealed-bid second-price auction	Mix	Sealed	X	X
Fixed-price	Fix	Open	X	X

Table 2.2Auction type & fixed-price

Yahoo! provides seller with alternatives of bidding or buyout when seller post 1896 product on the website. If you want to sell a product, just like the bidding way, you have to confirm your qualified membership, and sign in the auction website. Next, choose the selling function, and then base on Yahoo!'s product categories to choose the product type and upload the product picture. Finally, set your pricing mechanism-buyout price(NT.1 per product), and finish the product transaction detail setting.

You have to pay the post fee(NT.3 per product; maximum charge NT.90 per seller) and additional pricing option fee. After the product has been sold for fifteen days, you have to pay the commission fee (3% of deal price).



Comparing fixed-price to bidding, there are some advantages and disadvantages

when sellers choose fixed-price strategy. (Example: Yahoo!)

Pricing Strategy	Pros	Cons
Bidding	1.More attractive -Chandran	1.Flexible price
	and Morwitz(2005)	2.Product amount(=1)
	2.Easier to sell 3.Longer transaction	
		time
Fixed-price	1.Fixed price	1.Less attractive
	2.Product amount(>1)	2.Harder to sell
	3.Shorter transaction deal	
	time	

Table 2.3Pros & cons of pricing strategy

2.3Hypothesis

According to the research from Ariely and Simonson(2003), the bidding price would be higher than the product's monetary value. However, they also pointed out this may happen on some kinds of condition (product attribute& degree of information loading). Besides, their research was held in 2003, at that time, Internet auction was just starting, and search engine and consumer's shopping preference were also under construction. We believe online buyers are wiser and sharper now. Hence, we supposed-online bidder would search information which is helpful for buying decision. Therefore, the phenomenon that bidding final price is higher than product's monetary value should not exist anymore, when the product attribute is common. In addition, according to the definition proposed by Xia, Monroe, &Cox (2004), price fairness is buyer's perception of the price provided by seller. We assumed bidder wouldn't submit the bidding price which is more than the fixed-price set by seller. As we assumed, the bidding final price wouldn't be higher than fixed-price, and we noticed the online buyer was used to fixed-price business model. Most online auctions were dealt with fixed-price, so we believed fixed-price auction would attract more buyers. Fixed-price will attract impatient buyer who is willing to pay higher price to ensure that he (she) could win the auction in a short time. (Hidvégi, Wang, & Whinston, 2006) Based on this context, we proposed our hypothesis as:

H1: When seller chooses fix-price strategy, his profit would be more than bidding way.

Although bidding is interesting for some buyers, we believe most online buyers are more impatient now(Haipeng, Sharon, & Akshay, 2005). This kind of impatient buyers think bidding is just a business trick, which means they don't believe they can buy the product with a low price. Hence, they will choose to buy in fixed-price rather than bidding. Besides, in website system, when sellers choose fixed-pricing strategy, they are usually able to set the product amount (Yahoo!). Based on this context, we proposed our hypothesis as:

H2: When seller chooses fixed-price strategy, the transaction amount would be more than bidding way.

Chernev(2006)indicated buyers would prefer higher precision level of price information than lower precision level when they decided to bid. Hence, we supposed the more information would attract more bidders, and then number of bids would increase, which results in higher final price (Hansen, 1985; Reynolds et al., 2008; Vincent, 1995). We proposed our hypothesis as:

H3: When seller chooses bidding strategy, the more price information (opened reserved price) would lead more earnings for seller than less price information (hidden reserved price).

Chapter 3 Methodology

3.10verview

The exploration of our hypothesis was divided into two studies:

- Laboratory experiment: to investigate our main hypothesis- the impact of seller pricing strategy to final profit.
- Field research: to investigate our main hypothesis- the impact of seller pricing strategy to final profit in real business case.

The result was presented in Chapter 4.

3.2Stimulus and Pretest

To avoid the effects of product attributes on willing-to-pay, such as utilitarian or hedonic(Babin, Darden, & Griffin, 1994), we chose clothes to be our experiment item. For some people, clothes presents utilitarian function (Morganosky, 1984), but for some, clothes mean hedonic joy(Hirschman & Holbrook, 1982). We wanted to exclude the impact of product efficacy on willing-to-pay, so we assumed the collected data would be both product efficacy experienced consumers.

Pretest is also composed of two parts- bidding and fixed-price. As for the result, bidding's average of deal price was NT.96.33, total earning (included deal price and transportation) was NT.3990, and total profit (total earning minus clothes cost,

transportation cost, and list fee) was NT.24. The brief data was presented in the following table. We did not obtain the result of fixed-price (no product had been sold).

	Earning	Cost
Total product earning	2890	
Total transportation	1100	
Total clothes cost		2690
Total list cost		176
Total transportation cost		1100
Total profit	NT.24	

Table 3.1Pretest result

In pretest, we found products would be sold out in bidding way, but might be sold in an unbelievable low price (See Appendix II). Besides, our experiment was held by a new account (no seller reputation), so it might be more difficult for fixed-price product to be searched. According to the result of pretest, we set more conditions to help research execution.

3.3 Experiment process: laboratory experiment

The laboratory experiment process of this research was composed of three parts:

(1) Experiment setting

Experiment set includes product auction length, reserved price, starting price, buyout price, transportation, and auction end time.

(2) Auction end

After the auction end time, we collected the measurement data, and delivered sold product.

(3) Analysis

Finally, we used the statistic software to analyze our experiment measurement.



Fig. 3.1Experiment process(laboratory experiment)

3.4 Laboratory experiment

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The main objective of this study is to explore the impact of seller pricing strategy on profit, and as literature review, the experiment design is composed of two conditions, bidding and fixed-price. In study1, we designed the bidding auction to two types of bid- opened reserved price and hidden reserved price, and in order to observe the impact of price on buyer's buying behavior, we designed fixed-price to three kinds of price level for the exploration of our object- NT.280, NT.250, and NT.220, the price set was based on the pretest's result (pretest's price set was too expensive leaded to no product had been sold), and to collect experiment data we referred to the market price

then the lowest profitable price was set, so the highest price was set NT.280, the lowest price NT.220 set by our cost(NT.150 per clothe, transportation NT.50, and auction setting fees about NT.20). All experiment are examined with twenty products.

Bidding	Opened reserved price	
	Hidden reserved price	
	NT.280	
Fixed-price	NT.250	
	NT.220	

Table 3.2Experiment cell

3.4.1 Bidding

Following is the design of bidding auction

- (1) Auction Length: 6 Days.
- (2) Reserved price: we designed the bidding auction to two types, opened reserved price and hidden reserved price, and we used the price setting of transportation to achieve our purpose. The transportation price of opened reserved price bidding was NT. 200, and we believed online bidder would take this as the minimum willing-to-sell price, which equals to the function of reserved price. The ordinary auction system setting is used in hidden reserved price bidding, and we set the reserved price (NT.150=cost per clothe) and it wouldn't be shown to the bidders.
- (3) Starting price: both were NT.1.
- (4) Transportation: NT.200 for opened reserved price (as minimum willing-to-sell

price), and NT.50 for hidden reserved price (ordinary post office's transportation).

(5) Auction end time: both were 9p.m. -10p.m.

(The product details setting page is demonstrated in Appendix I)

		Bidding type Opened reserved price Hidden reserved price		
	Auction Length	6 Days	6 Days	
	Reserved price	V	V	
Auction	Starting price	NT.1	NT.1	
setting	Transportation	NT.200	NT.50	
	Auction end	9p.m10p.m.	9p.m10p.m.	
	time	WILLIAM.		

Table 3.3Laboratory experiment design (bidding)

3.4.2 Fixed-price

Following is the design of fixed-price auction:

- (1) Auction length: 6 Days.
- (2) Buyout price: we designed three kinds of price level (NT.280,NT.250, and NT220)
- (3) Transportation: in order to overcome the new seller's weakness (no reputation) and to attract more buyers, our buyout price included the transportation (to increase searching amount), so transportation setting was zero.
- (4) Auction end time: 9p.m. -10p.m. for all
- (5) Product pieces:

(The product details setting page is demonstrated in Appendix I)

		Price Level		
		NT.280	NT.250	NT.220
	Auction	6 Days	6 Days	6 Days
	Length			
Auction	Reserved	X	X	X
setting	price			
	Buyout price	NT.280	NT.250	NT.220
	Transportation	X	X	X
	Auction end	9p.m10p.m.	9p.m10p.m.	9p.m10p.m.
	time			

Table 3.4Laboratory experiment design (fixed-price)

3.4.3 Subjects

Our subjects were the online bidders. Our experiment items are all female, and ages are 18-30years old. Subject's occupations were student, office lady, and full-time housewife.

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3.5Field study

In study 2, we observed five pieces of product in the same product category- ordinary and luxury, and on two types of pricing strategies- bidding and fixed-price(2 by 2 experiment designed, each cell were 5 identical products).

Following is the design of our field study:

- (1) Seller's reputation: all observed sellers had sold product before.
- (2) Product type: basically was clothing, and product attributes included ordinary (uniqlo), and luxury (agne's b. & garcia).
- (3) Observation length: all observations were held during June 1st-June 20th.

3.6 Measurement

The main measurement of this research is seller's profit, and the formula of profit is shown below:

$$\begin{aligned} P_{T} &= \sum_{i=1}^{n} (P_{i} - C) \\ &\text{Pr=profit} \\ &\text{P=Product price} \\ &\text{C=Cost} \end{aligned}$$

Product price included deal price and transportation, and cost included clothes cost (NT.150 per product), post fee (NT.3 per product), reserved price fee (NT.5 per post), buyout price fee (NT.1 per post), commission fee (3% deal price), and transportation (usually NT.50).

Chapter 4 Result

4.1 Study1: Laboratory experiment

4.1.1 Bidding

After six days per experiment, the results of bidding type auction were: number of view (the average viewed number of products web page in six days) was 59.05, number of trace (the total pieces of clothes that had been traced in six days) was 13, number of deal (the total cases of clothes that had been sold in six days) was 4, and number of bids (the average number of bids that had been submitted in six days) was 0.2 when the reserved price was opened. The results of another bidding type auction were: number of view (the average viewed number of product web page in six days) was 80.55, number of trace (the total pieces of clothes that had been sold in six days) was 15, number of deal (the total cases of clothes that had been sold in six days) was 6, and number of bids (the average number of bids that had been submitted in six days) was 2.4 when the reserved price was hidden.

	Number of	Number of	Number of	Number of
	view(average)	trace(total)	deal(total)	bids(average)
Opened	59.05	13	4	0.2
reserved price				
Hidden	80.55	15	6	2.4
reserved price				

Table 4.1Laboratory experiment result (bidding)

4.1.2 Fixed-price

After six days per experiment, the results of fixed-price type auction were: number of view (the average viewed number of products web page in six days) was 29.25, number of trace (the total pieces of clothes that had been traced in six days) was 6, and number of deal (the total cases of clothes that had been sold in six days) was 1 when the fixed-price was NT.280. The results of second fixed-price type auction were: number of view (the average number of product's web page had been viewed in six days) was 27.45, number of trace (the total pieces of clothes that had been traced in six days) was 2, and number of deal (the total cases of clothes that had been sold in six days) was 3 when the fixed-price was NT.250. The results of third fixed-price type auction were: number of view (the average viewed number of products web page in six days) was 30.4, number of trace (the total pieces of clothes that had been traced in six days) was 9, and number of deal (the total cases of clothes that had been sold in six days) was 12 when the fixed-price was NT.220.

	Number of view(average)	Number of trace(total)	Number of deal(total)
NT.280	29.25	6	1
NT.250	27.45	2	3
NT.220	30.4	9	12

Table 4.2Laboratory experiment result (fixed-price)

4.1.3 Hypothesis testing

We calculated the final profit with two conditions, one condition was to include the cost of rest unsold clothes (comprised product cost, list cost, and transportation), another was to exclude the cost of rest unsold clothes (only calculated the deal price of sold items, the list cost of sold items, and transportation). The profit of included rest product was NT.-2376 when the bidding type was opened reserved price. The excluded rest product profit was NT.72 when the bidding type was opened reserved price. On the other hand, the profit of included rest product was NT.-2228 when the bidding type was hidden reserved price. The excluded rest product profit was NT.-56 when the bidding type was hidden reserved price.

The profit of included rest product was NT.-2878 when the buyout price was NT.280, and the excluded rest product profit was NT.72. The profit of included rest product was NT.-2393 when the buyout price was NT.250, and the excluded rest product profit was NT.166. The profit of included rest product was NT.-929 when the buyout price was NT.220, and the excluded rest product profit was NT.223.

		Profit	Profit(exclude rest product)
Bidding	Opened reserved price	-2376	72
	Hidden reserved price	-2228	-56
Fixed-price	NT.280	-2878	38
	NT.250	-2393	166
	NT.220	-929	223

Table 4.3Experiment measure (laboratory experiment)

Apparently, the profit of fixed-price was higher than that of bidding (except the buyout price NT.280). To avoid the price effect (higher price with lower sold quantity), and control the condition, we compared the result of lowest buyout price (NT.220) to that of bidding with statistic analysis. The sold probability of lowest buyout price was 0.6, that of opened reserved price bidding was 0.2, and that of hidden opened reserved price bidding was 0.3. The statistic value Z=-3.6530(opened v.s. NT.220), and significant level was 0.00013. The statistic value Z=-2.7397(hidden v.s. NT.220), and significant level was 0.003075. The sold probabilities of both bidding were lower than the lowest fixed-price. Besides, the excluded rest product profit of fixed-price (NT.220) was NT.223, which was the highest profit in the comparison of bidding & fixed-price. Consequently, our Hypothesis 1, "When seller chooses fixed-price strategy, his profit would be more than bidding way." was supported.

	Sold probability	Statistic value	Significant level (two-tailed)
NT.220	0.6		
Opened reserved price	0.2	Z=-3.6530	0.00013
Hidden reserved price	0.3	Z=-2.7397	0.003075

Table 4.4Statistics analysis (laboratory experiment)

Hypothesis 2" When seller chooses fixed-price strategy, the successful transaction would be more than bidding way." was tested in Hypothesis 1 (See Table 4.4). The statistic value Z=-3.6530 (opened v.s. NT.220), and significant level was 0.00013. The statistic value Z=-2.7397(hidden v.s. NT.220), and significant level was 0.003075. Hypothesis 2 was supported We tested hypothesis 3" When seller chooses bidding strategy, the more price information (opened reserved price) would lead more earnings for seller than less price information (hidden reserved price)." by laboratory data. We used p-test to test the sold probability of opened reserved price and hidden reserved price, the sold probability of opened reserved price was 0.2, the sold probability of hidden reserved price was 0.3. The statistic value Z=-1.1180, and significant level was 0.131776. In table 4.3, the profit (excluded rest unsold product) of opened reserved price was higher than that of hidden reserved price, but the profit (included rest unsold product) of opened reserved price was lower than that of hidden reserved price. Hypothesis 3 was partially supported by laboratory experiment.

4.2 Study2: Field study

4.2.1 Ordinary product

During June 1st- June 20th, we observed five products with both bidding and fixed-price pricing strategies. The results of field study in ordinary product were: average final price (comprised deal price and transportation) was NT.437.4, number of bids (the average number of bids that had been submitted during observed period) was 15, and seller's reputation (the average of seller's reputation) was 15502, when the pricing strategy was bidding. The average final price (comprised deal price and transportation) was NT.640, number of bids (the average number of bids that had been submitted during observed period; in this condition, deal pieces were also considered) was 3.4, and seller's reputation (the average of seller's reputation) was4280.6, when the pricing strategy was fixed-price.

	Bidding	Fixed-price
Final price(average)	437.4	640
Number of bids(average)	15	3.4
Seller's reputation	15502	4280.6
(average)		

Table 4.5Field study result (ordinary product)

We also plotted scatter diagram to examine whether the effect of seller reputation on the final price of ordinary product (comprised bidding price and transportation) is significantly strong. The result is shown in Fig.4.1 (excluded one

outlier)

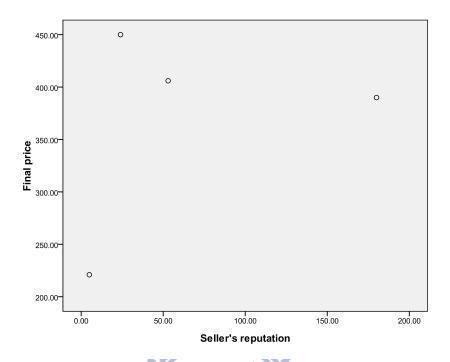


Fig. 4.1 Field study scatter diagram (ordinary product)

From the scatter diagram, we concluded the seller's reputation didn't strongly affect the final price of these four products. 896

4.2.2 Luxury product

We found product 1 was sold by many sellers with bidding price strategy when the product feature was luxury (we observed 11 product records), and the next calculation used the average data of eleven product 1 with other four different products. The results of field study in luxury product were: average final price (comprised deal price and transportation) was NT.476.3, number of bids (the average number of bids that had been submitted during observed period) was 16.96, and seller's reputation (the average of seller's reputation) was 983.22, when the pricing

strategy was bidding. The average final price (comprised deal price and transportation) was NT.865.8, number of bids (the average number of bids that had been submitted during observed period; in this condition, deal pieces are also considered) was 3.6, and seller's reputation (the average of seller's reputation) was 452.2, when the pricing strategy was fixed-price.

	Bidding	Fixed-price
Final price(average)	534.55	865.8
Number of bids(average)	16.96	3.6
Seller's reputation	983.22	452.2
(average)		

Table 4.6Field study result (luxury product)

We also plotted scatter diagram to examine whether the effect of seller reputation on ordinary product's final price (comprised bidding price and transportation) is significantly strong. The result is shown in Fig.4.2.

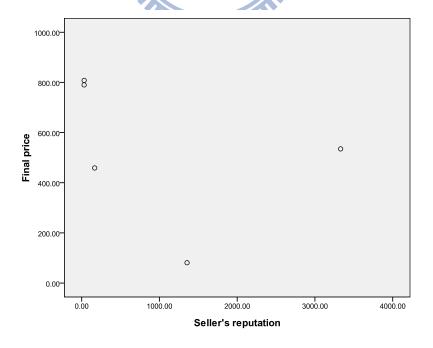


Fig. 4.2 Field study scatter diagram (Luxury product)

From the scatter diagram we concluded the seller's reputation didn't strongly affect the final price of these five products.

Next, we plotted scatter diagram to find out whether there is the pattern between seller's reputation and final price of product 1. The result is shown in Fig.4.3 (excluded three outliers)

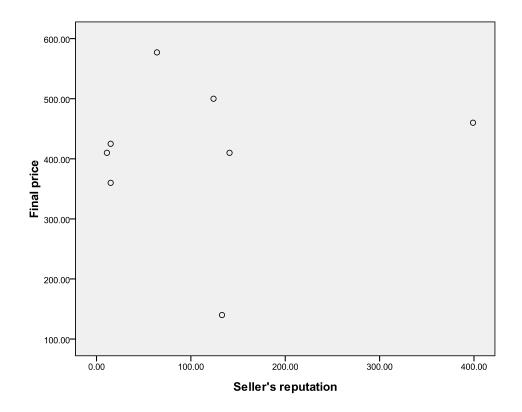


Fig. 4.3 Field study scatter diagram (Luxury product1)

From the scatter diagram we concluded the seller's reputation didn't strongly affect the final price of these eight products.

4.2.3 Hypothesis testing

Ordinary product

Hypothesis 1 was examined by independent T test. We used SPSS statistic software to obtain the statistics, and the statistic result were t-value 2.451, and significant level 0.04, at α =0.05, which were significant. Hypothesis 1"When seller chooses fix-price strategy, his profit would be more than bidding way." was supported.

Statistic value	Significant level (two-tailed)
T=2.451	P=0.04

Hypothesis 2" When seller chooses fixed-price strategy, the transaction amount would be more than bidding way." We analyzed this hypothesis by independent T test. We used SPSS statistic software to obtain statistics, and the statistic results were t-value 4.707, and significant level 0.009, at α =0.05, which were significant. Hypothesis 2 was supported.

Statistic value	Significant level (two-tailed)
T=4.707	P=0.009

Hypothesis 3" When seller chooses bidding strategy, the more price information (opened reserved price) would lead more earnings for seller than less price information (hidden reserved price)." was not tested by field study, because field

study couldn't control the amount of price information.

Luxury product

Hypothesis 1 was examined by independent T test. We used SPSS statistic software to obtain statistics, and the statistic results were t-value 1.409, and significant level 0.196, at α =0.05, which were not significant. Hypothesis 1"When seller chooses fix-price strategy, his profit would be more than bidding way." wasn't supported.

Significant level			
(two-tailed)			
P=0.196			

Hypothesis 2" When seller chooses fix-price strategy, the transaction amount would be more than bidding way." We analyzed this hypothesis by independent T test. We used SPSS statistic software to obtain statistics, and the statistic results were t-value 1.218, and significant level 0.29, at α =0.05, which were not significant. Hypothesis 2 wasn't supported.

Statistic value	Significant level	
	(two-tailed)	
T=1.218	P=0.29	

Hypothesis 3" When seller chooses bidding strategy, the more price information (opened reserved price) would lead more earnings for seller than less price information (hidden reserved price)." was not tested by field study, because field

study couldn't control the amount of price information.

The following table is the result of Hypothesis testing

	Laboratory experiment	Field study
H1:Fixed-price>Bidding	Supported	Partially supported
H2:Fixed-price transaction	Supported	Partially supported
amount>Bidding		
transaction amount		
H3:Higher precision	Partially supported	
level>lower precision		
level(on bidding condition)		

Table 4.7Hypothesis analysis



Chapter 5 Conclusion

5.1 Discussion

Our hypothesis 1 "When seller chooses fix-price strategy, his profit would be more than bidding way "was supported by laboratory experiment and field research. Although Ariely & Simonson(2003)demonstrated bidding would lead to higher deal price than other identical product which was available to be searched. However, it is probably due to the product category. We used ordinary clothes to examine the effect of consumer's price perception on seller's earning, and the result was significant. We demonstrated the pricing strategy of original auction did not work anymore. For consumers, seller-supplied price would affect their evaluations of product during auction process (Kamins, Drèze, & Folkes, 2004). In our study, the buyout price was similar to the seller-supplied price (in Kamins, Drèze, & Folkes's experiment design, seller-supplied prices were reserved price and minimum starting price), and we believed buyout price could help consumer's buying decision. In other words, fixed-price probably means this product is more valuable to consumers, and seller would sell it with fixed-price rather than bid. In other aspect, this also means the consumer becomes more impatient to bid over time. Goal theory(Heckhausen & Gollwitzer, 1987) could also explain this inference. The patient consumer would pay

more time to bid and search information which is helpful for product evaluation.

That's the reason why our experiment demonstrated that bidding is usually not able to submit price which is higher than fixed-price. Impatient consumers would pay more money to ensure they can obtain this product in shorter time. However, there are also opposite cases- the excluded outlier in luxury product bidding result of field study (see Appendix VIIII), in which the bidding prices were higher than available fixed-price of the identical merchandise. We considered that the reasons were loyalty to the website (Anderson & Srinivasan, 2003), seller's reputation(Lucking-Reiley, 1999) and searching cost(Lynch Jr & Ariely, 2000) which was higher than we expected.

Hypothesis 2" When seller chooses fix-price strategy, the transaction amount would be more than bidding way." was supported by laboratory experiment and partially supported by field study. This outcome was not only for the systematic setting of auction, but also pointed out nowadays consumers get used to the fixed-price business model. The statistical insignificance might be considered as the impact of product feature, either. The buyers who bought luxury product were fewer rationally.

Hypothesis 3" When seller chooses bidding strategy, the more price information (opened reserved price) would lead more earnings for seller than less price

information (hidden reserved price)." wasn't totally supported by laboratory experiment. Our experiment outcome was partially diverse when compared to Chernev's (2006) finding, and it is probably due to our experiment design. Our experiment design was more price information, which informed consumer our minimum acceptable price by transportation (NT.200), and the start bidding price(in our experiment, deal price was also considered) was NT.1. The commission fee (3% of deal price) was lower than less of price information (we set the reserved price as NT.150, and bidders should at least bid up to NT.150, then we would sell the product to her). Besides, cognitive dissonance(Festinger, 1957) might happen. Consumer's attitude toward the hidden reserved price was positive, and she might think the reserved price is low. Since she joined the bidding, endowment effect (Thaler, 1980)might occur. That is, she would bid until the bidding price is over the hidden reserved price. Some bidders might think the transportation is too high, and didn't join the auction, price information was facile to get in online auction, buyer could determine willing-to-pay whether seller provided price information or not. Finally, although the sold probability of opened reserved price was less than hidden, total profit of opened reserved price was still more than hidden, we can conclude opened reserved price is more profitable for seller, because cost of opened reserved price was less than hidden.

5.2 Managerial implication

Consumers are sensitive to price

When buyout price was NT.280, we sold one piece of product. On the other hand, as buyout price was lower (from NT.280, NT.250, to NT.220), the sold pieces increased to three and twelve. That may point out consumer's buying decision is mainly affected by price(Kim, Srinivasan, & Wilcox, 1999) in the Internet nowadays.

Bidding doesn't work anymore

In the earlier Internet period, search engine was on developing, and consumers were learning this new business channel. However, after these years, search engine has been developed thoroughly, and consumers are also getting more familiar to the artificial online shopping store. In another aspect, for consumer, this will be an advantage, because the bidding prices submitted by other bidders won't be higher than the available fixed-price, the final deal price will be lower than market price. However, bidding is a great advertising tool, so the online shops we observed all adopted both pricing strategies- bidding and fixed-price. This phenomenon might explain why many retailer stores used DM merchandize to apply the advertising impact.

Seller reputation is important

Our field study excluded some outliers, these outliers were dealt in an unbelievable high price, and we noticed this case happened when the seller reputation was extremely high (see Appendix IX). That means in the high-risk trade condition (online auction), buyer prefers to choose more reliable seller; in other words; sellers with higher reputation records may have better selling.

5.3 Limitation

Product feature

We adopted clothes to be our experiment stimulus. The common product feature of clothes was consistent with our hypothesis, but the luxury product feature of clothes was apparently opposite to our hypothesis. That's the nature of feature weakness, but in other aspect, it may be a manipulating advantage.

Seller's honesty

This limitation was mainly from the experiment defects of field research. We could not ensure the auction was real, because some sellers used several accounts to bid their own product, and obtained reputation records which are beneficial for subsequent selling. Furthermore, some sellers might join the auction to bid up the bidding price.

Manipulation check

The experiment result partially supported the hypothesis, and it is probably due to our experiment design. In our laboratory experiment design of bidding, the reserved price was the product price with transportation when opened. Some buyers could take transportation as the minimum price which the seller would accept, but some took transportation as an unbelievable high charge. The following research should pretest the buyer's perception of this condition.

Data quantity

For time limitation, the data of laboratory experiment and field study in our study were less than what we expected. Following researcher may take this into account when expecting their experiment length.

5.4 Future research

Future research may investigate the product categories which used the reserved price mostly. Match product feature and use different pricing strategy, and then the experiment conclusion may be diverse. Or add some condition, for example, put buyout price simultaneously in bidding auction type, to test whether online buyer's behavior would be different with auction which is only bidding. The following study may observe the number of bids on different auction condition, and infer possible online buyer behavior.

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Appendix I Auction systemic setting



Appendix II Pretest result







Appendix III Laboratory experiment data (bidding feat. opened reserve price)

	Bid price	Number of	Auction	Number of	Number
		view	length	trace	of bids
Product1	1	36	6	1	0
Product2	1	59	6	2	0
Product3	1	65	6	2	0
Product4	1	96	6	0	0
Product5	1	26	6	0	0
Product6	1	122	6	4	1
Product7	1	38	6	0	0
Product8	1	13	6	0	0
Product9	1	40	6	1	0
Product10	1	90	6	2	1
Product11	1	120	6	3	1
Product12	1	45	1/6	2	0
Product13	1	51	6	0	0
Product14	1	5/ 73 E	S 126 =	3	0
Product15	1	65	6	4	1
Product16	1	72	6	0	0
Product17	1	39	6	1	0
Product18	1	70	6	1	0
Product19	1	17	6	0	0
Product20	1	44	6	1	0

Appendix IV Laboratory experiment result (bidding feat. hidden reserve price)

	Bid price	Number of	Auction	Number of	Number
		view	length	trace	of bids
Product1	100	31	6	0	1
Product2	10	79	6	2	1
Product3	110	156	6	3	9
Product4	160	91	6	1	3
Product5	100	48	6	0	1
Product6	1	105	6	2	1
Product7	150	51	6	0	1
Product8	1	30	6	1	0
Product9	11	55	6	5	2
Product10	120	120	6	4	6
Product11	150	137	6	3	4
Product12	150	S/IIIE	S 126	3	5
Product13	160	58	6	1	2
Product14	141	87	6	3	4
Product15	1	53	6	1	1
Product16	100	103	6	1	1
Product17	150	50	6	0	3
Product18	50	146	6	2	5
Product19	1	40	6	0	0
Product20	1	60	6	1	0

★Red ones are sold items

	Price	Number of	Auction	Number of
	-	view	length	trace
Product1	280	16	6	0
Product2	280	26	6	2
Product3	280	32	6	0
Product4	280	48	6	2
Product5	280	34	6	0
Product6	280	34	6	0
Product7	280	36	6	0
Product8	280	5	6	0
Product9	280	25	6	2
Product10	280	30	6	0
Product11	280	55	6	3
Product12	280		6	0
Product13	280	20	6	0
Product14	280	42	6	1
Product15	280	22	6	0
Product16	280	42	6	1
Product17	280	26	6	0
Product18	280	40	6	0
Product19	280	12	6	0
Product20	280	22	6	0

%Red ones are sold items

Appendix VI Laboratory experiment result (fixed-price feat. buyout price NT.250)

	Price	Number of	Auction	Number of
		view	length	trace
Product1	250	13	6	0
Product2	250	17	6	0
Product3	250	26	6	0
Product4	250	54	6	0
Product5	250	29	6	0
Product6	250	50	6	0
Product7	250	18	6	0
Product8	250	4	6	0
Product9	250	24	6	1
Product10	250	40	6	0
Product11	250	37	3	0
Product12	250		6	0
Product13	250	18	6	0
Product14	250	30	6	0
Product15	250	29	6	0
Product16	250	44	6	1
Product17	250	9	6	0
Product18	250	55	6	0
Product19	250	7	6	0
Product20	250	30	6	0

★Red ones are sold items

Appendix VII Laboratory experiment result (fixed-price feat. buyout price NT.220)

	Price	Number of	Auction	Number of
		view	length	trace
Product1	220	9	6	0
Product2	220	29	6	0
Product3	220	36	5	2
Product4	220	84	6	1
Product5	220	42	6	0
Product6	220	39	6	1
Product7	220	27	6	0
Product8	220	20	5	1
Product9	220	19	6	0
Product10	220	38	6	0
Product11	220	8	1	1
Product12	220	188	4	2
Product13	220	18	6	0
Product14	220	35	6	1
Product15	220	31	6	0
Product16	220	49	6	1
Product17	220	18	6	0
Product18	220	52	6	1
Product19	220	20	6	0
Product20	220	16	6	0

★Red ones are sold items

Appendix VIII Field research result (ordinary product)

	Product1	Product1	Product2	Product2	Product3	Product3
	(Buyout)		(Buyout)		(Buyout)	
Deal price	620	660	550	351	570	350
Number of	2	26	3	19	3	9
bids						
Transportation	80	60	40	55	50	100
Seller's	262	15240	174	53	87	24
reputation						

	Product4	Product4	Product5	Product5
	(Buyout)		(Buyout)	
Deal price	590	310	590	171
Number of	4	8	5	13
bids			ESA	IE
Transportation	50	80	60	50
Seller's	5640	180	15240	5
reputation		E X	1896	E

Appendix IX Field research result (luxury product)

	Product1	Product1	Product1	Product1	Product1	Product1
	(Buyout)					
Deal price	549	1030	710	680	310	380
Number of bids	12	42	21	41	15	16
Transportation	60	60	60	60	100	80
Seller's reputation	1440	5953	14536	15240	11	399

	Product1	Product1	Product1	Product1	Product1	Product1
Deal price	330	310	477	370	100	400
Number of bids	12	19	27	24	11	23
Transportation	80	50	100	55	40	100
Seller's reputation	141	15	ES 64	15	133	124

	Product2	Product2	Product3	Product3	Product4	Product4
	(Buyout)		(Buyout)		(Buyout)	
Deal price	750	419	1000	750	300	21
Number of bids	3	18	1	27	1	3
Transportation	55	40	80	40	55	60
Seller's reputation	707	167	32	32	50	1355

	Product5	Product5	
	(Buyout)		
Deal price	1400	728	
Number of bids	1	14	
Transportation	80	80	
Seller's reputation	32	32	

 [★]Red ones are excluded outlier