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The Frame Effect of Price in Online Selling

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Abstract: This research investigates how the price frame affects the consumer's preference. Using qualitative methodology from the perspective of behavioral science, we find in the overall assessment of a product, the consumers have more selective attention and thus higher weight on secondary attributes under partitioned pricing than under combined pricing. That means in online selling, consumers pay more attention on shipping cost under partitioned pricing than under combined pricing. Under partitioned pricing, the higher the price evaluability the attribute has, the more selective attention on the attribute and thus higher weight on it in the overall assessment of a product. At the same time, consumer's preference is decided by the transaction value of the attribute which is easier to evaluate. If the price of the product is easier to evaluate, consumers will put more weight on it, and they will choose the product which has higher transaction value on product price. In contrast, if the shipping cost is easier to evaluate, consumers will put more weight on it, and they will choose the product which has higher transaction value on shipping cost.

Keywords: online pricing; price evaluability; preference; frame effect

1. INTRODUCTION

Online purchase is becoming an important part in our daily life. According to the survey of CNNIC (China Internet Network Information Center), the total market size of e-commerce has reached RMB5,000 billion by the third quarter of 2012. The retail market size is RMB 760.9 billion among it and has increased by 34.5%. Internet is changing the buying behavior of consumers. The survey showed that 77% network-citizen would search online before they made buying decision. The result of search will affect the buying behavior of these people, and been multiplied diffused. So how to present the information of product or service online is a question worth of making a research. As price is one of the most important elements in buying decision, the research on price presenting is significant.

There are two types of pricing strategies are widely used online. One is partitioned pricing which separates the total product sale price into a base price and various surcharges, such as shipping and handling, taxes and other fees (e.g., "\$115 for a book plus \$25 for shipping"). The other is combined pricing which include all the prices of the different components (e.g., "\$140 for a book including shipping"). Which price format is preferred by consumers, and if the company use partitioned price, how to segregate the price between different components when keep the total price constant. These are the two questions we will probe in this thesis.

2. LITERATURE REVIEW

Frame effect refers to two similar statements in logic about the same thing resulting different judgment and decision^{[1][2]}. Many researchers have confirmed that the framing of messages about products affects consumers' purchase intentions or behavior. Levin et al. (1995) found that consumers' likelihood of purchasing beef was higher when the beef was framed in terms of its percent lean rather than its percent fat^[3].

Recent behavioral research suggests that shifts in preferences could be determined by the way prices are framed. Morwitz et al. (1998) found when the surcharge was presented as dollar form (\$5) or percentage form (10% of \$50), the likelihood of purchase was different. The latter one was lower than the former one. Because

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people needed more recognition effort when they processed the information of percentage form^[4]. Cheema (2008) found whether people paid attention to surcharge depending on the reputation of the sellers. If the reputation of the seller was high, people paid less attention to surcharge. But when the reputation of the seller was lower, people would pay more attention to surcharge. When they thought the surcharge was higher, they would give up purchasing^[5]. Carlson and Weathers (2007) discovered that when the total price was not presented and the seller was low trustworthy, the buying intention and perceived justice of price were lower when the price was portioned into several parts than in few parts. But when the trustworthy of the seller was higher, there was no difference. However, when the total price was presented, whether the seller was high trustworthy or low trustworthy, the amount of parts of the price were portioned was positive correlated to the buying intention and perceived justice of price^[6]. Zheng and Dong (2009) found that the attributes of the secondary product would affect the buying behavior of the consumers. When the secondary product was utilitarian, the partitioned price was more significant to improve the likelihood of buying the bundles and satisfaction of decision making than combined price. When the secondary product was hedonic, the result is opposite^[7].

When the total price remains constant, how should it be separated between the different components? Yadav(1994) made a study on the thinking processing of partitioned price, and found that when consumers evaluated a bundle product, they used recognition processing model of anchoring and adjusting. They chose to evaluate the primary component at first, and adjusted the judgment based on the evaluation of secondary component, but this adjustment was usually not enough. So the focal component affected the total evaluation more greatly than the secondary one^[8]. But some other research anticipated that consumers were more focused on the relative smaller component. According to Webber Rule, when the absolute value of change was the same, consumers were more sensitive to the lower-priced component than the high-priced one. Similarly, reference dependence theory demonstrated that people evaluated the economic results based on the percentage rather than absolute value^{[9][10]}. For example, \$5 discount is perceived higher when the base price is \$10 than that of \$100. From the perspective of Information Integration Theory Gaeth et al. posited that when people were evaluating the bundled products, the weight on the secondary component was larger than the value proportion on the bundle^[11]. From these studies of above, we can find there is a contradiction on which component is more important when people make buying decisions. So we can try to use some other ways to study how we should separate the price between different components from another point of view. From the study of past, we find the portioned components' attribute can affect the effectiveness of partitioned price. Chakravarti (2002) posited that different partitioned price format made people focused on different attribute of the core product. Partitioned pricing on consumption-related feature (eg. Ice-making machine) made people focused on the consumption benefits of core product, and improved the total evaluation of the price. But if partitioned pricing on performance-related feature (eg. Insurance) made people focused on the performance of core product. They might worry about the risk of the product problems which would decrease the effectiveness of partitioned price^[12]. Xia and Monroe (2004) also found for online sellers, it was more accepted when partitioned pricing on sales tax than shipping^[3].

3. THE CONCEPTUAL MODEL

In order to explain how price frame effect the consumer's value perception, we can use a simple psychological mechanism. Consumers correlate the price of each attribute to its benefit. Different price presentation format changes consumer's information processing of each attribute. Consumer will reduce his/her recognition effort as possible when he/she does not sacrifice the accuracy. So we can suppose: 1. Consumer will have a subjective priority to the product attribute, for instance, they can distinguish focal and secondary

attribute.2. Based on the number of the prices, consumers evaluate the attributes as the number of prices presented to them heuristically. Specifically, when price is presented as combined format, consumers are focused on focal attribute and form a single evaluation. However, when price is presented as partitioned format, the benefits of multiple attributes are highlighted, which makes secondary attribute salient. For a product with clear focal and secondary attribute, variations in the perceived value of the latter should exert greater influence on preference when the price is partitioned. Based on the theory of price format and product evaluation, we can construct the conceptual frame as figure 1:

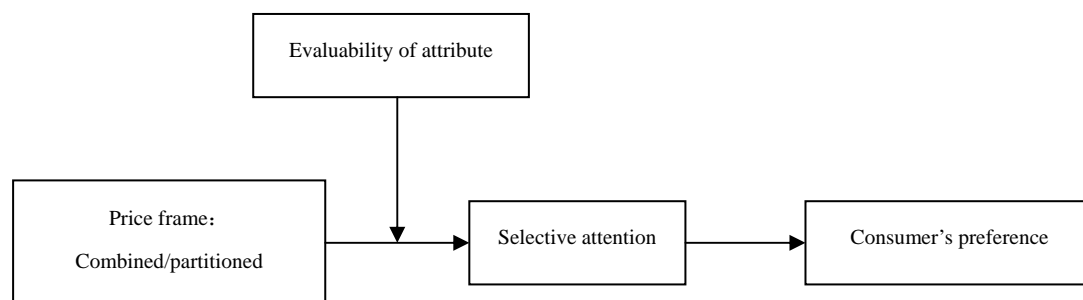


Figure 1. The conceptual model of the research

3.1 Price frame and selective attention

Selective attention means people perceive only part of what they pay attention to. When people are processing the product information, their perception is often effected by selective attention. That is the reason why people have perceptible bias most of time. Partitioned pricing make some separated components more focused by consumers. The research of Chakravarti (2002) and the research of Xia and Monroe(2004) can clarify this from the literature review^{[12][13]}. Bertini and Wathieu (2006) thought price presenting format deciding the depth of which consumers process the price information^[14]. Hamilton and Srivastava (2008) made an experiment of car repair. People had different price sensitive between auto parts and labor. Because auto parts was the high-perceived-benefit component and labor was the low-perceived-benefit component. Participants were more sensitive to the price of components that provided low consumption benefits than to the price of components that provided relatively high consumption benefits. And the experiment demonstrated consumers prefer partitioned pricing product bundle in which the price of the low-benefit component was lower and the price of the high-benefit component was higher^[15]. For the product which is presented as combined price, consumers are more focused on the evaluation of the focal component, for instance the books and theatre tickets. But if the product is presented as partitioned price, the consumers will evaluate each attribute separately which make the relatively secondary attributes that are ignored before get more attention. For instance, the book shipping fee and service fee of ticketing. The processing mechanism shows that not all the attributes are equally silent. Partitioned pricing make people renew the perceived value of each component.

We can refer that when people are evaluating the total value of the product, people have more selective attention on secondary component of partitioned pricing than of combined pricing.

3.2 Selective attention and consumer's preference

Selective attention determines the weight of each attribute in the overall assessment of the product. It positively correlates to the weight which means when people have higher selective attention on an attribute, the higher weight the attribute contributes to the overall assessment of the product. So in the overall assessment of the product, the consumers have higher assessment weight on secondary attribute when the price is partitioned than when the price is combined. Specifically, when the price of secondary component is higher than

expectation, consumers prefer to combined pricing product. When the price of secondary component is lower than expectation, consumers prefer to partitioned pricing product. When the price of secondary component is equal to expectation, the preference has no significant difference.

3.3 Evaluability of attribute mediates between price frame and selective attention

Hsee (1999) posited the concept of evaluability for the first time. Bertini and Wathieu (2006) borrowed this concept to the field of behavioral pricing. They thought if the consumers could judge confidently the price of an attribute in partitioned pricing, the attribute was high evaluability. The judge confidence depended on the accuracy of reference price. This evaluability was negatively correlated to the range of preference price^[14]. When the accepted range of price is believed narrow, the higher the attribute's evaluability. Conversely, when the accepted range of price is believed wide, the smaller the attribute's evaluability. From the studies of above, we can find partitioned pricing make people evaluate each attribute. This processing mechanism derives a question: how to evaluate each attribute to form the overall judgment? From the point of view traditional normative economics, the perceived gains and losses can offset each other and the overall price is the determinant factor. But recent behavior study shows that evaluability of attribute mediates between price frame and selective attention. The higher the evaluability of the attribute, the higher the selective attention on it, however the higher weight on the attribute when the consumers make the overall assessment. That's to say, for partitioned pricing product, when the range of the reference price of secondary component is narrower than focal component, which means the secondary component has high evaluability, the higher selective attention is paid to it. The secondary component accounts for higher weight in the overall assessment. And when the price of secondary component is perceived cheaper, the consumers will have higher preference on the total product. Conversely, when it is perceived more expensive, the consumers will have lower preference on the total product. But if the range of the reference price of focal component is narrower than the secondary component, the preference of the total product is determined by the perceived price of the focal component of the product.

4. THE RESULTS AND DISCUSSIONS

The principal objective of this research is to investigate how the price format affects the consumer's evaluation on the product and to suggest a simple mechanism that explain why partitioning an expense might be advantageous or might not advantageous. This research finds that price format will affect consumer's selective attention on each attribute of the product, whereas affect the overall assessment of the product. The combined pricing make people process incompletely the information of the secondary attribute of the product. Conversely, the partitioned pricing make consumers have higher selective attention on secondary attribute, whereas in the overall evaluation of the product, the perceived value of secondary accounts for higher weight. The management implication of this research are as the following: in the practice of pricing, when the sellers can provide more benefits or enough difference to their competitors on focal attributes, using combined pricing can make people more focused on the focal attributes but not on the secondary attributes which has insignificant effects on the product. This method will benefits the sales. When the sellers can only provide the consumers with homogenous focal attribute but more benefits on secondary attributes, partitioned pricing is a better choice.

This research also demonstrates consumer's evaluation has systematic bias in the process of forming the overall value after the consumers have evaluated each attribute of the product in partitioned pricing. People will allocate higher weight to the parts which is easy to evaluate. The price evaluability of separated attributes decides the consumer's selective attention. The higher the price evaluability of separated attributes, the higher the selective attention that the consumers have on them. The higher the selective attention, the higher the weight on those attributes when forming the overall evaluation of the product. The management implications are as the following: To the attributes which have high price evaluability, the sellers should provide the consumers with

more transaction value. This aim can be realized by two ways: firstly, in partitioned pricing, the sellers should reduce the amount of the price which is allocated to the attribute that have higher price evaluability, but increase the amount of the price which is allocated to the attribute that have lower price evaluability. Secondly, the consumers reasonable perceived value can be realized by manipulating the price evaluability of the attributes. When consumers are not clear on the price of secondary attribute, if the price of the secondary attribute is competitive, the sellers can provide the consumers with narrower range of reference price to increase the evaluability of that attribute and make people put higher weight on that attribute when consumers form the overall assessment on the product. If the price of the secondary attribute is not competitive, the sellers can provide the consumers with wider range of reference price to decrease the evaluability of that attribute and make people put low weight on that attribute and even ignore it when consumers form the overall assessment on the product. In the sales of the price evaluability of secondary attribute is obviously higher than that of focal attribute, the price of secondary attribute is the determinant factor which decides the consumers perceived value and buying behavior. Especially when online selling is becoming more and more popular in recent, the secondary attribute which is insignificant to the consumers in the past, for instance, the shipping fee will become the determinant factor which people decide to buy or give up.

The future research direction should be focused on the characteristics of information processing of Chinese people. In the information processing of price, which social and feeling personalities of Chinese people will affect their price perception. The contrast research is more meaningful to recent pricing practice in the field of behavioral pricing. In addition, in the future research of price evaluability affecting consumers preferences, others factors which have interactive effects with price frame should be considered.

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