

Network Consumers' Reference Price Formation Analysis

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Abstract

In this paper, based on the previous literature on reference prices, the definition, forms of expression and related theories and analysis of reference prices are summarized. Based on this analysis, it is concluded that the reference price formation of online consumers is related to their information search behavior. Finally, E-commerce companies make suggestions for online promotions.

Keywords

Reference Price, Information Search, Online Shopping, E-Commerce

1. Introduction

The reference price is a reference point where the consumer evaluates the price of the product and constitutes the consumer's expectation of the price of the product. It is the result of consumers searching for different information and analyzing information processing. Reference price is an important tool for consumers to save cognition and intrinsic price measurement in the purchasing decision process, and is increasingly valued by companies. The process of information search is the process of consumer decision making and is an important part of the formation of consumer reference prices. In general, consumers will search for information according to their own needs before purchasing decisions. Individuals' limited cognitive ability makes consumers have to use some tools to help them make decisions. Reference prices can effectively help consumers limit the scope of information search. Save on search costs and cognitive efforts have a major impact on purchase decisions and post-purchase evaluations. It can be seen that research on consumer reference prices can help companies better understand consumer behavior, and price and promotion of products to increase profits. Therefore, based on the summary of previous related literature, this pa-

per analyzes and describes the process of forming the reference price of online consumers to help online retailers better understand the consumer purchasing decision process. Finally, it provides suggestions for online promotion of online e-commerce companies.

2. Research on Reference Prices

In recent years, prices have become an important consideration for consumers' purchase decisions and have become the focus of research by merchants and scholars. In the study of Western scholars, it has been pointed out that prices play two important roles in consumers' value perception and purchase decision-making process. The first is to allocate limited resources. Prices are the monetary sacrifices consumers have to make in order to obtain goods. In general, the higher the price, the stronger the sense of currency perceived by the consumer and the lower the perceived price attractiveness (Blattberg *et al.* 1995) [1]. The second is to pass information. Due to the existence of information asymmetry, consumers often infer products based on limited information (such as price) issued by the merchant when they cannot fully grasp the specific information of the product. For example, consumers will infer the quality and value of goods based on the price of the goods.

Commodity prices influence the behavior of purchase behavior decision-making by affecting the value perception of consumers, and are increasingly valued by more and more research scholars, thus developing the research field of consumer price behavior. In these studies, scholars also realized that the price as a factor of consumer appraisal of merchandise attraction, not only affect its value perception by its own absolute index. In 1986, Winer first proposed the existence of a reference price phenomenon using an indirect method. In 1995, Kalyanaram and Winer came to the following conclusions through a large number of empirical studies: Consumers will compare the reference price information formed by past prices with the current price, and make different responses based on the price level after comparison. Scholars realize that when consumers evaluate price attractiveness, besides the absolute price of the product itself, it will be compared with the reference price formed inside, and thus the level of the price will be perceived and the purchase decision will be made. Since then, reference prices have begun to be a part of consumer behavioral behavior and have received the attention of the majority of scholars.

2.1. Definition of Reference Price

Many scholars define the reference price from different perspectives. Foreign scholars are relatively advanced in this research. Kalyanarm and Winer (1995) [2] argue that the consumer's reference price is based on the expected price of past purchase experience and the current shopping environment. Some scholars divide the reference price into internal reference prices and external reference prices based on the source of the price information received. Kalyanaram and

Little (1994) [3] pointed out that the internal reference price is the memory price that the consumer touched in the past purchase process, and the external reference price is the price that consumers observe in the purchase environment. Together, these two parts form their price reference point. Bolton and Lemon (1999) [4] from the perspective of consumer price fairness perception, believe that a reasonable reference price should be “fair” or “fair” to consumers. Bolton, Warlop, and Alba (2003) [5] pointed out that consumers’ perception of price fairness is based on their past purchase prices and prices of other competitors, and on the basis of the evaluation of merchant costs and reasonable profits. Meziyas, Chen, and Murphy (2002) [6] point out that consumers are members of a social group and point out that the reference prices consumers desire are affected by the purchase prices of other consumers of the social groups they are in. Domestic studies on reference prices started relatively late, but they have also developed relatively well. Domestic scholar Qian Haitao (2007) [7] believes that the reference price refers to the relevant price information that the consumer can recall in the mind when purchasing a product. Chang Xue (2008) [8] pointed out from the perspective of information sources that the reference price was the expected price formed by the consumer based on past experience and the current shopping environment. In the buying environment, the price information provided to the consumer through advertising and pricing is called the external reference price; the price at which consumers integrate various types of price information is called the internal reference price. Zhang Zhenglin (2011) [9] from the consumer perception of price perception, that the reference price is based on perceived price, quality, past payment prices, competitive price and other factors formed by the price. With the further development of the reference price, domestic scholars began to make a more comprehensive definition of the reference price starting from the various influencing factors of the reference price. Zeng Yurong (2012) [10] pointed out that the reference price can be summarized as follows: The reference price is based on consumer expectations; The reference price is the price that consumers have adapted in the past and is an internal standard; The reference price is the price that consumers can expect to observe at the point of purchase and is accompanied by a dynamic update of the external environment.

In summary, the reference price refers to the price that the consumer uses to compare with the price provided by the merchant when shopping, and it is the expected price that is jointly influenced by the memory price of the consumer and the current purchase environment. It can be divided into internal reference price and external reference price. Consumers will judge the “fairness” or “fairness” of this reference price based on past purchasing experience, competitive price, merchant’s cost and reasonable profit assessment, and the purchase price of the social group in which it is located.

2.2. The Expression of the Reference Price

It is generally believed that the reference price is stored in the mind of the con-

sumer in the form of a specific number. However, some scholars have found that, in addition to the specific reference price, consumer's reference price may also be a reference price range (such as Li Ning running shoes may be more expensive than ordinary canvas shoes), or some kind of Commodity price beliefs (for example, many store clothes will be discounted before and after Christmas). Mazumdar and Monroe (1990) [11] pointed out in the study that when consumers learn a price information in an unconscious situation, they remember more about a price range than recalling a specific price. Mazumdar, Raj and Sinha (2005) [12] pointed out that the storage mode of the reference price in the consumer brain gradually shifted from the specific price information to the evaluation mode. It can be seen that the consumer's reference price performance form is summarized into three types: one is a specific digital form; the second is a certain price range; and the third is a price evaluation mode for a certain commodity.

In addition, Deaton and Muellbauer (1980) [13] pointed out that consumers would set a budget before purchase to determine the quantity of goods purchased. Heath and Soll (1996) [14] pointed out that the budget set by consumers before the purchase of goods may become a reference point for consumers to actually spend. It can be seen that the consumer's reference price may be expressed in the form of consumer budget.

In general, the expression of reference prices can be divided into digital and non-digital forms. The digital form includes a specific price value range or price range, the source of which mainly includes the consumer's past consumption experience and the budget set by the consumer before consumption. The non-digital form refers to a consumer's belief in price, and its source is also due to the future expectations of the consumer based on past consumer experience. That is, based on the "nearer past", the expectation of future results is formed.

3. Classical Theory and Analysis of Reference Price

The classical theoretical analysis of reference prices can help us to better understand the process and characteristics of reference price formation. This paper provides a theoretical basis for the analysis of the formation of the reference price for Internet consumers.

3.1. Adaptation Level Theory

Helson (1959) [15] proposed the theory of adaptation level, and believed that the current and past experience integrated to form people's internal models (adaptation level), and people respond to external stimuli based on this internal model. The theory of adaptation level points out that in the cognitive process of price, consumers will compare the external price stimuli according to their adaptation level (*i.e.* reference point) to determine the acceptable level of external prices. In other words, when the consumer is facing the advertising reference price, it compares the internal reference price range as an adjustment reference point. If

the reference price of the advertisement falls within the consumer's internal reference price range, the advertisement reference price will be accepted, and at this time, the consumer is less likely to change or move the internal reference price range; If the reference price of the advertisement is not within the internal reference price range, the consumer may adjust the internal reference price to an appropriate level. As a result, companies can use this theory to increase advertising prices, prompting consumers to adjust their internal reference prices to higher levels. However, this theory does not fully explain the consumer's reaction to the reference price of advertising. For example, when the advertising price is excessively blown, consumers will not change their own price perceptions and adjust their own internal reference prices. At this time, the advertising price will be invalid. The assimilation-comparison theory gives a more comprehensive explanation of this phenomenon.

3.2. Assimilation Contrast Theory

Sherif, Hovland (1958) [16] proposed the assimilation contrast theory, whose basic assumption is that individuals compare the new stimulus with the experience of past similar stimulus. This experience constitutes an internal reference range for consumers. External reference prices within this range will be accepted by consumers. When the external reference price is not within the range but at the margin of the range, the internal reference price range of the consumer may move outward in the direction of the reference price, resulting in a new internal reference price range standard, resulting in the "assimilation" phenomenon; However, when the external reference price is far from the consumer's internal reference price, it will be compared with the consumer's internal reference price range, resulting in a "contrast" phenomenon. The connotation explained by this theory is that when consumers face external reference prices, they will produce two kinds of decision results. First, the internal reference price of the consumer is "assimilated" with the external reference price, that is, the consumer's internal reference price will be affected by the external reference price and accept the external reference price; Second, the internal reference price of consumers forms an "opposition" with external reference prices. That is, consumers' internal reference prices will not be affected by external reference prices and do not trust external reference prices. However, the theory's limitation is that it cannot explain the following phenomenon: When the exaggerated reference price is not unreasonably unacceptable, the consumer will still adjust the internal reference price to save cognitive costs and accept the exaggerated reference price.

3.3. Expectation Theory

The expectation theory of Kahneman and Tversky (1979) [17] believes that consumers will produce different decision responses based on different results after comparing with reference points. When consumers compare with the reference point, the loss they perceive can be stronger than the benefit. Many stu-

dies also show that consumers' perceptions of losses and benefits are different, and they respond more strongly to losses. In other words, when the consumer compares the actual price of the product with the reference price, if the actual price is higher than the reference price, the consumer will feel "loss"; If the actual price is lower than the reference price, the consumer will feel "return", but the consumer is more sensitive to the perceived "loss" response. Mayhew and Winer (1992) [18] in his study also pointed out that the loss caused by the consumer's response is greater than the response caused by the return. It can be seen that consumers' perceptions of "loss" and "return" are different. Frankel, Mayew, and Sun (2001) [19] consider the reference price as a consumer's perception of value, and believe that the perceived price of the reference price to consumers' benefits and losses will be affected by the consumer's price sensitivity, promotion sensitivity, and the impact of brand loyalty. Bell and Lattin (2000) [20] found that different types of consumers have different price reference points, and that price-sensitive consumers have lower reference prices than those who are price-insensitive.

Based on the above research and analysis, consumers compare the actual price with the intrinsic reference price, resulting in two perceptions of "loss" and "gain". If the actual price is higher than the reference price, the consumer perceives "loss", and vice versa, the "return" is perceived, and the consumer's response to "loss" is greater. The reason is that when the consumer is price-sensitive, he will have a lower reference price and therefore may experience more losses in the purchase; when the consumer price is not sensitive, it will have a higher reference price and therefore experience more gains in the purchase. In addition to price sensitivity, consumers' sensitivity to promotions and brand sensitivities may also affect consumers' reference prices, which in turn may affect their perception of "loss" and "return" during the purchase process.

3.4. Range Theory

Some scholars have proposed Volkmann (1951) to apply the theory of range theory and price perception. It is believed that consumers will form a price range with upper and lower limits based on past memory prices. Therefore, the relative position of the actual price of a commodity within this price range will become an indicator for people to judge the attractiveness of commodity prices. Parducci (1995) further proposes a range-frequency theory that the consumer's reference price is also related to the frequency of the price, and the higher the frequency of a certain price, the greater the impact on the consumer. Janiszewski and Lichtenstein (1999) [21] believe that consumers evaluate the attractiveness of a price by comparing the price of the product with the value of the price range in their mind. When the reference price exists, when the higher range of the reference price evoked rises, consumers will be more likely to accept the market price of the product. On the contrary, when the lower range of reference prices that are

evoked falls, consumers will find it harder to accept the market price of the goods. For example, if the consumer's reference price range for a computer is 3000 - 5000, and the price of an original 5000 computer rises to 5100 in a certain period of time, consumers will expand the reference price range upwards to 5100. When the price of computers fell to 5000 yuan, consumers would be more comfortable with the price. If the original price of 5000 computers is reduced to 2900 due to promotional activities, consumers will expand the reference price range down to 2900, then the price of the computer will return to 5000 after the promotion, and consumers will find it difficult to accept the price.

Based on the above classic theory of reference prices, the following conclusions can be drawn: First, the reference price is a reference price range that is formed by consumers based on current and past experience; second, the reference price range will constantly change. When the reference price range moves to the new price, it is called the assimilation effect. When the reference price range is larger than the new price gap, the comparison will be harder. Thirdly, the reference price is an important tool for consumers to perceive "returns" and "losses". Their use results will have an impact on consumers' purchase decisions, and consumers' responses to losses are greater than responses to benefits. Fourth, the values at both ends of the reference price range will change, and compared with the lower range of the reference price, consumers are more likely to accept market prices after the higher range of the reference price rises.

4. Network Consumer's Reference Price Formation

With the popularity of the Internet, more and more people tend to shop online. In the e-commerce environment, the consumer's purchase process can be divided into four stages: information search, evaluation selection, purchase decision making, after-sales service, and service evaluation. Information search, as the first step in the consumer purchase process, has a crucial influence on consumers' purchase decisions. This article is based on the online consumer's information search behavior, combined with the reference price related theory, such as the adaptation level theory, the assimilation contrast theory, the expectation theory and the scope theory, etc., to analyze how the online consumer information search behavior dynamically affects their reference price.

4.1. The Reference Price Formation of Online Consumers Is Influenced by Information Search Behavior

Battman and Park (1980) divided information into internal source information and external source information according to the different sources of information. Liu Hailong (2009) [22] concluded in his dissertation that internal source information refers to the existing information stored in personal cognitive memory; Information from internal sources is further divided into active acquisition and passive acquisition. Active acquisition is the search of past memories by consumers, memories of personal experiences, etc.; passive acquisition refers

to information that is less involved. External source information refers to information other than consumer memory. According to specific sources, it can be divided into personal source information, such as family, friends, neighbors, etc. Business source information, such as from advertising, distributors, etc.; public source information, such as neutral information without commercial propaganda; Source of experience information, such as experience gained through processing, inspection, and use of the product. It is also pointed out in their research that consumers tend to use current memory information for price judgment, but if consumers lack the required price memory information, they will tend to search for price information from the external environment to judge. It can be seen that the reference price as a kind of information sought by consumers will be influenced by the information search process of consumers. Compared with the traditional consumption channels, in the e-commerce environment, the network as a supplement to consumer information search channels, the impact of the formation of consumer reference prices cannot be ignored.

4.2. Analysis of Reference Price Formation Based on Information Search Behavior of Online Consumers

Research on consumer information search behavior can basically be classified into the following three theories: information economics theory, psychological motivation theory and information processing theory.

When consumers are in a state of “very knowledgeable,” “uncertain,” or “problem solving,” information search behavior occurs. Based on the information processing theory of consumers, the analysis of the process of forming a reference price for information search by consumers under the e-commerce environment is as follows: The first is the identification puzzle. At this stage, consumers have limited knowledge or lack of past purchasing experience. Consumers’ reference price range for a certain product is not clear, resulting in “knowledge of the very status” and “uncertainty”. And the “problem produced” status; The second stage is that the consumer determines the connotation of the problem according to the nature of the problem, and knows that it is necessary to determine the reference price range of the product through information search; The third stage is the consumer’s specific information search process. At this time, different consumers will have different information search focus. For example, fair-minded consumers will focus on searching for experience-sharing information for other consumers of the same product, while price-sensitive consumers focus on the price attributes of the product, and price-insensitive consumers focus on other attributes of the product. This information has become an important factor in the formation of consumer reference prices. The fourth stage is the evaluation of problem solving. Consumers have already formed a reference price range for a certain product in the third stage. At this stage, consumers will use their internal reference price range to assess the attractiveness of the actual market price. Similarly, different types of consumers may have different perceived values after using reference prices. For example,

price-sensitive consumers tend to have a lower reference price floor and are therefore prone to experience “loss”.

5. Conclusion

This article through the combing and summary of reference price related literature, combined with information processing theory, analysis of the formation process of online consumer reference price, draws the following conclusions: First, the reference price is the expected price formed by the consumer based on past consumer experience and the current purchase environment. The specific forms of expression are digital and non-digital; second, the reference price has dynamic characteristics, and its specific changes will change with the consumer's information processing; third, the formation of reference prices for online consumers is the result of information search and processing. Consumers with different characteristics will have different information processing methods. Therefore, different reference prices are formed and ultimately affect the consumer's purchase decision.

6. Some Suggestions for E-Commerce Companies

This article is based on the research of consumer information search behavior, using the classical theory of reference price to analyze the formation process of the reference price of online consumers in the e-commerce environment, which is of great significance to the promotion and pricing strategy of the enterprise.

- 1) E-commerce companies provide consumers with reference price information. The reference price of consumers is easily influenced by external factors. By proactively providing reference price information, companies can effectively increase the reference price range of consumers, thereby increasing consumers' “transaction value” perception and thus promoting sales activities.
- 2) E-commerce companies focus on product quality, provide good after-sales services, and increase customer satisfaction. The formation of reference prices for consumers is vulnerable to the impact of post-purchase evaluations by other consumers. E-commerce companies should pay attention to product quality and consumer after-sales service management, so as to increase customer satisfaction after sales, and then form a good range of word of mouth. At the same time, do a good job in online post-purchase commentary information management, and actively provide effective commentary information to help consumers to better form internal psychological prices.

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