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Literature Review: The Impact of Consumer Loss Aversion on Pricing Strategies in the Internet Era

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Abstract: Loss aversion is gaining attention in economic analysis and has implications for the pricing strategies of merchants in this Internet age. Moreover, in the past, there was a particular gap in the research on the relationship between loss aversion and pricing strategies. For this reason, this paper adopts the form of a literature review to review the relevant literature in the past. This review covers studies and related articles on 'loss aversion', 'loss aversion in the Internet era', 'pricing policies' and 'loss aversion associated with pricing strategies'. This study aims to provide an accurate definition of both by reviewing the literature on loss aversion and pricing policies. By summarizing and analyzing the past literature, the relationship between the two is re-examined to find the intrinsic link that exists between the two. The results of this study identify research gaps in the research area and point out future research directions.

Keywords: loss aversion, pricing strategy, internet era

1. Introduction

Loss aversion is a psychological concept that has received increasing attention in economic analysis and has gradually become a buzzword. The psychological concept of loss aversion is widely used in many social sciences, such as law, medical decision-making, political science, marketing, metals, and consumer economics [1]. The main reason for the popularity of the psychological concept of loss aversion is that it can explain many economics and methodological puzzles from a psychological perspective. Examples include the endowment effect [2], the equity premium puzzle [3], and the status quo bias [4]. Moreover, loss aversion has a wide range of real-life applications, especially concerning commodity prices. For example, Putler [5] found from a study of consumer spending in supermarkets that consumers were more sensitive to an increase in egg prices than to a decrease in egg prices. In other words, because of the psychological concept of loss aversion, consumers lose more money when the price of eggs rises, so they become more loss averse and are more concerned about whether the price of eggs rises. Similarly, Hardie et al. [6] found in their study of supermarket shopping data that consumers showed a loss aversion to changes in the price and quality of orange juice. In other words, loss aversion also influences merchants' pricing strategies. Especially in this internet era, pricing is now more uniformly low but has become dynamic. Therefore exploring the relationship between loss aversion and pricing strategy becomes essential for marketers.

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This review covers studies and research-related articles on 'Loss Aversion,' 'Loss Aversion in the Internet Era,' 'Pricing Policies, and 'Loss aversion in relation to pricing strategy.' The impact of the relationship between the two is examined by reviewing the literature related to loss aversion and pricing policy. Identify research gaps in this research area and point out research directions for future research. We describe the definitions and explanations of the relevant keywords in Section 2 and present the research gaps in the related literature in Section 3. Our conclusions are presented in Section 4.

2. Literature Review

2.1. Loss Aversion

Loss aversion has attracted a great deal of attention since its introduction. It has been defined and explained differently by different generations of scholars, but before 2000 it was still at the foundation stage of basic theory. Loss aversion was introduced by Kahneman and Tversky [7] as a psychological phenomenon in which the adverse effects of giving up an object are more significant than the associated effects of gaining it. Loss aversion is most commonly defined by Kahneman and Tversky in 1992 [8] as ‘losses loom larger than gains’. In other words, loss aversion refers to the perception that losses are more unbearable when people face the same amount of gain and loss. Kahneman and Tversky’s [8] prospect theory defines loss aversion and introduces the concept of a value function. The value function is the change in the value of gains and losses relative to a reference point and the actual state of the asset. As loss aversion reflects the fact that people's risk preferences are not uniform, when it comes to gains, people are risk averse, and the value function is relatively flat compared to losses; when it comes to losses, people are risk-seeking, and the value function is steeper compared to gains. The formulation of prospect theory laid the foundation for the later contribution of loss aversion to economic analysis. An example is the explanation of Thaler’s [2] concept of endowment utility, which states that once an individual owns a good, he values it much more highly than before he owned it. In addition, Kahneman and Tversky [9] propose a complement to the conditions for loss aversion, highlighting the critical role of initial entitlement and reference levels in determining preferences. For example, loss aversion can complicate negotiations in that the last party to make a concession is often judged to have lost, even though the conceding party has also gained. And then Rabin [10], in his study of psychological and economic investigations, found the growing importance of loss aversion as a psychological 'law' and proposed that loss aversion be included in economic analysis. This proposal brought loss aversion into greater focus and set the stage for loss aversion to playing a more significant role in economic analysis. In short, scholars provided the foundational concepts for loss aversion before 2000, brought the psychological concept into the public eye, and began to use loss aversion to explain several economic issues.

The research on loss aversion has continued and become more detailed since 2000, and Novemsky and Kahneman [11] proposed and proved the existence of bounds on loss aversion. They argue that people are not loss averse to the money spent on a purchase. They argue that no risk aversion exceeds loss aversion in equilibrium risk. On the other hand, Schmidt and Zank [12] argue that most observed risk aversion is driven by loss aversion and that loss attitudes seem to be an intrinsic part of risk attitudes. Gächter et al.’s [13] experiments provide further evidence of the relationship between risk and risk-free aversion. Their study found that. Loss aversion in risk-free choice is positively correlated with loss aversion in risky choice, and risk-free loss aversion is, on average higher than risky loss aversion. They also found that increasing age, income, and wealth led to an increase in loss aversion but that increasing education led to a decrease in loss aversion. Gal and Rucke [14] argue that most previous work on loss aversion has treated it as a fundamental principle without considering it in context. They argue that loss aversion is atypical of a cardinal principle because its definition

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does not consider specific cardinal processes, and it describes a behavior rather than explains it. Harinck et al. [15] experimentally prove the hypothesis that small gains are more significant than small losses. In other words, when people lose minimal, loss aversion decreases and may reverse. This conflicts with the basic definition of loss aversion. In addition to research on the relationship between loss aversion and risk, scholars have also been exploring ways to reduce the impact of loss aversion on decision-making. Andersson et al. [16] found experimentally that the psychological bias of loss aversion is much reduced when decisions are made on behalf of others, which brings decisions closer to rationality. In short, the research on loss aversion has become more profound and diverse since 2000. It has generated different thinking from the original and efforts to eliminate the decision disadvantages associated with loss aversion.

2.2. Loss Aversion in the Age of the Internet

The development of the Internet has given rise to many online shops, and merchants are gradually putting offline products online. Because online products cannot be touched directly by consumers, a certain degree of disappointment arises when they receive them. Loss aversion arises when consumers believe the product they receive is less valuable than expected [17]. Consumer loss aversion affects online sales in three ways. Firstly, it influences the discount policies of online shops, designed to compensate for consumers' loss aversion feelings towards online goods. Ma et al. [18] found that the degree of consumer loss aversion prompts merchants to reduce the optimal discount price. In other words, the more severe the degree of loss aversion of consumers, the less likely they are to choose to shop online, and in order to attract consumers, merchants have to increase their discounts. Secondly, negative comments posted by consumers on online platforms such as social media can lead to loss aversion among other consumers. For example, potential consumers check online reviews of a hotel before choosing where to stay or dine [19]. Due to loss aversion, consumers want to reduce the potential loss, and negative reviews can influence consumers' choices. Furthermore, negative reviews posted by consumers can also create loss aversion in other people who have not watched the film, thus affecting the film's revenue. It is because consumers will feel more loss of film quality through negative tweets, and the perceived loss of quality will make consumers believe that they are not getting positive value from the film; therefore, consumers are likely to spread their negative feelings and emotions to others, leading to a total collapse of the film's word-of-mouth [20]. Finally, loss aversion will make logistics companies take responsibility. If customers are dissatisfied with logistics services, they may choose other competing companies; to compensate for the customer's loss, logistics companies must take full responsibility and offer discounts, money, and coupons of corresponding value [17]. Loss aversion influences merchants' sales policies and word-of-mouth in the Internet era. Moreover, merchants are taking action to reduce the impact of loss aversion online.

2.3. Pricing Strategy

Pricing strategy is a fundamental marketing strategy for businesses. Adjusting prices to market conditions is one of the three ways to increase competition in the production system, and it is the simplest and fastest way [21]. Kortge and Okonkwo [22] argued that pricing strategy aims to earn profit and return on investment while making the consumer feel that the price is equal to the product's value. In other words, it is essential to price the product so that consumers perceive that they are getting an equal value for their money. Shankar and Bolton [23] also found that among the factors associated with the four dimensions of pricing were the autarkic price and customer factors. In other words, the customer factor is very relevant to pricing. In addition to this, Dolgui and Proth [21] suggested that the adjustable policies in pricing policy are categorized as market segmentation strategy (specific customer segments), discounting strategy, skimming pricing (innovation),

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penetration pricing (low price), and revenue management (anticipating competition). The fact that three of the five policies are targeted at customer segments clearly indicates that pricing policy cannot be separated from the consumer. In short, the pricing strategy is closely related to the consumer and will be adjusted according to the consumer.

Pricing has also changed with the growth of the Internet. In contrast to traditional theories that the Internet will depress prices, there is evidence that the prices of online goods may be higher than those in offline shops [24]. In addition, the prevalence of auctions as a mode of selling in online consumer markets and the low cost of changing prices on the Internet has led marketers to use dynamic pricing for marked-up goods and services [25]. Furthermore, because Internet technology can help managers monitor customer behavior more efficiently, help segment markets, and test and maintain updated prices, uniformly low prices are no longer the only option for online companies, and the Internet has opened up a market for dynamic pricing [24]. However, this change has also made the influence of consumer psychology on shopping more apparent. Because every consumer has a price range that he or she recognizes, once the price of a product is out of the range, the consumer may not be able to accept it [25]. In other words, once the consumer thinks the product's price is too high, he/she may give up buying the product. Due to different levels of price tolerance, less tolerant customers will spend time searching and comparing and ultimately choose the retailer with the lower price. In contrast, customers with a high tolerance will choose the most convenient way [26]. In short, pricing has become more convenient and dynamic during the Internet era from uniformly low prices. Therefore consumers will choose different merchants according to their inner tolerance of price.

2.4. Pricing Strategy

The relationship between the two has been explored extensively in the literature, and Levy [27], using international data from 16 different countries over more than 100 years, demonstrates that loss aversion is critical to the price of risky markets and that loss aversion affects the structure of optimal pricing strategies through interactions [28]. Moreover, loss aversion affects the structure of the optimal pricing strategy through interactions, i.e., the more loss-averse consumers are, the more they tend to favor the lowest price [28]. Courty and Nasiry [29] argue that the value of using the consumer as an evaluator should be sufficiently large. Otherwise, the impact of loss aversion on the firm's optimal price will be uncertain. The past literature has mainly examined the case of monopolistic firms. Heidhues and Koszegi [30] simulate a monopolist selling to loss-averse firms by building a model and find that the monopolist engages in counter-cyclical mark-ups in order to mitigate the contrasting effect, increasing consumer expectations through random "sales" to attract demand at high prices. Chen and Nasiry's [31] model also demonstrates that a monopoly's optimal dynamic pricing policy may be cyclical, e.g., the firm regularly charges high prices but offers occasional discounts to attract revenue-sensitive consumers. In short, the past literature demonstrates a relationship between consumers' loss aversion and pricing policies.

For examining the relationship between consumers' loss aversion and pricing policy, past research has expanded on more relevant theories. Wang et al. [32] categorize customers into three main groups based on their sensitivity to gains and losses: loss-averse (loss-sensitive), gain-seeking (gain-sensitive), and loss neutral (equally sensitive to losses and gains). The theory of reference price is also an essential part of the study of the relationship between consumers' loss aversion and pricing policy, as Sibly [33] found that the decline in customer demand when the reference price is proposed to rise (or quality to fall) is greater than the increase in customer demand with a fall in the reference price (or a rise in quality) because loss aversion creates a kink in the price and quality in the customer's demand function. In other words, price adjustments need to consider adjustments in customer expectations based on historical prices and service levels. Van [34] finds that consumer losses are less sensitive to loss aversion to internal reference prices than external reference prices. Based on

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reference prices, Rosato [35] found that sellers use discounts on some items to raise consumers' reference points and get them to purchase another item at a high price. This type of bait-and-switch selling exploits consumers' loss aversion. And then Ahrens et al. [36] proposed a new partial equilibrium theory of price adjustment based on consumer loss aversion, which describes the relationship between firms' demand curves and consumers' reference prices. In addition, Hahn et al. [37] propose a theory of price discrimination based on consumer loss aversion, where sellers allow consumers to experience the profit and loss effects in advance based on their shopping experience before paying by offering them a bundled menu. In short, the relationship between consumers' loss aversion and pricing policies has been studied to varying degrees in the literature.

3. Conclusion

3.1. Research Gaps

According to the Review of the studies and research-related articles on‘Loss aversio’, ‘Loss aversion in the internet era’, ‘Pricing policy’, and ‘The relationship between loss aversion and pricing strategy’. Previous studies have partially explored and investigated the relationship between loss aversion and pricing strategies. Regarding research content, studies by Heidhues and Koszegi [30] and Chen and Nasiry [31] demonstrated how loss aversion affects monopoly firms' optimal dynamic pricing policy. However, there is a gap in non-monopoly. In addition to that, Ma et al. [18] proved that loss aversion affects discounting policy. A research gap exists on the relationship between other pricing policies and loss aversion. The study does not mention the online pricing policy and loss aversion relationship. In terms of research methodology, Sibly [33], Van [34], and Rosato [35] used models to study the relationship between loss aversion and reference price. Ma et al. [18] used a model to prove that the degree of loss aversion drives online merchants to reduce the optimal discount price. Hahn et al. [37] also use a model to propose a theory of price discrimination based on consumer loss aversion, while Levy [27] uses international data from different countries to prove the theory. In short, most of the research in this study area has been on constructing models to prove theories, and relatively few studies have used actual data.

3.2. Directions for Future Research

Based on a review of previous research, the relationship between loss aversion and specific pricing strategies could be explored. For example, the relationship with market segmentation strategies, discounting strategies, skimming pricing, penetration pricing, and revenue management. The relationship between loss aversion and pricing strategies in the non-monopoly case can be studied as it differs from the monopoly case. In addition, it can be considered to study the impact of loss aversion on pricing policies for online sales. Stage-by-stage actual data can be collected either quantitatively or qualitatively for theoretical proof and validation of past theories.

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