The Impact of Consumer Loss Aversion on Returns Policies and Supply Chain Coordination

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ABSTRACT

Product return is a common after-sale service. Existing literature has assumed loss neutral consumers, while in practice consumers are often more sensitive to utility losses than gains, i.e., customers are often loss averse. In this paper, we study the impact of such loss aversion on the retailer’s optimal pricing and returns policies. We analyze three scenarios where the seller offers no refund, full refund and partial refund for the returned products. Under each scenario, the seller determines the optimal price, quantity, and refund amount (under partial refund case) in order to maximize the expected profit. Our results demonstrate that consumer loss aversion leads a no-refund retailer to charge lower price and order smaller quantity, has no impact on a full-refund retailer, and results in a more lenient returns policy for a partial-refund retailer. We also find contracts that coordinate supply chains selling to loss averse consumers. Therefore, this article sheds some lights on how the management of returns policies should be adapted when consumers are loss averse.

KEYWORDS

Consumer Returns, Loss Averse Customers, Marketing-OM Interface, Pricing

1. INTRODUCTION

Many products, such as apparel, kitchen appliances, game controllers, and DVD players, are often referred to as “experience goods” (Che, 1996), since consumers need to “experience” them to determine the degree of satisfaction with the products. For example, a customer may hesitate before buying a dress or a PC game since she is unsure if the dress will match her existing wardrobe or whether she will enjoy the PC game. She may be particularly uncertain when buying online, because she is unable to know for sure the product attributes such as size, color, or material from product description. The exact value of the product, therefore, is not known to this consumer before purchase, even if the product has no quality problem. Valuation uncertainty decreases customers’ willingness of purchase. In order to reduce product fit uncertainty, improve customer satisfaction and boost sales, retailers offer a number of after-sale services. One such service is to accept the return of the products after sales have taken place, if they do not meet customers’ expectations. Indeed, customer returns policies are pervasive in today’s retail business environment. The value of goods returned by buyers in the U.S. during 2009 exceeded $180 billion, about 8% of total sales (NRF, 2009). Most returns are due to mismatch between buyers’ expectations and actual experiences. It is contended that between 11% and 20% of all the electronic items purchased are returned, though only about 5% of them are truly defective (NRF, 2009).
Various types of returns policies have been implemented in practice. For instance, policies such as exchange only, all sales final, store credit, money back guarantee, and restocking fees, are all commonly adopted by retailers. These returns policies vary greatly with respect to the length of return window, the format of refund, and most notably, the amount of refund. The most generous ones, such as money back guarantee, allow customers to return a product and receive 100% of the price paid. This type of full-refund policy completely eliminates customers’ risk of product misfit. The retailer, however, not only loses the potential revenue from the returned products, but also may incur additional shipping and handling costs. Some retailers offer a more stringent returns policy by charging a “restocking fee” to cover processing and other related costs, i.e. only partially refunding customers the purchase price. In this case, the customers and the retailer share the product misfit risk as both may incur some losses when the products are returned. And finally, though not very popular, it is still observed that some retailers adopt the extreme policy of not allowing any return.

Returns policies protect customers against product fit uncertainty, and hence, may stimulate purchases. It is shown that customers are more likely to buy products from a retailer with generous returns policies. On the other hand, returns have immediate operational consequences which may have a negative effect on a retailer’s revenue. Returned products increase inventory holding costs and handling costs, and they are often resold at discounted prices or salvaged. In view of such tradeoff, determining which returns policy is the most appropriate one is a delicate task, as retailers need to carefully balance the benefits and costs. Although the problem of finding the optimal returns policies has received attention in both academics and practice, existing studies on consumer returns policies assume that consumers are loss-neutral while making their purchasing decisions. In practice, however, it is very common to observe that consumers are more sensitive to losses than gains. The phenomenon is well documented in studies such as Kahneman and Tversky (1979), Thaler (1980) and Kahneman et al. (1991), and is referred to as “loss aversion”. For example, consumers’ price-increase elasticity can be higher than price-decrease elasticity (Putler, 1992). In the case of product return, a loss averse customer may feel much more unhappy when the product does not meet her expectation, compared to her happiness when the product exceeds her expectation. It is unclear how such loss aversion would impact retailers’ optimal decisions. The focus of this paper is to study how retailers should adjust their returns policies as well as other pricing and inventory decisions when consumers are loss averse.

In this paper, we examine the situation in which the seller sells a product to loss averse consumers. The seller makes pricing and quantity decisions and also selects an appropriate returns policy in order to maximize his profit. We analyze three cases where the seller offers no refund, full refund or partial refund for returned products. Under full-refund policy, the seller reimburses the consumer the full price of the product if it does not fit the customer’s preference. Under partial-refund policy, the seller offers a certain amount of refund less than the purchase price. The difference between the full price and the refund amount may be interpreted as a restocking fee or a non-refundable shipping and handling charge that the seller imposes on consumers. In addition to price and quantity, the retailer under partial-refund scenario also needs to determine the optimal refund amount. As for consumers, each purchases at most one product while facing uncertainty in product valuation before she experiences the product. Like the seller, the consumer decides whether to purchase and whether to return the product after purchase in order to maximize her expected utility. Consumers are loss averse, implying that they lose more utility when unsatisfied with the product than the utility gain when satisfied. As a result, the utility function is assumed to be a piecewise linear function with a steeper slope when being negative. Consumers evaluate the price and returns policy before purchase, without knowing the true valuation of the product. Under this setting, we explore the following research questions: (1) What is the impact of consumer loss aversion on the seller’s pricing and order quantity decisions? (2) How does loss aversion affect the optimal refund amount? and (3) Does there exist a contract to coordinate the supply chain selling to loss averse consumers? This paper contributes to the literature by answering the three questions above, and to highlight the fact that consumer behavior such as loss aversion can have a significant impact on retailer and supply chain performance.
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