Psychological Mechanism of the Effect of Return Shipping Strategy on Consumers' Willingness to Return Goods
--Mediating Role Based on Stop-Loss Psychology

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Abstract. Along with the rapid development of the global e-tailing market, the study of the psychological mechanisms of online consumers' return behavior has attracted widespread attention in both academic and practical circles. In this paper, a 2 (buyer vs. seller pays for shipping) $\times$ 2 (impulsive vs. non-impulsive shopping) intergroup experiment is used to investigate the mechanism of the relationship between return shipping strategy and willingness to return in the context of vanishing shopping demand, and the moderating effect of impulsivity on the impact of return shipping strategy. The study found that stop-loss psychology partially mediated the relationship between return shipping strategy and willingness to return, and that the effect of return shipping strategy on willingness to return was not significant in impulsive shopping situations. This study uses the concept of stop-loss psychology to explain the psychological impact of consumers' return behavior when post-purchase demand disappears, which is important for e-commerce companies to develop return shipping strategies based on the analysis of online shopping contexts.

Keywords: Return shipping strategy · Willingness to return · Stop-loss mentality · Impulse shopping

1 Introduction

The development of the e-commerce industry has led to a continued increase in consumer reliance on online shopping, with the replacement rate for online shopping in China growing for the seventh consecutive year, reaching 81.2% in 2021. However, this has also led to a high return rate, with e-commerce reports showing that the return rate for online shopping basically remains above 20%. The huge number of consumer returns has become an important factor affecting the economic efficiency and sustainable development of e-commerce companies. In recent years, the motivation and factors influencing online consumers' returns have attracted extensive academic attention.

Motivations for online return behavior include aspects of product quality, merchant services, logistics services, and personal aspects of consumers [1, 2]. The rapid development of the e-commerce industry has led to significant improvements in product quality,

merchant services, and logistics services, and an increasing number of returns are due to subjective consumer reasons. Subjective return motives include both returns with product dissatisfaction such as dissatisfaction with product performance, product not matching expectations, and finding better alternatives, and returns due to disappearance of demand rather than dissatisfaction with the product. Nowadays, most studies focus on the former, and not enough attention is paid to the psychology of return behavior due to disappearance of demand.

Consumers' psychological perceptions can deviate under different return motives. (1) When the product is not perceived to be as described before the purchase, the cognitive gap between pre-purchase expectations and post-purchase perceptions leads to cognitive dissonance, which in turn leads to the desire to reduce the level of cognitive dissonance by returning the product [3–5]. (2) Under this type of return motivation in which consumers become dissatisfied, such as when there are problems with objective aspects of the product, merchant, and logistics, consumers will engage in counterfactual thinking that triggers post-purchase regret and thus affects willingness to return [4]. Under the influence of the demand-vanishing return motive, the product is no longer necessary for the consumer, which leads to a serious impact on the utility of the product, and the money spent on the purchase of the product is equivalent to a loss for the consumer, who may have a stop-loss mentality of wanting to recover the loss by returning the product.

Many studies have demonstrated the key influential role of return shipping strategy on the willingness to return goods [5, 6]. Many existing studies have investigated how return shipping fees can be formulated to maximize merchant benefits by constructing mathematical models [7]. However, the internal psychological mechanism of return shipping strategy on return behavior is not well developed, which may cause the impact of return shipping strategy to be underestimated.

Impulse shopping is also an important influence on the willingness to return [2], and impulse shoppers tend to purchase products that are non-essential [1], non-planned, and non-thoughtful [3]. Compared to planned shopping, impulse shopping may result in a higher probability of waste and loss [2]. Due to the greater risk of loss, consumers will be more receptive to return shipping costs, when the inhibitory effect of strict return shipping strategy on willingness to return is weakened. There may be disparities in the effect of return shipping strategy on return willingness under different shopping impulsiveness.

This study addresses two important questions: first, to explore whether stop-loss psychology plays a key antecedent role when post-purchase demand disappears, the relationship between return shipping strategy and return behavior and whether it is influenced by stop-loss psychology; second, to explore whether impulse shopping plays a moderating role.

2   Theoretical Basis and Research Hypothesis

2.1   Theoretical Basis

2.1.1   Transaction Utility Theory

Transactional utility theory considers transactional utility as a measure of the perceived value of the transaction itself, which is the price actually paid by the consumer compared to the desired price in mind for the purchase of the product [6]. After the demand disappears, the product is no longer necessary for the consumer and the product utility decreases. The disappearance of demand likewise leads to a decrease in the consumer's perceived value of the transaction itself, resulting in a decrease in the utility of the transaction. The purchase behavior causes a financial loss to the consumer, and the consumer develops the psychology of wanting to return the product to help effectively avoid the financial loss, and this paper defines this psychology of recovering the loss as the stop-loss psychology.

2.2   Research Hypothesis

2.2.1   The Effect of Return Shipping Strategy on Willingness to Return Goods

Many studies have demonstrated that return strategy affects consumer return behavior [5], and a lenient return strategy increases purchase rates while bringing about more irrational return behavior [2, 7]. Return shipping cost, as one of the dimensions of return strategy, is the economic cost of the return process, and the stricter the return shipping strategy the higher the cost of consumer returns and the lower the willingness to return. Hypothesis H1: Return shipping strategy positively affects consumers' willingness to return goods.

2.2.2   Moderating Role of Shopping Impulsiveness

Impulsive shopping is irrational shopping behavior [8] and is often associated with negative outcomes such as financial problems and waste [8, 9]. Impulse shoppers have low product utilization, higher risk of waste and loss, and will be more accepting of return shipping costs. The dampening effect of return shipping costs on the willingness to return goods is weakened when compared to non-impulse shopping. Hypothesis H2: Shopping impulsiveness will negatively moderate the positive relationship between return shipping cost strategy and willingness to return.

2.2.3   The Mediating Role of Stop-Loss Psychology

Traditional decision theory suggests that the effectiveness of individual behavior or decisions often depends on the comparison of decision benefits with decision costs [9]. The cost of return shipping serves as the cost of return to recover the loss, and the recovered loss is equivalent to the decision benefit. This gain for consumers to recover existing losses after the demand disappears is constant, and the return shipping cost as an additional cost to recover losses is equivalent to another loss added to the existing losses. With constant decision gain, the level of decision cost will have a greater impact

on the decision effect. Higher return costs (vs. lower costs) will weaken the stop-loss psychology of consumers and inhibit their willingness to return goods. Hypothesis H3: Stop-loss psychology mediates the relationship between return shipping strategy and willingness to return.

2.2.4 Moderating Effect of Shopping Impulsiveness on the Mediating Role

Impulse shopping usually leads to wasteful behavior by ineffective use of products [9]. Waste and loss situations are more likely to occur after impulse shopping than when non-impulse shopping [9], and consumers face a greater risk of loss after keeping the product and have a higher acceptance of the economic cost of returning the product due to return shipping costs. The effect of a strict return shipping strategy to inhibit consumers' stop-loss psychology is severely weakened when impulsive shopping occurs, and the path by which the leniency of the return shipping strategy affects stop-loss psychology and thus willingness to return is also negatively affected, but not when non-impulsive shopping occurs. Hypothesis H4: Impulsive (vs. non-impulsive) shopping negatively moderates the indirect effect between return shipping strategy and willingness to return via stop-loss psychology, i.e., this indirect effect is weaker for impulsive shopping (Fig. 1).

3   Experiment 1

3.1   Experiment Design

The main purpose of the experiment was to verify the moderating effect of shopping impulsivity on the relationship between return shipping strategy and consumers' willingness to return goods, as well as to investigate the mediating role of stop-loss psychology between return shipping strategy and willingness to return goods and the moderating effect of shopping impulsivity on the mediating role of stop-loss psychology. This experiment used a 2 (return shipping strategy: buyer bears vs. seller bears) × 2 (impulsive shopping vs. non-impulsive shopping) between-group experimental design. We set up different shopping situations based on Taku et al.'s [9] method for initiating impulse shopping situations and combined with realistic situations. The impulse shopping situation was set up as follows: you plan to buy a juicer, and after selecting your preferred juicer, you quickly After browsing, you hastily put together an electric kettle and finally bought a juicer and an electric kettle; the non-impulse shopping scenario is set as follows:
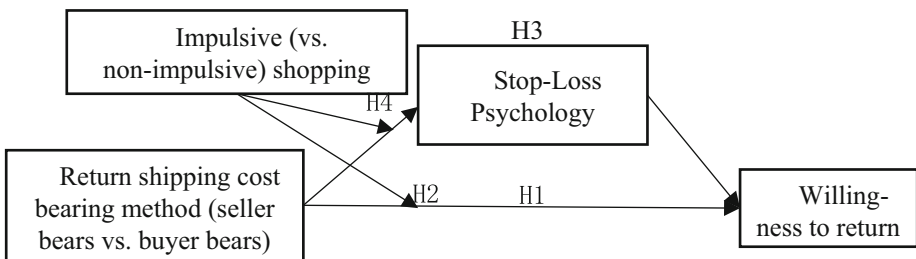

Fig. 1. Study model

you plan to buy a juicer and an electric kettle, and after selecting your favorite juicer, you have 1 day left before the end of the "10% off 2 new products" promotion, and after careful comparison and repeated weighing After careful comparison and repeated trade-offs, I chose an electric kettle and finally purchased a juicer and an electric kettle.

Subjects were randomly assigned to two groups of situations and read shopping situation materials to initiate different shopping impulses. Based on the characteristics of impulsive shopping, the success of the manipulation was examined by using the three items "planning, necessity, and deliberation". The results of the paper-based questionnaire for 40 college students showed that the impulsive and non-impulsive groups were more successful in planning judgments (1 = completely disagree, 7 = completely agree, M impulse = 2.17, SD = 1.03, M plan = 4.18, SD = 1.74, $F_{(1,38)}$ = 20.75, p = 0.000, $\eta 2$ = 0.353), necessity judgments (M impulse = 2.17, SD = 1.03, M plan = 4.18, SD = 1.74, $F_{(1,38)}$ = 20.75, p = 0.000, $\eta 2$ = 0.353), and necessity judgments (M impulse = 3.48, SD = 1.28, M plan = 4.59, SD = 1.00, $F_{(1,38)}$ = 8.83, p = 0.005, $\eta 2$ = 0.188), on thoughtful judgments (M impulse = 3.52, SD = 1.56, M plan = 5.18, SD = 1.24, $F_{(1, 38)}$ = 13.00, p = 0.001, $\eta 2$ = 0.255) were significantly different. Thus, impulsive and non-impulsive situations were set up successfully.

The data of this experiment were collected online through the credamo data platform. The variables were measured according to the definition of stop-loss psychology, and questions were designed to measure stop-loss psychology in terms of applicability, utilization, waste budget, and economic loss, such as "the purchased product does not have high applicability", "the future utilization of this product has high uncertainty ", "Keeping this product will waste my capital budget", "If I keep this product, the cost of purchasing the product will cause me some financial loss", "Returning the product will help me recover unnecessary financial loss".

3.2 Experimental Procedure

On-line data collection platform subjects were randomly divided into four groups, and subjects completed all of them according to the instructions and submitted the questionnaire. The Cronbach's α coefficient of the stop-loss psychological variable was 0.757 higher than 0. 70, indicating a high reliability. A total of 160 questionnaires were distributed in this online experiment, and invalid questionnaires were excluded, and 150 questionnaires were finally validly returned, with a valid return rate of 94%.

3.3 Experimental Results

3.3.1 Manipulation Test

The results showed that the shopping context was manipulated successfully, with both contexts being judged on shopping planfulness (M impulse = 1.797, SD = 0.891, M plan = 6.105, SD = 1.173, $F_{(1,148)}$ = 639.172, p = 0.000, $\eta 2$ = 0.812), on the necessity of shopping (M impulse = 2.590, SD = 1.215, M plan = 6.000, SD = 1.200, $F_{(1,148)}$ = 298.144, p = 0.000, $\eta 2$ = 0.668), on the judgment of whether the shopping was well thought out (M impulse = 2.430, SD = 1.283, M plan = 5.510, SD = 1.291, $F_{(1,148)}$ = 214.828, p = 0.000, $\eta 2$ = 0.592) were significantly different.
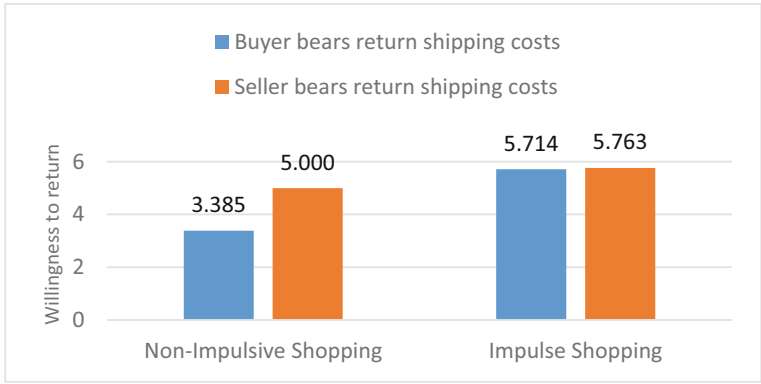
Fig. 2. Interaction of return shipping strategy (buyer vs. seller) and impulse shopping (yes vs. no)

3.3.2 Main Effects Test

ANOVA analysis revealed a significant main effect of return shipping strategy on willingness to return goods ($F_{(1,148)} = 15.089$, p = 0.000, $\eta2 = 0.095$), Hypothesis H1 was verified; a significant main effect of shopping impulsiveness on willingness to return goods ($F_{(1,148)} = 33.348$, p = 0.000, $\eta2 = 0.189$); the interaction effect of return shipping strategy and shopping impulsiveness was significant ($F_{(1,148)} = 9.480$, p = 0.002, $\eta2 = 0.062$). When shopping impulsively, there was no significant difference in the likelihood of return for subjects in the two scenarios where the seller covered the shipping cost versus the buyer covered the shipping cost ($MSaler = 5.763$, SD = 0.228, $MCustomer = 5.714$, SD = 0.237, $F_{(1,148)} = 0.022$, p = 0.882, $\eta2 = 0.000$). Non-impulsive purchases were significantly less likely to be returned when the buyer covered shipping (vs. the seller covered shipping) subjects ($MSaler = 5.000$, SD = 0.228, $MCustomer = 3.385$, SD = 0.225, $F_{(1,148)} = 25.528$, p = 0.000, $\eta2 = 0.149$). Hypothesis H2 was verified (Fig. 2).

3.3.3 Mediation Effect Test

Regression analysis was conducted with return freight strategy as the dependent variable (X) and stop-loss psychology as the dependent variable (Y), and the results showed that return freight strategy positively influenced stop-loss psychology ($\beta = 0.3733*$); regression analysis was conducted with return willingness as the dependent variable (Y), return freight strategy, and stop-loss psychology as the independent variable (X), and stop-loss psychology had a significant positive effect on return willingness ($\beta = 0.7357***$), at this time freight bearing strategy has a significant positive effect on willingness to return ($\beta = 0.5679**$), in addition bootstrap test shows that this mediating effect value is 0.2747, 95% CI $= [-1.6026, -0.4790]$, excluding 0. Stop-loss psychology plays a partially mediating role between return freight strategy and willingness to return, and Hypothesis H3 is supported.
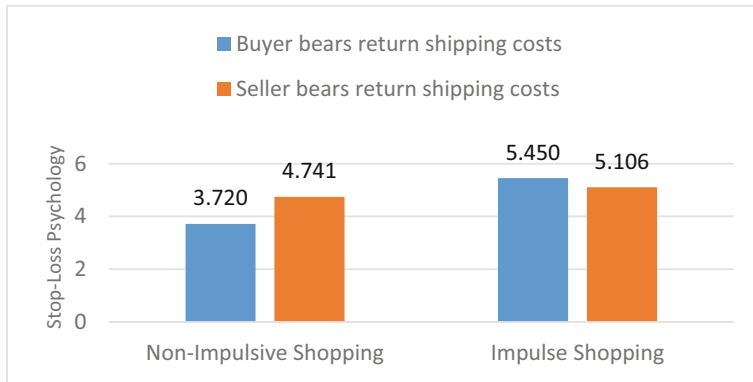
Fig. 3. Impulsive (vs. non-impulsive) shopping regulation effect graph

3.3.4 Moderated Mediating Effect Test

A regression model was constructed to examine the linear relationship between Y and X, W, and XW, with return shipping strategy as the independent variable (X), shopping impulsiveness as the moderating variable (W), stop-loss psychology as the dependent variable (Y), and return inertia as the control variable. The results show that the inter-action term between return shipping strategy and shopping impulsivity has a significant negative effect on stop-loss psychology ($\beta = -1.3640***$). The effect of return shipping strategy on stop-loss psychology is not significant when shopping impulsivity is high ($\beta = -0.3431$, 95% CI $= [-0.7450, 0.0588]$); the positive effect of return shipping strategy on stop-loss psychology when shopping impulsivity is low strategy had a significant positive effect on stop-loss psychology ($\beta = 1.0209***$, 95% CI $= [0.6227, 1.4191]$). The indirect effect between return shipping strategy and willingness to return via stop-loss psychology was stronger when shopping impulsivity was low ($b = 0.7511$, 95% CI $= [.3506, 1.2048]$), while the indirect effect was not significant when shopping impulsivity was high ($b = -0.2524$, 95% CI $= [-.5585, .0106]$). There was a significant difference between the indirect effect in the case of low shopping impulsivity and high shopping impulsivity, with a difference of 1.0035, 95% CI $= [-1.5996, -.4877]$, and hypothesis H4 was supported (Fig. 3).

4 Conclusion

4.1 Research Findings

This study shows that (1) stop-loss psychology occurs when consumer demand disappears after purchase, and stop-loss psychology plays a partially mediating role between return shipping strategy and willingness to return. Consumers' stop-loss psychology occurs when the utilization and usefulness of the product decreases after demand disappears and there is a risk of loss and waste to the consumer by keeping the product. (2) Shopping impulsiveness negatively moderates the indirect effect between return shipping strategy and willingness to return via stop-loss psychology. The inhibition of stop-loss

psychology by having buyers bear return shipping costs is significant when shopping impulsiveness is low; the indirect effect is no longer significant when shopping impulsiveness is high. The negative effect of return shipping strategy on stop-loss psychology is suppressed when impulsive shoppers are more receptive to strict return shipping strategy, and the indirect effect of return shipping strategy on return willingness via stop-loss psychology is also negatively affected.

4.2   Management Insights

(1) e-commerce platforms and selling merchants can adopt targeted return strategies according to different shopping environments. For impulsive shopping and non-impulsive shopping characteristics to take different return shipping strategy. In the shopping environment with high incidence of impulse shopping, merchants can consider reasonable provisions in other return restrictions, such as time costs, energy costs. (2) E-commerce platforms and selling merchants should take effective measures to reduce consumer stop-loss psychology. In the pre-purchase return shipping strategy on the development of a good measure to find a balance that can effectively reduce consumer stop-loss psychology and does not affect the purchase rate too much. In the post-purchase stage, merchants can establish a return compensation mechanism to reduce the consumer's sense of psychological loss.

4.3   Research Limitations and Future Prospects

There are a variety of post-purchase uncertainty situations that affect consumers' willingness to return goods, and this paper only addresses one of these situations where post-purchase demand disappears; the internal influence of return shipping strategy on willingness to return goods in other situations in reality remains to be proven, and this is the direction we need to study in the future.

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