




# Promotion Architecture: A Deal Fairness Model of Restricted Price Promotions

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This research examines the effectiveness of two common types of restricted price promotions: *threshold promotions* (conditional on spending more than a threshold amount; e.g., “Get \$5 off on orders of \$10 or more”) and *capped promotions* (limited to a maximum dollar value; e.g., “Get 50% off, up to \$5 per order”). Results from seven preregistered studies, including one field study, show that threshold promotions lead to higher purchase intentions and conversion rates (but potentially lower purchase amounts) than comparable capped promotions—even though capped promotions are equivalent in maximal economic savings for the consumer—when the trigger value (the spending amount at which the promotion activates or caps) is low. This effect occurs because consumers have higher expected promotion levels for capped promotions and lower expected spending levels for threshold promotions, leading them to perceive the threshold promotion as a fairer deal. However, this effect reverses when the trigger value is high, wherein consumers perceive capped promotions as a fairer deal and prefer them to threshold promotions. The implications of our results for the optimal management of price promotion architectures were discussed.

**Keywords:** price promotion, framing, fairness, expectation, choice architecture

Price promotions are temporary monetary incentives used by retailers to motivate customers (Chandon, Wansink, and Laurent 2000). They are a widely adopted strategy for influencing consumer purchasing decisions.

For instance, managers on food ordering platforms frequently implement various types of price promotions (see [web appendices A and B](#) for examples). Recent studies indicate that 65% of orders on DoorDash and 55% on Uber Eats include a discount (Intouch Insight 2024; Guskowski, 2024).

Unlike traditional promotions such as “\$5 off” or “50% off,” managers have increasingly adopted *restricted* price promotions that impose limits or preconditions on the

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incentives. These restricted promotions are now as common as their unrestricted counterparts in the marketplace (web appendices C and D). For example, Uber Eats offers, “\$5 off your order of \$15 or more,” whereas DoorDash provides, “Take 50% off, up to a \$10 discount” (web appendix A). We refer to the former as *threshold promotions*, which are only applicable if the purchase amount exceeds a specified threshold. The latter is referred to as *capped promotions*, wherein the discount is capped at a maximum stated value.

Take DoorDash, the most popular US food delivery platform (Intouch Insight 2024), as an example. We collected data from 100 restaurants in New York and Los Angeles on DoorDash and found that these were the two most common promotional types: 55% of stores use capped promotions, whereas 24% use threshold promotions (web appendix C). Given that both types of restricted promotions are widely used by managers, a key question arises: should managers choose capped promotions or threshold promotions? Specifically, consider two restricted promotions offering the same maximum benefit: one using a threshold promotion, “Enjoy \$5 off on orders of \$10 or more,” and the other using a capped promotion, “Enjoy 50% off, up to \$5 per order.” Although both promotions offer the same maximum savings, managers may be uncertain about which *promotion architecture* (threshold or cap) better motivates consumer purchases for the equivalent objective deal and cost to the firm.

There is also wide variability in the way different managers set these promotions. In our data from DoorDash, the size of the percentage discounts in capped promotions ranges from 15% to 40%, with the discount cap varying from \$5 to \$50. Similarly, the dollar amount for threshold promotions ranges from \$3 to \$13, with the threshold amount varying from \$15 to \$70. This raises the question of how the settings of these promotions affect consumer decision-making. For instance, when creating a capped promotion, does a higher percentage (with the same cap) better motivate purchases? Alternatively, might it backfire? In this article, we provide insights for managers on how to set the percentage and cap for capped promotions, as well as the dollar amount and threshold for threshold promotions.

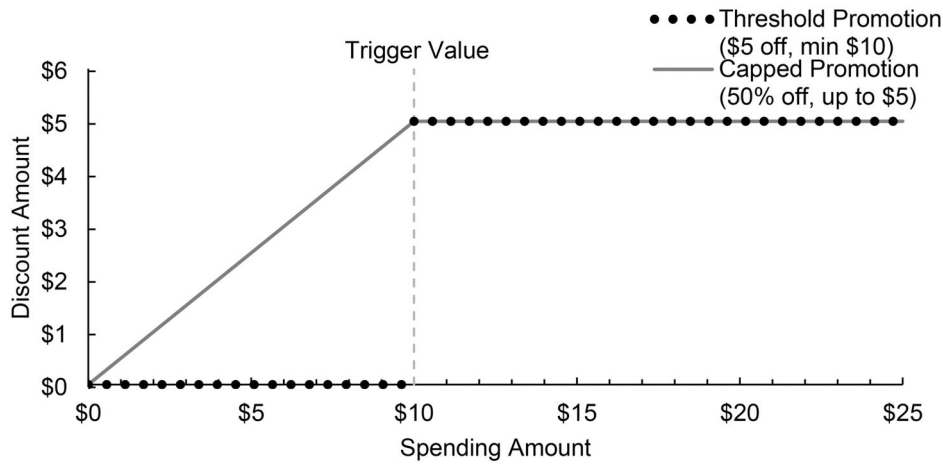
We suggest that managers should clearly define the primary objective of their price promotion, whether to increase purchase intention or to boost the purchase amount among buyers, and carefully consider the relationship between consumers’ typical spending levels and the *trigger value*. The trigger value refers to the spending level that triggers a change in the discount received (e.g., if the promotion is, “Enjoy 50% off, up to \$5 per order,” the spending trigger value is \$10). Stated differently, for threshold promotions, the trigger value is the minimum amount (min) consumers must spend to receive the discount, and for capped promotions, the trigger value is the maximum spending amount before a limit applies. In figure 1, we

visually compare the discount provided by these two promotion types at different spending levels, using a \$10 trigger value example. Notably, from a consumer perspective, capped promotions are economically superior to threshold promotions until their spending reaches the promotional trigger value, after which the two promotion types are economically equivalent.

This article examines how capped and threshold promotions affect consumers’ purchase intentions and spending amounts. Surprisingly, although capped promotions are economically superior (or equivalent) for consumers, the current research finds that threshold promotions are preferred by consumers and more effectively motivate purchase intentions in a specific and common context: when the trigger value is perceived as low (using the above example, \$10 for food delivery) relative to consumers’ typical spending in that category (e.g., a \$25 expenditure on average). We hypothesize that this advantage for threshold (vs. capped) promotions occurs for two reasons: (1) the high percentage in capped promotions (50%) leads consumers to expect more promotional benefits than the small (\$5) benefit they receive, and (2) the low spending threshold (“on orders of \$10 or more”) in threshold promotions leads consumers to perceive the same (\$5) discount as larger. Thus, although the capped offer may seem attractive initially, creating a high expectation, consumers ultimately perceive capped promotions (with low trigger values) as relatively poor deals and less fair than the equivalent threshold promotions. However, in the case of high and hard-to-reach trigger values (e.g., a threshold of \$50 for food delivery), consumers’ expectations and reactions are reversed, and capped promotions are seen as good and fair deals and are more effective than comparable threshold promotions, as we explain in more detail below. We also demonstrate that there is a trade-off between prioritizing purchase intention (attracting more customers) and maximizing purchase amount (the amount spent per customer): although a threshold promotion with a low trigger value is effective in encouraging purchases, the average purchase amount among buyers may be lower compared to that achieved with a capped promotion, due to anchoring effects.

This research makes three major contributions. First, this research is the first to examine an emerging and increasingly common type of price promotion (capped promotions) and detail the psychological process and behavioral effects associated with this type of promotion. Second, this research contributes to the broader literature on restricted promotions (Sokolova and Li 2021). Past research has examined the effectiveness of restricted versus unrestricted promotions and found that restrictions convey information about good deals (Inman, Peter, and Raghurir 1997). The current work classifies promotion restrictions into two categories (precondition type and limit type; i.e., threshold and capped). It is the first to examine the conditional

**FIGURE 1**  
DISCOUNTS FOR COMPARABLE CAPPED AND THRESHOLD PROMOTIONS. MIN, MINIMUM.



effectiveness of different types of restricted price promotions and the role of expectations in shaping the perceived fairness of the promotional deal. Third, this research contributes to the percentage-dollar promotion literature (Chen, Monroe, and Lou 1998) by providing a parsimonious explanation that accounts for findings that the standard economic model and previously identified pricing mechanisms (e.g., format neglect Sevilla, Isaac, and Bagchi 2018) have been unable to explain. For instance, the current research identifies conditions under which discounts framed in small-dollar terms can be more effective than those framed in large-percentage terms. More broadly, this research provides managers with a framework for assessing the effectiveness of price promotions, helping them design optimal promotion architectures regarding perceived fairness, cost-effectiveness, and impact on sales.

In the following sections, we review the literature on price-promotion architecture and draw from research on expectation disconfirmation and fair deal perceptions to motivate our hypotheses. We then present the results of seven preregistered studies testing our hypotheses and discuss our findings' theoretical and managerial implications.

## THEORETICAL DEVELOPMENT

Two of the most well-examined price promotion types are offers in dollar terms and percentage terms. When discounts in dollar terms and percentage terms are equivalent (50% off a \$10 purchase vs. \$5 off a \$10 purchase), research indicates that price discounts framed in dollar terms are perceived as more substantial than same-amount alternatives framed in percentage terms when product prices are high, but this pattern reverses with low prices

(Chen et al. 1998). A meta-analysis further found that although both the deal percentage and the amount positively influence the perceived savings, the percentage has more impact (Krishna et al. 2002). Several variants of percentage and dollar-term discounts have recently become pervasive in marketing practice, including capped and threshold promotions. The current research compares these two types of restricted promotion architectures.

### Restricted Promotion Architectures: Capped versus Threshold

*Promotion restriction* is a tactic that constrains consumers' actions in some way when they purchase a market offering (Inman et al. 1997). Commonly applied promotion restrictions tend to either set a *precondition* or add a *limit* to the offer. The preconditions can be the minimum number of products purchased, the minimum purchase amount, or the fulfillment of a nonmonetary condition (Bertini and Aydinli 2020; Cheng and Ross 2023; Cheng and Stadler Blank 2025; Dallas and Morwitz 2018; Lee and Ariely 2006; Sokolova and Li 2021). Precondition-type promotions can take the form of "bonus packs," "buy-one-get-one-free" (BOGO) deals, "free gifts," or "bundle offers" (Raghubir 2004). For example, some promotions offer consumers an additional free product, a bonus quantity, or a discounted price conditional on purchasing a focal product or reaching a minimum quantity (Ding and Zhang 2020; Palmeira and Srivastava 2013; Teng 2009). Alternatively, limit-type promotions can involve a maximum quantity one can buy under a discount or when an offer is available (Chandon et al. 2000; Cheema and Patrick 2008; Inman et al. 1997). Studies show that preconditions and limited

sales restrictions affect consumers' likelihood of purchase (Gneezy 2005; Inman et al. 1997; Yoon and Vargas, 2011). However, whether and how each type of restriction differentially influences consumer decisions remains unclear.

The current research compares two common choice architectures (Thaler and Sunstein 2008) used in promotion contexts, which we call "promotion architectures." The first is a dollar-term promotion with a spending amount precondition, which we call a *threshold* promotion (e.g., "\$5 off on orders of \$10 or more"). The second is a *capped* promotion (e.g., "50% off with a maximum discount of \$5"), a percentage-term promotion with a maximum value limit. Although the nature of the restrictions for threshold and capped promotions is quite different, if the thresholds are low, the economic value of the two promotions can be equivalent for an extensive range of spending amounts, specifically when the spending amount is at least equal to the trigger value (as seen in figure 1). In the above examples, taking up either offer leads to the same outcome (\$5 off) if the amount spent meets or exceeds the trigger value of \$10. However, capped promotions apply to a broader range of purchases than threshold promotions: only capped promotions provide savings when consumers' spending is below the trigger value. Thus, the economic benefit for consumers from capped promotions is always equal to or greater than that of equivalent threshold promotions.

However, consumers' preferences are affected not only by the financial benefits obtained from a promotion but also by its psychological aspects, such as the transaction utility generated by perceiving a "fair" deal (Campbell 1999; Thaler 1985). Consumers are particularly critical of firms presenting overly optimistic claims and later making corrections in advertising (Darke and Ritchie 2007; Darke, Ashworth, and Ritchie 2008). Thus, it is possible that when consumers fully understand the benefit they will receive from a given promotion, they will judge the capped promotion as a relatively unfair deal because of the limit to the discount—a possibility that we explore in the next section.

## Fairness Perceptions and Expectation Discrepancies

One of the critical determinants of promotion evaluation is perceived fairness (Darke and Dahl 2003). Past literature suggests that deal fairness perceptions arise from comparing an offer with a reference, which may be internal (e.g., one's offer in the past) or external (e.g., others' offer; Adams 1965; Thaler 1985; Xia, Monroe, and Cox 2004). We posit that the perceived promotion ratio ("*perceived promotion*") is compared to an expected reference promotion ("*expected promotion*") to determine the perceived fairness of a promotion. For the perceived promotion ratio, consumers compare the attainable discount with the expected spending amount ("*expected spending*"). Indeed, research suggests that consumers possess two a priori

internal expectations based on their previous experiences when evaluating a price promotion in the absence of external references: (1) an expectation regarding the average or moderate promotion percentage (Grewal, Marmorstein, and Sharma 1996; Kalwani and Yim 1992), and (2) an expectation concerning their spending amount or shopping goal (Cheng and Ross 2023; Du and Hardisty 2025; Lee and Ariely 2006).

In the context of food ordering, we surveyed consumers' internal expectations of promotion level and expected spending level based on past experiences with food ordering (web appendix D). Most respondents (85.1%) mentioned typically receiving discounts of less than or equal to 20% ( $M = 12.53\%$ ,  $SD = 13.71\%$ ). Their mean expected spending was \$33.99 ( $SD = \$17.15$ ), comparable to the average spend per order reported by other sources (e.g., Miller 2025).

Therefore, assuming an expected promotion of 20% for food delivery, an unrestricted "\$5 off" promotion for an order will be deemed as a fair and good deal if a consumer usually spends \$25 because the offer ( $\$5/\$25 = 20\%$ ) meets their expectation (20%; table 1). However, the same "\$5 off" promotion will be perceived as relatively less fair if they usually spend \$50 because the offer ( $\$5/\$50 = 10\%$ ) is lower than their expectation (20%). Indeed, research shows that consumers are more willing to put in effort to get a \$5 discount on a product priced at \$15 versus one priced at \$125 (Tversky and Kahneman 1981). This reasoning is also consistent with the view from Thaler (1980, 50) that the "search for any purchase will continue until the expected amount saved as a proportion of the total price equals some critical value."

As noted, a reference amount or expectation is labile and can be shaped by multiple factors. It can be derived not only from an internal reference arising from previous experience in memory (e.g., past price; Kalyanaram and Winer 1995) but also from an external reference arising from information in the environment, such as the promotions that others receive (Darke and Dahl 2003). Studies show that extreme or exaggerated reference prices (e.g., exaggerated manufacturer's suggested retail prices) can raise price expectations and thus improve the perceived offer value in comparison (Urbany, Bearden, and Weillbaker 1988). However, mentioning a large promotion may increase expectations for the actual promotion offer value and thereby undermine deal evaluation because of the disconfirmation stemming from the discrepancy between expectation and the actual savings outcome (Oliver, Balakrishnan, and Barry 1994; Spreng, MacKenzie, and Olshavsky 1996). Thus, a "50% off" price claim may increase consumers' reference for promotions. However, the promotion may appear unfair when consumers realize that it does not apply to their purchase or the obtained discount is lower than 50% (Mobley, Bearden, and Teel 1988).

TABLE 1

RELATIONSHIPS BETWEEN EXPECTED AND PERCEIVED PROMOTIONS—ILLUSTRATED WITH A TYPICAL SPENDING AMOUNT OF \$25

Unrestricted promotions (e.g., “\$5 off”)  
 Perceived promotion:  $\frac{\text{promotion amount}}{\text{expected spending}} = \frac{\text{stated promotion amount}}{\text{usual spending amount (internal)}} = \frac{5}{25} = 20\%$

Expected promotion: previously encountered percentage = 20% (internal)

**Low trigger values (\$10)—lower than typical spending**

Capped promotions (e.g., “50% off, max \$5”)

Perceived promotion:  $\frac{\text{promotion amount}}{\text{expected spending}} = \frac{\text{capped amount}}{\text{usual spending amount (internal)}} = \frac{5}{25} = 20\%$

Expected promotion: stated promotion percentage = 50% (external)

Perceived promotion < expected promotion (lower deal fairness)

Threshold promotions (e.g., “\$5 off on orders of \$10 or more”)

Perceived promotion:  $\frac{\text{promotion amount}}{\text{expected spending}} = \frac{\text{stated promotion amount}}{\text{threshold amount (external)}} = \frac{5}{10} = 50\%$

Expected promotion: previously encountered percentage = 20% (internal)

Perceived promotion > expected promotion (higher deal fairness)

**Deal fairness comparison: capped promotions < threshold promotions**

**High trigger values (\$50)—higher than typical spending**

Capped promotions (e.g., “10% off, max \$5”)

Perceived promotion:  $\frac{\text{promotion amount}}{\text{expected spending}} = \text{stated percentage} = 10\%$

Expected promotion: stated promotion percentage = 10% (external)

Perceived promotion = expected promotion (higher deal fairness)

Threshold promotions (e.g., “\$5 off on orders of \$50 or more”)

Perceived promotion:  $\frac{\text{promotion amount}}{\text{expected spending}} = \frac{\text{zero}}{\text{threshold amount (external)}} = 0\%$

Expected promotion: previously encountered percentage = 20% (internal)

Perceived promotion < expected promotion (lower deal fairness)

**Deal fairness comparison: capped promotions > threshold promotions**

Consumers usually use internal references for spending and promotions. However, when external references are available and accessible, consumers may use those instead of internal ones when evaluating a price promotion because external references are available in the immediate environment wherein evaluation happens and thus are more salient and diagnostic to consumers than internal references (Hamilton 2024). Therefore, we reason that the availability and accessibility of the external references in restricted promotions may affect consumers’ expected promotion ratios and spending amounts. Specifically, we propose that the claimed promotion percentages (“50%”) in capped promotions (e.g., “50% off, max \$5”) act as a high external reference for the *promotion* and that the equivalent threshold levels (“\$10”) in threshold promotions (e.g., “\$5 off on orders of \$10 or more”) act as a lower external reference for expected *spending*.

In the following sections, we first build out our theory for the case in which trigger values are below typical spending amounts and then examine the case when they are above.

*When Trigger Values Are Low.* For capped promotions (e.g., “50% off, max \$5”), the large percentage discount value (50%) is an external reference point for consumers’ expected promotions. Once consumers realize that their usual spending amount (e.g., \$25 in food ordering) exceeds the trigger value (\$10), they understand they can only receive the capped offer amount (\$5) as their discount. Thus, consumers would find that the actual promotion (\$5/\$25 = 20%) they receive is lower than the expected promotion (50%). This negative expectation disconfirmation—a discrepancy generated from a worse-than-expected outcome (Oliver et al. 1994)—leads to lower perceived deal fairness and purchase intention. In contrast, for comparable threshold promotions (e.g., “\$5 off on orders of \$10 or more”), the expected spending is anchored on the low trigger value (\$10; Tversky and Kahneman 1974). The threshold restriction of \$10 also works as an external reference for spending amount (Cheng and Ross 2023), which consumers use to evaluate the size of the discount amount in percentage terms (Heath, Chatterjee, and France 1995).

Because there is no external reference for the promotion percentage, consumers may rely on an internal reference in memory, such as previously encountered offers (Hamilton 2024). In this example, the perceived promotion is derived from the ratio of the stated promotion amount (\$5) against the relevant comparison of expected spending (\$10), and thus ( $\$5/\$10 = 50\%$ ), it tends to be larger than the internal expected promotion (e.g., 20% previously encountered in food ordering; web appendix D) when the threshold is lower than consumers' usual spending amount. This positive expectation disconfirmation—a discrepancy generated from a better-than-expected outcome (Oliver et al. 1994)—leads to higher perceived deal fairness and purchase intention.

We use mathematical notation to illustrate the relationship between such expected promotions and the corresponding perceived promotions (table 1). However, consumers may not explicitly recall their previously encountered promotions and therefore may not calculate precisely (Kyung and Thomas 2016). Instead, the calculations we provide in table 1 are “as-if” models, approximating consumers' heuristic process. For example, consumers could also think about their spending amount first (e.g., \$25), expecting to have \$12.50 off ( $50\% \times \$25$ ), and realize the actual discount (\$5) is below expectation, which is a different thought process in terms of order of calculation but mathematically equivalent to the model we proposed.

Thus, even though the applicability of capped promotions is broader than threshold promotions (as capped promotions can be used on any purchase, and threshold promotions can only be used when spending is above the threshold), the perceived deal fairness of the capped promotions may be lower than that of threshold promotions. Accordingly, we put forth the following hypotheses conditional on low trigger values (summarized in figure 2):

**H1 (Conditional main effect):** When the trigger value is low (i.e., lower than consumers' usual spending), capped promotions lead to lower purchase intentions than comparable threshold promotions.

**H2 (Mediation):** When the trigger value is low (i.e., lower than consumers' usual spending), capped promotions versus comparable threshold promotions create a more negative expectation disconfirmation, lowering perceptions of fairness and, in turn, lowering purchase intentions.

Thus, following hypotheses 1 and 2, consumers may prefer a threshold promotion to a capped promotion when the trigger value is low.

*When Trigger Values Are High.* Next, consider the case in which the trigger value exceeds consumers' usual spending amount. In this case, we predict that consumers generally perceive capped promotions as a fairer deal than threshold promotions. For instance, a capped promotion of “10% off, max \$5” has a maximum trigger value of \$50,

which is now higher than the typical spending amount of \$25. Consumers spending an average amount can receive the full expected discount percentage (10%, leading to a rebate of \$2.50) without triggering the cap. Accordingly, the expected promotion ( $\$2.50/\$25 = 10\%$ ) is equal to the indicated external reference for the expected promotion of 10%. Thus, the capped promotion is perceived as a fair deal.

When threshold promotions are set with a high trigger value (e.g., “\$5 off on orders of \$50 or more”), consumers' usual spending amount (\$25) is now lower than the trigger value; thus, the promotion amount is not applicable or relevant, and the actual outcome would be \$0. Thus, when the trigger amount is higher than the consumers' usual spending amount, the perceived value of the threshold promotion (0%) is lower than the internal expected promotion (20%). This negative expectation disconfirmation leads to low perceived fairness and purchase intention (table 1). Thus, (summarized in figure 2), we hypothesize the following:

**H3 (Conditional main effect):** When the trigger value is high (e.g., higher than consumers' usual spending), capped promotions lead to higher purchase intention than comparable threshold promotions.

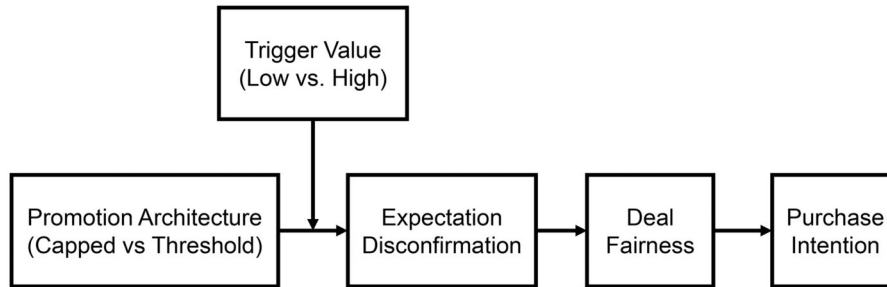
**H4 (Mediation):** When the trigger value is high (e.g., higher than consumers' usual spending), threshold promotions (vs. capped promotions) create negative expectation disconfirmation, lowering perceptions of fairness and, in turn, purchase intentions.

We examine the effect of promotion architectures when the trigger value is low and high (because both are prevalent in the marketplace; web appendix E). However, because threshold promotions apply to a narrower range of purchases than capped promotions with high trigger values, preferences between the promotion types can often be driven by differences in economic value. Thus, because it is theoretically more meaningful and interesting to examine the different psychological effects of two promotion architectures with similar economic values, our empirical studies mainly examine the case in which the trigger value is below usual spending (hypotheses 1 and 2; the promotions are closely comparable only when the trigger value is low; figure 1).

Once consumers' intention to make purchases is secured (such as with loyal customers), managers may shift their focus to encouraging consumers to increase their spending amounts. Prior research demonstrates that attractive promotions can enhance both purchase intentions and spending amounts (Hock, Bagchi, and Anderson 2020; Lam et al. 2001). Thus, one might assume that threshold promotions, by increasing purchase intentions when the trigger value is low, would similarly elevate consumer spending. However, consumers encountering threshold promotions might instead intend to spend *less* because their intended spending becomes anchored to the lower trigger value—the very

FIGURE 2

CONCEPTUAL FRAMEWORK.



mechanism that makes threshold promotions appear more appealing. Consequently, managers face a potential trade-off between increasing purchase intentions and maximizing spending among purchasing consumers. Due to these conflicting forces, we do not explicitly predict how promotion architecture influences overall sales (though we test it empirically in study 6). Instead, this article primarily investigates the impact of promotion architecture on purchase intention while also examining its implications for spending amount and overall sales to offer practical managerial insights.

## OVERVIEW OF STUDIES

We conducted seven preregistered studies as well as six studies in [web appendices](#) to test our hypotheses. Study 1 examines consumers' interest in the two types of digital discounts in a real-world social media setting. Study 2 tests hypotheses 1 and 3 with price promotions in the ride-hailing context. Study 3 tests hypotheses 1 and 2 using an unrestricted promotion to disentangle whether the observed difference between capped and threshold comes from an aversion to capped promotions and/or a preference for threshold promotions. Study 4 tests hypotheses 1 and 2 using a joint evaluation setting, which is also common in the marketplace. Study 5 tests all hypotheses by examining the moderating effect of low versus high trigger value. Studies 6a and 6b test the robustness of hypothesis 1 with lower promotion depths and further examine the impact of the two promotion types on overall sales. [Table 2](#) summarizes the results of all studies.

## STUDY 1: FOOD-ORDERING ADVERTISING FIELD STUDY

Instead of directly testing the effects of promotion architecture on purchase intentions when trigger values are low (hypothesis 1), this study examined an implication of hypothesis 1 that a threshold-promotion ad can be more

effective at engaging consumer interest than a comparable capped-promotion ad on social media platforms that use algorithmic targeting of ads ([Boegershausen et al. 2025](#); [Braun et al. 2024](#)). Specifically, we conducted a field study on TikTok, a popular short-form video platform, to compare consumer responses to advertisements employing equivalent threshold and capped types of promotions in a real-world social media context. We measured click-through rate (CTR), a standard metric in digital advertising and marketing research ([Hardisty and Weber 2020](#)), as an indicator of consumer interest. We expected threshold promotions to yield higher CTRs than capped promotions.

## Method

We ran a coupon-based ad campaign for a food-delivery platform using the “split test” tool in TikTok Ads Manager. This tool utilizes an algorithm to assign the audience to one of two groups, each seeing only one advertisement, and measures the CTR. We used the “Smart Video” tool in Ads Manager to turn two images into two 30-second videos, one with a threshold-promotion message (“Enjoy \$3 off on an order of \$5 or more”) and the other with an equivalent capped-promotion message (“Enjoy 60% off, \$3 max discount per order”) placed at the center of the screen throughout the video. The trigger value, \$5, was set to be lower than people's average spend (\$33.99; [web appendix D](#)). Both ads presented the same background music recommended by TikTok and had the same call for action (“Order Now”). We disallowed user comments to avoid any endogenous or unpredictable effects from the comments. We preregistered to run the campaign among TikTok viewers aged 18 years and older in the United States for 10 days, with an advertising cost of \$400 for each ad. Finally, we directed the viewers who clicked on the advertisements to a website wherein we debriefed them and provided a link to a real “\$3 off” Uber Eats coupon code.

**TABLE 2**  
SUMMARY OF RESULTS

<b>Study 1</b> ( <i>N</i> = 127,443; US TikTok users)				
	Capped promotion (%)		Threshold promotion (%)	
Click-through rate	1.25		1.38	
Main findings: consumers click more on a threshold promotion than a capped promotion when the trigger value is low.				
<b>Study 2</b> ( <i>N</i> = 403; Canadian Prolific participants)				
	Capped without spending	Threshold without spending	Capped with spending	Threshold with spending
Conversion rate	59.05%	67.71%	53.13%	67.92%
Preference for hailing a ride with a coupon (vs. taking a bus)	5.08 (2.50)	5.77 (2.47)	5.16 (2.41)	5.50 (2.63)
Deal evaluation	5.49 (1.95)	6.63 (1.67)	5.44 (1.91)	6.81 (1.65)
Main findings: threshold price promotions lead to higher conversion rates than capped price promotions when the trigger value is low, regardless of whether spending information is provided.				
<b>Study 3</b> ( <i>N</i> = 600; US Prolific participants)				
	Capped promotion	Unrestricted promotion	Threshold promotion	
Purchase intention	2.89 (1.80)	3.61 (1.72)	4.10 (1.97)	
Fairness perception	3.21 (1.87)	3.93 (1.67)	5.02 (1.67)	
Main findings: threshold price promotions lead to higher conversion rates than unrestricted and capped promotions when the trigger value is low.				
<b>Study 4</b> ( <i>N</i> = 200; US Prolific participants)				
	Capped		Threshold	
Choice	38.5%		61.50%	
Fairness perception	3.74 (1.11)		4.32 (0.71)	
Expectation discrepancy	2.84 (1.30)		2.35 (1.08)	
Main findings: expectation disconfirmation explains why threshold price promotions lead to higher conversion rates than capped promotions when the trigger value is low.				
<b>Study 5</b> ( <i>N</i> = 398; US Prolific participants)				
	Capped low trigger	Threshold low trigger	Capped high trigger	Threshold high trigger
Purchase intentions	2.87 (1.30)	3.73 (1.11)	3.11 (1.24)	1.94 (0.99)
Fairness perception	3.12 (1.15)	4.05 (0.95)	3.51 (0.99)	2.55 (1.18)
Expectation discrepancy	3.59 (1.23)	2.55 (1.18)	3.50 (1.22)	3.93 (1.13)
Main findings: threshold price promotions lead to higher conversion rates than unrestricted and capped promotions when the trigger value is low, but this reverses for high trigger values.				
<b>Study 6a Promotional depth 40%</b> ( <i>N</i> = 278; Canadian college students)				
	Capped promotion		Threshold promotion	
Deal evaluation	5.03 (1.93)		6.94 (1.35)	
Conversion rate	50.36%		85.61%	
Purchase amount	\$11.61 (\$13.86)		\$15.91 (\$7.46)	
Purchase amount—discount	\$8.61 (\$11.46)		\$10.78 (\$5.70)	
Main findings: threshold price promotions lead to higher conversions, purchase, and final payment amounts than unrestricted and capped promotions when the trigger value is low.				
<b>Study 6b Promotional depth 20%</b> ( <i>N</i> = 139; Canadian college students)				
	Capped promotion		Threshold promotion	
Deal evaluation	3.51 (1.59)		5.28 (1.80)	
Conversion rate	21.13%		61.76%	
Purchase amount	\$3.92 (\$7.87)		\$11.65 (\$10.15)	
Purchase amount—discount	\$3.29 (\$6.68)		\$9.79 (\$8.84)	
Main findings: threshold price promotions lead to higher conversions, purchase, and final payment amounts than unrestricted and capped promotions when the trigger value is low.				

NOTE.—For scale responses, means are provided with SDs in parentheses.

## Results

The threshold-promotion ad reached 61,895 viewers, and the capped-promotion ad reached 65,548 viewers. As preregistered, we conducted a one-tailed two-proportion  $z$ -test on CTR. We found that viewers were more likely to click on the threshold-promotion advertisement (1.38%) than the capped-promotion one (1.25%),  $z = 2.04$ ,  $p = .021$ . Exploratory analyses further revealed that viewers were more likely to play the threshold-promotion advertisement (13.52%) for at least two seconds compared to the capped-promotion ad (11.77%),  $z = 9.40$ ,  $p < .001$ .

## Discussion

Study 1 tested the effect of promotion architecture on CTRs on TikTok, with threshold promotions being 10% more effective at generating clicks than capped promotions when trigger values were low. The finding that threshold promotions were 15% likelier to be kept on screen for two seconds or longer than capped promotions is also consistent with the notion that consumers are more interested in threshold promotions. Note that social media-based “A/B Tests” are subject to “divergent delivery” due to the optimization and targeting algorithms of the platform (Boegershausen et al. 2025; Braun et al. 2024). Thus, although this study does not allow us to establish causality because of algorithmic confounds, it provides ecologically valid evidence supporting that a threshold-promotion ad can be more effective at engaging consumer interest than a comparable capped-promotion ad on social media. Although the influence of the algorithm is unavoidable, we replicated our findings in [web appendix F](#), suggesting a robust phenomenon in the real world that provides managerial guidance. Next, we follow up with fully randomized, laboratory-based experiments in the rest of the studies.

## STUDY 2: PRICE PROMOTIONS IN RIDE HAILING

This study examined the effects of promotion architecture on coupon conversion and deal evaluation when the trigger value is lower than consumers’ usual spending amount (hypothesis 1) in a traditional experimental setting, this time using a ride-hailing context. Unlike food ordering, in which consumers can adjust their spending by adding items to meet promotional trigger values, ride hailing offers less flexibility, as consumers cannot change core factors like their destination to influence spending. We set the maximum discount amount for the two conditions at \$5, with a trigger value of \$10, a commonly used price incentive for ride-hailing service platforms such as Uber and Lyft. We also conducted an exploratory examination to determine (1) whether the participants’ average spending amount in the past, either above or below the trigger value,

moderates the effect. As such, a low trigger value (\$10) might still have been high for some participants, and thus, we expect that only participants whose average spending amount in the past was above the trigger value would likely respond better to the threshold promotions (hypothesis 1). However, we expect those whose spending amount in the past was below the trigger value would be more likely to respond to the capped promotions (hypothesis 3); and (2) whether the effect is robust to informing participants of the average spending on hailing taxis, which may shed light on whether consumers naturally consult their typical spending amount.

## Method

We preregistered to recruit 400 Canadian residents from Prolific, and 403 participated in the study ( $M_{\text{age}} = 31.83$  years,  $SD_{\text{age}} = 20.22$  years; 58.1% female). We used a 2 (promotion architecture: capped vs. threshold)  $\times$  2 (information about average spending: present vs. not) factorial between-subjects design. We asked participants to imagine going home from work and deciding whether to hail a ride or take the bus. Half of the participants were instructed about their typical purchase patterns (“If you hail a ride, you will spend \$20 on average”), and half were not. We randomly assigned participants to one of the two promotion-restriction conditions. Participants in the threshold-promotion condition read, “Enjoy \$5 off a ride, on a ride of \$10 or more”; those in the capped-promotion condition read, “Enjoy 50% off a ride, \$5 max discount per ride.”

Next, we asked participants to indicate whether or not they would use the offer to hail a ride or take a bus (coupon conversion, binary), rate their strength of preference (1 = definitely hail a ride using Uber, 9 = definitely take a bus; reverse coded in results), and the extent to which they perceived the promotions as bad or good deals (deal evaluation; 1 = a very bad deal, 9 = a very good deal). We also measured participants’ typical spending on ride-hailing for a trip home, familiarity with Uber (1 = not familiar at all, 9 = very familiar), and whether they had an Uber account.

## Results and Discussion

First, we confirmed that the trigger value we used (\$10) was lower than the average spending amount ( $M = \$21.15$ ,  $SD = \$16.94$ , range = [\$1.00, \$120.00]) on ride hailing for a trip home,  $t(402) = 13.21$ ,  $p < .001$ . Most participants (75%) typically spend over \$10 on one ride. The majority of the participants (67%) had an Uber account and were familiar with Uber ( $M = 6.76$ ,  $SD = 2.19$ ), significantly higher than the scale midpoint (5),  $t(402) = 16.20$ ,  $p < .001$ .

*Conversion Rate.* Using logistic regression, we examined the effect of promotion architecture and the provision of typical spending amounts on coupon conversion. Results

revealed that respondents were significantly less likely to redeem the capped discount (56.22%) than the threshold discount (67.82%), Wald  $\chi^2(1) = 5.72, p = .017$ . There was neither a main effect of providing information on average spending, Wald  $\chi^2(1) = 0.23, p = .635$ , nor an interaction effect on coupon use, Wald  $\chi^2(1) = 0.37, p = .546$ .

**Preference Strength.** An analysis of variance (ANOVA) with preference strength as the dependent variable revealed that respondents had a stronger preference for hailing a ride (vs. taking a bus) when they saw a threshold discount ( $M = 5.63, SD = 2.55$ ) than when they saw a capped discount ( $M = 5.12, SD = 2.45$ ),  $F(1, 399) = 4.23, p = .040, \eta_p^2 = 0.01$ . There was, again, neither a main effect of mentioning the average spending,  $F(1, 399) = 0.16, p = .689$ , nor an interaction effect on preference strength,  $F(1, 399) = 0.47, p = .495$ .

**Deal Evaluation.** An ANOVA on deal evaluation revealed that respondents perceived the threshold discount ( $M = 6.72, SD = 1.66$ ) as a significantly better deal than the capped discount ( $M = 5.46, SD = 1.93$ ),  $F(1, 399) = 49.00, p < .001, \eta_p^2 = 0.11$ . Again, there was neither a main effect of providing the average spending,  $F(1, 399) = 0.15, p = .701$ , nor an interaction effect on deal evaluation,  $F(1, 399) = 0.43, p = .514$ .

Consistent with hypothesis 1, when the trigger value for a discount was low (i.e., lower than the typical purchase amount for most participants), consumers were more likely to choose to use the threshold discount coupon and have a higher deal evaluation than an equivalent capped discount. This result is striking given that the capped promotion is economically superior to the threshold promotion for spending amounts below the trigger value (about one-quarter of the sample). This effect also holds whether participants are assigned an average spending amount or not, suggesting that consumers in the control condition may have naturally thought of their typical spending amount ( $M = \$21.15$ ), which was very close to the \$20 typical spending assigned in the other condition.

#### *The Role of Trigger Value Relative to Past Spending.*

To provide an initial exploration (i.e., non-preregistered) of the role of the trigger value (hypotheses 1 and 3), we separated participants into two groups: those whose self-reported past spending amounts were higher than or equal to the trigger value (i.e., when the trigger value was below past spending) and those whose self-reported spending amounts were lower than the trigger value (i.e., when the trigger value was above past spending). An exploratory three-factor ANOVA showed a significant interaction effect on deal evaluation between spending information, trigger value relative to past spending, and promotion architecture,  $F(1, 395) = 7.07, p = .008, \eta_p^2 = 0.02$  (figure 3). Consistent with hypotheses 1 and 3, if the spending information was absent, there was a significant

interaction effect between trigger value and promotion architecture,  $F(1, 197) = 9.91, p = .002, \eta_p^2 = 0.05$ . Consumers had a higher deal evaluation for the threshold promotion than the capped promotion when the trigger value was below past spending,  $F(1, 197) = 26.76, p < .001, \eta_p^2 = 0.12$ . The reverse was true when the trigger value was above past spending,  $F(1, 197) = 3.30, p = .071, \eta_p^2 = 0.02$ . However, when spending information was provided, there was no interaction between trigger value and promotion architecture,  $F(1, 198) = 0.32, p = .572$ . Instead—and consistent with our instructions to assume a \$20 typical spending—consumers consistently had a higher deal evaluation for the threshold promotion than the capped promotion, regardless of their self-reported typical spending amount,  $F(1, 198) = 11.69, p < .001, \eta_p^2 = 0.06$ .

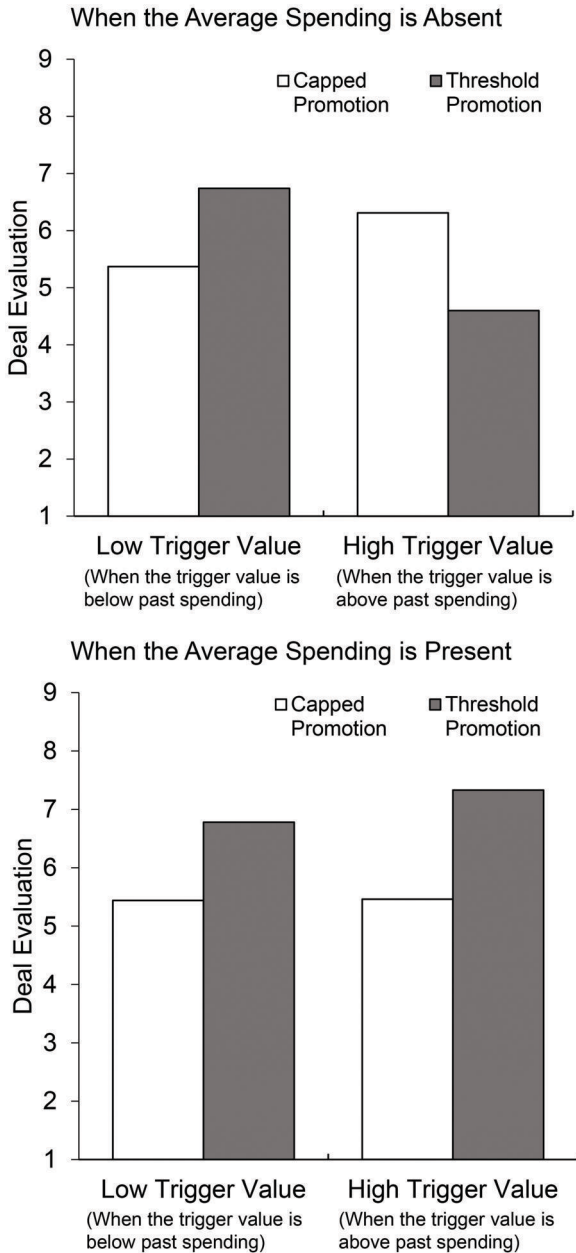
In sum, the findings indicated that when the spending amounts were not provided, consumers naturally consulted their past spending amounts and evaluated the deals based on whether they were above or below the trigger value. However, consumers no longer consulted their past spending amount when spending amount instructions were provided. Because the given spending amount (\$20) was above the trigger value (\$10), which led to negative expectation disconfirmation for the capped promotion, consumers in this condition preferred the threshold promotion regardless of their past spending amount. These findings were consistent with hypotheses 1 and 3. They also supported our assumption that consumers naturally consult their usual or typical spending amount in the past to construct deal perceptions and expected spending when evaluating deals. As this analysis was an exploratory test for hypothesis 3, we formally examine it in study 5.

### STUDY 3: UNRESTRICTED PROMOTION

Thus far, we have compared the effect on purchase intention of two restricted price promotion types. In study 3, we include an *unrestricted* dollar-term promotion as a baseline comparison condition to uncover whether the observed effect when the trigger value is low results from a negative expectation disconfirmation for capped promotions, a positive expectation disconfirmation for threshold promotions, or a combination. Based on our theorization (table 1), the expected spending is anchored on a lower value for threshold promotions. In contrast, consumers have the same expected promotion ratios and perceived promotion amounts for unrestricted and threshold promotions. Therefore, the perception–expectation ratio is higher for threshold promotions than unrestricted promotions, resulting in a positive expectation disconfirmation for threshold promotions. In contrast, the perceived promotions are the same for capped and unrestricted promotions, whereas the expected promotions are higher for capped promotions. Therefore, the perception–expectation ratio is lower for capped promotions than unrestricted promotions,

**FIGURE 3**

THE INTERACTION EFFECT AMONG THE PRESENCE OF SPENDING INFORMATION, TRIGGER VALUE, AND PROMOTION ARCHITECTURE IN STUDY 2.



resulting in a negative expectation disconfirmation for capped promotions. Accordingly, we propose that consumers would evaluate the threshold promotion (e.g., “\$3 off on an order of \$5 or more”) as better than the corresponding unrestricted dollar-term promotion (e.g., “\$3 off”), which would be evaluated as better than the capped

promotion (e.g., “60% off, \$3 max on an order”); fairness ratings are expected to follow the same order.

**Method**

We preregistered to recruit 600 participants residing in the United States from Prolific, and 600 took part in the study ( $M_{age} = 35.13$  years,  $SD_{age} = 14.31$  years; 69.7% female). Again, we asked participants to imagine themselves at home and deciding whether to order food from Uber Eats or cook dinner. Participants in the threshold-promotion condition saw a coupon: “Enjoy \$3 off on an order of \$5 or more.” Those in the capped-promotion condition read, “Enjoy 60% off, \$3 max discount on an order.” Those in the unrestricted promotion condition read, “Enjoy \$3 off.” Participants completed measures of their purchase intentions (“After seeing this offer, how likely are you to order from Uber Eats?” 1 = very unlikely; 7 = very likely) and promotion fairness perceptions (“Is the offer shown above a fair deal?” 1 = not fair at all; 7 = very fair; Campbell 1999) in a counterbalanced order. We also measured their expected spending amount per food order to confirm that our chosen trigger value (\$5) was low for this category.

**Results**

The trigger value for the restricted discounts (\$5) was lower than the average expected spending amount ( $M = \$24.67$ ,  $SD = \$10.80$ , range = [\$0.00, \$80.00]) for one meal order,  $t(599) = 44.60$ ,  $p < .001$ . Almost all participants (99.5%) expected to spend more than \$5 on one order.

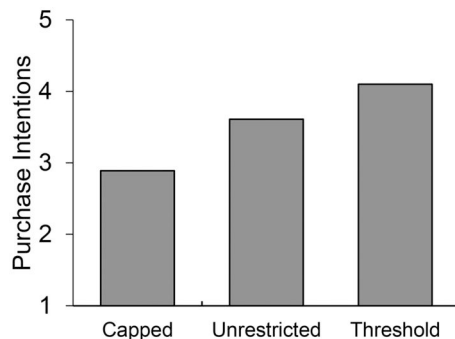
*Purchase Intention.* An ANOVA revealed a significant difference in purchase intentions among the three promotion-architecture conditions (figure 4),  $F(2, 597) = 21.90$ ,  $p < .001$ ,  $\eta_p^2 = 0.07$ . As expected, purchase intention was higher in the threshold promotion ( $M = 4.10$ ,  $SD = 1.97$ ) than in the capped promotion ( $M = 2.89$ ,  $SD = 1.80$ ),  $t(398) = 6.39$ ,  $p < .001$ , Cohen’s  $d = 0.64$ . Results also showed that purchase intentions with the unrestricted promotion ( $M = 3.61$ ,  $SD = 1.72$ ) were lower than with the threshold promotion,  $t(398) = 2.63$ ,  $p = .009$ , Cohen’s  $d = 0.26$ , but higher than with the capped promotion,  $t(398) = 4.09$ ,  $p < .001$ , Cohen’s  $d = 0.41$ .

*Fairness Perception.* We also observed differences in fairness perceptions among the three promotion-architecture conditions,  $F(2, 597) = 54.86$ ,  $p < .001$ ,  $\eta_p^2 = 0.16$ . Results revealed that people perceived the threshold promotion ( $M = 5.02$ ,  $SD = 1.67$ ) as fairer than the capped promotion ( $M = 3.21$ ,  $SD = 1.87$ ),  $t(398) = 10.21$ ,  $p < .001$ , Cohen’s  $d = 1.02$ .

*Indirect Effect.* Following a standard bootstrapped mediation test, fairness perceptions mediated the effect of

FIGURE 4

PROMOTION ARCHITECTURE AND PURCHASE INTENTION IN STUDY 3.



threshold promotion (vs. capped promotion) on purchase intention,  $b = 1.26$ , standard error (SE) = 0.14, 95% confidence interval (CI) [1.00, 1.53]. Compared with the unrestricted promotion ( $M = 3.93$ ,  $SD = 1.67$ ), people perceived the threshold promotion as fairer,  $t(398) = 6.53$ ,  $p < .001$ , Cohen's  $d = 0.65$ , and the capped promotion as less fair,  $t(398) = 4.06$ ,  $p < .001$ , Cohen's  $d = 0.41$ . Both the indirect effect of threshold promotion (vs. unrestricted promotion;  $b = 0.76$ ,  $SE = 0.12$ , 95% CI [0.53, 0.99]) and the indirect effect of capped promotion (vs. unrestricted promotion;  $b = -0.50$ ,  $SE = 0.12$ , 95% CI [-0.75, -0.26]) on purchase intention were mediated through fairness perceptions.

## Discussion

This study reveals that consumers have the highest purchase intention for the threshold promotion and the lowest for the capped promotion (in support of hypothesis 1), with the unrestricted promotion falling in the middle. Fairness perceptions mediate the differences in purchase intentions. These findings are also consistent with the theory that a negative expectation disconfirmation leads to lower purchase intentions for the capped promotion than the unrestricted promotion, and a positive expectation disconfirmation leads to higher purchase intentions for the threshold promotion than the unrestricted promotion (supporting hypothesis 2). This finding—that a restricted promotion can lead to a higher purchase intention than an unrestricted promotion—demonstrates a weak violation of dominance, further reinforcing the importance of promotion architecture for deal framing (Du and Hardisty 2025; Inman et al. 1997) and transaction utility (Campbell 1999; Thaler 1985). See web appendix G for a conceptual replication study examining both purchase intention and purchase amount of the three conditions with a lower promotion

depth (20%): “Enjoy 20% off (\$3 max discount on an order),” “Enjoy \$3 off (On an order of \$15 or more),” and “Enjoy \$3 off.”

## STUDY 4: JOINT EVALUATION

The three studies presented so far show higher purchase intentions or interest for threshold promotions than capped promotions when participants evaluate only one of the two discounts (and the trigger value is low). However, in the real world, these two types of restricted promotions are presented not only separately across service providers (web appendix A) but also simultaneously (e.g., promotions from different stores on the same app or flyer; web appendix B). We thus examine a phenomenon-driven moderator to see whether the effect still holds when participants simultaneously evaluate both promotion types (i.e., a joint evaluation mode; Hsee 1996). In a joint evaluation mode, the promotional benefits can be directly compared, and consumers can quickly discover that the capped promotion is objectively better than (if they spend less than the threshold amount) or equivalent to (if they spend no less than the threshold amount) the threshold promotion, and thus the evaluability of economic values is higher (Hsee 1996). However, we hypothesize that consumers may still evaluate the two promotions against their respective expected promotions, even in a more evaluable joint evaluation context. If so, fairness perceptions will be higher for threshold promotions, again driving higher purchase intentions for the threshold promotion over the capped promotion. Therefore, this study examines people's choice between two food-ordering apps using threshold versus capped promotion.

We also examine our proposed mechanism underlying preferences for threshold promotion by testing whether expectations and fairness perceptions serially mediate the effect (hypothesis 2). Lastly, we assess whether consumers notice that capped promotions apply to a broader range of purchases and whether they consider this applicability when evaluating the promotions.

## Method

We preregistered to recruit 200 US residents from Prolific, and 200 ( $M_{\text{age}} = 35.69$  years,  $SD_{\text{age}} = 13.71$  years; 49.5% female) participated in the study. We asked participants to imagine they were considering two apps from food-delivery companies (KABU and APT). One company offered a threshold discount (“Enjoy \$5 off on an order of \$10 or more”). The other offered a capped discount (“Enjoy 50% off, \$5 max discount on an order”). Whether the threshold discount or the capped discount was associated with a given company was counterbalanced.

Participants then indicated their choice (“Which app would you download and use the offer from?”) and

perceived fairness (“The offer from KABU/APT is fair”; Darke and Dahl 2003), negative expectation disconfirmation (“The offer from KABU/APT is below my expectation”), and applicability (“The offer from KABU/APT applies to all orders”) for each of the two companies using five-point scales (1 = strongly disagree; 5 = strongly agree).

## Results

Logistic regression analysis showed that presentation position had no significant effect on the proportion of consumers choosing the app with the threshold promotion (capped promotion on the left: 58%; threshold promotion on the left: 65%), Wald  $\chi^2(1) = 1.03, p = .310$ . Similarly, independent samples *t*-tests showed no significant position effect on any process measures,  $p > .10$ . Therefore, we collapsed the data across the two presentation-order conditions based on promotion architecture before conducting the main analyses.

*Choice.* Consistent with hypothesis 1, we find that with low promotional trigger values, consumers preferred threshold promotions (61.5%) over capped promotions (38.5%), even when presented with both alternatives in a joint evaluation,  $\chi^2(1) = 10.58, p = .001$ .

*Fairness and Negative Expectation Disconfirmation.* Paired-sample *t*-tests show that the perceived fairness for the threshold promotion ( $M = 4.32, SD = 0.71$ ) is significantly higher than that for the capped promotion ( $M = 3.74, SD = 1.11$ ),  $t(199) = 7.39, p < .001$ , Cohen’s  $d = 0.52$ ; and the negative expectation disconfirmation for the threshold promotion ( $M = 2.35, SD = 1.08$ ) is significantly lower than that for the capped promotion ( $M = 2.84, SD = 1.30$ ),  $t(199) = 5.12, p < .001$ , Cohen’s  $d = 0.36$ . A within-participant serial mediation analysis using MEMORE macro (model 1; Montoya and Hayes 2017) shows results consistent with a process model in which negative expectation disconfirmation and perceived fairness serially mediated the effect of promotion architecture (capped promotion = 0; threshold promotion = 1) on choice,  $b = 0.03, SE = 0.02, 95\% CI [0.00, 0.07]$ , supporting hypothesis 2.

*Applicability.* A paired-sample *t*-test shows that the perceived applicability for the threshold promotion ( $M = 2.42, SD = 1.49$ ) is significantly lower than that for the capped promotion ( $M = 3.88, SD = 1.37$ ),  $t(199) = 10.04, p < .001$ , Cohen’s  $d = 0.71$ . This difference can be attributed to the fact that 53.50% of consumers recognized the broader applicability of the capped promotion, whereas 37.00% perceived the applicability of both promotions as equal. A mediation analysis demonstrates that the applicability also mediates the effect of promotion architecture on choice (capped promotion = 0; threshold promotion = 1), but its direction is opposite to that of fairness,  $b = -0.15,$

$SE = 0.05, 95\% CI [-0.27, -0.06]$ . Among consumers who perceived the applicability of the capped promotion to be no broader than that of the threshold promotion, 72.04% chose the threshold promotion over the capped promotion. In contrast, among consumers who perceived the capped promotion as having broader applicability, this preference was significantly reduced to 52.34%, Wald  $\chi^2(1) = 8.01, p = .005$ . Notably, these participants also perceived the capped promotion to have higher negative expectation disconfirmation,  $t(106) = 3.12, p = .002$ , Cohen’s  $d = 0.30$ , and to be less fair,  $t(106) = 4.35, p < .001$ , Cohen’s  $d = 0.42$ .

## Discussion

We find that consumers choose the threshold promotion over the capped promotion when the two promotions are presented side by side, making the economic equivalence or dominance of the capped promotion more salient, supporting a strong form of hypothesis 1. That is, the mechanism of expectation disconfirmation we proposed is salient or robust enough to create the effect even in a direct-choice setting. The higher choice rate for the threshold promotion also indicates that our findings in previous studies are not artifacts of scale interpretation resulting from the between-subjects design but rather are comparable representations of experienced value (McKenzie and Sher 2020).

Our findings reveal that the evaluation of promotions is influenced by both psychological factors (such as expectation disconfirmation and perceived fairness) and economic factors (such as applicability). The preference for threshold promotions is diminished among consumers who perceive the capped promotion as less fair but applicable to a broader range of orders. Moreover, we tested the robustness of the mechanism with a separate evaluation using a different promotion context: charitable appeals in grocery shopping (web appendix H). We found that people were more likely to purchase with a threshold promotion (“We donate \$5 per purchase, if you purchase \$10 or more”) than with an equivalent capped promotion (“We donate 50% of your purchase price, up to \$5 per purchase”) and replicated the serial mediation model through negative expectation disconfirmation and fairness as well as the predicted effect of applicability. These findings support our theory that consumers consider both economic and psychological dimensions of promotions and that psychological fairness perception can prevail over the economic value.

## STUDY 5: TRIGGER VALUE AS A MODERATOR

The previous studies determined that consumers prefer the objectively equivalent (and sometimes less widely applicable) threshold promotion to the comparable capped promotion when the trigger value is lower than consumers’

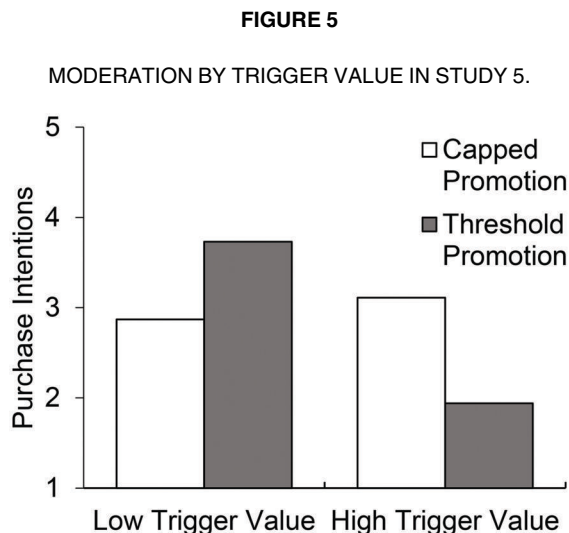
usual spending amount. However, our proposed process implies that the opposite may be true when the trigger value is higher than the consumers' usual spending amount because of the expanded zone of ineligibility for the threshold promotion. Also, when the trigger value is high, a consumer is less likely to exceed the cap for the capped promotions. Therefore, the perceived discounts are equal to the expected promotions for most consumers. Thus, we expect a reversal for high (vs. low) trigger values (hypotheses 3 and 4), which we examine in study 5.

## Method

We preregistered to recruit 400 US residents from Prolific, and a total of 398 ( $M_{\text{age}} = 33.58$  years,  $SD_{\text{age}} = 12.72$  years; 57.5% female) participated in the study in a 2 (promotion architecture: threshold vs. capped)  $\times$  2 (trigger value: high vs. low) between-subjects design. We asked participants to imagine that they were deciding whether to order out or cook dinner at home. Participants in the low-trigger threshold-promotion condition read, "Enjoy \$5 off (On an order of \$10 or more)," whereas those in the low-trigger capped-promotion condition read, "Enjoy 50% off (\$5 max discount on an order)." In the high-trigger threshold-promotion condition, participants read, "Enjoy \$5 off (On an order of \$50 or more)." Those in the high-trigger capped-promotion condition read, "Enjoy 10% off (\$5 max discount on an order)." We measured purchase intentions ("After seeing this message, how likely are you to use this offer and order from UberEats?" 1 = extremely unlikely, 5 = extremely likely), fairness perception ("The offer is fair." 1 = strongly disagree, 5 = strongly agree; same below), negative expectation disconfirmation ("The offer is below my expectation"), and applicability ("The offer applies to all orders"). We also measured participants' typical spending amount for one food-ordering delivery to confirm that the threshold settings used are comparatively high (\$50) or low (\$10).

## Results

First, we confirmed that the typical spending in one meal order ( $M = \$27.65$ ,  $SD = \$17.57$ ) is higher than the low-level trigger value setting (\$10),  $t(397) = 20.05$ ,  $p < .001$ , and lower than the high-level trigger value setting (\$50),  $t(397) = 25.38$ ,  $p < .001$ . Results of an ANOVA on purchase intention revealed that consumers had higher purchase intentions for low-trigger promotions than for high-trigger promotions (figure 5),  $F(1, 394) = 43.95$ ,  $p < .001$ ,  $\eta_p^2 = 0.10$ . Notably, there was a significant interaction effect between promotion architecture and trigger values,  $F(1, 394) = 75.38$ ,  $p < .001$ ,  $\eta_p^2 = 0.16$ . Pairwise comparisons showed that consumers in the low-trigger condition expressed higher purchase intentions with threshold promotions ( $M = 3.73$ ,  $SD = 1.11$ ) than they did with capped promotions ( $M = 2.87$ ,  $SD = 1.30$ ),  $t(199) = 5.03$ ,  $p < .001$ ,



Cohen's  $d = 0.71$ , supporting hypothesis 1. However, consumers in the high-trigger condition expressed lower purchase intentions with threshold promotions ( $M = 1.94$ ,  $SD = 0.99$ ) than they did with capped promotions ( $M = 3.11$ ,  $SD = 1.24$ ),  $t(195) = 7.34$ ,  $p < .001$ , Cohen's  $d = 1.05$ , supporting hypothesis 3.

Results from an ANOVA revealed a significant interaction effect on negative expectation disconfirmation between promotion architecture and trigger values,  $F(1, 394) = 38.04$ ,  $p < .001$ ,  $\eta_p^2 = 0.09$ . Pairwise comparisons showed that consumers in the low-trigger conditions had more negative expectation disconfirmation with capped promotions ( $M = 3.59$ ,  $SD = 1.23$ ) than with threshold promotions ( $M = 2.55$ ,  $SD = 1.18$ ),  $t(199) = 6.13$ ,  $p < .001$ , Cohen's  $d = 0.87$ . However, consumers in high-trigger conditions had less negative expectation disconfirmation with capped promotions ( $M = 3.50$ ,  $SD = 1.22$ ) than with threshold promotions ( $M = 3.93$ ,  $SD = 1.13$ ),  $t(195) = 2.57$ ,  $p = .011$ , Cohen's  $d = 0.37$ .

Results of an ANOVA on fairness perception showed a significant interaction effect between promotion architecture and trigger values,  $F(1, 394) = 78.00$ ,  $p < .001$ ,  $\eta_p^2 = 0.17$ . Pairwise comparisons revealed that consumers in low-trigger conditions had higher fairness perceptions for threshold promotions ( $M = 4.05$ ,  $SD = 0.95$ ) than for capped promotions ( $M = 3.12$ ,  $SD = 1.15$ ),  $t(199) = 6.27$ ,  $p < .001$ , Cohen's  $d = 0.89$ . However, consumers in high-trigger conditions had lower fairness perceptions for threshold promotions ( $M = 2.55$ ,  $SD = 1.18$ ) than they did for capped promotions ( $M = 3.51$ ,  $SD = 0.99$ ),  $t(195) = 6.22$ ,  $p < .001$ , Cohen's  $d = 0.89$ . Interestingly, the high-trigger capped promotion was perceived as fairer than the

low-trigger capped promotion,  $t(198) = 2.59$ ,  $p = .010$ , Cohen's  $d = 0.37$ .

Results of an ANOVA on applicability revealed that participants recognized the promotion applicability as higher for capped promotions ( $M = 3.51$ ,  $SD = 1.37$ ) than threshold promotions ( $M = 2.19$ ,  $SD = 1.44$ ),  $F(1, 394) = 93.35$ ,  $p < .001$ ,  $\eta_p^2 = 0.19$ . We also found a significant interaction effect between promotion architecture and trigger values,  $F(1, 394) = 16.75$ ,  $p < .001$ ,  $\eta_p^2 = 0.04$ . Pairwise comparisons showed that consumers in both low-trigger and high-trigger conditions correctly noticed that capped promotions offered a broader range of applicability than threshold promotions, with the difference in perceived applicability larger when the threshold was high (vs. low),  $ps < .001$ .

As preregistered, we applied the Process macro (Montoya and Hayes 2017) to examine the whole theoretical framework (figure 2) by conducting a moderated serial mediation analysis (model 83) of the effect of promotion architecture on purchase intention with negative expectation disconfirmation and fairness perception as serial mediators and the trigger value as the moderator. Consistent with hypothesis 2, results showed that when the trigger value is low, the indirect effect of promotion architecture (coded as threshold = 0, capped = 1) through negative expectation disconfirmation and fairness perception is significant and negative,  $b = -0.23$ ,  $SE = 0.05$ , 95% CI  $[-0.35, -0.13]$ . Consistent with hypothesis 4, results showed that when the trigger value is high, the indirect effect of promotion architecture (coded as threshold = 0, capped = 1) through negative expectation disconfirmation and fairness perception is significant and positive,  $b = 0.09$ ,  $SE = 0.04$ , 95% CI  $[0.02, 0.18]$ . Supporting the trigger value's moderating role, the moderated mediation index (difference between conditional indirect effects) is also significant,  $b = 0.32$ ,  $SE = 0.08$ , 95% CI  $[0.19, 0.49]$ . The moderated mediation index remains significant,  $b = 0.29$ ,  $SE = 0.07$ , 95% CI  $[0.16, 0.45]$ , even after perceived applicability is controlled.

## Discussion

Consistent with hypotheses 1 and 3, results from study 5 support our predictions that consumers' preferences for threshold promotions versus capped promotions depend on the trigger value. Consumers prefer threshold promotions to capped promotions when the trigger value is low (hypothesis 1), and this preference reverses with high trigger values (hypothesis 3). Consistent with our hypotheses 2 and 4, we find that negative expectation disconfirmation and fairness perceptions mediate the effect of promotion architecture on purchase intentions.

Interestingly, the high-trigger capped promotion ("10% off, max \$5 discount") was also perceived as fairer than the low-trigger capped promotion ("50% off, max \$5

discount"), although its promotion depth was dominated by its low-trigger counterpart, and the capped values were the same (\$5). This was also consistent with our proposed mechanism of expectation disconfirmation (hypothesis 2). To further examine the mechanism and provide managerial insights, we explored how various levels of promotion depth affect evaluations of capped promotions in [web appendix I](#). Generally, the promotion depth (10%–60%) negatively impacted fairness perception and deal evaluation when the capped values (\$3) remained constant. We also replicated that a high-trigger capped promotion ("Enjoy 20% off, \$3 max discount on an order") could be perceived as a fairer and better deal than a low-trigger one ("Enjoy 60% off, \$3 max discount on an order"). All these findings support our proposed mechanism, which suggests that an attractive offer can create a higher expected promotion, resulting in expectation disconfirmation and perceived unfairness.

In study 5, we kept the maximum discount offered constant (i.e., \$5). We varied the percentage level between high-trigger conditions (i.e., 10% off up to \$5 max) and low-trigger conditions (i.e., 50% off up to \$5 max). As a robustness check, we ran a study that kept the promotion depth or percentage level constant at 50% ([web appendix J](#)) across high- (i.e., \$25) and low-trigger conditions (i.e., \$5). The results were again consistent with hypotheses 1 and 3.

## STUDIES 6A AND 6B: OVERALL SALES

Studies 1–5 have supported the proposal that threshold promotions lead to higher *interest*, *purchase intention*, and *conversion* than capped promotions when the trigger value is low. Although deal evaluation and conversion effects are the focus of this research, it is also informative to examine total spending when evaluating the effectiveness of promotions (Hock et al. 2020; Lam et al. 2001). Considering that a low trigger value may evoke a goal of a smaller *purchase amount* for threshold promotions (Cheng and Ross 2023; Lee and Ariely 2006) and that it is unknown whether a low trigger value similarly affects purchase amounts for capped promotions, we are agnostic as to which promotion architecture will maximize overall sales, a critical managerial outcome. Therefore, the first goal of the following two studies is to examine the effect of promotion architecture on overall sales when the trigger value is low. Secondly, we adopted a smaller percentage for capped promotions (i.e., 20% and 40%) to test the robustness of the findings across promotion depth levels. Third, we elicited consumers' spontaneous thoughts after seeing the promotional messages to explore potential mechanisms. Lastly, we examined the generalizability of the findings among a relevant and younger population, college students, considering that 43% of Generation Z use meal delivery services (Roy Morgan 2022).

### Study 6a: 40% Promotion Depth

**Method.** A total of 278 students at a North American university participated in the study ( $M_{\text{age}} = 19.80$  years,  $SD_{\text{age}} = 1.28$  years; 59.7% female). We asked participants to imagine that they were deciding whether to order out or cook dinner at home. Participants in the threshold-promotion condition saw a coupon: “Enjoy \$6 off (On an order of \$15 or more).” Those in the capped-promotion condition read, “Enjoy 40% off (\$6 max discount on an order).” Participants were first asked to write down anything that crossed their mind as they considered the offer. Then, they completed the same measure of deal evaluation used in study 2 and indicated whether they would use the offer and make an order (coupon conversion, binary). Participants who answered “yes” to the conversion question were further asked to indicate how much money they were likely to spend before the discount was subtracted.

**Results.** An independent-sample *t*-test on deal evaluation revealed that respondents perceived the threshold discount ( $M = 6.94$ ,  $SD = 1.35$ ) to be a significantly better deal than the capped discount ( $M = 5.03$ ,  $SD = 1.93$ ),  $t(276) = 9.55$ ,  $p < .001$ , Cohen’s  $d = 1.15$ . In addition, logistic regression analysis revealed that the conversion rate was significantly higher for the threshold promotion (85.61%) than for the capped promotion (50.36%), Wald  $\chi^2(1) = 35.90$ ,  $p < .001$ .

Among those who would choose to make an order, the purchase amount was smaller when the coupon was a threshold promotion ( $M = 18.59$ ,  $SD = 3.87$ ) than when the coupon was a capped promotion ( $M = 23.06$ ,  $SD = 10.78$ ),  $t(187) = 4.10$ ,  $p < .001$ , Cohen’s  $d = 0.62$ . However, after taking the proportion of those who would make an order into consideration (non-choosers’ purchase amounts coded as \$0 and thus not normally distributed), a Mann–Whitney *U* test suggested that participants overall tended to spend more when it was the threshold promotion ( $M = 15.91$ ,  $SD = 7.46$ ) than when it was the capped promotion ( $M = 11.61$ ,  $SD = 13.86$ ),  $U = 7432.50$ ,  $z = 3.42$ ,  $p < .001$ . Consistent with this, the overall sales for the threshold promotion (\$2,212.00) are larger than those for the capped promotion (\$1,614.00). As a robustness check, using a bootstrapped method, we found that the 95% CI for the mean difference in individual spending (threshold—cap) is [\$1.71, \$6.80].

To provide managers with insight into the associated revenue analysis, we calculated the payment amount (purchase amount minus discount amount) based on each participant’s purchase amount and the promotion type. After the appropriate discount was deducted, the payment amount was still larger for threshold promotions ( $M = 10.78$ ,  $SD = 5.70$ ) than that for capped promotions ( $M = 8.61$ ,  $SD = 11.46$ ),  $U = 7,432.5$ ,  $z = 3.42$ ,  $p < .001$ . The bootstrapped 95% CI for the mean difference (threshold—cap) is [\$0.03, \$4.21].

We conducted an automated text analysis using the extended Moral Foundations Dictionary (Hopp et al. 2021) to determine the fairness perceptions implied by participants’ reported thoughts. An independent *t*-test showed that the fairness sentiment conveyed in the text was significantly higher for threshold promotions ( $M = 0.02$ ,  $SD = 0.04$ ) than that for capped promotions ( $M = 0.01$ ,  $SD = 0.02$ ),  $t(276) = 2.53$ ,  $p = .012$ , Cohen’s  $d = 0.30$ . Mediation analysis showed that fairness sentiment mediated the effect of the promotion architecture on deal evaluation,  $b = 0.06$ ,  $SE = 0.03$ , 95% CI [0.02, 0.14].

### Study 6b: 20% Promotion Depth

**Method.** We recruited 139 university students to participate in the study ( $M_{\text{age}} = 19.89$  years,  $SD_{\text{age}} = 1.10$  years; 56.0% female). The scenario and measures were the same as those used in study 6a, except for the promotion messages. Participants in the threshold-promotion condition saw, “Enjoy \$3 off (On an order of \$15 or more),” whereas those in the capped-promotion condition read, “Enjoy 20% off (\$3 max discount on an order).”

**Results.** Respondents perceived the threshold discount ( $M = 5.28$ ,  $SD = 1.80$ ) as a significantly better deal than the capped discount ( $M = 3.51$ ,  $SD = 1.59$ ),  $t(137) = 6.15$ ,  $p < .001$ , Cohen’s  $d = 1.04$ . Consistent with this, the conversion rate was significantly higher for the threshold promotion (61.76%) than for the capped promotion (21.13%), Wald  $\chi^2(1) = 22.00$ ,  $p < .001$ . Interestingly, among those who chose to make an order, the average purchase amount in the threshold-promotion condition ( $M = 18.86$ ,  $SD = 5.40$ ) was found to be similar to that in the capped promotion ( $M = 18.57$ ,  $SD = 4.30$ ) in this study,  $t(55) = 0.19$ ,  $p = .852$ . After taking those who would not make an order into consideration (coded as \$0), a Mann–Whitney *U* test suggested that participants, on average, tended to spend more when it was the threshold promotion ( $M = 11.65$ ,  $SD = 10.15$ ) than when it was the capped promotion ( $M = 3.92$ ,  $SD = 7.87$ ),  $U = 1,426.00$ ,  $z = 4.69$ ,  $p < .001$ . As a robustness check, using a bootstrapped method, we found that the 95% CI for the mean difference (threshold—cap) is [\$4.75, \$10.70].

After their discount amount was deducted, the payment amount for threshold promotions ( $M = 9.79$ ,  $SD = 8.84$ ) was nearly three times as large as that for capped promotions ( $M = 3.29$ ,  $SD = 6.68$ ),  $U = 1,426.00$ ,  $z = 4.69$ ,  $p < .001$ . The bootstrapped 95% CI for the mean difference (threshold—cap) is [\$3.93, \$9.08].

### Discussion

Studies 6a and 6b show that when the trigger value is low, consumers have higher purchase intentions with threshold promotions compared to capped promotions, even when the promotion depth level is low (i.e., 20% or

40%), supporting the robustness of hypothesis 1. The text analysis of participants' spontaneous thoughts suggests that fairness perceptions may underlie the effect. Intriguingly, there is a possible trade-off between the effect of promotion architecture on purchase intention (or conversion rate) and its impact on purchase amount. Although consumers overall perceive the threshold promotion (vs. capped promotion) as a better and fairer deal, and accordingly, the conversion rate is higher, buyers may spend less with a threshold promotion when the trigger value is low (study 6a but not 6b). Descriptive statistics reveal that the inconsistency of the spending effect between studies 6a and 6b is mainly driven by a major decline in the purchase amount for the capped promotions (\$23.06 vs. \$18.57) but not for the threshold promotions (\$18.59 vs. \$18.86) when the promotion depth changes from 40% to 20% and the maximum discount changes from \$6 to \$3. The results suggest that consumers' responses to purchase amounts with threshold promotions may have been similarly anchored on the threshold amount (\$15) in both studies (Tversky and Kahneman 1974).

When both the conversion rate and the spending amount per consumer are considered, the sales are consistently higher for the threshold promotion than the capped promotion (when the trigger value is low). To further explore the practical implications of our research, in another study, we found that capped promotions backfired compared to having no promotion at all (web appendix K). A capped promotion with a low trigger value resulted in both lower purchase intention and smaller purchase amounts compared to a no-promotion message. After considering the conversion rate, purchase amount, and discount, the no-promotion message led to the final payment being 54.51% more than the capped promotion per capita.

## GENERAL DISCUSSION

This research examined consumers' reactions toward two common types of promotions: capped and threshold. We find converging evidence that consumers have higher purchase intentions (and higher sale amounts) when offered threshold promotions than equivalent capped promotions, as long as the trigger value is lower than their usual spending amount. We observe this effect even when the capped promotion applies to a broader range of purchases and is economically equivalent to or even better than the threshold promotion—inconsistent with standard economic models. This phenomenon occurs because consumers heighten their *expected promotion* level for capped promotions and lower their *expected spending* for threshold promotions using external references, which leads to overall negative expectation disconfirmation and lower perceived deal fairness for capped promotions. Consistently, we discover that the preference for threshold promotions over capped promotions can be decomposed into two subeffects: we not

only find an aversion to capped promotions but also a preference in favor of threshold promotions over unrestricted promotions. Consistent with our framework, the preference between capped and threshold promotions reverses when the trigger value exceeds consumers' usual spending.

Furthermore, we present evidence supporting the generalizability of these findings. The capped versus threshold promotion architecture affects consumers' purchase intentions in everyday price-promotion contexts such as food ordering, ride hailing, and grocery shopping. These findings are robust to different manipulations and measures: across studies, these findings are robust to various percentage settings and promotion amounts and are found with both continuous measures (such as purchase intentions) and binary choices. The effect is also robust to providing an expected spending amount and using a joint evaluation mode that makes comparing the economic values of each promotion type more straightforward, which should favor capped promotions. We show the effects in both laboratory studies and real-world advertising, enhancing the ecological validity of the findings.

## Practical Implications

Capped and threshold promotions are now as common in the marketplace as their unrestricted counterparts, and managers on many digital platforms must decide which type of restricted promotions to choose (e.g., DoorDash; web appendices C and D) but may be confused or uncertain about the best way to frame discounts. This research informs consumers about potential effects and assists managers in designing cost-effective and successful price promotions. According to Lam et al. (2001), price promotions attract more consumers to visit the store and purchase. Meanwhile, managers also intend to increase consumers' spending amounts. Our findings reveal that a trade-off between the two goals may exist when using threshold promotions (vs. capped promotions). Firstly, we suggest that marketers aiming to maximize purchase intention should adopt a threshold promotion with a low trigger value or a capped promotion with a high trigger value. When marketing a new product, capturing early market share at the expense of profits may be more critical. These strategies may also be beneficial for first-time users to develop product use habits or to attract dormant users to reorder. Additionally, increasing purchase intention is more relevant when consumers have a concrete shopping goal and a predetermined spending amount. When consumers decide whether to hail a ride with an offer or take a bus, their destination is fixed, and spending is inelastic. Research also indicates that the promotion threshold does not affect consumer spending in a store (Lee and Ariely 2006).

Furthermore, when the goal is to maximize total sales, both purchase intentions and spending amount should be considered. Studies 6a and 6b, as well as web appendices G

and K, provide several cases in which overall sales are examined, and we find that threshold promotions still lead to more total spending than capped promotions in these studies. Therefore, we suggest that managers should not assume threshold promotions will always underperform compared to capped promotions, even when the latter appear to provide a similar or better deal. Instead, managers are encouraged to conduct A/B tests to determine which promotion is more effective in increasing purchase intention, purchase amount among buyers, and total sales for a specific context and trigger value.

Finally, we provide managerial guidance on the more effective use of capped promotions and suggest less costly alternatives to this promotional strategy. Surprisingly, but consistent with our theory, when implementing a capped promotion, it is advisable to state a *smaller* percentage (e.g., 20%), rather than a larger one (e.g., 60%), to mitigate negative expectation disconfirmation and enhance purchase intention (web appendix I). Additionally, managers might consider using call-to-action messages without promotional offers (e.g., “Enjoy your meal with us, order now”), as these can lead to higher purchase intentions and increased sales compared to messages with capped promotions (web appendix K).

### Theoretical Contributions

This research makes several theoretical contributions. First, by drawing on expectation discrepancy theory (Oliver and Swan, 1989), we propose a framework for promotion architecture that explains how two types of restrictions (a threshold precondition vs. a cap limit) affect consumers' purchase intentions. Specifically, we highlight the roles of two types of expectations, expected spending and expected promotion level, both of which are affected by external references in the offer messages. We propose that the relationship between perceived promotions (which are affected by expected spending) and expected promotions determines a promotion's deal fairness perception. When the trigger value is low, threshold promotions decrease consumers' expected spending, which increases the deal fairness perception. In contrast, capped promotions increase expected promotion levels, which decreases the deal fairness perception because of the high external references provided.

Consistent with this dual mechanism, our findings demonstrate that a threshold promotion (e.g., “Enjoy \$3 off when spending \$5 or more”) may result in a higher purchase intention compared to an unrestricted promotion (e.g., “Enjoy \$3 off”; study 3 and web appendix G). Conversely, a large-percentage capped promotion (e.g., “Enjoy 60% off, up to \$3”) not only leads to a lower purchase intention than the comparable threshold promotion but also leads to a lower purchase intention than a small-percentage capped promotion (e.g., “Enjoy 20% off, up to

\$3”; web appendix I) or even a no-promotion message (e.g., “Enjoy your meal with us, order now”; web appendix K). Notably, in all these scenarios, the promotions that result in lower purchase intentions are economically equivalent or superior to their counterparts.

Our findings also contribute to the literature on restricted promotions, answering a call to examine the effect of framing on promotion restrictions (Inman et al. 1997). We classify promotion restrictions into two categories: preconditions and limits. We build on past restricted promotions research that examined the effects of restrictions (e.g., threshold precondition; time limit) versus nonrestrictions (Gneezy 2005; Inman et al. 1997; Yoon and Vargas 2010) to conduct—to our knowledge—the first comparison between two types of promotion restrictions. As such, a general preference or aversion to restrictions in the previous literature cannot explain our effects parsimoniously.

Furthermore, our findings show *when* restricted promotions will be attractive (or not) to consumers, which helps to reconcile inconsistent guidance from previous literature regarding threshold promotions. For instance, studies find that adding a restriction (including a trigger) typically positively affects deal evaluation because consumers infer good deals from restrictions (Inman et al. 1997). Meanwhile, Gneezy (2005) reports that participants had a more negative attitude toward restricted coupons (minimum \$20 purchase) than unrestricted ones (\$10 coupon from the university's bookstore) because consumers infer that the store wants them to spend on unnecessary items. The current research finds that promotion architecture matters, and we propose a theoretical framework to predict when different price promotions will be most effective. For instance, the trigger value of \$20 used in the work by Gneezy (2005) may have been higher than participants' usual spending amounts in bookstores at that time, leading them to perceive the threshold promotion as unfair. Therefore, our framework enables us to explain seemingly disparate findings in the literature.

The present research also broadly builds on the literature on price-promotion framings. A long-lasting debate in price promotion research is whether to frame discounts in percentage or dollar terms (Chen et al. 1998; DelVecchio, Shanker Krishnan, and Smith 2007; Hardesty and Bearden 2003). Previous work indicates that people may rely predominantly on the nominal value and neglect other information when making evaluations, which is referred to as “base value neglect” (Chen et al. 2012), “format neglect” (Sevilla et al., 2018), or “pricing focalism” (Allard, Hardesty, and Griffin 2019). Thus, a large percentage number (e.g., 50% off) may make capped promotions more attractive to consumers than a small absolute dollar number (\$5 off) in threshold promotions. However, when the trigger values are low, our findings support the opposite in restricted-promotions architecture, revealing a solid

aversion to capped promotions in dollar terms (vs. threshold percentage promotions) because of negative expectation disconfirmation and lower fairness perception, which seems to dominate the previously discovered heuristic preference for large nominal values.

## Limitations and Directions for Future Research

We proposed that perceptions of deal fairness are the key driver of the observed effect. Consistent with transaction utility theory (Thaler 1985), we define “deal fairness perception” broadly in our framework—as encompassing both the cognitive assessment and the associated emotions regarding whether a deal is “reasonable, acceptable, or justifiable” (Xia et al. 2004). This construct may differ from moral judgment, as it primarily reflects participants’ subjective evaluation of the deal rather than a strictly ethical or moral assessment. Future research can help identify whether, and in what ways, ethical fairness shapes deal perceptions.

Although we adopted a unified framework based on expectation disconfirmation to explain how both threshold and capped promotions influence perceived deal fairness, we acknowledge that additional psychological mechanisms may also underlie the (in)effectiveness of each type of promotion. We made some attempts to rule out alternative explanations, such as misunderstanding and confusion (web appendix L), but still left some others unexamined. Specifically, for low-trigger threshold promotions, the ease of satisfying the spending requirement may trigger the perceived responsibility for a discount (i.e., smart-shopper feelings; Schindler 1998), which may enhance perceived fairness. In contrast, the perceived unfairness of low-trigger capped promotions may stem from a lay belief that higher spending should yield proportionally greater rewards—making the cap feel punitive (Adams 1965). As an exploratory analysis to examine self-reported processes, we asked ChatGPT to summarize people’s thoughts (Rathje et al. 2024) based on their open-ended responses. Although we found evidence supporting our framework, participants also reported appreciating that low-trigger threshold promotions were achievable and straightforward, whereas low-trigger capped promotions were disappointing and misleading (web appendix M). Future research could build on our work by exploring additional psychological accounts in more detail, helping to refine and enrich the understanding of consumer reactions to restricted promotions. As this article aims to open the conversation and bring attention to this substantive phenomenon, we view these possibilities as complementary rather than contradictory to our core theorizing.

Our research has examined the effect of promotion architecture on purchase intention and amount when consumers see the offers at the moment. However, the negative

expectation disconfirmation and lower fairness perception of capped promotions (vs. threshold promotions) may last longer and create a chain of influence over time, as is implied in a study in which capped promotions may create more negative inferences about the brand (web appendix H). A better-perceived deal may form user habits and lead to more purchases in the long run. In contrast, a worse deal may lead to negative effects on the effectiveness of later advertising (Darke, Ashworth, and Main 2010). We leave this question open and encourage future research to examine the long-term and carryover effects of promotion architecture.

Our framework also suggests that consumers often consult their usual spending amount when evaluating promotions without an external reference point for spending amount. It would be interesting to examine how consumers would evaluate threshold promotions versus capped promotions for a new product category in which the usual spending amount is uncertain. Moreover, this research has examined threshold promotions in explicit nominal values such as “\$5 off if you spend more than \$10.” However, broad threshold promotions also include free delivery or a free item whose monetary value is not explicit. Similarly, the threshold can also be non-nominal, such as “\$5 off if you buy two items.” Future research can test the effectiveness of non-nominal threshold promotions to extend the scope of the threshold promotions.

Although managers widely use restricted promotions, this research highlights the need for careful attention to promotion architecture design. Specifically, capped percentage promotions with high trigger values are not as well received as intended when a significant discrepancy exists between the actual discount percentage and the stated percentage. Instead, a comparable threshold promotion can be more cost-effective for managers and more appealing to consumers, particularly when the goal is to boost purchase intentions.

## DATA COLLECTION STATEMENT

Study 1 was conducted on TikTok in May 2022. Studies 2–5 were conducted on Prolific. Studies 6a and 6b were conducted at the University of British Columbia. Study 2 was conducted in November 2021. Study 3 was conducted in April 2022. Study 4 was conducted in February 2022. Study 5 was conducted in July 2022. Study 6a was conducted in November 2023. Study 6b was conducted in December 2023. All data were collected and analyzed by the first author. The data are stored in a project directory on the Open Science Framework. All study materials, data, and preregistrations are available at [https://osf.io/tnhvb/?view\\_only=0b5763ed25084a35a336ca91bd0218ae](https://osf.io/tnhvb/?view_only=0b5763ed25084a35a336ca91bd0218ae).

## REFERENCES

- Adams, J. Stacy (1965), "Inequity in Social Exchange," in *Advances in Experimental Social Psychology*, Vol. 6, ed. Berkowitz Leonard, Madison, WI: Elsevier, 267–99.
- Allard, Thomas, David J. Hardisty, and Dale Griffin (2019), "When 'More' Seems Like Less: Differential Price Framing Increases the Choice Share of Higher-Priced Options," *Journal of Marketing Research*, 56 (5), 826–41.
- Bertini, Marco and Aylin Aydinli (2020), "Consumer Reactance to Promotional Favors," *Journal of Retailing*, 96 (4), 578–89.
- Boegershausen, Johannes, Yann Cornil, Shangwen Yi, and David J. Hardisty (2025), "On the Persistent Mischaracterization of Google and Facebook A/B Tests: How to Conduct and Report Online Platform Studies," *International Journal of Research in Marketing*, 42 (3), 886–903.
- Braun, Michael, Bart De Langhe, Stefano Puntoni, and Eric M. Schwartz (2024), "Leveraging Digital Advertising Platforms for Consumer Research," *Journal of Consumer Research*, 51 (1), 119–28.
- Campbell, Margaret C. (1999), "Perceptions of Price Unfairness: Antecedents and Consequences," *Journal of Marketing Research*, 36 (2), 187–99.
- Chandon, Pierre, Brian Wansink, and Gilles Laurent (2000), "A Benefit Congruency Framework of Sales Promotion Effectiveness," *Journal of Marketing*, 64 (4), 65–81.
- Cheema, Amar and Vanessa M. Patrick (2008), "Anytime versus Only: Mind-Sets Moderate the Effect of Expansive versus Restrictive Frames on Promotion Evaluation," *Journal of Marketing Research*, 45 (4), 462–72.
- Chen, Haipeng (Allan), Howard Marmorstein, Michael Tsiros, and Akshay R. Rao (2012), "When More is Less: The Impact of Base Value Neglect on Consumer Preferences for Bonus Packs Over Price Discounts," *Journal of Marketing*, 76 (4), 64–77.
- Chen, Shih-Fen S., Kent B. Monroe, and Yung-Chien Lou (1998), "The Effects of Framing Price Promotion Messages on Consumers' Perceptions and Purchase Intentions," *Journal of Retailing*, 74 (3), 353–72.
- Cheng, Andong and Gretchen R. Ross (2023), "Tiered Discounts as Multiple Reference Points for Spending," *Journal of Consumer Psychology*, 33 (2), 424–31.
- Cheng, Andong and Ashley Stadler Blank (2025), "The Conditional-Promotion Paradox: When and Why Conditional Promotions Decrease Total Sales of the Promoted Product," *Journal of Marketing Research*, 62 (3), 526–42.
- Dallas, Steven K. and Vicki G. Morwitz (2018), "There Ain't No Such Thing as a Free Lunch': Consumers' Reactions to Pseudo-Free Offers," *Journal of Marketing Research*, 55 (6), 900–15.
- Darke, Peter R. and Darren W. Dahl (2003), "Fairness and Discounts: The Subjective Value of a Bargain," *Journal of Consumer Psychology*, 13 (3), 328–38.
- Darke, Peter R. and Robin J. B. Ritchie (2007), "The Defensive Consumer: Advertising Deception, Defensive Processing, and Distrust," *Journal of Marketing Research*, 44 (1), 114–27.
- Darke, Peter R., Laurence Ashworth, and Kelley J. Main (2010), "Great Expectations and Broken Promises: Misleading Claims, Product Failure, Expectancy Disconfirmation and Consumer Distrust," *Journal of the Academy of Marketing Science*, 38 (3), 347–62.
- Darke, Peter R., Laurence Ashworth, and Robin J. B. Ritchie (2008), "Damage from Corrective Advertising: Causes and Cures," *Journal of Marketing*, 72 (6), 81–97.
- DelVecchio, Devon, H. Shanker Krishnan, and Daniel C. Smith (2007), "Cents or Percent? The Effects of Promotion Framing on Price Expectations and Choice," *Journal of Marketing*, 71 (3), 158–70.
- Ding, Yu and Yan Zhang (2020), "Hiding Gifts Behind the Veil of Vouchers: On the Effect of Gift Vouchers Versus Direct Gifts in Conditional Promotions," *Journal of Marketing Research*, 57 (4), 739–54.
- Du, Guanzhong and David J. Hardisty (2025) "When Do Purchase Preconditions Increase Purchase Intention? The Role of External Reference Points," *Journal of Marketing Research*, Published online November 4, Forthcoming.
- Gneezy, Ayelet (2005), "Attitudes and Promotions," in *NA—Advances in Consumer Research*, Vol. 32, ed. Geeta Menon and Akshay R. Rao, Duluth, MN: Association for Consumer Research, 485–86.
- Grewal, Dhruv, Howard Marmorstein, and Arun Sharma (1996), "Communicating Price Information Through Semantic Cues: The Moderating Effects of Situation and Discount Size," *Journal of Consumer Research*, 23 (2), 148–55.
- Guszkowski, Joe (2024), "Delivery Apps are Dialing Up Discounts for Price-Conscious Consumers," *Restaurant Business*, September 18. Last Accessed March 13, 2024. <https://www.restaurantbusinessonline.com/technology/delivery-apps-are-dialing-discounts-price-conscious-consumers/>.
- Hamilton, Ryan (2024), "Consumer Price Evaluation Strategies: Internal References, External References, and Price Images in Consumer Price Perception," *Consumer Psychology Review*, 7 (1), 58–74.
- Hardesty, David M. and William O. Bearden (2003), "Consumer Evaluations of Different Promotion Types and Price Presentations: The Moderating Role of Promotional Benefit Level," *Journal of Retailing*, 79 (1), 17–25.
- Hardisty, David J. and Elke U. Weber (2020), "Impatience and Savoring vs. Dread: Asymmetries in Anticipation Explain Consumer Time Preferences for Positive vs. Negative Events," *Journal of Consumer Psychology*, 30 (4), 598–613.
- Heath, Timothy B., S. Chatterjee, and Karen R. France (1995), "Mental Accounting and Changes in Price: The Frame Dependence of Reference Dependence," *Journal of Consumer Research*, 22 (1), 90–7.
- Hock, Stefan J., Rajesh Bagchi, and Thomas M. Anderson (2020), "Promotional Games Increase Consumer Conversion Rates and Spending," *Journal of Consumer Research*, 47 (1), 79–99.
- Hopp, Frederic R., Jacob T. Fisher, Devin Cornell, Richard Huskey, and René Weber (2021), "The Extended Moral Foundations Dictionary (eMFD): Development and Applications of a Crowd-Sourced Approach to Extracting Moral Intuitions from Text," *Behavior Research Methods*, 53 (1), 232–46.
- Hsee, Christopher K. (1996), "The Evaluability Hypothesis: An Explanation for Preference Reversals Between Joint and Separate Evaluations of Alternatives," *Organizational Behavior and Human Decision Processes*, 67 (3), 247–57.
- Inman, J. Jeffrey, Anil C. Peter, and Priya Raghuram (1997), "Framing the Deal: The Role of Restrictions in Accentuating Deal Value," *Journal of Consumer Research*, 24 (1), 68–79.

- Intouch Insight, "The Path to Third-Party Delivery Excellence," Intouch Insight. Last Accessed March 13, 2024. <https://www.intouchinsight.com/resources/studies/third-party-delivery-report/>.
- Kalwani, Manohar U. and Chi Kin Yim (1992), "Consumer Price and Promotion Expectations: An Experimental Study," *Journal of Marketing Research*, 29 (1), 90–100.
- Kalyanaram, Gurumurthy and Russell S. Winer (1995), "Empirical Generalizations From Reference Price Research," *Marketing Science*, 14 (3\_supplement), G161–9.
- Krishna, Aradhna, Richard Briesch, Donald R. Lehmann, and Hong Yuan (2002), "A Meta-Analysis of the Impact of Price Presentation on Perceived Savings," *Journal of Retailing*, 78 (2), 101–18.
- Kyung, Ellie J. and Manoj Thomas (2016), "When Remembering Disrupts Knowing: Blocking Implicit Price Memory," *Journal of Marketing Research*, 53 (6), 937–53.
- Lam, Shun Yin, Mark Vandenbosch, John Hulland, and Michael Pearce (2001), "Evaluating Promotions in Shopping Environments: Decomposing Sales Response into Attraction, Conversion, and Spending Effects," *Marketing Science*, 20 (2), 194–215.
- Lee, Leonard and Dan Ariely (2006), "Shopping Goals, Goal Concreteness, and Conditional Promotions," *Journal of Consumer Research*, 33 (1), 60–70.
- McKenzie, Craig R. M. and Shlomi Sher (2020), "Gamble Evaluation and Evoked Reference Sets: Why Adding a Small Loss to a Gamble Increases Its Attractiveness," *Cognition*, 194, 104043.
- Miller, Alex (2025), "Surveying Americans on Food Delivery Usage [2023]," *Upgraded Points*, September 20. Last Accessed February 2, 2026. <https://upgradedpoints.com/news/americans-food-delivery-habits/>.
- Mobley, Mary F., William O. Bearden, and Jesse E. Teel (1988), "An Investigation of Individual Responses to Tensile Price Claims," *Journal of Consumer Research*, 15 (2), 273–9.
- Montoya, Amanda K. and Andrew F. Hayes (2017), "Two-Condition Within-Participant Statistical Mediation Analysis: A Path-Analytic Framework," *Psychological Methods*, 22 (1), 6–27.
- Oliver, Richard L., P. V. (Sundar) Balakrishnan, and Bruce Barry (1994), "Outcome Satisfaction in Negotiation: A Test of Expectancy Disconfirmation," *Organizational Behavior and Human Decision Processes*, 60 (2), 252–75.
- Oliver, Richard L. and John E. Swan (1989), "Equity and Disconfirmation Perceptions as Influences on Merchant and Product Satisfaction," *Journal of Consumer Research*, 16 (3), 372.
- Palmeira, Mauricio M. and Joydeep Srivastava (2013), "Free Offer ≠ Cheap Product: A Selective Accessibility Account on the Valuation of Free Offers," *Journal of Consumer Research*, 40 (4), 644–56.
- Raghubir, P. (2004), "Coupons in Context: Discounting Prices or Decreasing Profits?," *Journal of Retailing*, 80 (1), 1–12.
- Rathje, Steve, Dan-Mircea Mirea, Ilia Sucholutsky, Raja Marjeh, Claire E. Robertson, and Jay J. Van Bavel (2024), "GPT is an Effective Tool for Multilingual Psychological Text Analysis," *Proceedings of the National Academy of Sciences of the United States of America*, 121 (34), e2308950121.
- Roy Morgan (2022), "Meal Delivery Services Now Used by Over 7 Million Australians After Strong Growth During the Pandemic," Roy Morgan, August 9. Last Accessed August 9, 2022. <https://www.roymorgan.com/findings/meal-delivery-services-now-used-by-over-7-million-australians-after-strong-growth-during-the-pandemic/>.
- Schindler, Robert M. (1998), "Consequences of Perceiving Oneself as Responsible for Obtaining a Discount: Evidence for Smart-Shopper Feelings," *Journal of Consumer Psychology*, 7 (4), 371–92.
- Sevilla, Julio, Mathew S Isaac, and Rajesh Bagchi (2018), "Format Neglect: How the Use of Numerical versus Percentage Rank Claims Influences Consumer Judgments," *Journal of Marketing*, 82 (6), 150–64.
- Sokolova, Tatiana and Yi Li (2021), "Mix or Match? Consumer Spending Decisions in Conditional Promotions," *Journal of Consumer Psychology*, 31 (1), 91–102.
- Spreng, Richard A., Scott B. MacKenzie, and Richard W. Olshavsky (1996), "A Reexamination of the Determinants of Consumer Satisfaction," *Journal of Marketing*, 60 (3), 15–32.
- Teng, Lefa (2009), "A Comparison of Two Types of Price Discounts in Shifting Consumers' Attitudes and Purchase Intentions," *Journal of Business Research*, 62 (1), 14–21.
- Thaler, Richard H. (1980), "Toward a Positive Theory of Consumer Choice," *Journal of Economic Behavior & Organization*, 1 (1), 39–60.
- Thaler, Richard H. (1985), "Mental Accounting and Consumer Choice," *Marketing Science*, 4 (3), 199–214.
- Thaler, Richard H. and Cass R. Sunstein (2008), *Nudge: Improving Decisions About Health, Wealth, and Happiness*, New Haven, CT: Yale University Press.
- Tversky, Amos and Daniel Kahneman (1974), "Judgment under Uncertainty: Heuristics and Biases," *Science (New York, N. Y.)*, 185 (4157), 1124–31.
- Tversky, Amos and Daniel Kahneman (1981), "The Framing of Decisions and the Psychology of Choice," *Science (New York, N.Y.)*, 211 (4481), 453–8.
- Urbany, Joel E., William O. Bearden, and Dan C. Weilbaker (1988), "The Effect of Plausible and Exaggerated Reference Prices on Consumer Perceptions and Price Search," *Journal of Consumer Research*, 15 (1), 95.
- Xia, Lan, Kent B. Monroe, and Jennifer L. Cox (2004), "The Price is Unfair! A Conceptual Framework of Price Fairness Perceptions," *Journal of Marketing*, 68 (4), 1–15.
- Yoon, Sukki and Patrick T. Vargas (2010), "Feeling Happier When Paying More: Dysfunctional Counterfactual Thinking in Consumer Affect," *Psychology & Marketing*, 27 (12), 1075–100.
- Yoon, Sukki, and Patrick Vargas (2011), "No More" Leads to "want More," BUT "no Less" Leads to "want Less": Consumers' Counterfactual Thinking When Faced with Quantity Restriction Discounts," *Journal of Consumer Behaviour*, 10 (2), 93–101.

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