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RESEARCH ARTICLE OPEN ACCESS

The Interplay of Inflated Expectations, (Dis)Confirmation, and Emotional Spillover: Implications for Post-Purchase Loyalty in Mystery Deals

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ABSTRACT

Mystery deals, a marketing tactic used to boost sales, involve withholding the exact version of the product a customer will receive until after purchase. While prior research has examined consumers' pre-purchase reactions to mystery deals, their post-purchase responses remain underexplored. Addressing this gap, we contribute to the mystery marketing literature by investigating how consumers respond after the purchase when all details of the deal are revealed. Across six empirical studies (1 field, 3 online, 1 lab that uses IA-based facial expression recognition software, 1 supplementary), we disentangle the complex interplay of curiosity-induced inflated expectations, (dis)confirmation, and positive affective spillover effects generated during the pre-purchase phase. The results highlight the crucial role of positive affect in substantially enhancing customer loyalty during the post-purchase phase—compared to traditional deals where all details are known in advance. These affective processes even counterbalance the negative effects on loyalty when consumers receive their non-preferred outcome. For managers, our findings provide insights into how mystery deals impact customer retention, expanding beyond prior research that has primarily focused on customer acquisition. Thus, mystery deals can serve as a viable strategy to sustain customer loyalty, even when individual preferences cannot be fully met.

1 | Introduction

Many retailers employ mystery deals (MDs) as a marketing tactic, where the key product or service remains unknown before purchase (Guo et al. 2024; Hill et al. 2016; Kovacheva et al. 2022; Kovacheva and Nikolova 2023). MDs aim to boost demand, optimize capacity, or clear inventory (e.g., Fay and Xie 2008). For instance, Burger King offered a “mystery box” with one of eight possible burgers at a discount, without revealing which one customers will receive in advance (mein-deal.com 2019). Similarly, Pura Vida Bracelets, an online retailer, promotes surprise bracelets and rings online (Pura Vida 2024). More examples appear in Appendix A, Table A.1.

Unlike other mystery marketing tactics—such as mystery discounts, mystery gifts, or mystery teaser advertisements—mystery deals (MDs) incorporate uncertainty and surprise directly into the core offering itself. In these cases, the main component of the purchase (i.e., the product or service the consumer is actually buying) remains unknown at the point of purchase, rather than being a supplementary or promotional element. This distinguishes MDs from other tactics where the mystery is peripheral or additive, such as receiving a surprise gift alongside a known product (Guo et al. 2024). A clear classification and differentiation of mystery deals from other mystery marketing tactics can be seen in Figure 1.

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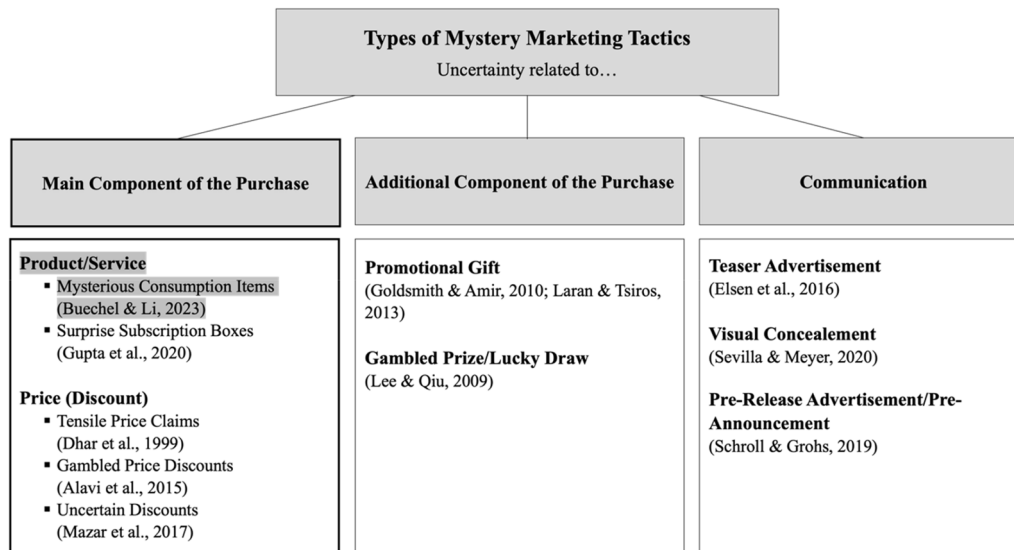


FIGURE 1 | Classification of and differentiation from varying mystery marketing tactics. The aim of this figure is not to provide a comprehensive review of the literature, but rather to offer an overview of different branches and types of mystery marketing tactics and to position the present research within this context. (Alavi et al. 2015; Dhar et al. 1999; Elsen et al. 2016; Gupta et al. 2020; Mazar et al. 2017; Schroll and Grohs 2019; Sevilla and Meyer 2020).

A defining characteristic of MDs is the intentional creation of an information gap, which consumers are motivated to bridge by completing the purchase. Unlike traditional deals (TDs), where all details are known upfront, MDs involve uncertainty and elevate expectations while introducing risk, as buyers cannot be certain they will receive their preferred option. In Burger King's deal, for example, customers had a one-in-eight probability of obtaining their preferred burger. Despite their growing prevalence, little is known about how consumers evaluate MDs after purchase and what psychological and behavioral mechanisms shape their final judgment.

Surprisingly, most research on MDs focuses on pre-purchase behavior, leaving post-purchase reactions largely unexplored. Studies suggest that mystery purchases are especially appealing when potential outcomes vary in attributes such as taste or style, rather than objective value (Buechel and Li 2023), and in experiential contexts (Urumutta Hewage and He 2022). Demographic factors, such as gender, also influence consumers' openness to mystery formats (Kovacheva et al. 2022).

Studies have also identified several mechanisms by which MDs enhance purchase motivation, including stimulating curiosity (Hill et al. 2016), fostering innate optimism (Goldsmith and Amir 2010), triggering a desire for surprise, and eliciting positive affect (Buechel and Li 2023; Laran and Tsiros 2013). Research in operational and strategic management further highlights how retailers benefit from MDs in the short term, particularly through price discrimination and inventory management (e.g., Fay and Xie 2008). However, little is known about how consumers react in the post-purchase phase, particularly when they receive an outcome that does not align with their preferences (for a summary of existing research, see Table A.2 in Appendix A).

This study seeks to address this gap by examining the impact of MDs on customer loyalty, defined as a consumer's attitude and

behavioral intention to maintain a relationship with a firm by making repeat purchases, either of the same or different products (Sirdeshmukh et al. 2002). We propose two key effects that influence customer loyalty in the post-purchase phase. First, a (dis)confirmation effect that arises as consumers compare the actual outcome of the MD to their inflated expectations and preferred outcome. Second, we introduce the concept of positive affective spillover, wherein the positive emotions elicited during the pre-purchase phase extend into the post-purchase phase, influencing consumers' loyalty (Brown and Kirmani 1999; Zillmann 1971). These two effects likely interact, and the result of their combination has not been studied, raising the question of their overall impact on customer loyalty.

Our research pursues three primary objectives: (1) to examine consumer reactions in the post-purchase phase when the mystery is revealed; (2) to test the interplay of the (dis)confirmation effect and positive affective spillover effect; and (3) to assess the overall impact of MDs on customer loyalty, especially when consumers do not receive their preferred outcome. To achieve these goals, we present six studies: three online experiments, one laboratory experiment, one field study, and one supplementary study.

To our knowledge, this is the first study to systematically investigate how mystery deals—where the uncertainty pertains to the core component of the purchase rather than an ancillary benefit—affect customer loyalty in the post-purchase phase. By moving beyond the commonly examined domain of pre-purchase excitement and curiosity, our research shifts the analytical focus to the long-term consequences of mystery deals, specifically their impact on sustained customer engagement and brand loyalty. We establish that post-purchase reactions are shaped by (1) the (dis)confirmation effect, where loyalty strengthens when expectations are met and remains stable even when they are not (and surprisingly, disconfirmation effects have not been studied in the context of MDs), (2) positive

affective spillover, which enhances emotional responses and mitigates negative effects of disconfirmation, and (3) inflated expectations, which make disconfirmation likely but do not necessarily harm loyalty. This advances MD research by demonstrating how resolving uncertainty impacts retention—an aspect overlooked in prior research focused on pre-purchase responses (Buechel and Li 2023; Goldsmith and Amir 2010; Hill et al. 2016). Furthermore, our findings also contribute to research on affect by showing that pre-purchase emotions persist into the post-purchase phase, shaping satisfaction and loyalty (e.g., Lee and Qiu 2009). Beyond theoretical contributions, our findings provide actionable managerial insights: MDs not only drive attention and sales but also foster loyalty—especially when designed to maximize positive pre-purchase affect. Retailers can boost engagement through visually appealing deals, curiosity-driven messaging, and exclusive mystery incentives, making MDs a strategic alternative to traditional offers across various industries and retail contexts.

2 | Theoretical Background

2.1 | How Mystery Deals Work—Creating and Resolving Information Gaps

In general, MDs consist of a creation phase before purchase and a resolution phase afterwards. In the mystery creation phase, the consumer is confronted with a deal that involves deliberately created uncertainty or an information gap about the final outcome. In the case of the MD type we investigate, the exact product variant remains unknown at the time of purchase. Such information gaps, defined as the difference between what one knows and what one wants to know, induce the perception of information deprivation and curiosity (Loewenstein 1994). Consequently, this motivates consumers to close the information gap and pursue exploratory behavior to acquire the missing information (Hsee and Ruan 2016; Loewenstein 1994). There is consensus in the literature that such forms of positive uncertainty (i.e., which involves uncertainty about *non-negative* outcomes only; Ruan et al. 2018) can stimulate purchases and improve consumers' attitudes and affective responses (Lee and Qiu 2009; Ruan et al. 2018).

In the post-purchase phase, the information gap induced by the MD is resolved by revealing the specific outcome. Unlike mystery advertisements, MDs require consumers to make a purchase—and invest money—to close the information gap. After the product is revealed, consumers will evaluate their individual utility of the outcome and will develop some level of satisfaction with the purchase and future intentions. In addition, the resolution of curiosity and uncertainty elicits affective responses that will also influence the outcome evaluations. In sum, we argue that creating and resolving a mystery for the consumer, through the MDs as defined earlier, leads to a complex interplay of effects that determine the outcome evaluation. The individual components of this overall effect are discussed in the following paragraphs.

2.2 | The Role of Inflated Expectations

In the pre-purchase phase, consumers will develop expectations about the outcome. However, these expectations will be inflated in

the way that they are more positive than if no mystery would have been involved, which can be attributed to two aspects. First, curiosity enhances expectations. It induces the anticipation of rewards in individuals, which leads them to expect to receive something valuable for their efforts undertaken to resolve it (e.g., Wiggin et al. 2019). In line with this, it has been reported that when consumers are in a state of curiosity, they tend to develop overly positive expectations about the outcome (e.g., Daume and Hüttl-Maack 2020). The second aspect is known under the term innate optimism (Bar-hillel and Budescu 1995; Goldsmith and Amir 2010). When consumers are confronted with uncertain alternatives, they overestimate the probability of positive as opposed to negative outcomes. In the context of mystery gifts, Goldsmith and Amir (2010) have even shown that consumers evaluate an uncertain outcome as valuable as the best possible outcome under certainty. In the same vein, we expect consumers to be overly optimistic when confronted with a mystery deal providing a set of equally likely (uncertain) product variants. Because of the uncertain outcome of the deal, consumers will form high expectations and expect their most preferred option. They will expect this best possible outcome even if the actual chance of obtaining this outcome is as high as the chance to get one of the other options. We therefore assume:

H1. Mystery deals will generate inflated expectations in consumers, such that the actual share of consumers expecting to receive the best possible outcome (i.e., their preferred option) will be higher than the predicted share of consumers that should receive it.

2.3 | Expectation-(Dis)Confirmation Effects

In the context of MDs, the expectation-disconfirmation paradigm plays a crucial role due to the uncertain outcome. According to this paradigm, consumers evaluate the outcome of a purchase based on a comparison of their pre-purchase expectations with the purchase outcome (Oliver 1980). The more a product meets consumers' initial expectations, the higher the customer satisfaction and loyalty (confirmation effect); the less it meets these expectations, the lower the customer satisfaction and loyalty (disconfirmation effect; e.g., Habel et al. 2016; Oliver 1980). Given that in the case of MDs, expectations are inflated, as explained before, the risk of creating negative disconfirmation is extraordinarily high. Furthermore, the affective reactions caused by the degree of disconfirmation play a crucial role; it decreases the pleasure of a consumption situation, whereas confirmation increases it (e.g., Oliver 1980), which further influences consumers' satisfaction and loyalty intentions (e.g., Westbrook 1987).

Immediately after the purchase, customers compare the outcome of the MD with their preferred alternative (Shen et al. 2019). We expect that consumers who receive a non-preferred outcome will experience a disconfirmation such that their positive affective reactions and loyalty intentions are lower than those of consumers getting a TD, in which they know from the beginning what they will receive. Furthermore, consumers who receive their preferred option when the MD is revealed will experience a confirmation that should be even higher than for consumers purchasing a TD. Receiving the desired, yet uncertain outcome in an MD will lead to stronger positive affective responses, such as positive surprise (Oliver et al. 1997)

and relief (Ruan et al. 2018; Yang et al. 2016), compared to a TD. Based on these considerations, we hypothesize:

H2. There will be a (dis)confirmation effect in the post-purchase phase such that MDs (dis)confirming consumers' preferences will decrease (vs. increase) loyalty through lower (vs. higher) levels of positive post-purchase affective reactions compared to TDs.

2.4 | Pre-Purchase Positive Affect and Positive Affective Spillover Effects

An additional aspect, unique to MDs, that influences outcome evaluation is the positive affective response generated during the pre-purchase phase, which can persist and continue to influence the consumer experience well into the post-purchase phase. Studies on positive uncertainty and curiosity in contexts such as teasing and advertising have shown that strong positive feelings, created in the pre-purchase phase, ultimately lead to positive consumer responses (e.g., Bar-Anan et al. 2009; Hüttl-Maack et al. 2024; Lee and Qiu 2009). Although negative affective responses of curiosity are also possible, such as feelings of frustration and discomfort associated with the experience of not knowing (Berlyne 1954; Litman and Jimerson 2004), research has demonstrated that using mystery deals in marketing overall elicits more positive than negative affect (Hill et al. 2016). The result is a *net positive hedonic experience* (Ruan et al. 2018).

Based on previous evidence in other domains (e.g., Brown and Kirmani 1999; Geers and Lassiter 2002; Zillmann 1971), we argue that these positive pre-purchase affective reactions will spill over to the post-purchase phase and positively influence the consumer's final response towards the deal. For instance, Brown and Kirmani (1999) and Zillmann (1971) propose that affective reactions towards a stimulus influence (1) affective reactions to a subsequent stimulus and (2) consumers' cognitive judgments of this second stimulus. Similarly, the affective priming paradigm suggests that the valence of an affective state influences the valence experienced by a subsequent stimulus in a consistent manner (Goldberg and Gorn 1987). In addition, the affective expectation model (e.g., Geers and Lassiter 2002) indicates that

people with positive affective expectations of a situation are likely to actually experience that later situation more positively. Based on this evidence, we assume that MDs (vs. TDs) will create higher positive pre-purchase affect, which spills over to the post-purchase phase and positively influences consumers' positive post-purchase affective reactions and loyalty by buffering any potential negative effects. In fact, we posit that positive affective spillover effects will outweigh the negative effects of disconfirmation and reinforce the positive effects in case of a confirmation. We therefore propose:

H3. There will be positive affective spillover effects such that MDs (vs. TDs) increase positive pre-purchase affect that (a) increases customer loyalty directly and (b) indirectly through an increase in positive post-purchase affect.

The interplay of the hypothesized effects are summarized in Figure 2. It illustrates how the two distinct sources of affect, the pre-purchase state involving curiosity and anticipation, and the post-purchase situation in which uncertainty is resolved, interact to shape the overall consumer response.

In the following, we present a total of six studies, including three online scenario-based experiments, one laboratory experiment, one field study, and one supplementary study. For an overview of all studies, see Table B.1 in Appendix B.

3 | Studies 1a and 1b: Examining the Proposed Effects

In the first two studies, we investigate our proposed effects in a product-related (Study 1a) and service-related context (Study 1b).

3.1 | Study 1a: Product-Related Context (Chocolate)

3.1.1 | Design, Participants, and Procedure

We conducted a single-factor (MD vs. TD) between-subjects online experiment with pre- and post-purchase phases. A total

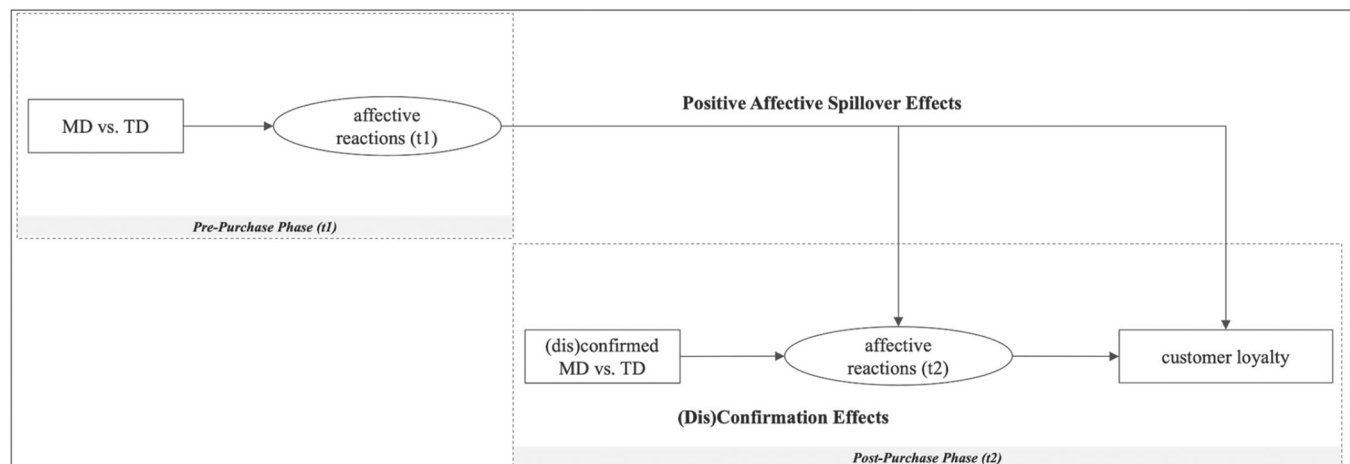


FIGURE 2 | Conceptual Model.

of 148 participants (50% women; $M_{\text{age}} = 46.32$ years, $SD_{\text{age}} = 14.63$ years) from a German professional panel, all interested in chocolate, took part.

3.1.1.1 | Pre-Purchase Phase. Participants viewed a German fictitious chocolate advertisement featuring either a TD or an MD and were randomly assigned to one condition. The TD offered a 10-pack of one specific flavor for €9 (discounted from €10), while the MD offered a 10-pack of one of four possible flavors for €7, without revealing which. Flavors—milk chocolate, hazelnut, strawberry, and caramel—were chosen for their popularity (Nier 2019; Splendid Research 2017; see Appendix C). Reflecting managerial practice and prior studies (e.g., Fay and Xie 2008; Granados et al. 2008), the MD was further discounted (€7 vs. €10). Compared to real-world cases (Table A.1 Appendix A), the MD discount was moderate for conservative testing.

Participants viewed the advertisement for at least 15 s, rated their positive affective response using a 5-point smiley scale by Shampanier et al. (2007), and indicated their expected flavor. They also rated their purchase intention on a 7-point single-item scale (e.g., Laran and Tsirios 2013; see Appendix D, for constructs and items). Cronbach's alpha values for multi-item constructs are also reported in Appendix D. Other constructs, mostly single-item, were adapted from established literature to ensure reliability and theoretical fit.

3.1.1.2 | Post-Purchase Phase Participants imagined receiving a 10-pack of chocolate after accepting the deal. TD participants got the advertised flavor; MD participants were assigned either hazelnut (most preferred) or strawberry (least preferred) to confirm or disconfirm preferences. After viewing the flavor for 15 s, brand loyalty intentions were measured using a 4-item scale (Chaudhuri and Holbrook 2001) and repurchase intentions with a single-item scale (Habel et al. 2016; Oliver 1980). Participants also rated post-purchase affect (Shampanier et al. 2007) and ranked flavors to assess preference confirmation. All constructs and items are detailed in Appendix D.¹

3.1.2 | Results of Study 1a

3.1.2.1 | Inflated Expectations and Pre-Purchase Affect. We first tested whether consumers had overly optimistic expectations in the MD condition. While a rational expectation would be 25% (with all four options equally likely), 86% of MD participants expected their preferred flavor. A chi-square test confirmed a significant difference (i.e., 25%; $\chi^2(1, n = 75) = 149.15, p < 0.001$), supporting H_1 that MDs lead to inflated expectations.

3.1.2.2 | (Dis)Confirmation Effects and Positive Affective Spillover Effects. We used Model 4 of the PROCESS macro (Hayes 2022) with 5000 bootstrapped samples and 95% bias-corrected confidence intervals to test our mediation hypotheses. The MD sample was split into confirmed ($MD_{\text{con}}, n = 20$) and disconfirmed ($MD_{\text{dis}}, n = 55$) groups based on whether participants received their preferred flavor. Then, two serial mediation models were estimated: one tested (dis)confirmation effects by contrasting MD_{con} and MD_{dis} with the TD;

the other examined positive affective spillover by comparing MD groups with TD. We controlled for MD_{con} versus MD_{dis} differences in all post-purchase measures to align path coefficients across models and included age and gender as covariates.

In the first model, we found significant disconfirmation ($a \times b = -0.16, 95\% \text{ CI } [-0.2830, -0.0485]$) and confirmation effects ($a \times b = 0.18, 95\% \text{ CI } [0.0479, 0.3439]$) on brand loyalty intentions. Compared to a TD, MD_{dis} lowers and MD_{con} raises brand loyalty intentions via post-purchase affect. Similar effects were found for repurchase intentions—disconfirmation ($a \times b = -0.17, 95\% \text{ CI } [-0.3361, -0.0492]$) and confirmation ($a \times b = 0.20, 95\% \text{ CI } [0.0648, 0.3663]$). These results support H_2 . The second model showed positive affective spillover: MDs (vs. TDs) increased brand loyalty and repurchase intentions through higher pre-purchase affect (MD vs. TD \rightarrow pre-purchase affect \rightarrow brand loyalty, $a \times b = 0.12, 95\% \text{ CI } [0.0177, 0.2552]$; MD vs. TD \rightarrow pre-purchase affect \rightarrow repurchase intentions, $a \times b = 0.14, 95\% \text{ CI } [0.0339, 0.2847]$) and through both pre- and post-purchase affect (MD vs. TD \rightarrow pre-purchase affect \rightarrow post-purchase affect \rightarrow brand loyalty intentions, $a \times b = 0.13, 95\% \text{ CI } [0.0361, 0.2371]$; MD vs. TD \rightarrow pre-purchase affect \rightarrow post-purchase affect \rightarrow repurchase intentions, $a \times b = 0.13, 95\% \text{ CI } [0.0409, 0.2639]$). These results support H_{3a} and H_{3b} . Key results are shown in Figure 3.²

3.1.2.3 | Overall Effects on Customer Loyalty. The indirect effects show that positive affective spillover (1) fully offsets the negative impact of disconfirmation and (2) amplifies the positive impact of confirmation. As a result, total effects reveal no significant decrease in brand loyalty ($b = 0.16, p = 0.37$) or repurchase intentions ($b = 0.20, p = 0.25$) for MD_{dis} versus TD. In contrast, MD_{con} (vs. TD) led to significantly higher brand loyalty ($b = 0.51, p < 0.05$) and repurchase intentions ($b = 0.59, p < 0.05$).

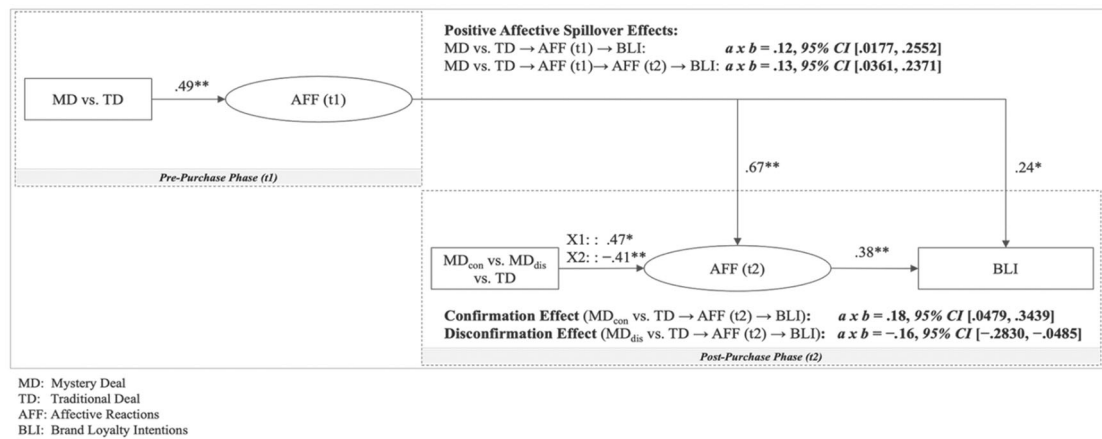
3.1.2.4 | Supplementary Study. In a supplementary study ($n = 213$), we tested whether the effects held when MDs and TDs were priced equally at €7, despite past research suggesting MDs are typically cheaper (e.g., Granados et al. 2008). We found similar results and patterns in the case of the same prices for brand loyalty intentions and repurchase intentions toward the deal (see Appendix E). In addition, we applied an alternative 3-item scale for overoptimistic expectations toward the MD outcome adapted from Daume and Hüttl-Maack (2020) to measure inflated expectations. At the low price (€7), MDs triggered significantly higher expectations than TDs ($M_{\text{MD, low price}} (\text{€7}) = 3.53$ vs. $M_{\text{TD, low price}} (\text{€7}) = 2.54$; $F(1, 222) = 14.69, p < 0.01$). At the high price (€9), no difference was found ($M_{\text{MD, high price}} (\text{€9}) = 3.08$ vs. $M_{\text{TD, high price}} (\text{€9}) = 2.81$; $F(1, 222) = 1.07, p = 0.30$). Thus, these findings additionally support the rationale that not the price per se, but the mystery deal (at a specific discount rate) drives these effects.

3.2 | Study 1b: Service-Related Context (Pasta Restaurant)

3.2.1 | Design, Participants, and Procedure

Study 1b used a similar design and procedure to Study 1a. We recruited 248 participants from a German professional online

a



b

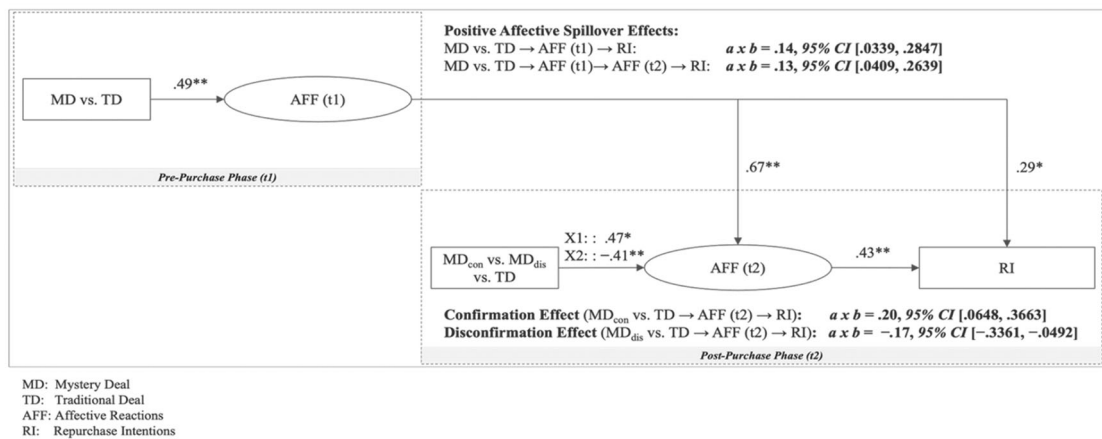


FIGURE 3 | Results of Mediation Analyses of Study 1a. (a) Dependent variable: Brand loyalty intentions, (b) Dependent variable: Repurchase intentions of the deal. Note: * $p < 0.05$, ** $p < 0.01$. AFF (t1) = positive pre-purchase affective reactions, AFF (t2) = positive post-purchase affective reactions, BLI = brand loyalty intentions, RI = repurchase intentions, X1 = MD_{con} versus TD; X2 = MD_{dis} versus TD.

panel (64% women; $M_{\text{age}} = 31.21$ years, $SD_{\text{age}} = 13.56$ years) for an online scenario experiment. In contrast to Study 1a, the deal featured a pasta meal in a restaurant, a typical service setting (see Appendix C for stimuli).

3.2.1.1 | Pre-Purchase Phase. Participants were asked to imagine encountering a deal at a pasta restaurant. In the TD condition, a specific pasta meal was offered for €9 (discounted from €10). In the MD condition, a “surprise pasta” was offered for €7. Four possible meals were used: meat sauce (most preferred), fish (least preferred), carbonara, and gorgonzola, selected based on German consumer taste preferences (YouGov 2019).

3.2.1.2 | Post-Purchase Phase. Participants were then asked to imagine accepting the deal. Those in the TD condition received the advertised pasta meal, while those in the MD condition were assigned either the most preferred meal (meat sauce) or the least preferred (fish), to either confirm or disconfirm their preferences. The same scales and measures from Study 1a were used in both phases. Additionally, participants were asked about their perceived disconfirmation to validate

whether their outcomes were confirmed or disconfirmed (Oliver 1980). All measures are depicted in Appendix D.

3.2.2 | Results of Study 1b

3.2.2.1 | (Dis)Confirmation Effects and Positive Affective Spillover Effects. As in Study 1a, we split MD participants into confirmed (MD_{con}, $n = 32$) and disconfirmed (MD_{dis}, $n = 97$) groups. A one-sample t -test showed that perceived disconfirmation was below the scale midpoint for MD_{con} ($M_{\text{MDcon}} = 3.13$; $t(31) = -3.22$, $p < 0.01$) and above the midpoint for MD_{dis} ($M_{\text{MDdis}} = 4.96$; $t(96) = 6.39$, $p < 0.001$), confirming that MD_{con} participants perceived the outcome as better and MD_{dis} participants as worse than expected.

We followed the same procedure as in Study 1a, estimating two serial mediation models using PROCESS Model 4 (5000 bootstrapping samples, 95% bias-corrected confidence interval; Hayes 2022). The first model revealed significant disconfirmation ($a \times b = -0.45$, 95% CI [-0.6055, -0.3009]) and confirmation effects ($a \times b = 0.38$, 95% CI [0.2372, 0.5486]) for brand loyalty, as well as for repurchase intentions

(disconfirmation effect: $a \times b = -0.40$, 95% CI $[-0.5659, -0.2610]$); confirmation effect: $a \times b = 0.35$, 95% CI $[0.2149, 0.5002]$). These results support H_2 .

The second mediation model showed significant positive affective spillover effects. MDs (vs. TDs) positively influenced brand loyalty and repurchase intentions through higher pre-purchase affect (MD vs. TD \rightarrow pre-purchase affect \rightarrow brand loyalty, $a \times b = 0.09$, 95% CI $[0.0245, 0.1694]$; MD vs. TD \rightarrow pre-purchase affect \rightarrow repurchase intentions, $a \times b = 0.15$, 95% CI $[0.0693, 0.2550]$) or through both pre- and post-purchase affect (MD vs. TD \rightarrow pre-purchase affect \rightarrow post-purchase affect \rightarrow brand loyalty, $a \times b = 0.12$, 95% CI $[0.0618, 0.1978]$; MD vs. TD \rightarrow pre-purchase affect \rightarrow post-purchase affect \rightarrow repurchase intentions, $a \times b = 0.11$, 95% CI $[0.0532, 0.1808]$).⁴ Results are shown in Appendix F.

3.2.2.2 | Overall Effect on Customer Loyalty. Total effects showed that MD_{dis} (vs. TD) did not significantly reduce brand loyalty intentions ($b = -0.07$, $p = 0.59$) or repurchase intentions ($b = -0.12$, $p = 0.36$), even though the disconfirmation effect was larger than the two affective spillover effects. This indicates that the spillover effects were strong enough to counterbalance the negative impact of disconfirmation. Moreover, brand loyalty and repurchase intentions were higher for MD_{con} participants than for TD participants (brand loyalty: $b = 0.62$, $p < 0.01$; repurchase intentions: $b = 0.50$, $p < 0.05$).

3.3 | Discussion of Studies 1a and 1b

The results of Studies 1a and 1b revealed two effects that influence the evaluation of MDs after the purchase. First, a (dis)confirmation effect in which customer loyalty depends on whether the outcome of the MD matches the customers' preferences (confirmation) or not (disconfirmation). In the case of (dis)confirmation, MDs lead to more (less) customer loyalty because of higher (lower) levels of positive post-purchase affect. Second, positive affective spillover effects in which consumers' positive affective reactions to MDs in the pre-purchase phase carry over to the post-purchase phase and positively impact customer loyalty. Moreover, these spillover effects counteract negative effects of the disconfirmation and complement positive effects of the confirmation. Consequently, customer loyalty is at equal levels for disconfirmed MD and TD customers—which is important given the high likelihood of having disconfirmed customers through MDs due to inflated expectations. The effects hold in a service context where potential negative effects of a disconfirmation are particularly strong due to the need for immediate consumption. Importantly, these results remain consistent even when the prices of MDs and TDs are identical, as demonstrated in the supplementary study.

4 | Study 2: Elaborating on Affective Reactions with Facial Expression Data

In Studies 1a and 1b, we demonstrated that consumers' affective reactions in both the pre- and the post-purchase phases play an

important role in understanding customer loyalty in MDs. However, we focused on self-reported affective reactions and did not capture consumers' spontaneous and unconscious responses. In Study 2, we used AI-based facial recognition software to directly track consumers' affective responses to MDs in the pre-purchase phase *before* and *after* the deal and in the post-purchase phase immediately *before* and *after* resolving the mystery.

4.1 | Design, Participants, and Procedure

We recruited 285 students from a German university for a laboratory experiment conducted in a specialized lab equipped with facial emotion recognition software. Participants received monetary compensation. A student sample was chosen due to the on-campus nature and technical complexity of the lab setup, which required standardized, in-person procedures. While student samples have known limitations, they are commonly used in theory-driven experiments investigating psychological processes such as affective responses. The design mirrored Study 1a (Appendix C), with video recording added to capture facial expressions. After informed consent, we obtained usable data from 264 participants ($M_{\text{age}} = 21.64$ years, $SD_{\text{age}} = 2.50$ years), analyzed via the TAWNY Emotions Analytics Platform (TAWNY n.d). This software is based on the established facial action coding system (FACS) by Ekman and Friesen (1978) used to identify the seven basic emotions. It reports second-by-second index values ranging from zero to 100 for each emotion, indicating the probability that a person is expressing that emotion.

The procedure followed Study 1a with three adjustments: (1) random assignment of participants to 15 workstations, (2) participants spent 60 s showing a neutral expression before starting, and (3) in the post-purchase phase, participants had a chance to receive any flavor, with hazelnut or strawberry assigned 40% of the time and milk chocolate or caramel 10%.

4.2 | Measures

We focused on the emotion of happiness, as it best represents positive affect in this study area (Ruan et al. 2018). We analyzed participants' happiness index in four phases: (1) the calibration phase, capturing natural expressions of happiness; (2) the creation phase, where participants encountered the TD or MD; (3) the pre-resolution phase, measuring happiness just before opening the virtual parcel; and (4) the resolution phase, when the specific TD or MD was revealed. For the calibration phase, we used the full 60-second timeframe. For the creation and resolution phases, we analyzed the first 10 s to capture quick, unconscious emotional reactions (Ekman 1992), avoiding cognitive influences. Our data supported this decision, with mean times to minimum and maximum happiness values within these phases being 2.22 (SD = 3.80) and 6.35 (SD = 7.69), respectively. Similarly, the mean time (seconds) to reach a minimum value in the resolution phase was 2.16 (SD = 3.41) and to reach a maximum value was 6.42 (SD = 6.33). For the pre-resolution phase, we used a 33-second timeframe, as it was

the median time from when participants accepted the deal to when the product was revealed. We calculated mean happiness scores for each phase and deal type. In both the pre-resolution and resolution phases, we split the MD group into MD_{con} (confirmed) and MD_{dis} (disconfirmed) subgroups, based on whether participants received their preferred alternative.⁵ Covariates included workstation, session, and gender.

4.3 | Results of Study 2

Affective Reactions in the Pre-Purchase Phase. We used planned contrasts for our analysis and compared the happiness scores for each deal ($n_{TD} = 132$; $n_{MD} = 132$) in the creation phase to the scores in the calibration phase to investigate whether the deal significantly increased participants' happiness. The MD significantly increased happiness scores in the creation phase compared to the calibration phase ($M_{MD, \text{calibration}} = 1.04$ vs. $M_{MD, \text{creation}} = 3.49$; $F(1, 262) = 8.07$, $p < 0.01$). In contrast, the happiness scores were not significantly affected by the TD ($M_{TD, \text{calibration}} = 1.93$ vs. $M_{TD, \text{creation}} = 3.27$; $F(1, 262) = 2.42$, $p = 0.12$).

Affective Reactions in the Post-Purchase Phase. We compared happiness scores across TD, MD_{con} ($n = 28$) and MD_{dis} ($n = 104$) groups before and after mystery resolution. MD_{con} participants reported significantly higher post-resolution happiness ($M_{MDcon, \text{pre-resolution}} = 3.97$ vs. $M_{MDcon, \text{resolution}} = 9.06$; $F(1, 261) = 4.72$, $p < 0.05$). In contrast, MD_{dis} scores were unaffected by the unfavorable outcome of the MD, ($M_{MDdis, \text{pre-resolution}} = 2.93$ vs. $M_{MDdis, \text{resolution}} = 4.04$; $F(1, 261) = 0.83$, $p = 0.36$). TD participants' scores remained stable across phases ($M_{TD, \text{pre-resolution}} = 3.78$ vs. $M_{TD, \text{resolution}} = 5.39$; $F(1, 261) = 2.22$, $p = 0.14$). Figure 4 summarizes our findings.

4.4 | Discussion of Study 2

The findings of Study 2 elaborated on consumers' positive affective responses to MDs in the creation and resolution phases. Using AI-based emotion tracking, we observed how consumers naturally respond to MDs, confirming that positive affect increases during both phases. When an MD's outcome matches customer preferences, customers experience even higher positive affect post-resolution. Moreover, the positive affect of those disconfirmed by the MD remains similar to

(1) that of TD consumers and (2) to their pre-resolution levels, suggesting that pre-purchase happiness counteracts the negative effects of disconfirmation on post-purchase happiness.

5 | Study 3: Robustness Checks

Study 3 compared the MD condition with a different TD baseline version (TD_{choice}) to rule out alternative explanations for the higher positive affect in the MD pre-purchase phase. It controlled for (a) the greater number of options in the MD condition and (b) the lack of choice in the original TD condition. In TD_{choice}, participants saw all four flavors and chose one freely. The study also reduced demand effects by removing the MD prompt asking participants to state their expected flavor.

5.1 | Design, Participants, and Procedure

We recruited 299 participants from a professional online panel representing the German population (50% women; $M_{\text{age}} = 44.71$ years, $SD_{\text{age}} = 13.77$ years) for an online scenario experiment. We used a single-factor (MD vs. TD_{choice} vs. TD) between-subjects design. Our primary focus was the comparison between the MD and TD_{choice} conditions, with the original TD condition included to test robustness.

Pre-Purchase Phase. Participants were randomly assigned to one of three conditions: MD, TD_{choice}, or TD_{non-choice}. TD conditions mirrored those from Study 1a. In the TD_{choice} condition, participants saw all four chocolate flavors (like the MD condition) and were informed they could choose one flavor (see Appendix C). The same measures from Study 1a were used, but participants were not asked which flavor they expected to receive. Additionally, TD_{choice} participants also selected one of the available flavors.

Post-Purchase Phase. As in Study 1a, participants were asked to imagine purchasing the deal and receiving a parcel with a 10-pack of chocolate. In the MD condition, they were randomly given one of four flavors. In the TD conditions, participants received either the advertised flavor (TD_{non-choice} condition) or the flavor they had chosen (TD_{choice} condition). The procedure and measures were identical to those in Study 1a (see Appendix D).

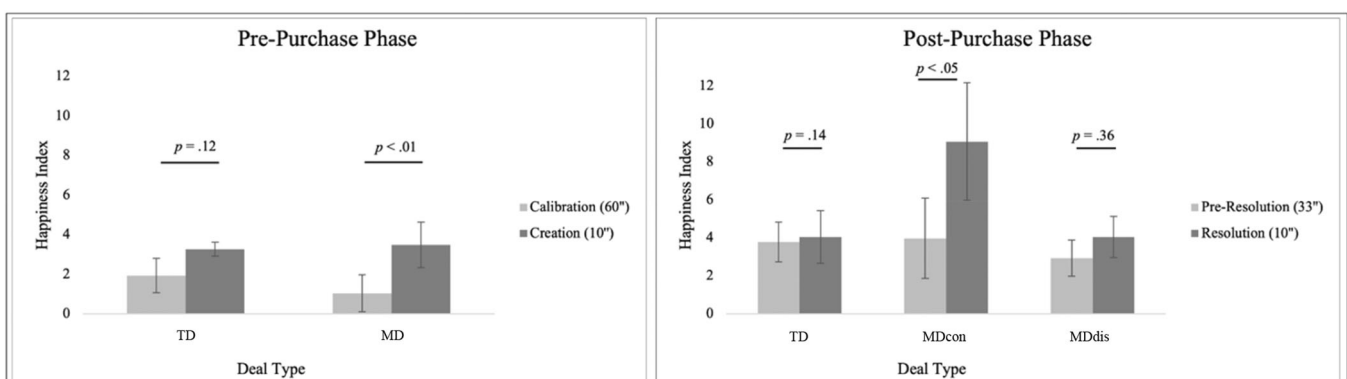


FIGURE 4 | Results for the Happiness Index in the Different Phases of the Lab Experiment.

5.2 | Results of Study 3

Our analysis focused on the MD ($n = 97$) and TD_{choice} ($n = 101$) conditions ($n = 198$; 51% women; $M_{\text{age}} = 45.09$ years, $SD_{\text{age}} = 13.72$ years). Appendix F also contains the results for the MD (vs. TD) condition, supporting our previous findings.⁶

(Dis)confirmation Effects and Positive Affective Spillover Effects. TD_{choice} was the reference group. The sample was split into confirmed (MD_{con}, $n = 33$) and disconfirmed (MD_{dis}, $n = 64$) groups based on participants' preferred option.

Using PROCESS Model 4 (5000 bootstrapping samples, 95% bias-corrected confidence interval; Hayes 2022), we estimated two serial mediation models. For brand loyalty intentions, the first model showed a significant disconfirmation ($a \times b = -0.19$, 95% CI $[-0.3380, -0.0637]$), but no confirmation effect ($a \times b = 0.11$, 95% CI $[-0.0378, 0.2662]$). The same pattern held for repurchase intentions (disconfirmation: $a \times b = -0.17$, 95% CI $[-0.3190, -0.0565]$; confirmation: $a \times b = 0.10$, 95% CI $[-0.0354, 0.2409]$). These findings partially support H₂.

The second model revealed significant positive affective spillover effects, where MD (vs. TD_{choice}) positively influenced brand loyalty and repurchase intentions through higher levels of pre-purchase affect (MD vs. TD_{choice} → pre-purchase affect → brand loyalty intentions, $a \times b = 0.08$, 95% CI $[0.0113, 0.1758]$; MD vs. TD_{choice} → pre-purchase affect → repurchase intentions, $a \times b = 0.14$, 95% CI $[0.0238, 0.2725]$) and both pre- and post-purchase affects (MD vs. TD_{choice} → pre-purchase affect → post-purchase affect → brand loyalty intentions, $a \times b = 0.07$, 95% CI $[0.0106, 0.1555]$; MD vs. TD_{choice} → pre-purchase affect → post-purchase affect → repurchase intentions, $a \times b = 0.07$, 95% CI $[0.0104, 0.1392]$). These results further support H_{3a} and H_{3b} (see Appendix F).

Overall Effect on Customer Loyalty. As in the previous studies, there was no significant total effect of MD_{dis} (vs. TD_{choice}) on brand loyalty intentions ($b = 0.10$, $p = 0.53$) or repurchase intentions ($b = 0.13$, $p = 0.42$), respectively, such that customer loyalty was similar between the MD_{dis} and TD_{choice} conditions. However, the results also revealed that, as a result of the missing confirmation effect, brand loyalty intentions ($b = 0.17$, $p = 0.38$) and repurchase intentions ($b = 0.31$, $p = 0.12$) were not higher in the MD_{con} condition compared to the TD_{choice} condition.

5.3 | Discussion of Study 3

Study 3 extends our understanding of MDs by including a TD condition that allows consumers to freely choose their preferred product. The findings show that the positive affective spillover of MDs persist, even offsetting potential negative effects of disconfirmation. In this case, MDs still generate additional positive affect in the pre-purchase phase (e.g., Hill et al. 2016), finally counteracting the negative effects of a disconfirmation on customer loyalty. However, confirming consumers in an MD does not yield additional loyalty benefits compared to a TD with free choice—unlike in previous studies. Presumably, the effects of receiving a preferred but initially uncertain outcome, or of

avoiding an undesired outcome, are not strong enough to outperform those of a TD, where consumers can choose a preferred and certain option from the outset.

6 | Study 4: Field Study in a Bakery

We conducted a field study with a bakery running 27 branches in a German city to examine the impact of MDs on post-purchase customer loyalty and explore temporal dynamics. From September 5–25, 2022, customers could choose between a TD or an MD. In the TD condition, customers picked three known buns for €4.85 (regular €5.40); in the MD condition, they received three surprise buns for €4.40. Buns were given in sealed bags with a survey invitation, revealing the study only after purchase. Participants could win a €10 voucher for completing the online survey. In total, we collected data from 235 customers (66% women; $M_{\text{age}} = 42.29$ years, $SD_{\text{age}} = 13.82$ years). Participants reported which deal they purchased, their brand loyalty intentions, which we measured with four items on a 7-point scale by Chaudhuri and Holbrook (2001), and their repurchase intentions, which participants indicated on a single-item 7-point scale adapted from Oliver (1980) and Habel et al. (2016; see Appendix D). MD customers also indicated their preferred bun flavors, allowing us to classify them into confirmed (MD_{con}, $n = 11$) and disconfirmed (MD_{dis}, $n = 87$) groups, with the TD condition ($n = 137$) as a reference. Results showed that confirmed MD customers' brand loyalty intentions matched those of TD customers ($M_{\text{MDcon}} = 5.00$ vs. $M_{\text{TD}} = 5.05$; $t(230) = -0.14$, $p = 0.89$), and disconfirmed MD customers' loyalty did not significantly drop ($M_{\text{MDdis}} = 5.05$ vs. $M_{\text{TD}} = 5.05$; $t(230) = 0.04$, $p = 0.97$). Similar findings emerged for repurchase intentions, which remained unaffected regardless of MD confirmation.

The interesting aspect of these results is that contrary to what would be expected based on the established confirmation-disconfirmation paradigm, customer loyalty of disconfirmed MD customers matches that of TD customers. This challenges the paradigm by suggesting that the positive affect elicited in the MD pre-purchase phase carries over into the post-purchase phase, offsetting potential negative effects of disconfirmation.

7 | General Discussion

This study advances the MD literature by shifting the focus beyond pre-purchase reactions to examine how consumers respond after the outcome is revealed—an area largely overlooked by previous research (e.g., Buechel and Li 2023; Hill et al. 2016; Kovacheva et al. 2022). Across multiple studies in diverse contexts, we shed light on the complex interplay between three different effect components: inflated expectations, the (dis)confirmation effect, and positive affective spillover. The interplay of these effects is unique to deals including mystery products and the joint outcome regarding post-purchase reactions was far from clear in prior literature, although each of the effects has been described before. The most intriguing finding of this study is that although we see that negative disconfirmation negatively affects loyalty, positive affect generated by the mystery in the pre-purchase phase can offset the negative consequences of disconfirmation. Overall, we

do not see any negative effects of disconfirmed MDs on loyalty compared to the outcomes of TD. This insight is particularly valuable given our finding that consumers have high expectations about receiving their most-preferred outcome (despite its low probability), which is a typical driver of negative disconfirmation (Oliver 1980; Yi 1990). Next, we will reflect upon our theoretical contributions to the literature and provide actionable implications for designing MDs that optimize both anticipation and post-purchase satisfaction.

7.1 | Theoretical Contributions and Implications

Revisiting the Confirmation-Disconfirmation Paradigm in Mystery Contexts. Our research advances the confirmation-disconfirmation paradigm (Oliver 1980) by demonstrating that, within the context of mystery deals (MDs), negative disconfirmation does not uniformly diminish post-purchase satisfaction or loyalty. Unlike traditional models where cognitive disconfirmation primarily drives post-evaluative outcomes, our findings suggest a bifurcated processing mechanism in MDs—one pathway grounded in cognitive expectation violation and another propelled by affective momentum. The affective experiences generated during the anticipatory phase of the MD can mitigate the impact of outcome-based cognitive disconfirmation, revealing a nuanced interplay between pre-outcome affect and post-outcome evaluation. What distinguishes MDs from typical disconfirmation scenarios (e.g., service failures) is the consumer's volitional engagement with uncertainty. Rather than passively enduring unpredictability, consumers in MD contexts actively seek it out, suggesting that uncertainty here fulfills autonomy-related psychological needs. In line with self-determination theory (Ryan and Deci 2000), this self-initiated risk-taking may confer intrinsic rewards—rooted in agency, exploration, and self-directed choice—that reshape evaluative frameworks. As a result, consumers may be more inclined to integrate the earlier positive affective states into their overall appraisal of the outcome, thereby sustaining satisfaction and reinforcing loyalty intentions even in the face of objective disconfirmation. This implies that MDs engage a dual-processing structure, wherein affective and cognitive evaluations are not merely parallel but dynamically interwoven, with autonomy amplifying the affective channel's influence on evaluative judgments.

Regarding customer satisfaction literature, we identify the affective experience of the purchasing process as a new moderating variable that determines the perceived outcome of a disconfirmation experience. This adds to prior research that identified other aspects, such as customer loyalty (Yi and La 2004) or moral identity (Van Vaerenbergh et al. 2012) to moderate the evaluation of disconfirmation experiences.

Multi-Stage Perspective of Affective Responses to MDs. By highlighting the dual role of positive affect in both expectation formation and post-purchase evaluation, our study advances the understanding of affective dynamics across the temporal arc of uncertainty in consumer decision-making (e.g., Ruan et al. 2018). Specifically, we demonstrate that positive affect generated during the uncertainty creation phase exerts a

lasting influence on post-outcome responses through an affective spillover mechanism. This finding challenges traditional compartmentalizations of the decision journey, which often treat the anticipatory and resolution phases as discrete (e.g., Lee and Qiu 2009; Shen et al. 2019), and instead underscores the psychological continuity that binds these phases through emotion. We introduce a multi-stage affective framework for understanding consumer engagement with mystery deals (MDs), encompassing pre-purchase anticipation, expectation formation, outcome realization, and post-purchase evaluation. Within this framework, affect functions not only as a momentary state but also unfolds a more dynamic, temporally distributed influence by modulating cognitive appraisals and evaluative judgments over time. This contributes to decision-making literature (e.g., Hsee and Rottenstreich 2004; Loewenstein 1987), emphasizing how emotional experiences accumulate and reverberate across the decision cycle.

In addition, this study may complement the traditional view of affect-as-information theory focusing on the affective experience in the moment of decision making (e.g., Labroo and Patrick 2009) by demonstrating a cross-phase affective spillover effect, where positive affect, formed before the product outcome is revealed, buffers the negative consequences of unmet expectations. This suggests that consumers in affect-rich contexts (e.g., playful, curiosity-inducing purchases) rely more heavily on their feelings to assess experiences—especially when cognitive judgments are uncertain, ambiguous, or disappointing.

By integrating self-reported scales with AI-driven physiological emotion tracking, our study strengthens the methodological rigor of mystery deal research, offering a more comprehensive assessment of affective processes.

Disentangling the Co-Occurring Effects and Explaining the Overall Outcome of MDs. Finally, we provide novel insights into the post-purchase effects of MDs, demonstrating that customer reactions are shaped by inflated expectations (which crucially do not backfire by increasing negative affect, such as disappointment), the (dis)confirmation of their expectations and the presence of positive pre-purchase affect. Importantly, we establish that MD-driven customer loyalty is not only sustained but can surpass that of TD customers when expectations are confirmed, challenging prior assumptions about uncertainty-driven promotions. Moreover, by analyzing both positive and negative MD outcomes, we expand the discourse on uncertainty creation and resolution, which has predominantly focused on favorable effects when desirable rewards are offered (e.g., additional money, gifts; Ruan et al. 2018; Shen et al. 2019) without a real risk of losing money due to a potential purchase mistake.

7.2 | Managerial Implications

Our findings offer critical insights for marketers on how to leverage MDs not only for customer acquisition but also for long-term customer retention—an aspect largely overlooked in previous research. MDs present a compelling alternative to TDs, particularly for retailers managing promotions, optimizing inventory, or enhancing customer engagement.

Beyond Inventory Reduction: Expanding MD Applications. While MDs have traditionally been used for inventory clearance, our results indicate that they are highly effective as a general promotional strategy. Even in contexts where retailers can offer a full product assortment, MDs generate higher purchase rates without negatively impacting customer loyalty—provided they are well-designed and engaging.

Leveraging MDs in Service Retail. Contrary to the belief that MDs may be less effective in service-based settings (e.g., restaurants, subscription services) due to immediate consumption needs, our findings show that MDs can successfully boost sales in these contexts without harming customer satisfaction or loyalty. This opens new opportunities for service-oriented businesses to incorporate MD strategies, such as mystery menu items or surprise service upgrades. Especially in the food sector, which involves the use of perishable ingredients, MDs can offer a practical way to sell dishes or items with surplus stock—thus contributing to food waste reduction.

Designing Engaging and Loyalty-Boosting MDs. To maximize the benefits of MDs, marketers should focus on generating positive pre-purchase affect, which can enhance customer experience and offset potential disconfirmation effects. Practical strategies to achieve this include: (1) The use of high-quality imagery, playful symbols (e.g., question marks or gift icons), and vibrant colors to visually signal the “mystery” and spark emotional anticipation (what has been shown to drive positive affect), (2) Curiosity-driven messaging by implementing phrases like “*Limited-time mystery deal!*” or “*Unwrap a surprise offer!*” to heighten anticipation and entertainment, (3) exclusive mystery incentives by providing additional perks (e.g., free shipping, bonus rewards) to enhance perceived value and reduce the risk of disappointment. Additionally, limiting the number of possible outcomes (e.g., offering 2–3 known product types instead of a large random pool) can help maintain clarity without sacrificing the mystery element. By strategically implementing these tactics, marketers can harness MDs not only to drive immediate sales but also to strengthen long-term customer relationships and brand loyalty. Ultimately, the effectiveness of MDs depends not on the product itself, but on the affective and cognitive context in which it is delivered—a key insight for translating our findings into practice.

7.3 | Limitations and Future Research

While our study provides valuable insights into the post-purchase effects of MDs, several avenues remain open for future research to enhance the generalizability and applicability of our findings.

More Real-World Experiments for Greater Generalizability. A key limitation of the current research is its reliance on controlled experimental settings, which, while valuable for establishing internal validity, may not fully capture the complexity of real-world consumer behavior. To strengthen external validity, future research should conduct further field experiments in real-world retail settings. While our studies provide robust experimental evidence and first insights of real-world findings via our field study, further testing MDs in live marketplaces—such as e-commerce platforms or brick-and-mortar stores—can reveal how real consumers respond to MDs

in natural decision-making environments. Investigating MDs across diverse industries, including travel, hospitality, and digital services, would further establish the practical implications of our findings. Additionally, future studies should explore the emotional and social dynamics that influence consumer engagement with MDs in real-life contexts. Feelings such as excitement or anxiety can shape consumers’ perceptions and willingness to take risks, while social influences—such as peer opinions, online reviews, or fear of missing out—may amplify or mitigate these emotional responses, ultimately affecting purchase decisions.

Exploring Variations in MD Design. A further limitation of the present research is that it treats mystery deals (MDs) as a relatively uniform, without fully accounting for the diversity of their design features. Future studies should examine how different MD features influence consumer expectations, pre-purchase affect, and post-purchase satisfaction. For instance, how do variations in the level of uncertainty (e.g., partial vs. full mystery), the number of potential outcomes, or the presence of choice modifiers (e.g., limited customization options) affect consumers’ emotional responses and loyalty? In addition, exploring diverse pricing strategies in more detail could shed light on how different pricing approaches interact with the use of MDs. Gaining a deeper understanding of these nuances would allow marketers to tailor MDs more effectively to different target audiences.

Boundary Conditions and Potential Downsides of MDs. One additional limitation of our current research is its focus on the overall positive effects of MDs, without fully addressing potential boundary conditions or negative outcomes. While we demonstrate that MDs generally maintain or even enhance customer loyalty, future research should explore scenarios where MDs might backfire. Are there specific product categories or consumer segments where MDs fail to create positive experiences? For example, in high-stakes purchases (e.g., luxury goods), would uncertainty deter rather than attract consumers? Additionally, research could examine the long-term impact of repeated MD participation—do frequent MD buyers develop skepticism over time, reducing the effectiveness of these promotions?

Capturing Complexity with Nonlinear and Latent Interaction Models. Present research lies in the reliance on traditional linear moderation models to test the hypothesized effects. While these methods offer interpretative clarity and are widely used, they may oversimplify complex relationships among variables. Real-world consumer behavior, particularly in response to mystery deals, might be influenced by nonlinear dynamics and interactions that evolve over time or depend on unobserved heterogeneity. Future research should consider employing more advanced modeling techniques—such as nonlinear moderation, latent interaction models, or machine learning approaches—to capture these nuanced patterns.

Extending Research into Cross-Cultural, Demographic, and Psychological Drivers. Another limitation of the current research is its limited consideration of cultural and demographic variability in consumer responses to MDs. Given that consumer attitudes toward uncertainty vary across cultures, future studies should examine whether the effects of MDs differ across cultural backgrounds, socioeconomic groups, and age demographics. Do consumers in uncertainty-averse cultures

respond differently to MDs compared to those in uncertainty-seeking cultures? Understanding these differences would provide more granular insights into how MDs can be effectively implemented across global markets. In addition to cultural and demographic factors, individual consumer characteristics—such as optimism, risk aversion, and tolerance for ambiguity—are likely to play a critical role in shaping responses to MDs. For example, optimistic consumers may view mystery elements as exciting opportunities, whereas risk-averse individuals might interpret the same features as potential threats, leading to avoidance behavior. Future research should incorporate these psychological traits to better understand heterogeneity in MD effectiveness and to inform the design of more personalized and targeted marketing strategies.

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Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Endnotes

¹We incorporated additional measures to document the mystery resolution process, such as participants' perceived information gap. However, these measures are not directly relevant to the hypotheses testing.

²A mediation analysis (Hayes 2022; PROCESS Model 4, 5,000 re-samples, covariates: age, gender) also showed that the MD (vs. TD) had a positive indirect effect on consumers' purchase intention by eliciting higher positive affective reactions in the pre-purchase phase ($a \times b = 0.33$, 95% CI [0.1161, 0.5291]), confirming previous findings on the positive effect of MDs on consumers' purchase intentions (e.g., Hill et al. 2016).

³We also assessed consumer satisfaction. The results showed a similar pattern in this and the following studies as for our customer loyalty constructs.

⁴A mediation analysis (Hayes 2022; PROCESS Model 4, 5,000 re-samples, covariates: age, gender) further demonstrated that MD (vs. TD) had a positive indirect effect on purchase intentions by increasing positive pre-purchase affective reactions ($a \times b = 0.34$, 95% CI [0.1861, 0.5052]).

⁵Similar to Study 1b, we validated our assignment of the post-purchase groups. A one-sample t -test revealed that the perceived disconfirmation of MD_{con} consumers was below the scale midpoint ($M_{MDcon} = 2.61$; $t(27) = -6.91$, $p < 0.001$), while it was above the scale midpoint for MD_{dis} consumers ($M_{MDdis} = 5.10$; $t(103) = 7.43$, $p < 0.001$). These results confirmed that MD_{con} (MD_{dis}) consumers actually perceived the outcome to be better (worse) than expected.

⁶A mediation analysis (Hayes 2022; PROCESS Model 4, 5,000 re-samples, covariates: age, gender) also showed that the MD (vs. TD_{choice}) had a positive indirect effect on consumers' purchase intention by eliciting higher positive affective reactions in the pre-purchase phase ($a \times b = 0.22$, 95% CI [0.0283, 0.4129]).

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Appendix A

TABLE A.1 | Examples of mystery deals in marketing practice.

Industry and Company	Outcome of MD	Description
<i>Food & Groceries</i>		
Burger King (U.S. fast food chain)	Burger	Mystery box contains one out of a pre-defined and advertised set of burgers; resolution of specific burger after purchase; discount: 22%–60%
Geile Weine (German online wine retailer)	Wine	Surprise wine package with six unknown bottles of wine is advertised; consumers do not know the identity of all six wines until after the purchase; discount: 19%–51%
<i>Fashion & Accessories</i>		
Pura Vida (online accessories retailer)	Bracelets and rings	Mystery bracelet or ring with secret style; resolution of specific style of bracelet or ring after purchase; discount: 29%
Elbenwald (German fanware retailer)	T-Shirt	Surprise t-shirt; consumers get one specific t-shirt from the assortment; resolution of specific t-shirt after purchase; discount: 65%–72%
Sock Mafia (Canadian fashion retailer)	Socks	Mystery box of socks from the assortment; consumers get nine specific pairs of socks after purchase; discount: 33%
<i>Travel & Hoteling</i>		
Lufthansa (airline)	Flight	Surprise flight to an unknown destination (out of a pre-defined set) with the option to deselect non-preferred destinations in advance; discount: 27%–39%
Priceline (booking website)	Flights, hotels, cars	Booking of hotels, flights, or cars without knowing the exact hotel, destination, or car until after booking; discount: 14%–44%
Hotwire (booking website)	Flights, hotels, cars	Booking of hotels, flights, or cars without knowing the exact hotel, destination, or car until after booking; discount: 30%–53%

TABLE A.2 | Illustrative review of extant mystery marketing insights in the literature.

Source	Perspective	Focus	Key findings
Buechel and Li (2023)	Consumer	Pre-purchase	Consumers prefer to choose mystery products over familiar ones when the possible outcomes are horizontally differentiated (e.g., varying in taste), but not when they are vertically differentiated (e.g., differing in value).
Fay and Xie (2008)	Firm	Pre-purchase	Presenting a mystery option can help reduce the seller's information disadvantage and mitigate the negative impact of demand uncertainty on profit. Additionally, offering mystery products can address the mismatch between capacity and demand, improving overall efficiency.
Goldsmith and Amir (2010)	Consumer	Pre-purchase	An uncertain incentive can be nearly as effective as guaranteeing the best possible outcome. This effect is specific to consumers' intuitive, low-effort decisions and may diminish when probability factors or situations that encourage more deliberate thinking come into play.
Hill et al. (2016)	Consumer	Pre-purchase	Consumers tend to be more curious when provided with a moderate amount of information compared to minimal details. Additionally, shopping in a state of active curiosity can influence consumer outcomes indirectly, with the effect being mediated by their evaluation of the mystery's appeal.
Kovacheva et al. (2022)	Consumer	Pre-purchase	When choosing between a guaranteed option and a surprise offering, male consumers are less likely than female consumers to opt for the surprise, as they tend to be more reluctant to give up control over the outcome of their purchase.
Laran and Tsiros (2013)	Consumer	Pre-purchase	While uncertainty reduces consumers' likelihood of purchase in cognitive decision-making, it boosts their purchase likelihood in affective decision-making.
Urumutta Hewage and He (2022)	Consumer	Pre-purchase	When making material purchases, consumers show a lower preference for mystery options compared to experiential purchases. This effect is driven by excitement neglect, meaning consumers are less inclined to seek the excitement associated with mystery options when purchasing material goods.
Current Research	Consumer	Pre-purchase Post-purchase	Positive affective spillover from the pre-purchase phase boosts consumer loyalty to mystery deals (vs. traditional deals), even helping offset loyalty drops when consumers receive a non-preferred alternative.

Appendix B

TABLE B.1 | Study overview.

Nr.	Sample	Study purpose	Design	Methodological approach
1a	148	Investigation of consumers' post-purchase reactions toward the resolution of a mystery deal in a product context.	Single-factor between subjects	Online-scenario experiment
1a supplementary	213	Supplementary investigation of consumers' post-purchase reactions when MD and TD are priced equally.	Single-factor between subjects	Online-scenario experiment
1b	248	Investigation of consumers' post-purchase reactions toward the resolution of a mystery deal in a service context.	Single-factor between subjects	Online-scenario experiment
2	264	Investigation of consumers' natural and spontaneous reactions to mystery deals.	Single-factor between subjects using AI-based facial recognition software	Laboratory experiment
3	299	Elimination of the presence of a higher number of presented option as a cause for higher positive affective reactions to mystery deals in the pre-purchase phase.	Single-factor between subjects	Online-scenario experiment
4	235	Addition of external validity to previous findings.	Single-factor between subjects	Field study with online survey

Appendix C

(See Table C1)

TABLE C.1 | Stimuli in the Pre-Purchase phase in studies 1a, 1b, 2, and 3.



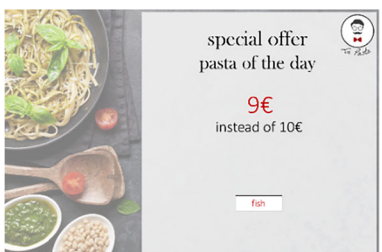
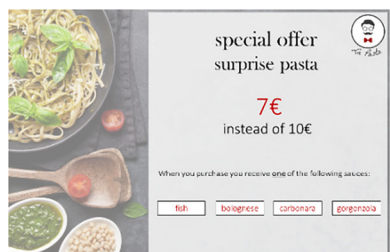





Scenarios of Studies 1a and 2 (Product Context)			
TD		MD	
			
Scenarios of Study 1b (Service Context)			
TD		MD	
			
Scenarios of Study 3			
TD	TD _{choice}	MD	
			

TABLE D.1 | Measurement items and validity assessment of constructs.

Construct source	α	Measurement items
Pre-Purchase Phase		
Purchase Intention e.g., Goldsmith and Amir (2010); Laran and Tsirios (2013)	single item (used in Studies 1a, 1b and 3)	How likely would you buy the deal you have just seen?
Positive Pre-Purchase Affective Reactions Shampanier et al. (2007)	single item (used in Study 1a, 1b and 3)	How do you feel with regard to [the ad]?
		
Positive Expectations Adapted from Daume and Hüttl-Maack (2020)	Study 1a: not used Study 1b: $\alpha = 0.79$ Study 3: not used	The ad I just saw... ...made me expect something interesting. ... triggers high expectations about what is advertised here. ... triggers my hope to receive my mostly preferred flavor from [the promotion].
Uncertainty e.g., Lee and Qiu (2009)	single item (used in Studies 1a, 1b, 2 and 3)	I feel uncertain about which [product] I would receive within the previously seen ad, when I participate in the deal and buy the [product].
Post-Purchase Phase		
Brand Loyalty Intentions Chaudhuri and Holbrook (2001)	Study 1a: $\alpha = 0.88$ Study 1b: $\alpha = 0.87$ Study 3: $\alpha = 0.85$	I will buy [this brand] the next time I buy [product name]. I intend to keep purchasing [this brand]. I am committed to [this brand]. I would be willing to pay a higher price for [this brand] over other brands.
Repurchase Intentions of the Promotion Adapted from Oliver (1980); Habel et al. (2016)	single item (used in Studies 1a, 1b and 3)	How likely would you purchase [such a promotion] of [the brand] again?
Positive Post-Purchase Affective Reactions Shampanier et al. (2007)	single item (used in Study 1a, 1b and 3)	How do you feel with regard to [the received product/service]?
		
Satisfaction e.g., Habel et al. (2016)	single item (used in Studies 1a, 1b and 3)	Generally, I am satisfied with [the product] I received.
Perceived Disconfirmation Oliver (1980)	single item (used in Studies 1b and 2)	Generally, [this product] is... (“better than expected” – “as expected” – “worse than expected”)

Note: Positive affective reactions were measured with a 5-point scale; all other constructs were measured with 7-point scales.

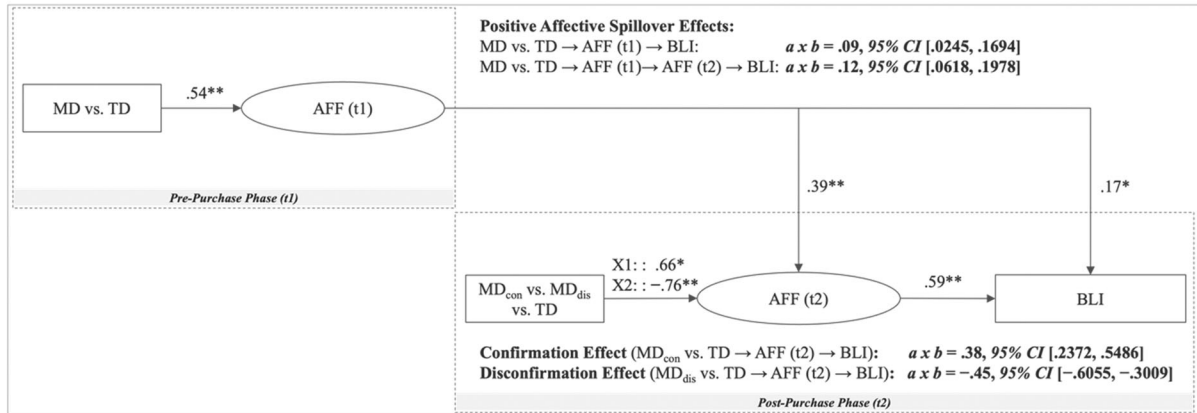
TABLE E.1 | Results of Supplementary Study with TD and MD at the Same Price (€7).

MD (€7) versus TD (€7)	Results
Effects on Brand Loyalty Intentions	
Disconfirmation Effect	$a \times b = -0.11$, 95% CI [-0.2670, -0.0004]
MD _{dis} versus TD → positive post-purchase affect → brand loyalty intentions	
Confirmation Effect	$a \times b = 0.26$, 95% CI [0.0496, 0.4985]
MD _{con} versus TD → positive post-purchase affect → brand loyalty intentions	
Affective Spillover Effects	
MD versus TD → positive pre-purchase affect → brand loyalty intentions	$a \times b = 0.09$, 90% CI [0.0036, 0.1857]
MD versus TD → positive pre-purchase affect → positive post-purchase affect → brand loyalty intentions	$a \times b = 0.02$, 90% CI [0.0001, 0.0625]
Total Effects	MD _{dis} versus TD: $b = 0.17$, $p = 0.38$ MD _{con} versus TD: $b = 0.74$, $p < 0.01$
Effects on Repurchase Intentions of Promotion	
Disconfirmation Effect	$a \times b = -0.21$ 95% CI [-0.4393, -0.0139]
MD _{dis} versus TD → positive post-purchase affect → repurchase intentions	
Confirmation Effect	$a \times b = 0.52$, 95% CI [0.2971, 0.7838]
MD _{con} versus TD → positive post-purchase affect → repurchase intentions	
Affective Spillover Effects	
MD versus TD → positive pre-purchase affect → repurchase intentions	$a \times b = 0.08$, 90% CI [0.0049, 0.1919]
MD versus TD → positive pre-purchase affect → positive post-purchase affect → repurchase intentions	$a \times b = 0.05$, 90% CI [0.0029, 0.1104]
Total Effects	MD _{dis} versus TD: $b = -0.01$, $p = 0.95$ MD _{con} versus TD: $b = 0.81$, $p < 0.01$

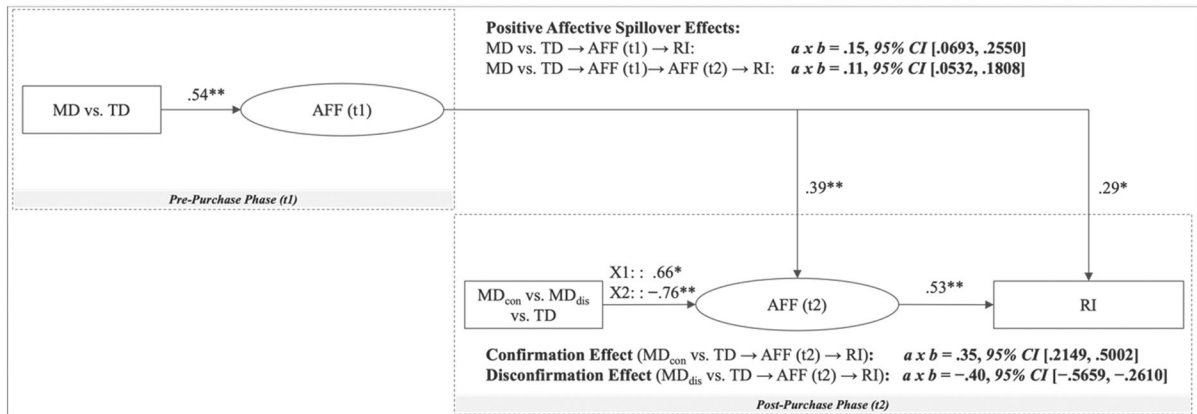
Note: We followed the same procedure and conducted the same analyses (PROCESS models; Hayes 2022) as in Study 1a; $n = 110$.

Study 1b

Dependent Variable: Brand Loyalty Intentions



Dependent Variable: Repurchase Intentions of the Promotion



Study 3

Reference Group: TD_{choice}; Dependent Variable: Brand Loyalty Intentions

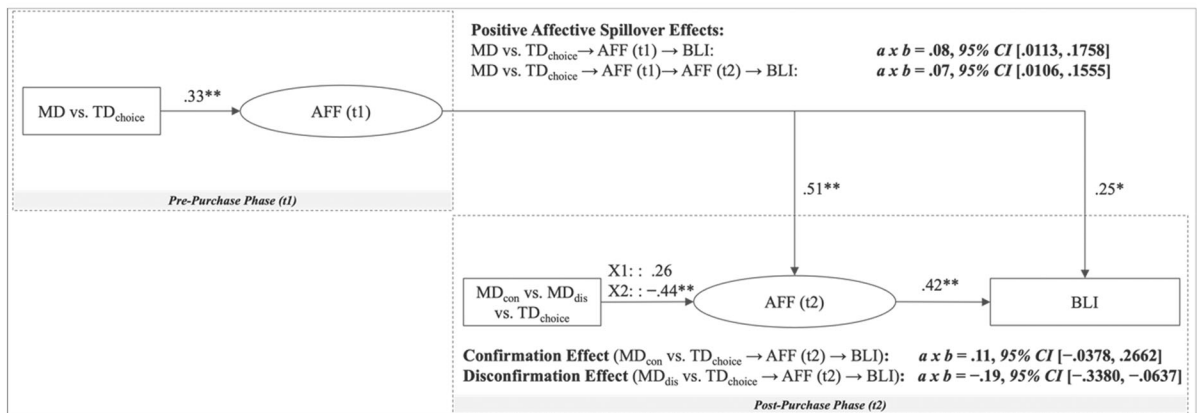
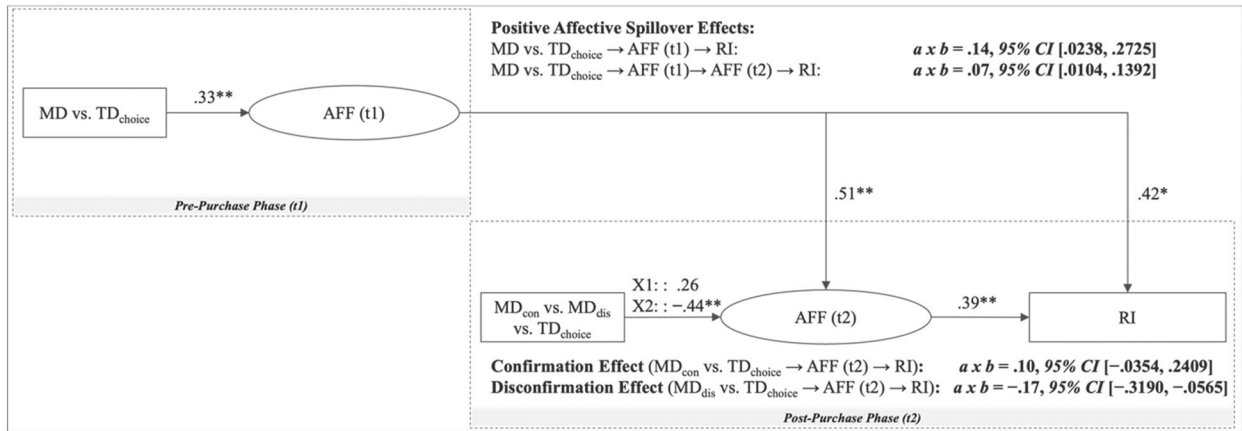
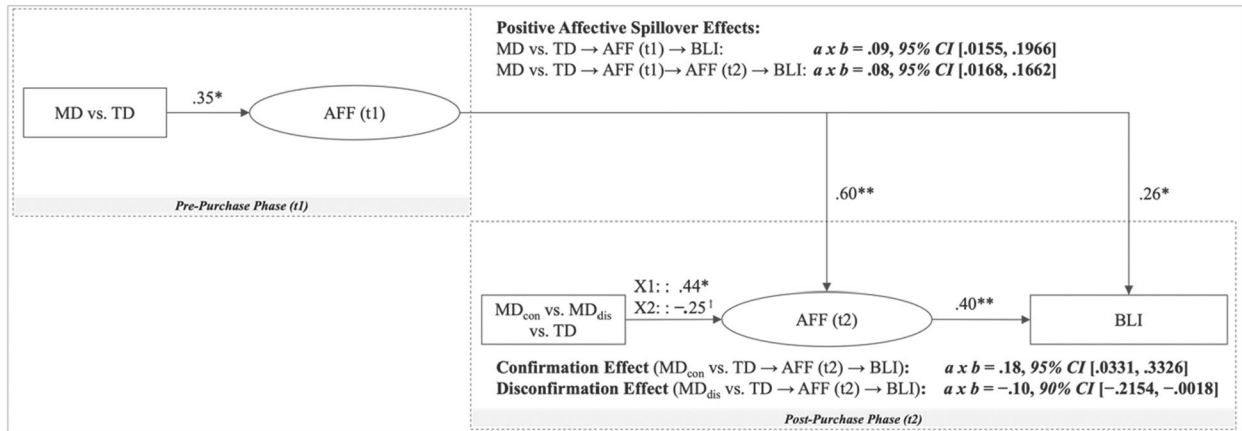


FIGURE F.1 | Integrated Results from Mediation Analyses of Study 1b and Study 3. Note: $^{\dagger}p < 0.10$, $*p < 0.05$, $**p < 0.01$, AFF (t1) = positive pre-purchase affective reactions; AFF (t2) = positive post-purchase affective reactions, BLI = brand loyalty intentions, RI = repurchase intentions, X1 = MD_{con} versus TD_{choice}, X2 = MD_{dis} versus TD_{choice}.

Reference Group: TD_{choice} ; Dependent Variable: Repurchase Intentions of the Promotion



Reference Group: TD; Dependent Variable: Brand Loyalty Intentions



Reference Group: TD; Dependent Variable: Repurchase Intentions of the Promotion

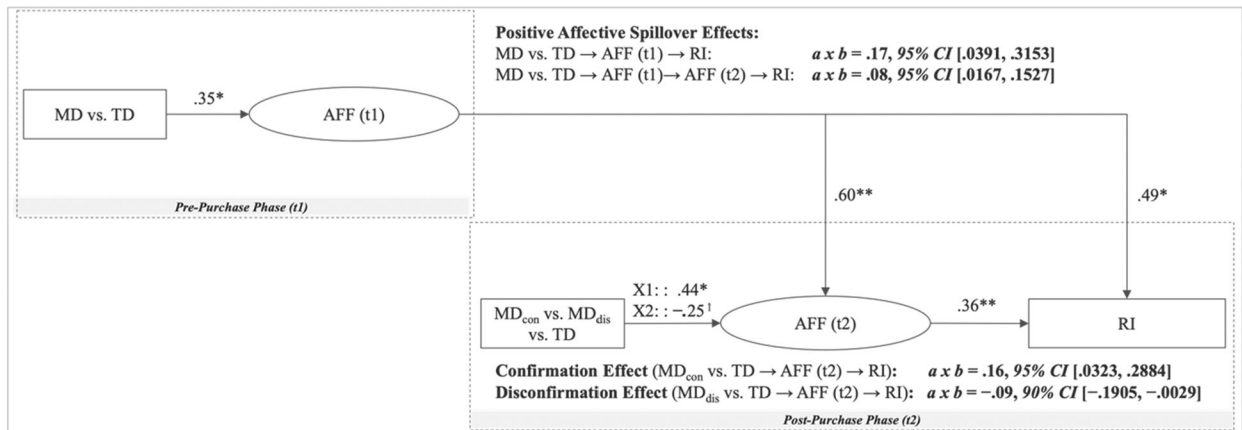


FIGURE F.1 | (Continued)