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## **Influence of sales promotion on impulse buying: a dual process approach**

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# **Influence of sales promotion on impulse buying: a dual process approach**

## **Abstract**

This study investigates how sales promotions influence the psychological processing that precedes impulse buying. Applying a dual process theory, we distinguish between Reflective and Impulsive processing pathways. Through a survey study on 470 consumers, we tested four sales promotions characterized by different rewards (monetary versus nonmonetary) and gratification typologies (immediate-reward versus delayed-reward). The study further analyses the effects of promotion-induced affect, in terms of arousal and valence, as well as the influence of individual impulse buying tendency and sales proneness. Results show that impulsive responses are influenced by promotion-induced affect and individual differences, while reflective responses differ depending on the reward typology. The results contribute to the extant literature by discriminating the effects of sales promotions on the Reflective and Impulsive systems. Implications for retailers and promotion managers concerning the formulation of effective promotion strategies are discussed.

*Keywords: Impulse buying; Impulse shopping; Sales promotion; Dual systems theory; Emotions*

## **1. Introduction**

Sales promotion expenditure represents a sizeable share of the overall marketing budget and a topic worth considerable attention from marketing managers due to its tactical importance (Kaur et al., 2021; Moorman, 2021). Sales promotion is described as “a collection of incentive tools, mostly short-term, designed to stimulate quicker or greater purchase of particular products or services by consumers or the trade” (Kotler & Keller, 2012, p. 541). As a key ingredient in marketing campaigns, sales promotion embodies an incentive to consumers’ purchase behavior. Promotions elicit psychological responses in the consumer as well as significant competitive responses from market actors (Neslin, 2002). Indeed, retailers often employ sales promotions to trigger immediate action and generate short-term sales (Blattberg & Neslin, 1990; Santini et al., 2016).

The reward intrinsic in sales promotions has often been acknowledged as a driving factor of Impulse Buying (IB). Positive effects have been observed both in online and offline settings, thus positing a generalizable impact of promotional activities on IB. In online environments, Dawson and Kim (2010) have highlighted how IB is positively related to promotional strategies such as price reductions, coupons, free gifts, sweepstakes, refunds, or membership discounts. Comparable results were observed in subsequent studies investigating the effect of bonus packs, bonus rewards, and group buying (Lo et al., 2016; Y. Xu & Huang, 2014). Further supporting evidence is found in brick-and-mortar settings (Bandyopadhyay et al., 2021; Liao et al., 2009). For example, Liao et al. (2009) show the positive effect of price-offs, free goods, vouchers, and loyalty programs on impulse purchases characterized by previous product knowledge.

Prior studies have focused on the end effect of promotions on IB, namely heeding an impulsive act of purchase from consumers. However, there has been little discussion about how sales promotions influence the psychological processing that precedes IB behaviors. Established marketing literature indicates the existence of psychological processing by consumers as the initial stage of response to sales promotions (Laroche et al., 2003; Lichtenstein et al., 1990). These psychological processes involve information processing concerning, for instance, the benefits and costs associated with the

use of sales promotion (Mittal, 1994). The presence of such psychological processing antecedent to purchasing behavior is also observed in reference to IB behaviors. Namely, IB is recognized as the resultant of the interaction between two modes of psychological processing: a Reflective and an Impulsive system (Strack et al., 2006; H. Xu et al., 2020). The two systems are conceived to operate with distinct logics and interact at various stages of information processing, both contributing to overt behaviors. This dual-process model further suggests that external cues can influence the two systems differently, depending on their motivational orientation (Strack & Deutsch, 2004).

Prior marketing research still lacks to investigate how sales promotions influence the response of the Reflective and Impulsive systems. To bridge this gap, our study aims at investigating how the attributes of sales promotions affect reflective and impulsive responses that precede IB. Indeed, if impulse purchases are generally positively influenced by sales promotions (Amos et al., 2014; Iyer et al., 2020), the process through which this influence is exerted is still not clear. We delve into four categories of sales promotions characterized by different attributes including reward typologies (monetary vs nonmonetary) and gratification characteristics (immediate-reward vs delayed-reward). These include price cuts, free gifts, cashback, and sweepstakes. We analyze their effect on the Reflective and Impulsive systems through the assessment of cognitive reflective responses and behavioral impulsive responses. We further consider the influence of promotion-induced affect in terms of arousal and valence as well as individual traits including impulse buying tendency and sale proneness. Data for this study is collected through a survey on a large sample of respondents based on an established methodology to investigate IB (Mandolfo & Lamberti, 2021).

This study makes both theoretical and practical contributions to the field. It is the first to apply a dual process approach to understand the impact of sales promotion on IB. We first advance the theoretical understanding of sales promotion by linking specific promotion characteristics to impulsive and reflective responses. In particular, we contribute to the extant literature advancing empirical proof of the impact of reward and gratification typology, promotion-induced affect, and personality traits on impulsive and reflective responses. The results, therefore, offer insights into the effect of promotion

characteristics on the psychological processing driving IB. Second, we discuss a set of techniques to promote IB based on the influence of Reflective and Impulsive systems. We specifically examine practical applications that practitioners may employ to trigger IB. Retailers and promotion managers could therefore make use of the findings to formulate effective marketing promotion strategies.

## **2. Literature review**

### ***2.1. Reflective and Impulsive systems***

Numerous streams of research today acknowledge IB as a complex buying behavior (Amos et al., 2014; Iyer et al., 2020; Xiao & Nicholson, 2013). This behavior encompasses several definitional aspects including a lack of pre-planning, strong psychological drives, and rapid decision-making (Beatty & Ferrell, 1998; Piron, 1991; Rook, 1987; Stern, 1962). Consumer behavior literature has delved into such complexity applying behavioral theories and models in online marketplaces and brick-and-mortar realities (Chan et al., 2017; Verplanken & Sato, 2011). A notable approach to understanding this complex behavior is advanced by Strack et al. (2006) in their Reflective-Impulsive-Model (RIM). This framework assumes the existence of two systems driving consumer behavior: the Reflective and the Impulsive system. The Reflective system is conceived as responsible for high order mental operations, encompassing deliberate judgments and evaluations through a process that is slow and effortful. The Reflective system is also theorized as in charge of assessing the desirability and feasibility of purchasing actions and implementing formed intentions. It is a rule-based system that assigns truth values to concepts and their relation (Krishna & Strack, 2017). The Reflective system is driven by the principle of consistency as it tries to avoid contradictions between elements. For instance, the Reflective system may evaluate as true the relationship between the concepts of wool and warmth. On the reverse, it may evaluate as false the relationship between the concepts of silk and warmth.

On the other hand, the Impulsive system is responsible for generating automatic behavioral responses through a fast and effortless process. This system is devised to be driven by salient cues, such as the

likability or the attractiveness of the purchase (Strack et al., 2006; Strack & Deutsch, 2004). The Impulsive system creates associative relationships between elements, grounded on the criteria of contiguity and similarity (Krishna & Strack, 2017). In these terms, it binds together frequently co-occurring features to form associations. For instance, stroking a woolen pullover may instantly evoke an association with snow.

Unlike other dual system frameworks, the RIM suggests an interaction between the two systems and a joint influence on overt behavior (Samson & Voyer, 2012). Along these lines, the RIM does not categorize a particular behavior as utterly attributable to one system, rather it posits that the Reflective and Impulsive systems jointly influence the resultant purchasing behavior. The activation of the two systems, in turn, is triggered by perceptual cues (Strack et al., 2006). These cues, which can be related to marketing instruments (e.g., shelf placement, sales promotion) and situational factors (e.g., moods, affective states), influence the activation of the Reflective and Impulsive systems following different pathways. The following paragraphs describe the influence of sales promotion characteristics, promotion-induced affect, and individual differences.

## ***2.2. Influence of sales promotion characteristics***

Marketing instruments such as shelf placement, packaging design, and sales promotion have been frequently related to triggers of IB (Hultén & Vanyushyn, 2014; Iyer et al., 2020; Mohan et al., 2013). These marketing tools are also theorized to influence both reflective and impulsive determinants of consumer behavior (Samson & Voyer, 2012). We posit that the extent of influence depends on the sales promotion typology since different sales promotions target different outcomes. For instance, Chandon et al. (2000) show that consumer benefits range from hedonic (e.g., value expression or entertainment) to utilitarian (e.g., saving or convenience) depending on the sales promotion typology. Along these lines, promotions that emphasize the rational benefits of the purchase are shown to encourage offerings leveraging utilitarian values (Santini et al., 2020). We then expect that sales promotions characterized by different gratification and reward typologies will influence impulsive

and reflective responses to a different extent. Based on the benefit congruency framework (Chandon et al., 2000), we posit that the monetary attributes of sales promotions influence mainly reflective responses as they provide primarily utilitarian benefits to consumers (e.g., a reduction of search effort). On the other side, we posit that nonmonetary promotions influence mainly impulsive responses, prompted by their hedonic nature. Likewise, we expect that the immediacy of the reward associated with a promotion scheme promotes stronger behavioral impulsive responses than delayed promotions. In the following, these arguments are illustrated.

### *2.2.1 Promotion-related gratification*

Early literature has shown that impulsive behaviors tend to favor an immediately available option over a future one (Piron, 1991). This thesis is confirmed also by research in consumer behavior assessing that immediate-reward promotions can trigger unplanned purchasing behaviors (Peter & Olson, 1999). Indeed, sales promotions designed to convey an immediate gratification (i.e., providing a reward as soon as the purchase is made) demand to consumers less processing effort than promotions offering deferred gratification. This outcome corroborates the mechanism of the Impulsive system, which prompts effortless and short-term oriented responses (Strack & Deutsch, 2004). Recent research in consumer behavior supported this argument. Focusing on reminder impulse shopping, Liao et al. (2009) empirically showed that immediate-reward promotions (e.g., price-offs) elicit a stronger purchasing drive than delayed-reward promotions (e.g., loyalty programs). Bandyopadhyay et al. (2021) also showed that immediate monetary promotions and immediate nonmonetary ones led to higher urges to buy impulsively. We posit that a similar influence of immediate-reward promotion would impact the behavioral response, which is evoked by the impulsive branch of the RIM. Formally, we advance:

**H1.** Immediate-reward promotions promote stronger behavioral impulsive responses than delayed-reward promotions.

### *2.2.2 Promotion-related reward*

A greater need for cognition from the individual side has been shown in domains related to mathematical calculation (Brown & Bond, 2015). In the area of price tactics, the presentation format of numeric price information proves to affect consumers' evaluation effort, which, in turn, influences their decision (Estelami, 2003). Similarly, when consumers face price promotions, rational thinking tends to activate since they need to calculate the amount of savings (Yang & Mattila, 2020). Individuals characterized by a low need for cognition are also more favorable toward sales promotions than shoppers displaying a high need for cognition (Jones, 2019). Furthermore, consumer rational thinking style showed to affect the relative effectiveness of different types of promotions (Yang & Mattila, 2020). Along these lines, we posit that monetary promotions induce stronger cognitive responses in consumers than nonmonetary ones. Formally, we hypothesize:

**H2.** Monetary promotions promote stronger cognitive reflective responses than nonmonetary promotions.

### *2.3. Influence of promotion-induced affect*

Situational factors including affective states and moods represent a further acknowledged category of external cues influencing IB behaviors (Amos et al., 2014; Iyer et al., 2020; Xiao & Nicholson, 2013). Evidence shows that these affective responses can be triggered by marketing instruments. For instance, pricing strategies can elicit surprise and enjoyment (O'Neill & Lambert, 2001) and promotions may trigger joy-of-winning or feelings of smartness (Schindler, 1998). A pleasant atmosphere is also associated with positive moods and facilitates purchases (Roux & Maree, 2021). Research on IB behavior has often investigated the impact of affect distinguishing between two core affective dimensions: arousal and valence (Iyer et al., 2020). Arousal is intended as the level of activation associated with the affective experience, while valence corresponds to the pleasantness of



the affective experience (Mehrabian & Russell, 1974). Pleasantness and arousal have been identified as major drivers of buying decisions among consumers (Rajagopal, 2010). Both variables were recurrently studied as antecedents of IB (Beatty & Ferrell, 1998; Rook, 1987) as well as triggers influencing information processing modes (Samson & Voyer, 2012). In particular, the RIM theorizes that the impulsive system is related to “a simply structured state of core affect that, by reflective processes, can be transformed in more elaborate feelings and emotions” (Strack & Deutsch, 2004, p. 237). Strack et al. (2006) further elaborate this relationship underscoring that the processes in the Impulsive system can result from the stimulation of affective stimuli. Along these lines, we expect that high arousal and high valence would significantly increase impulsive responses. Formally, we posit:

**H3a.** Promotion-induced high valence promotes stronger behavioral impulsive responses than promotion-induced low valence.

**H3b.** Promotion-induced high arousal promotes stronger behavioral impulsive responses than promotion-induced low arousal.

Conversely, we expect that core affect will not influence high order mental operations, which characterize the reflective system. This stance is supported by the idea that “the reflective system operates most efficiently at intermediate levels of arousal” (Strack & Deutsch, 2004, p. 223). Affective states characterized by high arousal have been shown to weaken reflective processes (Baron, 2000). On the other hand, also low levels of arousal were associated with a lowered capacity to engage in reflective processing (Krishna & Strack, 2017) and poor self-control (Strack & Deutsch, 2004). In other words, the reflective system requires a high amount of cognitive capacity, which tend to be depleted by the presence of affective states. Hence, we expect that the Reflective system is not influenced by promotion-induced affect. Hence, we hypothesize:

**H4a.** Promotion-induced high and low valence promote comparable cognitive reflective responses.

**H4b.** Promotion-induced high and low arousal promote comparable cognitive reflective responses.

#### ***2.4. Influence of personality traits***

Together with marketing stimuli and situational factors, we assume that personality traits represent further significant factors influencing the Reflective and Impulsive systems. Personality traits embody individual characteristics that are responsible for exerting causal effects on behavior. The investigation of such traits is well-established in IB research, where several studies have highlighted the role played by personality traits as causal variables (Chan et al., 2017; Xiao & Nicholson, 2013). Among these, impulse buying tendency tends to exert the largest effect on IB behaviors (Amos et al., 2014; Iyer et al., 2020). Impulse buying tendency relates to an enduring consumer trait that triggers an urge to perform an impulse purchase (Rook & Fisher, 1995; Verplanken & Herabadi, 2001). This spontaneous and sudden urge is generally related to little deliberation of the buying action favoring immediate gratification over a careful evaluation (Beatty & Ferrell, 1998). Prior research indicates a possible relation between consumer impulsivity/prudence and sales promotions (Santini et al., 2020). Prudent consumers evaluate all predictable costs associated with purchasing, thus underscoring a rational approach, while impulsive consumers typically evaluate only a reduced range of costs and tend to be influenced by immediate hedonic benefits (Liao et al., 2009). In this vein, we argue that impulse buying tendency would positively influence Impulsive system-related responses. We expect that shoppers that display pronounced impulse buying tendencies would experience stronger impulsive responses than shoppers displaying low impulse buying tendencies. On the contrary, we argue that impulse buying tendency does not discriminate the extent of reflective responses. Indeed, the Reflective system explicitly supports the cognitive understanding of future action. Knowledge about the value and potential costs of different purchasing options is weighted through reflective processes, which are slower than impulsive responses and may override the initial fast response. Therefore, we advance:

**H5a.** Shoppers with high impulse buying tendencies experience stronger behavioral impulsive responses than shoppers with low impulse buying tendencies.

**H5b.** Shoppers with high impulse buying tendencies and shoppers with low impulse buying tendencies display comparable cognitive reflective responses.

Individual variables can also affect consumers' processing of sales promotions. For instance, sale-prone individuals are shown to be more likely to perceive a higher value when the purchase price is presented in form of sale compared to an equivalent price not in form of sale (Monroe & Chapman, 1987). Such an individual propensity to express greater purchasing intentions when exposed to sales promotion is acknowledged as sale proneness (Alford & Biswas, 2002; Lichtenstein et al., 1993). This perspective, which holds that there is an underlying trait leading shoppers to be prone to deals in general, has been observed in past studies as well as in recent research (Lichtenstein et al., 1997; Tripathi & Pandey, 2019). When the construct of generalized deal proneness is operationalized, it is paired with feelings of satisfaction as well as with habits of buying products on sales (Lichtenstein et al., 1993). The involvement of affect and habits echoes the characteristics of the Impulsive branch of the RIM, where behavioral schemata are influenced by habit strength and motivational orientation (Strack & Deutsch, 2004). This argument is also supported by the positive relationship existing between sale proneness and impulsivity (Martínez & Montaner, 2006). Therefore, we expect that sale-prone shoppers would display stronger impulsive responses than low sale-prone shoppers. Conversely, we argue that sale proneness does not discriminate the extent of the deliberate judgements associated with the Reflective branch of the RIM. Indeed, reflective responses are expected to weigh the value and probability of potential purchasing decisions, regardless of individual sale proneness. Taking these arguments together, we posit:

**H6a.** High sale-prone shoppers experience stronger behavioral impulsive responses than low sale-prone shoppers.

**H6b.** High and low sale-prone shoppers display comparable cognitive reflective responses.

### **3. Methodology**

#### ***3.1. Research design***

The study was undertaken in Italy using a self-administered online survey with a between-subject design. We used four versions of an imaginary buying scenario adapting the design firstly introduced by Rook and Fisher (1995), which was also replicated in later studies (e.g., Luo, 2005). The buying scenario depicts a situation where a hedonic product can be purchased in an unplanned and spontaneous manner, thus mirroring the definitional aspects of IB. This imaginary shopping situation requires the participants to deviate from any personal shopping goal and project themselves into a fictional character (i.e., “Mary is a 21-year-old college student with a part-time job”, Rook & Fisher, 1995, p.308). Such an indirect questioning approach was also chosen to limit social desirability biases, which represent a common issue in IB research (Parboteeah et al., 2009). The four scenarios reflected the original descriptions in terms of characteristics of the fictional character, money available, product price, and shopping context. We introduced additional information concerning four sales promotions: a price cut, a cashback, a free gift, and a sweepstake. The four sale promotions combined reward typology (monetary vs nonmonetary) and gratification characteristics (immediate-reward vs delayed-reward). Monetary rewards included a discount of 25€ (i.e., price cut scenario) and a cashback of 25€ (i.e., cashback scenario). This monetary threshold mirrored the design of Liao et al. (2009), presenting a discount of one-third of the full price. The scenarios introducing delayed gratification (i.e., cashback and sweepstake) described a situation where individuals would receive a reward after three months from the moment of purchase. This time lag was conceived in line with the three-month lag employed by Liao et al. (2009). Full descriptions of the buying scenarios are reported in Table A.1 in the Appendix.

A battery of closed-ended scale items was reported after the scenario. All items for measuring the constructs were adapted from previous studies (Alford & Biswas, 2002; Mehrabian & Russell, 1974; Rook & Fisher, 1995). The survey was finalized through a pre-test involving 25 graduate students from a major Italian university. In the pre-test, we confirmed the soundness of the four scenarios and modified ambiguous wordings in the overall descriptions. Two external doctoral students and one faculty member evaluated the survey to remove inconsistencies in the flow. The tested survey then was then distributed electronically.

### ***3.2. Participants***

The study involved 470 Italian respondents (61% women,  $M_{age}=26.5$ ,  $SD = 8.7$ , age-range 16-51 years). Full respondents' demographics are reported in Table A.2. Sample size, age distribution and range, and gender ratio were selected in line with previous studies investigating IB behaviors and promotional activities (Hultén & Vanyushyn, 2014; Liao et al., 2009; Nghia et al., 2021). Given our interest in finding results generalizable to wider purchasing contexts, no specific inclusion criteria concerning income or shopping frequency were imposed. 29% of the respondents were workers, while the remaining part was represented by students. 58% of the sample achieved a secondary education degree, while the remaining part held a university degree.

### ***3.3. Measures***

Each participant read one of the four scenarios and was then asked to fill in a battery of closed-ended scales investigating behavioral, cognitive, and affective responses as well as individual traits. Behavioral responses to sales promotion assessed the reactions related to the Impulsive system. These were evaluated using the scale introduced by Rook and Fisher (1995) gauging the purchase decision prompted by the buying scenario (i.e., "If you were Mary, which of the following options would you choose? (1) buying the socks only, (2) wanting the sweater, but not buying it, (3) deciding not to buy the socks, (4) buying both the socks and sweater with a credit card, and (5) buying these plus matching

slacks and a shirt, also with a credit card”). These choice alternatives were designed to exemplify varying levels of impulsiveness, ranging on a continuum of avoidance-approach towards the purchase, in line with the motivational orientation characterizing the Impulsive system (Strack & Deutsch, 2004). This measurement of the willingness to purchase impulsively also embodies an acknowledged antecedent of IB (Mandolfo & Lamberti, 2021).

Cognitive responses to sales promotions measured reactions associated with the Reflective system. These were assessed using the three-item construct introduced by Chatterjee and McGinnis (2010) to evaluate the buyers’ judgement of the deal value on a 7-point Likert scale (e.g., “worthless – valuable”). The respondent’s appraisal was employed to induce a factual and evaluative process in the respondent, requiring an analytical process of the purchasing scenario (Strack & Deutsch, 2004). The cognitive assessment of this extrinsic reward was intended as an antecedent of IB in line with Xiao and Nicholson (2013). The construct reported a satisfactory reliability score ( $\alpha = .896$ ).

Promotion-induced affective responses were measured through two six-item constructs describing affective states in terms of valence and arousal according to Mehrabian and Russell (1974). This construct choice finds ample support in IB research (e.g., Beatty and Ferrell, 1998). Impulse Buying Tendency was investigated through the well-established nine-item scale employed by Rook and Fisher (1995). Sale Proneness was assessed through the homologous construct described by Alford and Biswas (2002). Full descriptions of the items investigated are reported in Table A.3 in the Appendix. All constructs were assessed on 7-point Likert scales and reported satisfactory reliability scores, namely Valence ( $\alpha = .894$ ), Arousal ( $\alpha = .815$ ), Impulse Buying Tendency ( $\alpha = .844$ ), and Sale Proneness ( $\alpha = .733$ ). All items were translated into Italian.

### ***3.4. Data processing***

Survey data were first pre-processed to detect inconsistency and noise. Four observations were discarded due to null variance in the responses. Next, our two dependent variables (i.e., impulsive and reflective responses) were standardized to equalize the range variability. Then, the variables

related to arousal and valence were split according to median value to group the respondents into high and low conditions. Likewise, two classes distinguishing between respondents reporting low and high scores of Impulse Buying Tendency were created according to the median value, mirroring the procedure of Liao et al. (2009). Two further groups discerning between high and low sale-prone shoppers were created as a result of a median split in line with Alford and Biswas (2002). A series of independent t-tests confirmed that the groups showed significant differences between the low and the high conditions.

### ***3.5. Common method variance***

To avoid that common method variance does affect the results, we developed the questionnaire using different scale types and we randomized the order of items. Further, the complex relationships among constructs make it difficult for participants to anticipate relationships in the framework or to use a cognitive map while responding (Bettiga & Lamberti, 2018). We further examined the robustness of the results using Harman's one-factor test (Podsakoff et al., 2003). Being the single factor explaining less than 50% of the variance, common method bias does not represent a threat to the study.

## **4. Results**

Sample sizes across the four scenarios proved to be comparable ( $N_{\text{PriceCut}} = 116$ ;  $N_{\text{Cashback}} = 105$ ;  $N_{\text{FreeGift}} = 121$ ;  $N_{\text{Sweepstake}} = 124$ ). No significant differences in terms of gender ( $\chi^2(3) = 2.295$ ,  $p = .513$ ), age [ $F(3, 462) = 1.030$ ,  $p = .379$ ], Impulse Buying Tendency [ $F(3, 462) = 0.445$ ,  $p = .721$ ], and Sale Proneness [ $F(3, 462) = 0.344$ ,  $p = .794$ ] were observed between the four scenarios. A minor positive correlation was observed between behavioral impulsive responses and cognitive reflective responses [ $r(464) = .347$ ,  $p < .001$ ], indicating the existence of a marginal relationship between the two categories of responses, in line with the supporting theory (Strack et al., 2006). Full bivariate correlations are shown in Table A.4 in Appendix.

We employed a series of ANOVA models to ascertain the effects of reward (monetary vs nonmonetary), gratification (immediate vs delayed), induced affect (high vs low arousal, high vs low valence), Impulse Buying Tendency (high vs low), and Sale Proneness (high vs low) on behavioral impulsive responses, with gender and age as moderators. Results first show that behavioral impulsive responses are not significantly influenced by the gratification typology. Immediate- and delayed-gratification promotions do not trigger different impulsive responses, hence we reject H1. Second, we observed a positive effect of promotion-induced affect on behavioral impulsive responses. Both valence [ $F(1, 456) = 32.450, p < .001$ ] and arousal [ $F(1, 456) = 34.126, p < .001$ ] appear to influence impulsive responses, whereby promotions that induce higher valence are related to stronger impulsive responses [ $M_{\text{HighValence}} = 0.246, SD_{\text{HighValence}} = 1.14; M_{\text{LowValence}} = -0.281, SD_{\text{LowValence}} = 0.680; t(464) = 6.224, p < .001$ ]. In a similar fashion, promotions inducing higher arousal are related to stronger impulsive responses [ $M_{\text{HighArousal}} = 0.225, SD_{\text{HighArousal}} = 1.052; M_{\text{LowArousal}} = -0.346, SD_{\text{LowArousal}} = 0.701; t(464) = 6.908, p < .001$ ]. Taken together, these results provide support for H3a and H3b. Third, our result show that individual Impulse Buying Tendency significantly shapes behavioral impulsive responses [ $F(1, 456) = 6.516, p = .011$ ]. Respondents displaying high impulse buying tendencies reported stronger impulsive responses than individuals reporting ones [ $M_{\text{HighIBT}} = 0.119, SD_{\text{HighIBT}} = 1.087; M_{\text{LowIBT}} = -0.257, SD_{\text{LowIBT}} = 0.696; t(464) = 4.428, p < .001$ ]. Therefore, we support H5a. Lastly, we observed that Sale Proneness exerts significant influence on impulsive responses [ $F(1, 456) = 12.615, p < .001$ ], where high sale-prone individuals relate to stronger behavioral impulsive responses than low sale-prone ones [ $M_{\text{HighSalesProne}} = 0.154, SD_{\text{HighSalesProne}} = 1.034; M_{\text{LowSalesProne}} = -0.251, SD_{\text{LowSalesProne}} = 0.797; t(464) = 4.767, p < .001$ ]. This result supports our H6a. No moderating effect of age and gender was observed. Table 1 summarizes the results of the ANOVA models.

[TABLE 1 ABOUT HERE]



We employed further ANOVA models to investigate the influence of promotion characteristics, promotion-induced affect, and individual differences on cognitive reflective responses. Table 2 reports the results of the ANOVA models, with age and gender as moderators. Results point out that reflective responses are significantly affected by the reward typology [ $F(1, 456) = 49.922, p < .001$ ]. Pairwise comparisons show that monetary promotions elicit higher desirability than nonmonetary promotions [ $M_{\text{Monetary}} = 0.316, SD_{\text{Monetary}} = 0.914; M_{\text{NonMonetary}} = -0.321, SD_{\text{NonMonetary}} = 0.970; t(464) = 7.271, p < .001$ ], thus supporting H2. Next, we focused on promotion-induced affect. Our data show that reflective responses are not influenced by different levels of promotion-induced valence. At the same time, we observed a positive effect of induced arousal [ $F(1, 456) = 44.076, p < .001$ ], whereby promotions that induce higher arousal are related to higher reflective responses [ $M_{\text{HighArousal}} = 0.093, SD_{\text{HighArousal}} = 1.055; M_{\text{LowArousal}} = -0.097, SD_{\text{LowArousal}} = 0.946; t(464) = 2.037, p = .042$ ]. Taken together, these results provide support for H4a but contradict H4b. Moreover, no effect of different levels of Impulse Buying Tendency and Sale Proneness on reflective responses was observed, thus confirming H5b and H6b. The outcome of the hypotheses tested is summarized in Table 3.

[TABLE 2 ABOUT HERE]

[TABLE 3 ABOUT HERE]

## 5. Discussion

This study set out to investigate how sales promotions influence the psychological processing that precedes IB behaviors. We distinguished two processing pathways, namely the Reflective and Impulsive systems, following the RIM theorized by Strack et al. (2006) and tested four different sales promotions in an imaginary IB scenario. Results showed that the two systems are affected to a different extent by sales promotion characteristics, promotion-induced affect, and individual differences. On the one hand, the Impulsive system did not display different responses to sales

promotion characteristics. Impulsive responses did not vary between immediate- and delayed-gratification typologies as well as between monetary and nonmonetary promotions. This result may be explained by the fact that the Impulsive system has a low threshold for processing incoming information. Indeed, impulsive responses are generally activated by simple associations with behavioral schemata (e.g., “seeing a cup will activate a drinking schema”, Strack & Deutsch, 2004, p. 229). Spontaneous impressions are also less focused and more wide-ranging (Uleman, 1999). Therefore, impulsive responses to promotion characteristics might be the result of simple behavioral schemata that do not process the specific characteristics of the promotion but trigger the association with the broad category of incentives to purchase. In these terms, seeing a sales promotion might activate a win schema, regardless of the specific content of the promotion. Hence, both immediate gratification (e.g., instant price discount) and delayed gratification (e.g., discount applied on future purchases) would activate impulsive responses. This result corroborates the large body of literature investigating the relationship between marketing stimuli and IB, where impulse purchases are generally positively influenced by sales promotions (Amos et al., 2014; Iyer et al., 2020). A notable exception to this argument is advanced by Liao et al. (2009), who demonstrated that immediate-gratification promotions trigger a stronger purchasing drive than delayed-reward promotions when shoppers have prior knowledge of the product. Comparing this result with the outcome of the present study a significant implication emerges. Namely, the possibility that product familiarity would mediate the activation of the Impulsive system. Indeed, the Impulsive branch draws on associations that are generally structured by similarity and continuity with previous experience. Further research in this field would be of great help to frame the different acceptations of IB (e.g., reminder, suggestion, pure IB) controlling for prior product knowledge.

On the other hand, the Reflective system appeared to be influenced by the reward typology associated with sales promotion, with monetary promotions promoting stronger reflective responses than nonmonetary promotions. This finding supports prior research, showing that, when consumers face price promotions, rational thinking may activate (Yang & Mattila, 2020). Monetary promotions,

indeed, by requiring mental operations, activate the Reflective system, responsible for such evaluations through a process that is slow and effortful.

Promotion-induced affect embodied a second element influencing the processing of the two systems. First, the Impulsive system proved to be significantly influenced by both dimensions of affect. Individuals experiencing higher arousal exhibited stronger impulsive responses than individuals experiencing low arousal. A similar relationship was observed for the dimension of valence. This outcome provides empirical proof of the theory advanced by Strack et al. (2006), evidencing that affective stimulation influences the responses of the Impulsive system. The result is also consistent with literature describing impulsive consumer behaviors as resultant of affective charges (Beatty & Ferrell, 1998; Rook, 1987). The finding has notable implications for the understanding of the affective triggers of IB. We suggest that impulsive responses are related to primitive affective processes, which can be described in terms of core affect (Russell, 2009). Hence, we underscore how IB behaviors can be triggered by feelings of primal nature, which do not involve high order deliberation. These findings raise intriguing questions regarding the extent of such affective processes to trigger IB. Along these lines, future studies might investigate if IB is related to a circumscribed level of arousal and valence or how individual variation in affective granularity influences IB behaviors.

One unanticipated finding was that highly aroused individuals displayed stronger reflective responses than low aroused ones. This unexpected result underscores that the Reflective system can be influenced by arousal. This finding is contrary to previous studies which have suggested that affective states of high arousal may weaken reflective processes (Baron, 2000) but also that low levels of arousal hinder reflective capacity (Krishna & Strack, 2017). This result might be explained by the fact that the present study did not investigate higher-order affective constructs (e.g., feelings of smartness or glee), which can be related to reflective responses (Strack & Deutsch, 2004), but it focused only on core affective responses. It could conceivably be hypothesized that higher-order affective constructs share a component of excitement with core affective responses. This possible explanation finds its foundations in early affective theories that posit the existence of a relationship

between cognitive interest and excitement, whereby interest-excitement embodies a motivational driver of action (Tomkins, 1962) and fosters individual engagement (Izard, 1977).

Turning our focus on individual differences, we observed that personality traits were related to the processing of the Impulsive system. Individuals reporting high Impulse Buying Tendency displayed stronger impulsive responses than respondents with low impulse buying tendencies. Likewise, high sale-prone shoppers showed stronger impulsive responses than low sale-prone respondents. On the contrary, individual traits did not discriminate the extent of reflective responses. These relationships may be explained by the speed and capacity of the two systems. The Impulsive system is theorized as fast and coupled with little cognitive effort (Strack & Deutsch, 2004). Personality and individual traits could generate spontaneous impressions before the analytical comprehension of the context. This phenomenon corroborates also with previous observations in attributional thinking, where the specific behavior activates categories that correspond with personality traits (Uleman, 1999). In other words, the possibility of performing an impulse purchase stimulates individual dispositions to purchase impulsively, whereby impulsive and sale-prone individuals prove to be significantly affected. The generation of intuitive and fast responses is followed by a deliberative and slow reflective process, which does not appear to be influenced by personal dispositions. This finding, while preliminary, contributes to the extant literature by confirming the positive influence of individual traits on IB; nevertheless, it underscores that personality traits influence only one mode of psychological processing that precede IB behaviors, namely the Impulsive system. In these terms, IB cannot be described as the mere consequence of irresistible and uncontrollable urges arising from personality. Further experiments, using a broader range of promotional characteristics (e.g., seasonality, compensation schemes), could shed more light on the extent of the activation of two systems during IB.

Overall, this work has two theoretical implications. First, it advances the theoretical understanding of sales promotion by linking specific promotion characteristics to impulsive and reflective responses. Our findings contribute to the extant literature advancing empirical proof of the influence of reward

and gratification typology as well as promotion-induced affect on impulsive and reflective responses. In these terms, this work is the first that demonstrates that the Reflective and Impulsive systems respond differently to sales promotions. This result corroborates with the RIM (Strack et al., 2006) by showing that the promotions' attributes embody a set of cues able to influence different psychological processing.

This work contributes also to existing marketing theories by showing that sales promotions do not only influence overt consumer behavior but also affect the psychological processing that precedes the buying action. This empirical result accords with the theory advanced by Strack and Deutsch (2004) by showing that promotional cues can affect psychological inner processing. Hence, promotion research can significantly benefit from the understanding of how the structure of a promotion affects its reflective evaluation as well as the impulsive reaction.

### ***5.1. Managerial implications***

Taken together, these findings have notable implications for practitioners aiming at promoting IB. We specifically show that practitioners can leverage both impulsive and reflective responses. Regarding the impulsive dimension, retailers can foster promotion-induced affect in terms of valence and arousal. A possible way to engage users is to incorporate a surprising, personal, and contagious trigger to generate a wow-effect when displaying the sales promotion. Wow factors could be related to personalized promotions that, for instance, include gamification dynamics (e.g., scratch-off promotions offering the chance to win a certain percentage off, or look-and-find games, where customers can search for a cue in a chance to win a prize). Such initiatives, directed to generate arousal, appear to increase consumers reflective responses as well. Hence, marketers can increase purchase desirability and promote the execution of purchasing intentions connected to the Reflective system by working on arousal and excitement. For instance, high arousal can be achieved through sales promotions based on time pressure, such as limited-time promotions or sales coupled with the information about the low stock quantity. Limited-edition products could work in the same way by

generating arousal due to the limited availability of the product. On the other hand, to leverage the Impulsive system, practitioners might also foster contextually relevant personalization addressing pre-existing personality traits. Practitioners can adopt behavioral segmentation to identify the individuals that show, for instance, high reward responsiveness. Spotting users with a pronounced tendency to react towards novelty or respond to sale incentives would help to tailor sales promotions not only based on purchase history but also individual factors. This approach also reflects a shift from pre-planned marketing tactics, toward more spontaneous and consumer-driven information. Customer Relationship Management (CRM) systems could support the identification of customers who are highly likely to respond positively to promotions. These systems can also identify the most desirable promotion scheme based on personality traits. CRM systems can consequently support increasing the response rate while lowering promotional costs for companies. Such a data-driven marketing approach can be enabled by direct-to-consumers business models to collect data on the consumers.

Lastly, practitioners can address the Reflective system introducing rewards associated with an instrumental and cognitive value, namely providing customer value by being a means to an end. Retailers can introduce promotions aimed at maximizing the utility, efficiency, or convenience of the purchase relying on positive framings (e.g., framing a promotion like new money that can be used to buy something else). Our study shows that both immediate benefits (e.g., a free gift offered in conjunction with the purchase) and delayed gratification (e.g., a cashback initiative) influence the Impulsive system. Hence, marketers can adopt both approaches to stimulate purchases. For instance, an immediate reward could be employed to stimulate product trial or to push cross-buying, whereas a delayed reward could be introduced to stimulate the consumer to visit again the same retail store or e-commerce platform. Notably, delayed promotions may work as a customer retention tactic, hence inducing both an immediate purchase and increasing the probability the consumer purchase again from the company, by rewarding customer loyalty. A further benefit of this approach concerns the generation of positive brand perceptions, as the brand supports consumers in reaching their goals,

counterbalancing the potential long-term negative effect of sales promotions on brand image. Pilot testing of such initiatives is encouraged to deepen our practical understanding of duality process approaches applied to consumer behavior.

## **6. Limitations and future research**

The observed results are subject to certain limitations. Although imaginary buying scenarios are widely supported by previous literature in IB research (Luo, 2005; Rook & Fisher, 1995), a first limitation lies in the capability of a scenario-based survey to elicit actual purchasing behaviors. We employed measurement scales already validated in literature and sample sizes comparable to previous studies, however, future research may employ complementary experimental designs to delve into purchasing behaviors. To foster the generalizability of our observations, we recommend further studies using different methods, for instance, observation techniques. A second limitation lies in the scenario and typology of products used as stimuli. Despite these being previously validated in literature (Rook & Fisher, 1995), further research is warranted to test different offers or shopping environments. For instance, future research can analyze virtual shopping environments, due to their peculiarity in terms of shopping experience. Also, future research might explore different attributes of sales promotions. Exchange schemes, whereby the customer exchanges an old version of a product for a new one, or buyback allowances based on the number of goods bought previously would introduce further variables (e.g., replacements, indemnifications), which may influence reflective and impulsive responses. Lastly, testing different product typologies such as hedonic or utilitarian ones may support the generalizability of the study.

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**Table 1.** Results of ANOVA testing for the effects of reward typology (monetary vs nonmonetary), gratification typology (immediate vs delayed), induced arousal (high vs low), induced valence (high vs low), Impulse Buying Tendency (high vs low), and Sale Proneness (high vs low) on behavioural impulsive responses

	Type III SS	df	MS	F	p-value
<i>Promotion characteristics</i>					
Reward typology	0.898	1	0.898	1.273	.260
Gratification typology	0.129	1	0.129	0.183	.669
<i>Promotion-induced affect</i>					
Valence	22.89	1	22.89	32.450	.001***
Arousal	24.07	1	24.07	34.126	.001***
<i>Individual differences</i>					
Impulse Buying Tendency	4.596	1	4.596	6.516	.011*
Sale Proneness	8.897	1	8.897	12.615	.001***
<i>Demographics</i>					
Gender	0.197	1	0.197	0.279	.598
Age	0.655	1	0.655	0.929	.336

\*  $p < 0.05$ , \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

Abbreviations: SS, sum of squares; df, degrees of freedom; MS, mean squares

**Table 2.** Results of ANOVA testing for the effects of reward typology (monetary vs nonmonetary), gratification typology (immediate vs delayed), induced arousal (high vs low), induced valence (high vs low), Impulse Buying Tendency (high vs low), and Sale Proneness (high vs low) on cognitive reflective responses

	Type III SS	df	MS	F	p-value
<i>Promotion characteristics</i>					
Reward typology	39.74	1	39.74	49.922	.001***
Gratification typology	0.357	1	0.357	0.448	.504
<i>Promotion-induced affect</i>					
Valence	1.319	1	1.319	1.656	.199
Arousal	35.09	1	35.09	44.076	.001***
<i>Individual differences</i>					
Impulse Buying Tendency	0.306	1	0.306	0.384	.536
Sale Proneness	2.227	1	2.227	2.798	.095
<i>Demographics</i>					
Gender	1.866	1	1.866	2.344	.126
Age	1.657	1	1.657	2.081	.150

\* p < 0.05, \*\* p < 0.01; \*\*\* p < 0.001

Abbreviations: SS, sum of squares; df, degrees of freedom; MS, mean squares



**Table 3.** Summary of the hypotheses tested and empirical evidence

<b>Hypothesis</b>	<b>Formulation</b>	<b>Empirical evidence</b>
<i>H1</i>	Immediate-reward promotions promote stronger behavioral impulsive responses than delayed-reward promotions.	Rejected
<i>H2</i>	Monetary promotions promote stronger cognitive reflective responses than nonmonetary promotions.	Supported
<i>H3a</i>	Promotion-induced high valence promotes stronger behavioral impulsive responses than promotion-induced low valence.	Supported
<i>H3b</i>	Promotion-induced high arousal promotes stronger behavioral impulsive responses than promotion-induced low arousal.	Supported
<i>H4a</i>	Promotion-induced high and low valence promote comparable cognitive reflective responses.	Supported
<i>H4b</i>	Promotion-induced high and low arousal promote comparable cognitive reflective responses.	Rejected
<i>H5a</i>	Shoppers with high impulse buying tendencies experience stronger behavioral impulsive responses than shoppers with low impulse buying tendencies.	Supported
<i>H5b</i>	Shoppers with high impulse buying tendencies and shoppers with low impulse buying tendencies display comparable cognitive reflective responses.	Supported
<i>H6a</i>	High sale-prone shoppers experience stronger behavioral impulsive responses than low sale-prone shoppers.	Supported
<i>H6b</i>	High and low sale-prone shoppers display comparable cognitive reflective responses.	Supported

**Table A.1.** Scenarios investigated

Scenario	Description
Price cut	<i>Mary is a 21-year-old college student with a part-time job. It is two days before Mary gets her next pay-check and she has only €25 left for necessities. In addition to food, Mary needs to buy a pair of socks for an outdoor party this weekend. After work, Mary goes with her friend Susan to the mall to purchase the socks. As they are exploring the mall, Mary sees a great looking sweater priced at € 75, discounted by €25 just for that day.</i>
Free gift	<i>Mary is a 21-year-old college student with a part-time job. It is two days before Mary gets her next pay-check and she has only €25 left for necessities. In addition to food, Mary needs to buy a pair of socks for an outdoor party this weekend. After work, Mary goes with her friend Susan to the mall to purchase the socks. As they are exploring the mall, Mary sees a great looking sweater priced at € 75. Just for that day, with the purchase of the sweater a beautiful matching beanie is offered as a gift.</i>
Cashback	<i>Mary is a 21-year-old college student with a part-time job. It is two days before Mary gets her next pay-check and she has only €25 left for necessities. In addition to food, Mary needs to buy a pair of socks for an outdoor party this weekend. After work, Mary goes with her friend Susan to the mall to purchase the socks. As they are exploring the mall, Mary sees a great looking sweater priced at € 75. Just for that day, the purchase of the sweater offers a cashback of € 25, which can be redeemed in three months.</i>
Sweepstake	<i>Mary is a 21-year-old college student with a part-time job. It is two days before Mary gets her next pay-check and she has only €25 left for necessities. In addition to food, Mary needs to buy a pair of socks for an outdoor party this weekend. After work, Mary goes with her friend Susan to the mall to purchase the socks. As they are exploring the mall, Mary sees a great looking sweater priced at € 75. Just for that day, the purchase of the sweater offers the opportunity to participate in a lottery to win a trip to Hawaii. The travel drawing will take place in three months.</i>

Note: Mary's wallet size of €25 (i.e., about \$ 28) was intended to mirror the monetary availability of \$25 conceived by Rook & Fisher (1995)

**Table A.2.** Sample demographics

<b>Gender</b>	<b>Frequency</b>	<b>Age</b>	<b>Frequency</b>
Female	61%	16-20	22.5%
Male	39%	21-25	46.2%
<b>Education</b>	<b>Frequency</b>	26-30	11.6%
Secondary	58%	31-40	9.2%
Tertiary	42%	41-51	10.5%

*N* = 470

**Table A.3.** Constructs investigated

Construct	Item	Loading	$\alpha$	CR	AVE
<b>Promotion-induced Valence</b> ( <i>Mehrabian &amp; Russell, 1974</i> )					
<i>If you were in Mary, how would you feel about the possibility of buying?</i>					
VA1	Happy – Unhappy	.819	.894	.919	.655
VA2	Pleased – Annoyed	.765			
VA3	Satisfied – Unsatisfied	.825			
VA4	Contented – Melancholic	.851			
VA5	Hopeful – Despairing	.831			
VA6	Relaxed – Bored	.758			
<b>Promotion-induced Arousal</b> ( <i>Mehrabian &amp; Russell, 1974</i> )					
<i>If you were in Mary, how would you feel about the possibility of buying?</i>					
AR1	Stimulated – Relaxed	.774	.815	.871	.575
AR2	Excited – Calm	.753			
AR3	Frenzied – Sluggish	.686			
AR4	Jittery – Dull	.789			
AR5	Wide-awake – Sleepy	.785			
AR6	Aroused – Unaroused	-			
<b>Impulse Buying Tendency</b> ( <i>Rook &amp; Fisher, 1995</i> )					
IBT1	I often buy things spontaneously	.676	.844	.884	.524
IBT2	"Just do it" describes the way I buy things	.726			
IBT3	I often buy things without thinking	.801			
IBT4	"I see it, I buy it" describes me	.752			
IBT5	"Buy now, think about it later" describes me	.746			
IBT6	Sometimes I feel like buying things on the spur-of-the-moment	.620			
IBT7	I buy things according to how I feel at the moment	-			
IBT8	I carefully plan most of my purchases	-			
IBT9	Sometimes I am a bit reckless about what I buy	.730			
<b>Sale Proneness</b> ( <i>Alford &amp; Biswas, 2002</i> )					
SP1	If a product is on sale, that can be a reason for me to buy it	.608	.733	.827	.491
SP2	When I buy a brand that's on sale, I feel I am getting a good deal	.654			
SP3	I have favourite brands, but most of the time I buy the brand that is on sale	.718			
SP4	I am more likely to buy brands that are on sale	.755			
SP5	Compared to most people, I am more likely to buy brands that are on special	.756			

Items AR6, IBT7, and IBT8 were discarded due to loading scores lower than .60

$\alpha$ : Cronbach's alpha; CR: Composite Reliability; AVE: Average Variance Extracted

**Table A.4.** Bivariate correlations (n = 466)

	<b>Impulsive behavioural responses</b>	<b>Cognitive reflective responses</b>	<b>Promotion -induced Valence</b>	<b>Promotion -induced Arousal</b>	<b>Impulse Buying Tendency</b>	<b>Sale Proneness</b>
<b>Cognitive reflective responses</b>	.347**					
<b>Promotion-induced Valence</b>	.370**	.051				
<b>Promotion-induced Arousal</b>	.377**	.370**	.163**			
<b>Impulse Buying Tendency</b>	.271**	.113*	.146**	.281**		
<b>Sale Proneness</b>	.262**	.078	.184**	.171**	.138**	
<b>Age</b>	.067	-.040	.048	-.014	.131**	.078

\* p &lt; 0.05, \*\* p &lt; 0.01