"Emotion regulation can be costly. A study on the effects of emotion regulation strategies on impulsive purchases in consumers"

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BUSINESS PERSPECTIVES

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# Emotion regulation can be costly. A study on the effects of emotion regulation strategies on impulsive purchases in consumers

## Abstract

In retail, emotion-fueled impulse purchases constitute a large part of everyday consumer purchases. Thus, emotion regulation training could benefit consumers to help to control their impulsive buying. Yet, emotion regulation strategies are not unequivocally associated with positive effects. Since research investigating emotion regulation in consumer contexts is scarce, the goal of this study is to examine whether emotion regulation training could be a valuable tool for consumers to help to limit impulse spending.

Customers at a local supermarket were recruited and randomly assigned to three groups: re-appraisal ($n = 50$), suppression ($n = 50$) and neutral ($n = 50$). The results show that re-appraisal does not differ affect impulse purchasing whilst the suppression group made significantly more impulse purchases and spent more compared to the neutral group. Yet, trait re-appraisal was associated with reduced impulsive purchasing in consumers with higher levels of negative emotions. The findings confirm that suppression appears a maladaptive form of emotion regulation and suggest that re-appraisal training could be a valuable tool for consumers, particularly for consumers with high levels of negative affect.

## Introduction

In retail settings, 62% of the amount of purchased products in the supermarket consist of impulsive purchases (Luo, 2005). Within specific product categories, impulsive purchases even attribute for 80% of the total product purchases (Abrahams, 1997). Consumers generally appear experience difficulty limiting impulsive buying tendencies. This is particularly alarming, given increasing household debt levels (Sweet, Nandi, Adam & McDade, 2014). Moreover, impulsive buying can lead to compulsive buying (Dittmar, 2001). Therefore, if consumer decision-making is frequently insufficient on daily routine activities (e.g., supermarket visits), impulsive buying tendencies could have a strong negative impact on the household's ability to achieve a healthy financial situation.

Impulsive buying is defined as: "*the experience of a sudden, often powerful and persistent urge to buy something immediately. The impulse to buy is hedonically complex and may stimulate emotional conflict. Also, impulsive buying is prone to occur with diminished regard for its consequences* (Rook, 1987)". So, impulsive buying tendencies entail unplanned purchases based on a sudden urge to buy the product. Research showed that these impulsive buying tendencies are largely influenced by emotions. For example, positive emotions are associated with increased impulsive purchasing during shopping (Weinberg & Gottwald, 1982), whilst consumers also make impulse purchases to lift negative emotions (Baumeister, 2002; Dittmar, 2001; Verplanken & Sato, 2011). Both positive and negative emotions contribute to impulsive purchasing during shopping (e.g., Verplanken, Herabadi, Perry & Silvera, 2008; Weinberg & Gottwald, 1982).

Since shopping in retail settings is a common and frequent activity in consumers, introducing tools to help consumers to limit their emotion-fueled impulsive spending in these routine activities could contribute significantly to the potential of individuals to sustain a healthy financial situation. Hence, emotion regulation training could provide an efficient tool to facilitate consumer decision-making processes and help consumers to avoid detrimental effects of emotions. Recent literature suggests that the emotion itself is important to emotion-driven consumer behaviors, but also how effectively individuals manage their emotions (Gross, 2007). Emotion regulation refers to the ability of the individual to adjust emotional experiences in accordance with situational demands. Several emotion regulation strategies are widely established (Richards & Gross, 2000; Koole, 2009), such as cognitive re-appraisal (i.e., re-interpreting emotional stimuli to change their emotional impact) and expressive suppression (i.e, blocking emotional expression (Gross, 2007). These two emotion regulation styles are independently associated with a wide range of behaviors, like stress (Moore, Zoellner & Mollenholt, 2008), negotiation outcomes (Yurtsever, 2008), or social interactions (Peters, Overall & Jamieson, 2014). Further, these strategies demonstrate diverging effects on various factors (e.g., well-being) (Gross & John, 2003), distinct patterns of neural activity (Dörfel, Lamke, Hummel, Wagner & Erk, 2014; Ochsner et al., 2004) and their effects are attributed to differences in the emotion regulation styles rather than the result of processes common to both strategies, such as attention (Bebko, Franconeri, Ochsner & Chiao, 2014).

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Overall, findings consistently suggest that re-appraisal is an effective strategy with positive effects, while suppression is a maladaptive form of emotion regulation with negative effects, for example, on memory (Dunn et al., 2009), smoking (Fucito, Juliano & Toll, 2010) or social relationships (Srivastava et al., 2009). Yet, while emotions constitute common factors in various consumer decision-making processes (e.g., de Hooge, 2014; Romani, Grappi & Dalli, 2012; So et al., 2015), research on emotion regulation within consumer behavior contexts is scarce. Yet, recent research suggests emotion regulation to influence consumer choices and behavior (Han, Duhachek & Rucker, 2015). Further, impulsive buying could itself be interpreted as a form of maladaptive emotion regulation (Dittmar, 2001; Fenton O'Creevy, Furnham, Dibbs & Davies, 2012; Verplanken & Sato, 2011). In order to alleviate negative mood or maximize positive moods, consumers would engage in impulse buying. Thus, everyday consumers could benefit greatly from training interventions to facilitate effective emotion regulation skills like cognitive re-appraisal to avoid impulsive purchasing.

Therefore, the main goal of this study is to investigate whether two brief emotion regulation training interventions (cognitive re-appraisal and suppression) affect the number of impulse purchases and money spent in consumers in a retail setting. We hypothesized that, compared to control group, consumers trained in re-appraisal would demonstrate a lower number of impulse purchases and spend less money on impulsive purchases compared to non-trained control participants, whilst in participants who trained in expressive suppression, the number of impulsive purchases and the amount spent on impulse purchases would be increased compared to control participants.

## Methods

### Participants

Customers at a local Dutch supermarket ($N = 150$, mean age = 50.21 years, $SD = 14.99$) were recruited and randomly assigned to three groups: re-appraisal ($n = 50$), suppression ($n = 50$) and neutral ($n = 50$). The majority were women (76 %; $n = 113$) and either had tertiary education (MBO; 26.8 %) or higher (College/University; 45.7 %). Participants were included if they were older than 18 years and made shopping decisions independently.

### Measures

*Impulsive Buying Tendency Scale (IBT; Verplanken & Herabadi, 2001);* The IBTS measures the general impulse buying tendency. Two subscales are calculated on cognitive (lack of planning) and affective aspects (feelings of excitement) of impulsive buying.

Participants rate 20 items on a scale from 1 (= not at all) to 7 (= completely agree) on their impulsive buying tendencies. The IBTS is internally consistent for both subscales cognitive aspects ($α = .91$) (Verplanken & Herabadi, 2001) and affective aspects ($α = .83$) (Verplanken & Herabadi, 2001).

*Emotion regulation questionnaire (ERQ; Gross & John, 2003).* The ERQ examines trait dispositions for two emotion regulation strategies: cognitive re-appraisal and expressive suppression. Participants rate 10 items on a scale from 1 (= strongly disagree) to 7 (= strongly agree) on emotional experience and emotional expression. It is a widely established tool with reliable subscales to index emotion regulation traits (for re-appraisal: $α = .79$, for suppression: $α = .73$; Gross & John, 2003). The ERQ is a valid tool to measure emotion regulation (Melka, Lancaster, Bryant & Rodriguez, 2011; Spaapen, Waters, Brummer, Stopa & Bucks, 2014).

*Positive Affect and Negative Affect Schedule (PANAS; Watson, Clark & Tellegen, 1988).* The PANAS measures participants' general mood on two subscales for positive and negative mood. Here, the PANAS measured general mood (trait disposition) and experienced mood (state). For state mood, a time frame was added to the regular items ('right now'). In both versions, participants rated 20 items on a scale from 1 (= not at all) to 5 (= extremely). The PANAS is a widely used scale for general affect with good reliability for the trait version (positive mood: $α = .88$, negative mood: $α = .87$; Watson, Clark & Tellegen, 1988) and state version (positive mood: $α = .89$, negative mood: $α = .85$; Watson, Clark & Tellegen, 1988).

*Emotion regulation instructions*

To provide participants with specific instructions how to regulate their emotions, previously tested emotion regulation instructions were modified (i.e., Richards & Gross, 2000). The following instructions were administered:

Cognitive re-appraisal:

*"During your shopping, we would like to see how well you are able to control yourself. Therefore, it is important to take a neutral stance during your shopping. Please look at the products in the supermarket as if you were an alien who saw these items for the first time. In other words, try to think objectively rather than feeling emotions. So, proceed with your shopping, but try to view everything from a third-person perspective".*

Suppression:

*"During your shopping, we would like to see how well you are able to control your facial expressions. Therefore, it is important to maintain a neutral fa-*

*cial expression during your shopping. Please try not to move your facial muscles. In other words, maintain a neutral face during shopping by not moving the muscles around your neck, chin, lips, cheeks, eyes and forehead. So, proceed with your shopping, but try to maintain a neutral face without emotion".*

Control:

*"During your shopping, we would like to see how you normally conduct your shopping. Therefore, it is important that you enter the store in a few moments to do your shopping. So, proceed with your shopping, as you would normally do".*

*Manipulation check.* To verify whether participants followed instructions, participants rated three items as a manipulation check for re-appraisal ("During shopping, I viewed my emotions objectively and with a different outlook"), suppression ("During shopping, I suppressed my emotions") and their overall compliance with following instructions ("During shopping, I followed the instructions well"). All items were rated on a scale from 1 (= strongly disagree) to 5 (= strongly agree).

*Impulsive buying behavior.* To measure the impulsive purchases, we used the number of self-reported impulsive purchases during the store visit and their monetary value. Participants indicated all spontaneous purchases on their cash receipts that were not planned upon entering the store, but for which they felt a strong urge to buy them. Additionally, participants completed 4 items regarding these impulse purchases on a 7-point likert scale (1 = strongly disagree, 7 = strongly agree; range = 4-28) (see also Verhagen & Dolen, 2011). These items measured whether participants evaluated the items as impulse purchases. An example is: "My purchase was spontaneous".

*Procedure*

Participants were recruited at a local supermarket in Maarheeze to participate in a study on emotions and shopping behavior. Upon entering the store, participants were invited to participate. Following a short briefing and after providing informed consent, participants were informed that they would be measured both pre- and post-shopping. They received a participation number so that the experimenter could assign the appropriate surveys. Next, the pre-survey was conducted consisting of Dutch pen-and-paper versions of the PANAS, ERQ, and IBTS. Further, depending on group membership, participants carefully read a short emotion regulation instruction (RA, SP, neutral). Then, the experimenter summarized the emotion regulation strategy verbally and applied a sticker to the participant's sleeve to serve as a mnemonic tool to facilitate the use of the instructed strategy during their shopping. The stickers read: 'think objectively' (RA), 'no expression' (SP), or 'normal' (control). The participants were instructed to use this strategy while shopping and asked to meet back with the experimenter after their shopping with the checkout receipt.

At post-shopping measurement, participants received the second survey, containing the PANAS-state and compliance items. Further, they received a definition of impulse purchases ('a spontaneous purchase that was not planned before entering the store, but where they felt a strong urge to buy the product') (Beatty & Ferrell, 1998) and indicated on the cash receipt which items were impulse purchases. After this, participants were thanked for their participation. Participants were informed at the start of the experiment that upon full completion of the experiment, they would enter a lottery where they could win one of three 10 euro gift cards.

## Results

*Descriptive statistics*

Table 1 presents a summary of the means and standard deviations.

Table 1. Means and standard deviations for all measures

|  | RA | SP | Control | Range |
|---|---|---|---|---|
| Pre-shopping | | | | |
| Age | 48.65 (13.07) | 49.06 (15.29) | 53.09 (16.48) | 18 – 83 |
| PANAS Positive Affect Trait ($\alpha$ = .80) | 3.45 (.62) | 3.34 (.54) | 3.37 (.55) | 1 – 5 |
| PANAS Negative Affect Trait ($\alpha$ = .88) | 1.82 (.62) | 1.89 (.70) | 1.59 (.45) | 1 – 5 |
| PANAS Positive Affect State ($\alpha$ = .87) | 3.06 (.73) | 2.99 (.59) | 3.04 (.64) | 1 – 5 |
| PANAS Negative Affect State ($\alpha$ = .91) | 1.82 (.63) | 1.32 (.47) | 1.19 (.42) | 1 – 5 |
| ERQ-RA ($\alpha$ = .80) | 4.77 (1.09) | 4.52 (1.15) | 4.93 (.80) | 1 – 7 |
| ERQ-SP ($\alpha$ = .62) | 3.45 (1.23) | 3.88 (1.09) | 3.42 (1.17) | 1 – 7 |
| IBT Cognitive ($\alpha$ = .82) | 3.39 (1.13) | 3.43 (1.16) | 3.31 (1.08) | 1 – 7 |
| IBT Affective ($\alpha$ = .77) | 3.17 (.95) | 3.24 (1.03) | 3.42 (1.01) | 1 – 7 |
| Post-shopping | | | | |
| Amount impulse purchases | 1.41 (2.34) | 3.68 (4.85) | 1.95 (2.72) | 0 – 18.67 |
| Number of impulse purchases | .74 (1.07) | 1.38 (1.51) | 1.02 (1.41) | 0 – 5 |
| VAS-IPE ($\alpha$ = .82) | 5.49 (1.57) | 4.45 (1.85) | 5.27 (1.30) | 1 – 7 |

Table 1 (cont.). Means and standard deviations for all measures

|  | RA | SP | Control | Range |
|---|---|---|---|---|
| Post-shopping |  |  |  |  |
| VAS-RA | 5.11 (1.42) | 3.87 (2.01) | 3.15 (2.01) | 1 – 7 |
| VAS-SP | 4.37 (1.81) | 5.20 (1.83) | 3.19 (2.22) | 1 – 7 |
| VAS-Follow | 5.72 (1.59) | 5.89 (1.63) | 6.21 (1.30) | 1 – 7 |
| Valid N | 49 | 49 | 49 |  |

Note: standard deviations in parentheses. PANAS = Positive and Negative Affect Schedule; ERQ = Emotion Regulation Questionnaire; IPE = Impulse Purchase Evaluation; RA = Reappraisal; SP = Suppression; VAS = Visual Analog Scale; Follow = Followed instructions during shopping.

### Effectiveness of the training instructions

To examine the effectiveness of the emotion regulation instructions, a series of ANOVAs were performed with the dependent variable self-report compliance ratings (neutral, RA, SP) and between-subjects variable group (group: RA, SP, control). For self-reported compliance, no significant differences were found between groups ($F (2, 140) = 1.28$; $p = .28$). Generally, participants applied the various instructions equally well.

For self-reported use of re-appraisal during shopping, the groups differed significantly ($F (2, 138) = 13.41$; $p < .01$). Post-hoc t-tests indicated that the RA-group viewed emotions from an objective perspective significantly more strongly than controls or suppressors (both $p$'s $< .01$). Self-reported suppression also differed significantly between the groups ($F (2, 139) = 12.23$; $p < .01$). As expected, suppressors scored significantly higher on self-reported suppression compared to the RA ($t (90) = -2.17$; $p = .03$) and control group ($t (90) = 4.74$; $p < .01$). Overall, the manipulation checks suggest that the instructions were effective.

### Effects of emotion regulation training on impulse purchases

Next, a series of ANOVAs examined the effect of the emotion regulation instructions (group: RA, SP, control) on impulse purchases (dependent variables: self-reported impulse purchase evaluation, number of impulse purchases, amount spent). For the self-reported impulse purchase intention, the three groups rated their impulse purchases differently ($F (2, 84) = 3.42$; $p = .04$). Post-hoc t-tests showed that the suppression group rated their impulsive purchases significantly lower on the qualification of these items as impulse purchases compared to the re-appraisal group ($t (56) = 2.22$; $p = .03$) and border-significantly lower compared to the control group ($t (59) = -1.93$; $p = .06$). Thus, compared to the other groups, the expressive suppression group believed more strongly that their impulse purchases were not unplanned or spontaneous.

For the actual number of impulse purchases, an ANOVA was performed with between-subjects variable group (RA, SP, control) and dependent variable number of impulse purchases. The results indicated a difference between groups, although just outside the range of statistical significance ($F (2, 140) = 2.57$; $p = .08$). Post-hoc t-tests revealed no differences between the re-appraisal and control group ($t (93) = -1.42$; $p = .24$) or between the suppression group and the control group ($t (91) = 1.18$; $p = .24$). Yet, the suppression group made significantly more impulse purchases compared to the re-appraisal group ($t (90) = -2.32$; $p = .02$), indicating that these emotion regulation instructions may have separate effects on the number of purchases.

For the total amount spent on impulse purchases, an ANOVA was performed with between-subjects variable group (RA, SP, control) and the amount (in Euros) spent on impulse purchases as dependent variable. A significant difference between the groups was observed ($F (2, 140) = 5.39$; $p = .01$). Post-hoc t-tests revealed no differences between the RA and control group ($t (93) = -1.03$; $p = .31$). Yet, the suppression group spent significantly more money on impulse purchases compared to the re-appraisal group ($t (90) = -2.88$; $p = .01$) and the control group ($t (91) = 2.14$; $p = .04$). Thus, suppression was associated more strongly with spending money on impulse purchases compared to the other groups (RA, control).

### Effects of state emotion and trait emotion regulation on impulsive buying behavior

To examine whether trait emotion regulation impacted the relationship between state emotions at the start of the experiment and actual impulsive buying behavior, hierarchical multiple regression analyses were conducted (Method = Enter) for dependent variable number of impulse purchases and amount of money spent on impulse purchases. In step 1, gender and age and individual impulsive buying tendency (IBT) were inserted into the model. In step 2, state emotion (PANAS), trait emotion regulation (ERQ) and condition (RA, SP, control) were incorporated. In the third step, interaction terms between positive/negative state mood (PANAS) and emotion regulation traits (RA, SP) were added. Table 2 summarizes the final models for both regressions.

For the number of impulsive purchases, the total model accounted for 17 % of the variance ($R^2$ =.17; $F$ (4, 128) = 1.75; $p$ = .06). As expected, trait impulsive buying tendencies were associated with an increase in impulsive purchases, although just outside the range of statistical significance ($\beta$ = .24; $p$ = .06). No differences were observed between the three groups ($\beta$ = .24; $p$ = .10). In the final model, only negative state emotions were significantly associated with an increase in the number of impulsive purchases in all participants ($\beta$ = 1.17; $p$ = .02). Further, only the interaction term negative emotion x re-appraisal was associated with a lower number of impulsive purchases ($\beta$ = -1.58; $p$ = .02). All other interaction terms were not significant, indicating that re-appraisal is the most effective strategy to cope with negative state emotions in order to limit the number of impulsive purchases.

For the amount of money spent on impulsive purchases, the total model accounted for 16% of the variance ($R^2$ =.16; $F$ (4, 128) = 1.69; $p$ = .07). Here, women spent significantly more on impulsive purchases ($\beta$ = -1.57; $p$ = .04). In the final model, the interaction term positive state emotions x suppression was associated with lower levels of the amount spent on impulsive purchases although the results were just outside the range of statistical significance ($\beta$ = -2.51; $p$ = .06). This shows that for positive emotions, suppression could help consumers to limit their spending. The other interaction terms were not significant.

Thus, re-appraisal was the most effective strategy to help consumers to limit the number of impulsive purchases during negative emotions, while suppression was the most effective strategy during positive emotions to limit the amount spent on impulsive purchases.

Table 2. Regression analyses to examine the interaction between emotion and emotion regulation strategies on impulsive buying behavior

| Indices | | B | SE B | p |
|---|---|---|---|---|
| | $R^2$ = 0.17, F = 1.75, p = 0.06 | | | |
| | Gender | -.19 | .28 | .51 |
| | Age | -.01 | .01 | .22 |
| | IBT Cognitive | .24 | .12 | .06 |
| | IBT Affect | -.01 | .14 | .92 |
| | RA | -.05 | .12 | .69 |
| | SP | -.03 | .11 | .78 |
| Number of impulsive purchases | Condition | .24 | .15 | .11 |
| | PANAS-Neg | 1.17 | .51 | .02 |
| | PANAS-Pos | .12 | .34 | .72 |
| | Neg x RA | -1.58 | .66 | .02 |
| | Pos x RA | -.10 | .43 | .82 |
| | Neg x SP | -.94 | .68 | .17 |
| | Pos x SP | -.74 | .51 | .15 |
| | $R^2$ = 0.16, F = 1.69, p = 0.07 | | | |
| | Gender | -1.57 | .74 | .04 |
| | Age | .01 | .02 | .93 |
| | IBT Cognitive | .42 | .32 | .19 |
| | IBT Affect | .32 | .37 | .39 |
| | RA | -.11 | .32 | .74 |
| Amount spent on impulsive purchases | SP | -.09 | .29 | .75 |
| | Condition | .29 | .38 | .45 |
| | PANAS-Neg | 1.39 | 1.31 | .29 |
| | PANAS-Pos | .41 | .87 | .64 |
| | Neg x RA | -2.22 | 1.69 | 0.19 |
| | Pos x RA | -.02 | 1.15 | .98 |
| | Neg x SP | .68 | 1.77 | .70 |
| | Pos x SP | -2.51 | 1.31 | .06 |

Notes: For the purpose of clarity, only the final regression models are presented in the Table.
Abbreviations: IBT = Impulsive Buying Tendencies Scale; Neg = Negative emotions; Pos = Positive emotions; PANAS = Positive and Negative Affect Schedule; RA = Re-appraisal, SP = Suppression.

## Discussion

The main findings are: 1. A brief training of suppression was associated with stronger impulsive buying tendencies compared to re-appraisal; 2. Sup-

pression training was associated with higher amounts of money spent on impulsive purchases compared to the re-appraisal and control groups; 3. Re-appraisal training did not reduce the number of impulsive purchases, nor the amount spent on them;

4. Yet, trait re-appraisal was associated with a lower number of impulsive purchases in consumers in a negative emotional state, while trait suppression was associated with lower amount of money spent on impulsively during a positive emotional state.

Impulse purchases constitute a large part of purchases in the retail sector (Luo, 2005). One of the factors contributing to individual impulsive buying tendencies are emotions. Prior research already established that negative emotions are associated with stronger impulsive buying tendencies (e.g., Silvera, Lavack & Kropp, 2008; Verplanken & Sato, 2011). The present findings support this view and showed that, in all participants, negative emotions were a significant predictor in explaining the number of impulse purchases.

This underlines the importance of developing tools to empower consumers through self-regulatory emotion regulation techniques (Verplanken & Sato, 2011). Prior research has widely acknowledged two emotion regulation strategies: cognitive re-appraisal and suppression (Gross, 2007). Cognitive re-appraisal is generally associated with positive behavioral effects, while suppression is associated with paradoxically negative behavioral effects (e.g., Richards & Gross, 2003; Corcoran & Woody, 2009). Suppression may paradoxically generate stronger emotions instead of reducing emotions, which, in turn, could influence consumer purchasing behavior (e.g., enhance the number of impulsive purchases or the tendency to spend money impulsively). The present findings partially confirm this view. Although re-appraisal was not associated with any immediate effects on impulsive buying behavior (on number of impulse purchases, nor on the amount spent on them) compared to the control group, the suppression group spent significantly more money than both other groups on impulse purchases. Compared to re-appraisers, the suppressors also made more impulse purchases.

Furthermore, although no effects were observed for the brief re-appraisal training on consumers' impulsive buying behavior, the interaction between trait re-appraisal and negative emotions was significantly associated with a lower number of impulsive purchases. This is particularly noteworthy, since negative emotions are associated with impulsive buying behavior (e.g., Silvera et al., 2008, Verplanken et al., 2005). Second, trait suppression was associated with lower amounts spent on impulsive purchases during positive emotional states in consumers. This could indicate that managing the emotional expression of positive emotions is easier than managing the expression of negative emotions. Earlier observations already indicated that suppression is a maladaptive strategy for negative emotions (e.g., Che,

Luo, Tong, Fitzgibbon & Yang, 2015; Gross & John, 2003). Indeed, the suppression group was associated with poorer financial outcomes as they spent more money on impulse purchases. Moreover, people in the suppression group incorrectly believed to be more in control of their purchasing behavior compared to the other groups. Thus, suppression training was associated with overall negative effects on consumer behavior. Yet, trait suppression had positive effects on the relationship between positive mood and impulse behavior. So, although suppression is believed to be a less effective emotion regulation strategy, future researchers should look into the potential of suppression for managing specifically positive emotions. From a social perspective, the expression of negative emotions could be generally undesirable and evokes shame or guilt, while an abundant display of positive emotions is not met with social scrutiny. Thus, in positive emotions, suppression may not generate a strong situation of conflict and could potentially be helpful to reduce adverse effects of positive emotional states.

Several limitations can be observed. First, the suppression group spent significantly more money on impulse purchases, compared to the other groups. It could be that the suppression group spent money on different types of items compared to the other two groups, like costly premium brands. Thus, future research should measure which items the consumers spent their money on to learn whether maladaptive emotion regulation drives consumers towards different product types (e.g., towards premium brands or luxuries). Second, while both emotion regulation strategies proved effective, only suppression demonstrated actual effects on consumer behavior. Using self-report measures could limit the validity of the effectiveness measurement of the emotion regulation instructions, but another explanation is that cognitive re-appraisal is simply more difficult to learn to implement properly. While suppression is easy to understand and apply, cognitive re-appraisal may need more time and training to be able to implement it successfully. Cognitive re-appraisal may require repeated and more intense training compared to a single text instruction (e.g., applying re-appraisal during emotion-inducing film clips). Third, how the participants generally approach emotional stimuli in their daily life (trait emotion regulation) could have deviated significantly from the random intervention they were assigned to. Perhaps, this did not match well with their personal emotion regulation strategy. Additionally, it could be argued that the experiment sparked emotional awareness in consumers, which could alter consumer behavior (e.g., Chartrand, 2005). Recent findings additionally indicate that the spontaneous use of emotion regulation strategies can even vary per emotion within in-

dividuals (Dixon-Gordon, Aldao & de Los Reyes, 2015). This could explain why there were no differences between conditions on actual impulsive purchase behavior of the short-term manipulations, in particular, of re-appraisal. Fourth, it could be that our method of establishing impulsive purchases retrospectively could have biased our findings. Consumers may not have honestly disclosed how many impulsive purchases were made. Yet, while the suppression group clearly demonstrated enhanced impulsive purchasing, the suppressors were convinced that they spent less on impulse purchases. This indicates that consumers hold a biased view of their spending patterns and use strategies to solve this cognitive dissonance. In order to restrict the incorrect labeling of an impulse purchase as a non-impulse purchase, we provided a clear definition which purchases qualify as 'an impulse purchase'. Yet, additional methods to establish the actual impulse purchases could help (e.g., examining shopping lists at the start of the experiment).

## Conclusion

Overall, the present study corroborates the view that suppression is associated with maladaptive effects on consumer behavior. In the present study, suppression was associated with spending more money on impulsive purchases and making more impulsive purchases compared to the re-appraisal group. Although re-appraisal is generally associated with positive effects, a brief re-appraisal training had no effects on immediate consumer behavior. Yet, trait re-appraisal generally emerged as the most effective strategy to cope with negative state emotions to help reduce the number of impulsive purchases. This indicates that individuals who predominantly use re-appraisal to cope with emotions in their daily life,

could experience positive effects on impulsive buying behavior. Future research should examine whether brief re-appraisal interventions are simply harder to train compared to suppression exercises. Trait suppression was associated with lower levels of impulsive purchases for positive emotions. Hence, while generally suppression is associated with negative effects, suppression appeared to have beneficial effects in managing positive emotions. The current findings support earlier reports which indicated that emotion regulation of positive affect could have significant effects on human behavior which are often overlooked (e.g., Carl, Soskin, Kerns & Barlow, 2013; Gilbert, 2012). Future research should explore the role of suppression in coping with positive emotions more closely, as positive emotions are widely associated with consumer behavior, such as impulsive buying (Adelaar et al., 2003; Verplanken & Sato, 2011). Finally, corroborating earlier reports, emotion regulation affected impulsive buying tendencies (e.g., Vohs & Faber, 2007). Cognitive re-appraisers managed negative emotional states most effectively and demonstrated lower levels of impulsive purchases. Cognitive re-appraisal could be especially helpful in limiting impulsive purchasing in consumers during negative emotional states, whilst suppression may facilitate positive effects on consumer behavior during positive states. The present findings underline the necessity for developing emotion regulation training tools to help consumers to limit their impulsive spending and achieve a healthy financial situation.

## Acknowledgements

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