

# The relationship between consumer shopping stress and purchase abandonment in task-oriented and recreation-oriented consumers

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**Abstract** Shopping is sometimes a source of stress, leading to avoidance coping behavior by consumers. Prior research suggests that store-induced stress makes shopping an adverse experience and thus negatively affects consumers' purchase likelihood. We propose that consumers' response to shopping stress depends on their motivational orientation. The greater the in-store stress, the more likely task-oriented consumers are to abandon the trip without making purchases. However, recreation-oriented consumers will be, up to a point, less likely to end the trip. The results of four studies show that the functional relationship between shopping stress and purchase abandonment changes from monotonic and positive for task-oriented consumers to an inverted U-shape for recreation-oriented consumers. Evidence of goal changes provides a process explanation for the differing functional relationships. The results offer an alternative explanation for why people buy or not and suggest approaches to structuring the shopping environment to appeal to both types of consumers.

**Keywords** Consumer shopping stress · Motivational shopping orientation · Purchase abandonment · Functional relationship

## Introduction

According to a recent study, one out of three consumers who enters a brick-and-mortar store puts back or leaves items on the shelves, leaves the checkout line, or just leaves the store immediately upon entering (e.g., Poole 2015). While some of those individuals enter the store with no intention to purchase (e.g., their goal is to inform themselves about products for future purchases), many others abandon their purchases owing to the store experience itself. In particular, store-induced stress makes the shopping experience aversive (Moschis 2007). A common belief is that consumers use purchase abandonment as an avoidance coping behavior (Duhachek 2005), suggesting a positive monotonic effect of shopping stress on purchase abandonment (Baker and Wakefield 2012; Moschis 2007). However, research presently lacks “a more fine-grained emphasis on the conditions under which stress has or does not have negative consequences” (Moschis 2007, p. 431), creating “the need to study a specific consumption-coping response in the context of a consumer’s motivation for engaging in an activity” (p. 437).

We address this need by looking at how a consumer’s motivational shopping orientation—the predisposition toward shopping that can vary between task-oriented and more recreation-oriented activity (Brown et al. 2003)—affects the relation of shopping stress to purchase abandonment. We argue that consumers with a task orientation will exhibit the previously reported monotonic relationship between shopping stress and purchase abandonment. Those individuals want to make a purchase efficiently without distractions—a goal that

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is threatened by stress in the store (Lazarus and Folkman 1984). We also explore the contrasting possibility of a non-monotonic (inverted U-shaped) relationship for consumers with a recreational orientation. Beyond a threshold level of stress, those individuals find shopping unenjoyable and thus focus on the alternative goal of making a purchase as a kind of compensation for the negative consequences associated with their inability to make progress toward their desired goal (Wrosch et al. 2007). We test these propositions in four studies: two cross-sectional surveys (Studies 1a and 1b), one experiment (Study 2), and a field quasi-experiment (Study 3). Using both measured and manipulated values of shopping stress and motivational orientation, the results provide consistent support for the moderating role of motivational orientation on the relationship between shopping stress and purchase abandonment.

Our paper offers several contributions to the shopping literature and to management practice. First, this research provides a more nuanced view of the behavioral consequence of shopping stress, which has previously been assumed to be a simple linear relationship (Baker and Wakefield 2012). By connecting shopping stress and motivational orientation, marketing academics and practitioners can gain new insights into how to adjust marketing activities according to individuals' shopping motives and how to account for consumers' different responses to the same (stressful) shopping situation. Second, we provide evidence of the process underlying the change in the functional relationship for task- and recreation-oriented consumers. Third, we empirically examine reasons for purchase abandonment in brick-and-mortar stores, which despite their practical relevance have not previously been studied.

### Shopping stress and motivational shopping orientation

Store conditions that threaten important goals trigger avoidance behaviors on the part of consumers trying to cope with the felt stress (Lazarus and Folkman 1984). Motivational shopping orientation determines consumers' in-store shopping goals (Lunardo and Mbengue 2009), and thus goal attainment naturally connects both domains. However, little research bridges the two streams. We intend to make this connection.

#### Research on shopping stress

Transactional stress theory defines stress as “a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being” (Lazarus and Folkman 1984, p. 19). Fundamental to this view is that the

actual situation does not trigger stress, but rather the beliefs and thoughts the person has about the situation (Jones and Bright 2001). An individual experiences stress “when the consequences of an encounter are deemed to have negative implications” (Duhachek and Kelting 2009, p. 474), leading to “goal incongruity.” Stress theories further suggest that felt stress makes a person initiate coping (Jones and Bright 2001). Avoidance is a way to cope with a problem indirectly, which leads to experiencing fewer controllable stressors (Elliot et al. 2011), prevention of further harm caused by these stressors (Durante and Laran 2016; Miao and Wang 2016), and more positive adaptation in the short run (Suls and Fletcher 1985). Consumer behavior research has suggested that abandonment is an avoidance coping strategy in response to stress triggered by new technologies (Mick and Fournier 1998). Relatedly, focus group participants reported abandonment as a response when they experienced stress in the store (Aylott and Mitchell 1999). Further, investigation of the influence of crowding-induced stress on patronage intentions in malls has revealed a negative linear relationship between the two variables (Baker and Wakefield 2012). Table 1 gives an overview of important findings from stress research.

#### Research on motivational shopping orientation

Shopping motivation refers to general predispositions of shoppers toward the act of shopping on a particular shopping trip (Brown et al. 2003). This view of shopping orientation as being situational is widely shared (e.g., Babin et al. 1994; Holmqvist and Lunardo 2015; Kaltcheva and Weitz 2006). Research has identified several shopping motives, such as affiliation (e.g., Westbrook and Black 1985), which later research has extended, for example to adventure shopping (Arnold and Reynolds 2003). Importantly, subsequent research has revealed that the different shopping motives are driven by two fundamental motivational orientations: task-oriented and recreation-oriented (e.g., Arnold and Reynolds 2003; Babin et al. 1994; Kaltcheva and Weitz 2006), which typically influence key retail outcomes like satisfaction and loyalty (Jones et al. 2006).

Task-oriented consumers see the shopping trip mainly as a mission to be completed as efficiently as possible (Büttner et al. 2015). They are rational and cognitive, and intend to purchase a product efficiently (Kaltcheva and Weitz 2006). In contrast, recreation-oriented consumers are more concerned with the fun, play, and entertainment of shopping, as well as with the sensory stimulation arising from the experience itself (Babin et al. 1994; Kaltcheva and Weitz 2006). Thus, their goal is to experience pleasure, stimulation, and entertainment while shopping (Büttner et al. 2014).

Table 1 summarizes results from prior research and its managerial relevance. The single attempt to directly connect motivational orientation and consumer shopping stress found no

**Table 1** Literature on shopping stress and motivational orientation

Study	Topic	Method	Main findings and learnings
<b>Focus: Shopping stress and coping</b>			
Aylott and Mitchell (1999)	Exploring grocery shopping stressors and coping strategies	Focus groups with $N = 239$ participants	-Crowding and queuing are mentioned the most as possible stressors -Individuals react differently to stress -Purchase abandonment is mentioned as one possible coping strategy Key learning: -Purchase abandonment is a way to deal with stress in the store
Duhachek (2005)	Investigation of coping to stressful consumption episodes	Study 1: $N = 176$ , students, exploratory and confirmatory factor analyses Develop a scale to measure use of a diverse set of coping strategies	-Categories of coping are identified (e.g., emotional venting, avoidance) Key learning: -Avoidance builds “distance between oneself and the stressor” (p. 46)
Moschis (2007)	Investigation of stress in the context of consumer behavior	Conceptual paper based on Lazarus and Folkman’s transactional stress theory	-Consumption can be a source of consumer stress -Consumers can cope with stress by resorting to consumption coping (shopping abandonment) or non-consumption coping (social support) Key learning: -Stress appraisals (harm or loss, threat, challenge) trigger coping -Stress can be triggered during the shopping trip -Purchase abandonment is a reaction to shopping stress
<b>Focus: Shopping stress, shopping behavior and motivational shopping orientation</b>			
Baker and Wakefield (2012)	Investigation of why some shoppers in a mall respond negatively to a specific level of density while others respond positively	Quasi-experimental approach with online survey, structural equation modeling $N = 300$ , panel participants Survey; connecting individual differences, motives, shopping orientation, perception, affective and behavioral response in one model	-Perceived crowding has a positive effect on stress -Stress has a negative effect on purchase intentions -A relationship between task shopping and stress is proposed but not shown empirically Key learning: - Only a monotonic effect between crowding-induced stress and shopping behavior is investigated
<b>Focus: Motivational shopping orientation</b>			
Büttner et al. (2015)	Influence of motivational shopping orientation on consumers’ reactions toward (non-)monetary promotions	Experimental studies Study 1: $N = 89$ , panel participants Shopping motivation measured, promotion type (monetary vs. nonmonetary) Study 2: $N = 99$ , students 2 (shopping motivation: task-focused vs. experiential) $\times$ 2 (promotion type: monetary vs. nonmonetary) mixed design Study 3: $N = 117$ , students 2 (shopping motivation: task-focused vs. experiential) $\times$ 2 (promotion type: monetary vs. nonmonetary) $\times$ 2 (consumer budget: low vs. high) mixed design Shopping motivation in Study 1: chronic shopping motivation, measured Manipulation of shopping motivation in Studies 2 & 3: scenario reading	-Task-oriented shopper value monetary promotions more than non-monetary promotions -Experiential shoppers find both types of promotions attractive -Low financial budget diminishes the influence of shopping orientation on retailer choice Key learning: -Situational shopping motivations are manipulated via a scenario reading approach

**Table 1** (continued)

Study	Topic	Method	Main findings and learnings
Jones et al. (2006)	Influence of shopping value (utilitarian vs. hedonic value) on satisfaction and other retail outcomes	Survey (with respect to last shopping trip), regression analyses <i>N</i> = 245 consumers Shopping value: measured	-Most retail outcomes (e.g., satisfaction with retailer) are influenced more by non-product-related, hedonic aspects than utilitarian aspects -Utilitarian shopping value is stronger related to repatronage intention Key learning: -Motivational shopping orientation impacts shopping behavior
Kaltcheva and Weitz (2006) Study 1 was later replicated by Holmqvist and Lunardo (2015)	Moderating effect of motivational orientation between arousal and pleasantness	Experimental studies Study 1: <i>N</i> = 166, students 2 (motivational orientation: task vs. recreation-oriented) × 2 (arousal: high vs. low) × 2 (replicates) between-subjects design Manipulation of arousal: complexity, color warmth and saturation Study 2: <i>N</i> = 161, students 2 (motivational orientation: task- vs. recreation-oriented) × 2 (arousal: high vs. low) between-subjects design Manipulation of arousal: music tempo and volume Manipulation of motivational shopping orientation in both studies: scenario reading	-Motivational orientation moderates the arousal-pleasantness link -Task- (recreation-) oriented consumers find high-arousal environments unpleasant (pleasant) -Impact of manipulated arousal on shopping intentions is mediated by pleasantness -Only monotonic effects are investigated Key learning: -Motivational shopping orientation is manipulated via a scenario reading approach; our scenarios follow these -Contrary to Kaltcheva and Weitz's study, we focus on the impact of stress (which may or not arise in unpleasant situations or be low in pleasant ones defined by music and color) on deciding whether not to make a planned purchase (purchase abandonment) and how that effect depends on a consumer's motivational shopping orientation
Van Rompay et al. (2012)	Effect of ambient and spatial store design elements in interaction with motivational orientation on shopping pleasure and intentions	Experimental study <i>N</i> = 123 shoppers in a clothing store 2 (interior color: arousing red vs. less arousing blue) × 2 (store layout: spacious vs. cluttered) × 2 (shopping motivation: task- vs. recreation-oriented) Manipulation of motivational shopping orientation: scenario reading	-Task-oriented shoppers prefer well-organized, spacious store layouts (and are less affected by ambient variables) -Recreational shoppers prefer high levels of arousal (ambient element) and are less affected by spatial design element Key learning: -Store layout is a design variable that can be used for manipulating the stress level in a store

Note: task-oriented (=utilitarian); recreation-oriented (=experiential, hedonic)

significant relationship. It only found a negative monotonic relationship between stress and patronage intentions, suggesting that store-induced stress always makes the shopping experience aversive (Baker and Wakefield 2012). However, that study focused on the direct effect of task-oriented shopping on stress and did not examine potential interrelationships between motivational orientation and consumer shopping stress. Such interrelationships might reveal conditions under which shopping stress does not have negative consequences or might even produce positive effects for the retailer (Moschis 2007). Therefore, our study looks at the potential interplay between shopping motivation and store conditions to explain differences in consumers' purchase abandonment.

### The moderating role of motivational orientation

Task-oriented consumers get fulfillment mainly from the outcome of the shopping activity: the purchase of a product. When going to a store, their main goal is to complete this purchase with the minimum expense of energy (Kaltcheva and Weitz 2006; Lunardo and Mbengue 2009). Making a purchase without any distractions maintains their inner balance (Wolfinbarger and Gilly 2001). For task-oriented consumers, stress in the store threatens to cause a loss of resources (e.g., by raising shopping effort) (Lazarus and Folkman 1984). Threat appraisals are associated with reactions that are "oriented toward escaping the situation" (Skinner 1995, p. 81).

Thus, when the goal of efficiently making a purchase is thwarted, task-oriented consumers tend to abandon the purchase trip to reduce the felt stress. Therefore:

H1: For consumers with a task orientation, a monotonically positive relationship exists between a consumer's shopping stress and purchase abandonment.

In contrast, recreation-oriented consumers primarily derive fulfillment from the shopping activity itself (Kaltcheva and Weitz 2006). While in a store, they seek fun and entertainment (Büttner et al. 2013) and look for rich experiences from shopping (Wolfenbarger and Gilly 2001). Interestingly, recreation-oriented consumers regard in-store stress as both a threat and a challenge (Lazarus and Folkman 1984). Increasing levels of felt stress in the store make it difficult or even impossible to enjoy the shopping activity and have fun in the store (Lunardo and Mbengue 2009). However, the obstacles to enjoyment may lead recreation-oriented consumers to restructure their goal hierarchy and direct their efforts toward alternative goals—that is, to seek outcomes other than getting enjoyment from shopping (Brandstädter and Renner 1990). Such reengagement can “compensate for the negative consequences associated with the inability to make progress toward a desired goal by altering a person's focus on success versus failure” (Wrosch et al. 2007, p. 252).

Importantly, research on goal reengagement suggests that a threshold level for goal disengagement exists, above which consumers increasingly turn their goal-directed behavior toward more functional goals such as making a purchase (Wrosch et al. 2003). In this respect, the threshold level has been shown to increase with more negatively valenced (i.e., threatening) information (McGinnies 1949), which is why goal reengagement of recreation-oriented shoppers does not occur at lower levels of perceived stress. Moreover, the decision to pursue the new goal is associated with an increased focus on the positive aspects of the new functional goal (Gollwitzer et al. 1990). As a result, recreation-oriented consumers should show less purchase abandonment in high-stress circumstances than in moderate-stress situations and compared to task-oriented consumers. We hypothesize:

H2: For consumers with a recreational orientation, purchase abandonment takes an inverted U-shape, rising over low levels of shopping stress and subsequently decreasing over higher levels of stress.

We test our hypotheses in a series of four studies (Table 2). Using a cross-sectional online survey, Study 1a demonstrates the proposed moderating role of motivational orientation on the relationship between consumer shopping stress and purchase abandonment. Study 1b replicates this finding using data from a cross-sectional offline survey. Study 2 extends

these findings with an experimental manipulation of shopping stress and motivational orientation in a computer-based design. Finally, Study 3 replicates and validates this effect in the field.

## Study 1a

### Method

**Data collection** In Study 1a, we investigated the role of motivational orientation on the functional relationship between consumer shopping stress and purchase abandonment. We recruited 883 participants (mean age: 40.46; 47.79% male) using an online panel that was representative of the population in terms of age, gender, and education. Participants on this panel spoke the same language and took part voluntarily, that is, without being paid an incentive.

In the survey, participants were asked to remember a recent shopping trip to a retail store. Participants then answered questions regarding this specific shopping trip and provided information on purchase abandonment, shopping stress, motivational orientation, and general shopping involvement, as well as their socio-demographics.

**Measures** Whenever possible, we used existing measures of constructs adapted to the current context. Cronbach's alphas provide evidence for measurement reliability of the variables (see the Appendix). To capture purchase abandonment, we averaged three items adapted from Kukar-Kinney and Close (2010), who measured online shopping cart abandonment ( $\alpha = .89$ ). Consumer shopping stress was assessed by averaging five items taken from Baker and Wakefield (2012) ( $\alpha = .90$ ). We measured consumer motivational orientation with one item adapted from Wagner and Rudolph's (2010) purpose-specific shopping motivation scale. Specifically, we asked participants why they made this shopping trip and then presented them with two response options (“I needed to buy something” vs. “I wanted to go shopping for its own sake”). Overall, 437 participants indicated that they were more task-oriented and 446 indicated that they were more recreation-oriented when they went on the shopping trip.

Regarding the control variables, we measured a consumer's general shopping involvement by averaging four items adapted from Wakefield and Baker (1998) ( $\alpha = .90$ ). To capture frequency of visiting the store, we followed Desai and Talukdar (2003) and asked participants to indicate whether they regularly shopped in the store (dummy-coded with 1 = yes, 2 = no). Gender (dummy-coded with 1 = female, 2 = male) and age were used as control variables. Wherever possible, we used seven-point Likert scales anchored by 1 (“strongly disagree”) and 7 (“strongly agree”). Table 3 provides descriptive statistics and correlations among the variables.



**Table 2** Overview of studies

Characteristics	Study 1a	Study 1b	Study 2	Study 3
Focus	Recall of recent shopping trip	Store exit intercept	Imagined shopping trip	Store exit interview
Sample size	$N = 883$	$N = 501$	$N = 285$	$N = 189$
Core variables				
Shopping stress	Self-report (recall); measured with multiple items	On-site recall; measured with multiple items	Manipulated via scenario; measured with single item	Based on time of day; measured with single item
Motivational orientation	Self-report (recall); measured with single item	On-site recall; measured with single item	Manipulated via scenario; measured with multiple items	On-site recall; measured with multiple items
Purchase abandonment	Self-report (recall); measured with multiple items	On-site recall; measured with multiple items	Self-reported; intentional; measured with multiple items	On-site recall; measured with single item
Results: Relationship between stress and purchase abandonment				
Task-oriented (Strength of relationship)	Increasing (significant)	Increasing (significant)	Increasing (significant)	Increasing (marginally significant)
Recreation-oriented (Strength of relationship)	Inverted U (significant)	Inverted U (significant)	Inverted U (significant)	Inverted U (significant)

## Model estimation

To test the moderating effect of consumer motivational orientation on the functional relationship between consumer shopping stress and the continuous dependent variable purchase abandonment, we used ordinary least squares regression with interaction terms (Srinivasan and Moorman 2005). We included the main effect of shopping stress and motivational orientation together with the quadratic form of shopping stress. The regression also included the two-way interactions between motivational orientation and consumer shopping stress as well as the two-way interactions between motivational orientation and the quadratic form of consumer shopping stress. Before creating the higher order and interaction terms, we mean-centered the consumer shopping stress variable to increase interpretability of its main effects (Grewal et al. 2010).

An important consideration is the potential endogeneity bias that might result from bidirectional causality between consumer shopping stress and purchase abandonment.<sup>1</sup> Personal goals and especially failing to meet them exert a powerful influence on psychological well-being (Emmons 1986; Martin and Tesser 1996). Previous research has argued that situations that impede important goals evoke stress (Elliot et al. 2011). In this context, if consumers do not get fulfillment from the outcome of the shopping activity (e.g., the purchase of a product), abandoning the purchase may increase stress levels. To account for this possibility, we used a control function procedure that has been applied to similar problems in previous research (e.g., Grewal et al. 2010). The procedure

derives a proxy variable to capture the part of the endogenous predictors that correlates with the error term in the main equation, so the remaining variation in the endogenous variable is independent of the error and traditional estimation approaches will be consistent (Petrin and Train 2010). In a first-stage regression, the endogenous variable (shopping stress) is regressed on a set of exogenous variables. The resulting residuals then serve as a regressor in the second-stage regression, with the assumption that the errors of the two stages follow a bivariate normal distribution (Garen 1984). Therefore, this procedure solves the endogeneity problem, irrespective of how the endogenous regressor appears (Wang et al. 2015).

We used several store-related, product-related, and customer-related exogenous variables in the first-stage regression model (see Arnold et al. 2005 for possible categorizations of stressors). The first variable is *perceived confusion of the store layout*, measured by averaging three items adapted from Dickson and MacLachlan (1990) ( $\alpha = .93$ ). A shopping situation in which a confusing store layout prevents a consumer from finding the desired products induces psychological costs for the consumer (Chebat et al. 2005), who can interpret the confusion as a threat (Lazarus and Folkman 1984). The same reasoning holds for *perceived spatial density*, which we assessed by averaging three items adapted from Machleit et al. (1994) ( $\alpha = .89$ ). Consumers can perceive retail situations as restrictive when too many objects appear in a given space (Machleit et al. 1994). Moreover, the *perceived presence of salespersons* can be psychologically disturbing and thus increase shopping stress because individuals may feel pressure to conform to expected consumer roles (Uhrich and Tombs 2014). This variable was adapted from Baker et al. (1992) and dummy coded—participants indicated whether they noticed available employees in the store.

<sup>1</sup> In our case, endogeneity arises from reverse causality. It could also arise from other sources, such as omitted variables, unobserved measurement errors, and the problem of self-selection.

**Table 3** Means, standard deviations, and correlations among variables in Study 1a

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. Purchase abandonment	1.00												
2. Consumer shopping stress	.22*	1.00											
3. Motivational orientation	.22*	-.05	1.00										
4. Shopping involvement	.01	-.05	.06	1.00									
5. Frequency of store visit	.16*	.05	.17*	.01	1.00								
6. Gender	.02	.13*	-.03	.15*	-.02	1.00							
7. Age	.06	.02	.01	-.04	-.06	-.14*	1.00						
8. Confusion of the store layout	.23*	.38*	.02	-.04	.14*	.00	.00	1.00					
9. Spatial density	.20*	.41*	-.03	-.06	.04	.12*	.03	.35*	1.00				
10. Presence of salespersons	.12*	.25*	-.02	-.04	.02	-.06	.05	.24*	.24*	1.00			
11. Waiting time	.02	.33*	-.11*	-.04	-.05	.02	.03	.23*	.29*	.37*	1.00		
12. Choice overload	.09*	.25*	-.02	.06	.05	.08*	.04	.25*	.25*	.09*	.17*	1.00	
13. Crowding	.14*	.37*	-.01	-.06	-.00	.09*	.03	.19*	.51*	.27*	.51*	.21*	1.00
Mean	1.62	2.07	---	4.00	1.27	---	40.46	2.53	2.30	---	2.36	2.08	2.12
SD	1.48	1.32	---	1.70	.44	---	39.21	1.69	1.45	---	1.67	1.40	1.41

Notes: \*  $p < .05$  (two-tailed). — not applicable. Uncorrected correlations appear below the diagonal

We also posit that *perceived waiting time* increases shopping stress. Measured by averaging three items adapted from Grewal et al. (2003) ( $\alpha = .96$ ), waiting time or even the anticipation of waiting in a store can be interpreted as a threat (Miller et al. 2008). *Perceived choice overload*—measured by averaging three items adapted from Dickson and Albaum (1977) ( $\alpha = .93$ )—may also affect a consumer’s shopping stress. Consumers can find that too many options in a product category constitute a threat since they cannot easily make a good choice and can incur temporal, error, and psychic costs (Loewenstein 2000). Finally, in line with Baker and Wakefield (2012), we suspect that *perceived crowding* or human density creates consumer shopping stress. We measured it by averaging three items adapted from Machleit et al. (1994) and Baker and Wakefield (2012) ( $\alpha = .92$ ) that relate to having too many people in a store.

From this first-stage regression on shopping stress, we obtained the residual  $R_S$ . Given that the correction for endogeneity bias is conditional on the values of the endogeneous consumer shopping stress variable, we then estimated the impact of the shopping stress and the interaction terms between the residual from Stage 1 and the linear and quadratic form of consumer shopping stress, respectively, on purchase abandonment along with the residual (Garen 1984; Grewal et al. 2010). Formally, the Stage 2 regression model is:

$$\begin{aligned}
 \text{PurchAban}_i = & \beta_0 + \beta_1 \text{ShopStress}_i + \beta_2 \text{ShopStress}_i^2 \\
 & + \beta_3 \text{MotOrient}_i + \beta_4 \text{ShopStress}_i \times \text{MotOrient}_i \\
 & + \beta_5 \text{ShopStress}_i^2 \times \text{MotOrient}_i + \alpha_1 R_{S,i} + \alpha_2 R_{S,i} \\
 & \times \text{ShopStress}_i + \alpha_3 R_{S,i} \times \text{ShopStress}_i^2 + C\gamma + \varepsilon_i
 \end{aligned}
 \tag{1}$$

where *PurchAban* refers to the purchase abandonment of subject *i*. *ShopStress* is consumer shopping stress and *MotOrient* is motivational shopping orientation. *C* is a vector of control variables, which include shopping involvement, frequency of store visit, gender, and age;  $\beta_0, \dots, \beta_5, \alpha_1, \dots, \alpha_3$  and  $\gamma$  are coefficients to be estimated;  $\varepsilon_i$  is the error term.

To determine whether consumer motivational orientation influenced the effects of consumer shopping stress on purchase abandonment, we ran a separate regression analysis for the task- and recreation-oriented consumer subsamples. These regression models were equal to the model used in Step 1 with two exceptions. First, as consumer motivational orientation does not vary in either subsample, we excluded it and its interaction terms from analyses. Second, to develop a parsimonious model, in the subgroup analyses we dropped terms not significant in the first-step analysis (e.g., Campbell 1999).

## Results

### Antecedents of consumer shopping stress

Although the first-stage regression primarily served to obtain endogeneity correction terms for the main model, the results reported in Table 4 are of interest in their own right given the scarcity of quantitative research on the relative importance of antecedents to consumer shopping stress (Moschis 2007). For the explanatory variables, variance inflation factors (VIF) indicate multicollinearity is not a concern, as the highest value is 1.69, which is well below 10 (Hair et al. 2010, p. 204). The variables also explain a significant amount of the variance in consumer shopping stress ( $R^2 = .29, p < .01$ ).

**Table 4** First-stage regression predicting shopping stress in Study 1a

Variables	Coefficient	Standard error	t-Value
Constant	.53	.10	5.55**
Confusion of the store layout	.17	.02	6.93**
Spatial density	.18	.03	5.47**
Presence of salespersons	.22	.10	2.12*
Waiting time	.09	.03	3.27**
Choice overload	.08	.03	2.95**
Crowding	.13	.03	3.65**
R <sup>2</sup>	.29		
Adjusted R <sup>2</sup>	.28		

Notes: \*  $p < .05$ , \*\*  $p < .01$

With respect to the store-related variables, perceived store layout confusion ( $\varphi_1 = .17, p < .01$ ), spatial density ( $\varphi_2 = .18, p < .01$ ), presence of salespersons ( $\varphi_3 = .22, p < .05$ ), and waiting time ( $\varphi_4 = .09, p < .01$ ) all related positively to consumer shopping stress. Perceived choice overload also increased consumer shopping stress ( $\varphi_5 = .08, p < .01$ ). Similarly, perceived crowding was an antecedent of shopping stress ( $\varphi_6 = .13, p < .01$ ).

**Impact on purchase abandonment** Table 5 provides the results of the second-stage regression. Again, multicollinearity is not an issue (maximum VIF value of 4.67). However, heteroskedasticity exists in the standard error term  $\varepsilon_i$ , so ordinary least square-estimated coefficients would be statistically inefficient. Therefore, we use White's (1980) correction for the error term. As shown in Table 5, the independent variables explain a significant amount of variance in purchase abandonment ( $R^2 = .16, p < .01$ ).

Neither the (positive) main effect of consumer shopping stress ( $\beta_1 = .15, p > .10$ ) nor the effect of the square of shopping stress ( $\beta_2 = .13, p > .05$ ) on purchase abandonment are significant at the .05 level.<sup>2</sup> However, as expected, the interaction terms between consumer motivational orientation and shopping stress ( $\beta_4 = .21, p < .01$ ) and between motivational orientation and the quadratic form of shopping stress ( $\beta_5 = -.06, p < .05$ ) are significant, suggesting differences in the functional relationship across the different motivational orientations.

Motivational orientation ( $\beta_3 = .41, p < .01$ ), the residual term ( $\alpha_1 = -.26, p < .01$ ), and the control variable frequency of store visit ( $\gamma_2 = .38, p < .01$ ) do significantly affect purchase abandonment. In contrast, shopping involvement, gender, and age do not ( $p > .10$ ).

<sup>2</sup> To rule out alternative functional relationships, we also tested for cubic and fourth-order terms of shopping stress to impact purchase abandonment. However, neither extracted significant effects ( $\beta_{cub} = .05, p > .10$ ;  $\beta_{fourth} = -.01, p > .10$ ).

A comparison of the results for task- and recreation-oriented consumers provides support for our hypotheses. For more task-oriented consumers, shopping stress has a significant and positive main effect on purchase abandonment ( $\beta_{1, task} = .36, p < .01$ ), while the quadratic term is not significant ( $\beta_{2, task} = -.00, p > .10$ ). Thus, for task-oriented consumers, a positive monotonic relationship between consumer shopping stress and purchase abandonment exists, supporting H1.

In contrast, for more recreation-oriented consumers, we find both a significant and positive main effect of consumer shopping stress on purchase abandonment ( $\beta_{1, recreational} = .83, p < .01$ ) and a negative quadratic effect ( $\beta_{2, recreational} = -.13, p < .01$ ). Thus, the impact of consumer shopping stress on purchase abandonment takes an inverted U-shape, in support of H2. As expected, moderate perceived stress levels strengthen the likelihood of purchase abandonments for recreation-oriented consumers.

## Study 1b

Study 1a provides support for the moderating role of motivational orientation on the relationship between consumer shopping stress and purchase abandonment. For task-oriented consumers, the relationship is linear, indicating more likely purchase abandonment with increasing stress levels. In contrast, for recreation-oriented consumers, the results show an inverted U-shaped relationship between shopping stress and purchase abandonment.

A bias might be present in our online survey, since consumers were asked to recall an experience with a time delay. The perceived level of stress of something that happened some time ago can differ from the perceived stress at the time of the event. To address this possibility, we conducted a second cross-sectional survey study offline immediately after a shopping situation.

## Method

A total of 501 consumers (mean age = 33.45 years; 43.11% male) participated in this offline survey, which consisted of the same questions as the online survey in Study 1a. The offline questionnaire was administered to consumers who had just left a brick-and-mortar retail store and were asked to take part in a survey about their shopping trip. This time, 306 participants were more task-oriented and 195 participants were more recreation-oriented. Table 6 provides descriptive statistics and correlations among the variables.

## Results

We conducted the same regression analysis as in Study 1a. The results mostly replicate the findings from the online data.

**Antecedents of consumer shopping stress** The first-stage regression did not suffer from multicollinearity (maximum



**Table 5** Second-stage regression predicting purchase abandonment in Study 1a

Variables	Coefficient	Standard error	t-Value
Constant	-.07	.33	-.21
Main effect			
Consumer shopping stress	.15	.13	1.14
Consumer shopping stress <sup>2</sup>	.13	.09	1.51
Impact of motivational orientation			
Motivational orientation	.41	.07	5.48**
Motivational orientation × Consumer shopping stress	.21	.06	3.68**
Motivational orientation × Consumer shopping stress <sup>2</sup>	-.06	.03	-1.99*
Impact of Stage 1 residual			
Residual	-.26	.09	-2.86**
Residual × Consumer shopping stress	-.08	.07	-1.19
Residual × Consumer shopping stress <sup>2</sup>	-.01	.02	-.62
Control variables			
Shopping involvement	.01	.03	.33
Frequency of store visit	.38	.13	2.99**
Gender	.04	.09	.41
Age	.00	.00	.83
R <sup>2</sup>	.16		
Adjusted R <sup>2</sup>	.15		

Notes: \*  $p < .05$ , \*\*  $p < .01$  (one-tailed)

VIF value of 1.67). Moreover, the variables explained a significant amount of variance in consumer shopping stress ( $R^2 = .23, p < .01$ ).

Perceived confusion of the store layout ( $\varphi_1 = .14, p < .01$ ), spatial density ( $\varphi_2 = .08, p < .05$ ), and presence of salespersons ( $\varphi_3 = .42, p < .01$ ) had a significant effect on shopping stress. Here, waiting time ( $\varphi_4 = .02, p > .10$ ) was not significantly related to the dependent variable, possibly because it was relatively constant at the time of the survey. However, the results again indicated that perceived choice overload ( $\varphi_5 = .07, p < .05$ ) and crowding ( $\varphi_6 = .15, p < .01$ ) positively affected consumer shopping stress.

**Impact on purchase abandonment** Table 7 summarizes the findings of the second-stage regression model. Multicollinearity is not an issue (maximum VIF is 5.26), but we again used White’s (1980) correction for the error term  $\varepsilon_i$ , because heteroskedasticity existed. The independent variables explained a significant amount of variance in purchase abandonment ( $R^2 = .09, p < .01$ ).

Replicating the results from Study 1a, regression analysis reveals significant effects of the interaction terms between consumer motivational orientation and shopping stress ( $\beta_4 = .13, p < .05$ ) and between motivational orientation and the quadratic form of shopping stress ( $\beta_5 = -.08, p < .05$ ) on purchase abandonment. For task-oriented consumers, consumer shopping stress had a significant positive main effect on purchase abandonment ( $\beta_{1, task} = .19, p < .01$ ) while the quadratic term was not significant

( $\beta_{2, task} = .05, p > .10$ ). Thus, H1 is supported. Moreover, the proposed inverted U-shaped relationship for recreation-oriented consumers (H2) was replicated as well. The respective group-specific regression analysis reveals both a significant positive main effect of consumer shopping stress on purchase abandonment ( $\beta_{1, recreational} = .38, p < .01$ ) and a significant negative quadratic effect ( $\beta_{2, recreational} = -.12, p < .05$ ). Thus, the moderating role of motivational orientation for the shopping stress–purchase intention link found in Study 1a is robust across the online and offline surveys.

## Discussion

Two differences in the results compared to Study 1a should be noted. First, the distribution of task- versus recreation-oriented shoppers shifted from relatively equal in the online survey (Study 1a) to more task-oriented dominated in the offline survey (Study 1b). Although the key relationships remained constant, this finding might indicate a retrospective bias in consumers’ recall of shopping motivation in the online survey. The delay between the experience and the reflection of an event is a crucial antecedent of memory performance: the more time that has elapsed since the encoding of the event, the less precisely the event will be recalled (Lewandowsky et al. 2004).

Second, no effect of the residual term on purchase abandonment was found in Study 1b. Consequently, the  $R^2$  dropped compared to the online data. The conditions of the shopping event itself might be responsible for this change.

**Table 6** Means, standard deviations, and correlations among variables in Study 1b

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. Purchase abandonment	1.00												
2. Consumer shopping stress	.18*	1.00											
3. Motivational orientation	.15*	-.00	1.000										
4. Shopping involvement	.05	-.05	.23*	1.00									
5. Frequency of store visit	.18*	.13*	.17*	.01	1.00								
6. Gender	-.04	-.05	.02	-.38*	.09*	1.00							
7. Age	-.07	-.04	-.16*	-.09*	-.07	-.09	1.00						
8. Confusion of the store layout	.13*	.33*	.07	.06	.14*	.01	-.01	1.00					
9. Spatial density	.14*	.31*	.11*	.05	.12*	-.02	.06	.32*	1.00				
10. Presence of salespersons	.10*	.29*	.08	.05	.05	-.01	.01	.27*	.21*	1.00			
11. Waiting time	.12*	.28*	-.04	-.06	.00	.07	-.10*	.28*	.35*	.35*	1.00		
12. Choice overload	.01	.23*	.06	.03	.02	-.08	.01	.26*	.24*	.12*	.09	1.00	
13. Crowding	.16*	.35*	-.03	-.02	.06	-.00	-.09*	.20*	.45*	.25*	.56	.21*	1.00
Mean	1.68	2.17	---	4.09	1.23	---	33.45	2.47	2.41	---	3.02	2.70	2.72
SD	1.55	1.26	---	1.82	.42	---	15.20	1.72	1.63	---	1.91	1.80	1.65

Notes: \*  $p < .05$  (two-tailed). — not applicable. Uncorrected correlations appear below the diagonal

Since participants of the online survey in Study 1a were asked to remember one of their most recent shopping trips to a retail store, their recollections reflected different experiences in terms of time, products, and stores. In contrast, the offline data in Study 1b came from consumers who had just left a given retail store. Therefore, the environment in the offline data was relatively constant, resulting in less variance in the stress factors compared to Study 1a.

### Study 2

Study 1a and Study 1b offer initial evidence for the hypothesized effects based on correlational results. Yet without random assignments and experimental controls, we cannot assert conclusively that motivational orientation moderates the functional relationship between consumer shopping stress and purchase abandonment. To corroborate our findings, we therefore

**Table 7** Second-stage regression predicting purchase abandonment in Study 1b

Variables	Coefficient	Standard error	t-Value
Constant	.50	.61	.82
Main effect			
Consumer shopping stress	.19	.21	.92
Consumer shopping stress <sup>2</sup>	.12	.14	.86
Impact of motivational orientation			
Motivational orientation	.31	.10	3.01**
Motivational orientation × Consumer shopping stress	.13	.08	1.70*
Motivational orientation × Consumer shopping stress <sup>2</sup>	-.08	.05	-1.73*
Impact of Stage 1 residual			
Residual	-.31	.20	-1.55
Residual × Consumer shopping stress	-.05	.13	-.38
Residual × Consumer shopping stress <sup>2</sup>	.02	.07	.29
Control variables			
Shopping involvement	.00	.04	.09
Frequency of store visit	.50	.20	2.43**
Gender	-.16	.14	-1.19
Age	-.00	.00	-.68
R <sup>2</sup>	.09	Adjusted R <sup>2</sup>	.07

Notes: \*  $p < .05$ , \*\*  $p < .01$  (one-tailed)

explicitly manipulated shopping stress and motivational orientation in Study 2. As we detail later, we also manipulated the presence of salespersons in the shopping experience.

## Method

**Participants and design** A usable sample of 285 consumers (mean age = 33.84 years; 28.00% male) was recruited to take part in the study. We employed a 3 (shopping stress: low vs. moderate vs. high)  $\times$  2 (motivational orientation: task- vs. recreation-oriented)  $\times$  2 (presence of salespersons: absent vs. present) between-subjects factorial design where participants were randomly assigned to one of the twelve scenarios. In the end, 144 (141) participants were in the task-oriented (recreation-oriented) condition. Regarding stress, 88 (96, 101) participants were in the low (medium, high) stress condition. For 135 (150) participants, salespersons were present (absent).

**Procedure, manipulations, and measures** Each participant received a short scenario and a questionnaire. The scenario described a clothing shopping situation, and participants were instructed to read the scenario and put themselves into the described situation. To preclude confounding effects, we did not provide product or store brand names.

Motivational shopping orientation was manipulated by following the procedure of Kaltcheva and Weitz (2006) since this procedure was successful in a replication study (Holmqvist and Lunardo 2015). In the task-orientation treatment group, the scenario indicated that the respondent was going on a trip that weekend and realized that s/he did not have enough suitable T-shirts, sweaters, and pairs of pants for the trip. Therefore, s/he decided to purchase at least one of the respective products and drove to a clothing store. In keeping with the task-orientation motivation, the scenario further indicated that all the participant wanted to do in the store was find one or more suitable T-shirts, sweaters, and pairs of pants for the trip and then leave.

In the recreation-orientation treatment group, the participant was told to imagine that s/he was currently at home with none of his/her friends around. Moreover, owing to cold temperatures outside, outdoor activities like going for a walk or running were unappealing, and the TV program was too dull to watch. Therefore, s/he felt bored and to relieve the boredom decided to visit some stores and shop for clothes.

Stress was manipulated on the basis of the results of the first-stage regressions in Studies 1a and 1b. That is, we manipulated shopping stress in terms of crowding, confusion of the store layout, spatial density, and waiting time. Specifically, in the low-stress condition, participants read the following:

When you enter the store, you find it fairly empty. Because of the lack of other customers, it is really easy

to move smoothly through the store and the aisles. Other people do not bump into you. Additionally, you have no difficulty orienting yourself in the store due to the store layout. It is very easy to find your way. It is also easy to have a quick and decent look at the different items in the clothing section because you have enough space. Fortunately, there are no lines in front of the fitting rooms and at the register.

The moderate shopping stress condition was described as follows:

When you enter the store, you find it fairly busy. Because of the moderate number of other customers, it is more or less OK to move smoothly through the store and the aisles, although you occasionally have to alter your path slightly to get to your desired destination and you sometimes have to wait to see particular items. Additionally, it is more or less OK for you to orient yourself in the store due to the store layout. In general, you are able to shop with relative ease. Only sometimes does another customer bump into you. It is also more or less OK to have a quick and decent look at the different items in the clothing section because you have at least a little space. Moreover, there are moderate lines in front of the fitting rooms and at the register.

Participants in the high shopping stress condition read the following scenario:

When you enter the store, you find it very crowded and filled with many people. Because of the large number of other customers, it is really hard to move smoothly through the store and the aisles. Other people often bump into you. Additionally, you have great difficulty orienting yourself in the store due to the store layout. It is very tough to find your way. It is also hard to have a quick and decent look at the different items in the clothing section because you don't have enough space. Moreover, there are very long lines both in front of the fitting rooms and at the register.

Prior to the main experiment, we asked 60 participants (mean age: 24.38 years, 31.70% male) to imagine shopping for clothing in a store, and then read one of the three stress scenarios and rate the level of felt stress on a seven-point scale of very low to very high (Atalay et al. 2016; Miller et al. 2008). The results of this pretest revealed that our manipulation was successful. The high-stress scenario scored highest on the scale ( $M_{\text{high}} = 6.00$ ), followed by the moderate-stress scenario ( $M_{\text{moderate}} = 4.71$ ), and the low-stress scenario ( $M_{\text{low}} = 1.90$ ;  $F(2, 57) = 37.88, p < .01$ ).

After reading one of the six scenarios in the main experiment, participants were told that they either saw many available salespersons (present condition) or no available salesperson (absent condition). We used this ending of the scenario as a recognition check to ensure that participants read the scenarios. Moreover, the manipulation of salespersons' presence should account for the important role of employees in consumers' store experiences (Zboja et al. 2016).

Participants then completed a questionnaire. We measured goal reengagement with three items ( $\alpha = .88$ ) taken from Wrosch et al. (2007). In addition, after reading the scenario subjects indicated the goal they would like to attain on a bipolar single-item scale anchored by "making a purchase" and "getting enjoyment from shopping." Their desired goal could thus be different from the motivational orientation triggered through the manipulation. To measure the dependent variable of purchase abandonment, we used the same three items ( $\alpha = .85$ ) from Studies 1a and 1b. Participants rated the single stress item used in the pretest to check the manipulation of consumer shopping stress. We used the four-item measure of Kaltcheva and Weitz (2006) to assess motivational shopping orientation. This measure includes two items to assess task orientation ( $\alpha = .90$ ) and another two items to capture recreational orientation ( $\alpha = .80$ ). Finally, the respondents indicated whether salespersons were present or not, assessed the perceived realism of the described scenarios with two items ( $\alpha = .72$ ) taken from Du et al. (2011), and provided their age and gender before completing an open-ended suspicion probe question.

## Results

**Manipulation/recognition checks** The responses to the suspicion probe reveal that none of the participants was aware of the true purpose of the study. Additionally, participants evaluated the scenario as a realistic shopping experience ( $M = 5.63$ ;  $t = 18.25$ ,  $p < .01$ ) and 94.74% were able to correctly recall whether salespersons were absent or present. While the full sample was used in the analyses, the results remain consistent when participants who failed the recognition check were dropped.

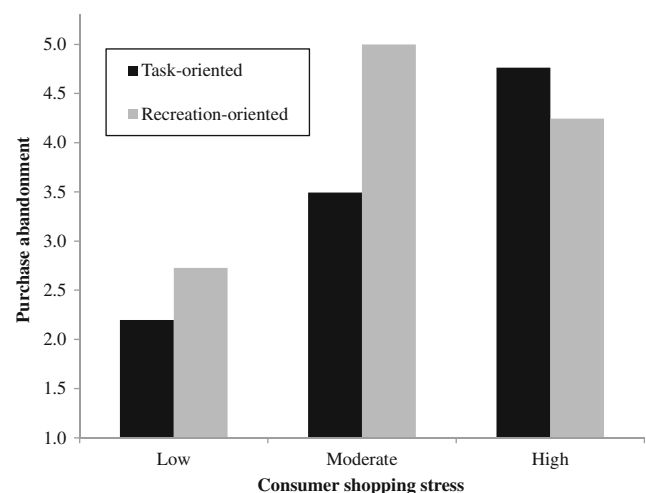
An analysis of variance (ANOVA) with the task (recreational) orientation measure as the dependent variable and the manipulation as the independent variable reveals that consumers indeed perceived the task (recreational) orientation condition as more task- (recreation-) oriented (task scale:  $M_{\text{task}} = 6.20$ ,  $M_{\text{recreation}} = 3.24$ ;  $F(1, 283) = 236.12$ ,  $p < .01$ ; recreational scale:  $M_{\text{task}} = 2.11$ ,  $M_{\text{recreation}} = 4.74$ ;  $F(1, 283) = 185.44$ ,  $p < .01$ ).

Another ANOVA with the perceived shopping stress of the participant as the dependent variable and the experimental condition as the independent variable reveals a significant effect ( $F(2, 282) = 134.47$ ,  $p < .01$ ). Planned contrasts show

that respondents in the high-stress condition ( $M_{\text{high}} = 6.23$ ) felt significantly more stress than those in the moderate-stress condition ( $M_{\text{moderate}} = 5.29$ ;  $F(1, 282) = 15.47$ ,  $p < .01$ ), and participants in the moderate-stress condition reported significantly more perceived stress than those in the low-stress condition ( $M_{\text{low}} = 2.36$ ;  $F(1, 282) = 141.23$ ,  $p < .01$ ).

**Hypotheses testing** To test whether motivational orientation moderates the relationship between consumer shopping stress and purchase abandonment, we conducted an ANOVA with purchase abandonment as the dependent variable and the manipulations of shopping stress and motivational orientation together with their interaction as independent variables. We analyzed subjects' responses using unweighted means analysis of variance to accommodate the unequal cell sizes (Winer et al. 1971). The analysis reveals a main effect of consumer shopping stress ( $M_{\text{low}} = 2.46$ ,  $M_{\text{moderate}} = 4.18$ ,  $M_{\text{high}} = 4.49$ ;  $F(2, 279) = 25.49$ ,  $p < .01$ ) on purchase abandonment, but no significant effect of motivational orientation ( $M_{\text{task}} = 3.52$ ,  $M_{\text{recreation}} = 4.01$ ;  $F(1, 279) = 2.08$ ,  $p > .10$ ). Importantly, as expected, a significant interaction effect is present between shopping stress and motivational orientation ( $F(2, 279) = 8.47$ ,  $p < .01$ ).

Decomposition of the sample into respondents with task- and recreation-oriented motivation provided support for our hypotheses. As Fig. 1 shows, task-oriented participants in the moderate stress condition ( $M_{\text{moderate, task}} = 3.49$ ) were more likely to abandon the purchase than those in the low stress condition ( $M_{\text{low, task}} = 2.20$ ;  $F(1, 141) = 12.92$ ,  $p < .01$ ). Similarly, participants in the high stress condition ( $M_{\text{high, task}} = 4.76$ ) were significantly more likely to abandon the purchase than those in the moderate stress condition ( $F(1, 141) = 12.99$ ,  $p < .01$ ). Here again, the influence



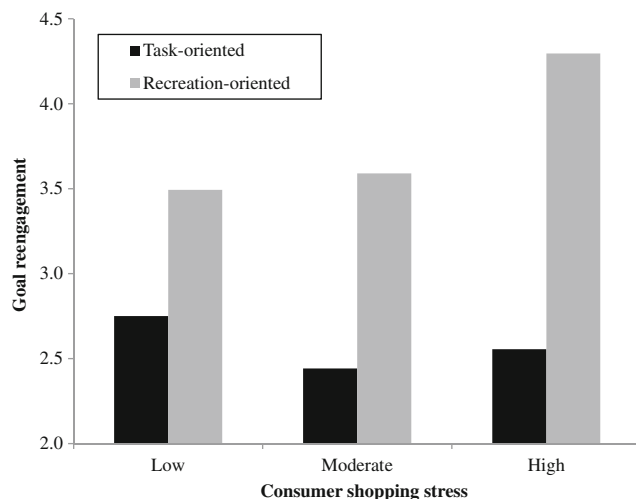
**Fig. 1** The effect of consumer motivational orientation on the relationship between consumer shopping stress and purchase abandonment (Study 2)

of consumer shopping stress on purchase abandonment is monotonic and increasing for task-oriented shoppers. Thus, H1 is supported.

For the recreation-oriented consumers, participants in the moderate stress condition ( $M_{\text{moderate, recreation}} = 5.00$ ) were more likely to abandon the purchase than those in the low stress condition ( $M_{\text{low, recreation}} = 2.73$ ;  $F(1, 138) = 40.13$ ,  $p < .01$ ). However, as depicted in Fig. 1, participants in the high stress condition ( $M_{\text{high, recreation}} = 4.25$ ) were less likely to abandon their purchase than those in the moderate stress condition ( $F(1, 138) = 4.84$ ,  $p < .05$ ), but more likely than those in the low stress condition ( $F(1, 138) = 19.56$ ,  $p < .01$ ). This result suggests that for recreation-oriented consumers, an inverted U-shaped relationship exists between shopping stress and purchase abandonment. Thus, H2 is supported.

We next tested our theoretical argument that goal reengagement appears beyond a moderate level of stress for recreational shoppers, but not for the task-oriented ones. We conducted two ANOVAs, one for each condition of motivational orientation, with goal reengagement as the dependent variable and the manipulation of consumer shopping stress as the independent variable. The results indeed reveal no significant differences in the task-oriented condition ( $F(2, 141) = .47$ ,  $p > .10$ ). As shown in Fig. 2, task-oriented participants in the moderate stress condition ( $M_{\text{moderate, task}} = 2.44$ ) did not show higher tendencies to reengage goals than those in the low shopping stress condition ( $M_{\text{low, task}} = 2.75$ ;  $F(1, 141) = .93$ ,  $p > .10$ ), nor did individuals in the high stress condition ( $M_{\text{high, task}} = 2.56$ ) compared to those in the moderate ( $F(1, 141) = .13$ ,  $p > .10$ ) and low stress conditions ( $F(1, 141) = .36$ ,  $p > .10$ ).

By contrast, we found a significant change in the level of goal reengagement in recreation-oriented shoppers ( $F(2, 138) = 3.18$ ,  $p < .05$ ). Supporting our threshold



**Fig. 2** The effect of consumer motivational orientation on the relationship between consumer shopping stress and goal reengagement (Study 2)

argument, planned contrast analyses reveal significantly higher levels of reengagement for individuals in the high stress condition ( $M_{\text{high, recreation}} = 4.29$ ) than for those in the moderate ( $M_{\text{moderate, recreation}} = 3.59$ ;  $F(1, 138) = 3.99$ ,  $p < .05$ ) and low stress ( $M_{\text{low, recreation}} = 3.49$ ;  $F(1, 138) = 5.19$ ,  $p < .05$ ) scenarios, while no differences were found between the low and moderate conditions ( $F(1, 138) = .07$ ,  $p > .10$ ) (see also Fig. 2). Importantly, individuals in the high stress condition were more (less) inclined to indicate “making a purchase” (“getting enjoyment from shopping”) as their “new” goal ( $M_{\text{moderate, recreation}} = 4.36$ ,  $M_{\text{high, recreation}} = 3.21$ ;  $F(1, 138) = 11.38$ ,  $p < .01$ ). An analysis (5000 bootstrapped samples) (Hayes 2013) demonstrates that this change in goals mediated the decline in purchase abandonment of recreation-oriented shoppers beyond the moderate stress level. Further, while the indirect effect was significant ( $\beta_1 = -.44$ ,  $CI_{.95} = -.91$  to  $-.15$ ), the direct effect of shopping stress on purchase abandonment was no longer significant ( $\beta_2 = -.32$ ,  $CI_{.95} = -1.05$  to  $.41$ ). Therefore, the results support the argument that, beyond a medium threshold level of stress, recreation-oriented shoppers change goals from getting enjoyment from shopping to making a purchase, which in turn reduces the intention to leave a store without making a purchase.

**Additional testing** Prior research has provided evidence that consumers’ purchase decisions are strongly influenced by salespeople in the store (Zboja et al. 2016). Therefore, we tested whether salespersons’ presence, which served as a recognition check in our study, influences the results of the study. The results of an ANOVA reveal that our findings do not depend on whether a salesperson is present. The main effect of presence ( $F(1, 273) = .65$ ,  $p > .10$ ), the interaction terms of salesperson’s presence and consumer shopping stress ( $F(2, 273) = .44$ ,  $p > .10$ ) and motivational orientation ( $F(1, 273) = .54$ ,  $p > .10$ ), and the three-way interactions of those three variables ( $F(2, 273) = .18$ ,  $p > .10$ ) were not significant.

One could argue that instead of abandoning their purchases, task-oriented consumers in particular may *accelerate* purchases in response to shopping stress, because making a purchase as quickly as possible could maintain their inner balance and therefore avoid the negative outcomes of high stress and a purchase failure (Wolfenbarger and Gilly 2001). To test this explanation, we asked participants to rate two additional items based on Byun and Sternquist (2012) ( $\alpha = .60$ ), which were averaged to capture purchase acceleration. An ANOVA reveals no significant effect of the interaction between consumer shopping stress and motivational orientation on purchase acceleration ( $F(2, 279) = 1.04$ ,  $p > .10$ ).

Finally, more task-oriented than recreation-oriented consumers might abandon their offline shopping trip in the high stress condition, but at the same time buy online to achieve their purchase goal. In times of increasing e-commerce use,



individuals commonly shop offline to gather information about products and then later purchase online when, for instance, the shopping environment (e.g., long queues) makes them uncomfortable. To test whether task-oriented consumers are more likely than recreation-oriented ones to switch from offline to online purchases across the stress conditions, we asked participants to also rate two items ( $\alpha = .92$ ) adapted from Gupta et al. (2004) to measure switching. However, an ANOVA shows the effect of the interaction term between consumer shopping stress and motivational orientation on switching to online purchases was not significant ( $F(2, 279) = 1.00, p > .10$ ). Taken together, the additional tests provide evidence that the results presented above are stable, reinforcing the generalizability of the findings.

### Study 3

Study 2 replicates the findings of the survey-based Studies 1a and 1b. Consumers with a task-oriented shopping motivation were more likely to abandon their purchases when shopping stress increased. By contrast, recreation-oriented consumers with a moderate stress level were more likely to abandon their purchases than those with low or high shopping stress. In Study 3, we aim to replicate and generalize the linear (task orientation) and inverted U-shaped (recreational orientation) effects of shopping stress on purchase abandonment using a field quasi-experiment.

### Method

**Participants and design** The sample consisted of 189 subjects (mean age = 28.37 years; 17.46% male), who were recruited outside a clothing store on the streets of a city in central Europe. This study was a quasi-experiment with three levels of consumer shopping stress (low, moderate, high) and with motivational orientation as a measured variable. Regarding stress, 79 (52, 58) participants were in the low (medium, high) stress condition.

**Procedure, manipulations, and measures** Consumers were intercepted for interviews between 10 a.m. and 8 p.m. on five days (Monday, Tuesday, Wednesday, Friday, Saturday) of the same week. Subjects were asked to complete a survey regarding their experience in the store and their purchase behavior.

Results of interviews with five doctoral students determined the day and time of day (morning, afternoon, evening) that were used to manipulate stress. The students stated the stress level they generally experienced in a week with respect to these 15 time slots, which usually differ in perceived crowding and waiting time. For instance, the students rated shopping on Wednesday morning as not very stressful, shopping on a Friday evening as moderately stressful, and shopping on Saturdays as highly stressful.

Study participants were first asked to indicate their motivational shopping orientation for their trip to the clothing store, which was measured by two items ( $\alpha = .80$ ; task-oriented motivation) adapted from Kaltcheva and Weitz (2006). Subjects then stated whether they had or had not abandoned the purchase. Participants also rated the single stress item used in the pretest of Study 2 to test the manipulation of consumer shopping stress. They also indicated their waiting time and crowding experiences on a single item each to assess those two important drivers of shopping stress. Finally, the respondents indicated their arousal level on two items adapted from King et al. (1983) and their age and gender. Arousal was included because of the discussion in the literature representing stress and arousal as being two separate concepts (e.g., Duckro et al. 1989).

We also asked 60 other participants (mean age = 28.80 years; 25.00% male) to recall their experience in the clothing store. Those individuals rated the same stress item used in the main sample. An ANOVA showed that our manipulation was successful. The high stress time slots were indeed perceived as significantly more stressful than the moderate and low stress times ( $M_{low} = 2.24, M_{moderate} = 2.71, M_{high} = 4.28; F(2, 57) = 4.81, p < .05$ ).

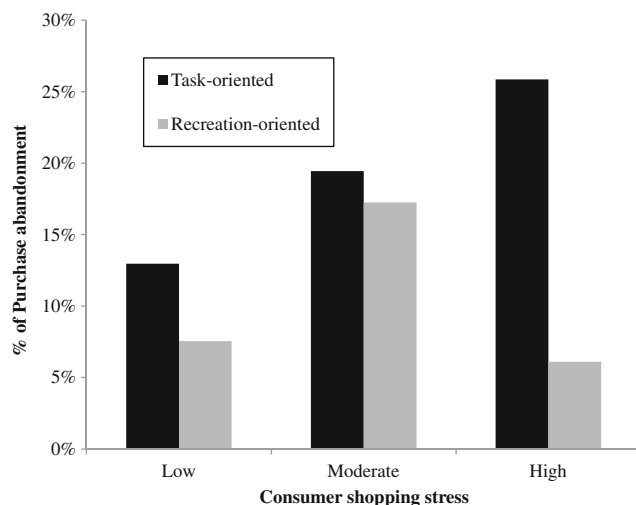
### Results

**Preliminary analyses** We also tested whether our preassigned manipulations of consumer shopping stress were successful in the main sample. An ANOVA with participants' *perceived* shopping stress as the dependent variable and the *experimental* shopping stress condition as the independent variable confirmed the success of the manipulation. Respondents in time slots designated as high stress reported feeling significantly more stress than those in moderate and low stress time slots ( $M_{low} = 1.78, M_{moderate} = 2.25, M_{high} = 3.90; F(2, 186) = 22.81, p < .01$ ). We observed the same pattern for perceived waiting time ( $M_{low} = 1.54, M_{moderate} = 1.90, M_{high} = 4.60; F(2, 183) = 56.58, p < .01$ ) and perceived crowding ( $M_{low} = 1.88, M_{moderate} = 2.48, M_{high} = 5.09; F(2, 185) = 55.49, p < .01$ ). Consistent with the felt stress results, this result suggests that the stress drivers (waiting time, crowding) differed across the time slots.

In line with our theoretical argument, we might argue that task-oriented shoppers purposely avoid stressful shopping situations and therefore the data may suffer from a self-selection bias. If this were true, more task-oriented consumers would have chosen less stressful time slots for shopping (and vice versa for recreation-oriented individuals). The results of an ANOVA with motivational orientation as the dependent variable and the experimental consumer shopping stress condition as the independent variable do not support this. Motivational orientation did not significantly differ either across the three stress conditions ( $F(2, 186) = .01, p > .10$ ) or across the preassigned time slots ( $F(2, 186) = 1.06, p > .10$ ).

**Hypotheses testing** Given the categorical nature of our dependent variable, we conducted logistic regression analysis to assess the effect of motivational orientation on the relationship between consumer shopping stress and purchase abandonment. The analysis reveals no significant main effects for shopping stress (reference category: moderate stress;  $\beta_{low \rightarrow moderate} = .53, p > .10$ ;  $\beta_{moderate \rightarrow high} = -.35, p > .10$ ) and motivational orientation ( $\beta = .62, p > .10$ ). If motivational orientation has a moderating role on the relationship between consumer shopping stress and purchase abandonment, then the interaction between high (low) stress and motivational orientation should (not) be significant. The results confirm the expected pattern ( $\beta_{moderate \rightarrow high \times MotOrient} = -1.39, p < .05$ , one-tailed;  $\beta_{low \rightarrow moderate \times MotOrient} = -.29, p > .10$ ).

We also split the sample into task-oriented shoppers (value of motivational orientation higher than the midpoint 4 on the 7-point task orientation scale;  $n = 117$ ) and recreation-oriented shoppers (value lower than 4 on the 7-point task orientation scale;  $n = 72$ ) (e.g., Büttner et al. 2015; Lunardo and Mbengue 2009). Figure 3 shows that among task-oriented consumers, purchase abandonment was more likely in the high stress condition than in the low stress condition (25.87% vs. 12.96%,  $\beta_{low \rightarrow high} = .85, p < .05$ , one-tailed). Although the result was not significant, we also found that purchase abandonment was more likely in the moderate stress condition than in the low stress condition (19.44% vs. 12.96%,  $\beta_{low \rightarrow moderate} = .48, p > .10$ ) and in the high stress condition than in the moderate stress condition (25.87% vs. 19.44%  $\beta_{moderate \rightarrow high} = .37, p > .10$ ). These results again suggest a monotonic relationship between consumer shopping stress and purchase abandonment for task-oriented shopping motivation, marginally supporting H1.



**Fig. 3** The effect of consumer motivational orientation on the relationship between consumer shopping stress and purchase abandonment (Study 3)

For recreation-oriented consumers, we found the expected inverted U-shaped functional relationship. Participants in the moderate shopping stress condition were more likely to abandon the purchase than were those in the low stress condition (17.25% vs. 7.55%,  $\beta_{low \rightarrow moderate} = .94, p < .10$ , one-tailed). Moreover, purchase abandonment was less likely in the high stress condition than in the moderate stress condition (6.11% vs. 17.25%,  $\beta_{moderate \rightarrow high} = -1.16, p < .05$ , one-tailed). We found no significant differences between the low and high stress conditions (7.55% vs. 6.11%,  $\beta_{low \rightarrow high} = -.23, p > .10$ ). Therefore, H2 is supported.

## General discussion

Shopping situations are widely recognized as sources of stress, with experienced stress leading to avoidance behavior (Durante and Laran 2016). Individuals try to create “psychic or physical distance between one-self and a stressor” (Duhachek 2005, p. 46) and thus are more likely to abandon purchases in a store with stressful conditions—in particular, when they are confronted with uncontrollable stressors (Elliot et al. 2011). However, the impact of motivation for engaging in a shopping activity is often ignored, despite its important role for interpreting conditions experienced in a shopping environment (Kaltcheva and Weitz 2006). Little is known, for example, about how customers’ motivational orientation for a shopping trip influences their avoidance behavior. The present research attempts to address this by investigating how motivational shopping orientation influences the relationship between consumer shopping stress and purchase abandonment.

Across four studies, we consistently find support for a moderating role of motivational shopping orientation. For customers with a task-oriented motivation, we find a monotonic relationship between shopping stress and purchase abandonment, consistent with their perception of stress as a threat to their purchase goal. This finding aligns well with suggestions that consumer avoidance behavior is more likely with higher levels of stress (Baker and Wakefield 2012; Moschis 2007). However, for recreation-oriented customers, the results indicate a curvilinear, inverted U-shaped relationship: purchase abandonment first increases as levels of shopping stress rise, but then decreases at higher levels. These results emerge in two cross-sectional surveys (online and offline), one experiment, and a field quasi-experiment, which incorporate both measured and manipulated levels of stress and shopping motivation (Table 2).

To the best of our knowledge, this study is the first to predict and confirm a non-linear relationship between shopping stress and purchase abandonment. Prior research proposes a positive linear relationship (Baker and Wakefield 2012; Moschis 2007) but also acknowledges that this assumption may be over-simplified, and calls for a study of conditions

where “people respond differently to the same potentially stressful situations” (Moschis 2007, p. 431). We find that motivational orientation is one such differentiating condition. While for task-oriented customers an increase in stress consistently resulted in an increase in purchase abandonment, for recreation-oriented individuals the relationship was inverted U-shaped. That is, abandonment of purchase becomes less likely with increasing levels of stress beyond a moderate level. For example, our field study results indicate that purchase abandonment dropped from 17.25% in the moderate stress condition to 6.11% in a high stress shopping environment. We thus provide initial evidence that recreation-oriented shoppers not only regard stress in the store as a threat, as it appears to be for task-oriented customers, but also as a challenge (Lazarus and Folkman 1984). Beyond a threshold level of stress, those individuals shift their efforts toward the alternative goal of making a purchase to compensate for the negative consequences associated with the inability to make progress toward their desired goal (Wrosch et al. 2007).

Our research also adds to the discussion about whether arousal and stress are two distinct concepts (e.g., Maier and Wilken 2014), with arousal as a neutral state of increased physiological activity and stress as a subjective perception of the situation as being harmful, threatening, or challenging (King et al. 1983). The current results support the view that arousal and stress are distinct concepts. Stress can be perceived whether or not there is arousal and arousal may also be perceived in the absence of stress (Duckro et al. 1989). While Kaltcheva and Weitz (2006) show that arousal has different effects on shopping behavior depending on the motivational orientation, we show that only high stress situations lead to different behaviors depending on the motivational orientation. In low stress conditions, task- and recreation-oriented individuals behave similarly.

The paper also provides some insights into how conditions in the store and its direct environment can induce shopping stress in consumers. Research on the relative importance of such stressors is rare even though consumption situations are a primary source of stress (Moschis 2007). To account for potential endogeneity, we calculated a control function model in our two cross-sectional survey analyses where we examined antecedents of customer shopping stress. Although not the primary focus of our research, this analysis provides support for the importance of store-related and product-related factors. For instance, the store layout may be confusing and raise psychological costs (Chebat et al. 2005), or may have too many alternatives in a given space that are then perceived as restricting by a customer (Machleit et al. 1994). Both situations result in elevated shopping stress. Similarly, the presence of salespersons can be psychologically disturbing. Individuals might perceive pressure to conform to expected consumer roles, amplifying shopping stress (Uhrich and Tombs 2014). The results also indicate that perceived choice overload is a

threat to the consumer since s/he experiences temporal, error, and psychic costs (Loewenstein 2000). Moreover, the results confirm the findings of Baker and Wakefield (2012), who show a positive relationship between human density and shopping stress. The emotions of shoppers tend to be heightened by perceptions of crowding. Given the negative (positive) response of task- (recreation-) oriented customers to high stress conditions, we also provide support for the conjecture of “the likelihood of both positive and negative consequences of perceived human density” (Baker and Wakefield 2012, p. 804).

### Managerial implications

For managers, a potentially valuable insight is that shopping stress can systematically influence customer avoidance behavior. Neither the factors leading to stress nor customers’ coping strategies are well understood by practitioners (Moschis 2007). Our research suggests that not all customers respond negatively when faced with the same conditions. Given the finding that recreation-oriented customers are less likely to abandon purchase in high stress environments, retailers may not benefit from reducing stress at times and places where most customers are expected to be shopping for recreational reasons.

Our research supports the insight that retailers need to be creative in addressing the needs of both task- and recreation-oriented shoppers (Beasty 2005), taking into account the likelihood that the dominant motivational orientation may vary across store departments and time of day and week. The findings from the field study indicate that in more stressful shopping environments, task-oriented shoppers’ purchase abandonment is more than four times that of recreation-oriented customers. Therefore, strongly task-oriented customers, such as young men who tend to seek control and characterize themselves as task shoppers (Baker and Wakefield 2012), should be shielded from high stress situations. This can be achieved by giving more control to customers in their shopping experience through, for instance, encouraging shopping during less crowded times (Baker and Wakefield 2012). Another valuable tactic may be to provide customers with shopping apps that show information on crowding in the store (and across its areas) and on where to find items or product features on maps to reduce the confusion of the store layout, two significant sources of stress in our research.

For recreation-oriented customers, such as young females who display their enjoyment of shopping by smiling (Baker and Wakefield 2012), the results suggest avoiding even moderate stress levels. Depending on the “natural” stress conditions, the strategy for success may differ. Given naturally low stress environments, for example on Wednesday mornings (when most people are at work and shopping situations are less crowded), companies should try to avoid increasing stress

by playing loud music or having employees standing in aisles, reducing spatial density. In contrast, in typically high stress conditions such as weekends or holidays (when more people shop), maintaining or even increasing the stress level may be advisable. For instance, raising the volume of background music (Kaltcheva and Weitz 2006) or having employees target recreational shoppers with conversations may boost purchasing (Baker and Wakefield 2012).

### Limitations and future research

Although our investigation provides insights into why consumers buy or do not buy in a store, it has limitations that open avenues for future research. For example, we conducted the studies in an urban area in central Western Europe. Previous research indicates that individuals residing in rural (suburban) areas are less (more) likely to leave without buying (Caughey et al. 1999), which suggests replicating our investigation in other areas. It might suggest that rural shoppers are more task-oriented (perhaps due to the need to travel farther to shop) and rural stores represent less stressful shopping environments. Additionally, Western and non-Western societies experience stress differently (Laungani 1993). In non-Western societies, many sources of stress (e.g., crowding) are common and thus not experienced as a major problem, suggesting that purchase abandonment may not be as prevalent there.

The brick-and-mortar stores in our research primarily focus on generating sales. However retail stores have different functions such as building sales or reinforcing the image of the brand, such as with themed flagship stores (Kozinets et al. 2002). In these cases, companies might carry less inventory and have salespersons recommend purchases at other physical locations or online. Therefore, purchase abandonment as a consumer response to store-induced stress would be less of a concern for these stores.

Further, individuals sometimes enter a store without intending to buy anything. Their intention could be to talk to knowledgeable salespersons or test the physical product and then make a purchase later online, where products are usually perceived as lower priced (Burke 2002; Wang and Goldfarb 2016). Although we did not observe such behavior in the context of clothing products (Study 2), future research should study this third category of consumer motivation for entering a brick-and-mortar store in more detail by focusing on other shopping contexts.

Future research should also study potential environmental factors that affect the translation of shopping stress into purchase abandonment. Comparing the experimental data in Study 2 and the data of the field quasi-experiment in Study 3, we observe different patterns of purchase abandonment in the moderate stress condition. While in the computer-based setting task-oriented consumers were much less likely to abandon purchases than recreation-oriented shoppers, in the field

abandonment was similar for the two groups. One factor that could explain this is that the high stress condition in Study 3 led to moderate (vs. high) levels of stress. Future studies could utilize different stores or times of year (e.g., Christmas) to explore truly high stress environments. Another factor that could explain this difference is shopping alone versus with family members and/or friends. The social aspect of shopping is important to consumers' evaluation of the shopping experience (e.g., Kim et al. 2005) and therefore might also affect consumers' response to store-induced stress. Our field quasi-experiment did not differentiate between shopping alone vs. with other individuals, which might explain the differences in response. Finally, it is possible that the text itself that we used to manipulate the stress level in Study 2 might have caused differences in purchase abandonment patterns. The text was slightly longer in the moderate compared to the low and high stress conditions and thus might have affected the participants' involvement in our study.

Moreover, we did not investigate how the temporal distance to the goal of making a purchase in the store (i.e., how long one has been in the store) affects a consumer's behavior (Huang et al. 2012). This effect can be accounted for in future studies. For task-oriented shoppers, researchers might look at the relative importance of the purchase itself and how this importance influences their subsequent response. Moreover, future research could study which interventions help reduce purchase abandonment of task-oriented shoppers. For instance, low price (Close and Kukar-Kinney 2010) and transaction convenience (Rajamma et al. 2009) can reduce online shopping cart abandonment. A simultaneous investigation of those factors and stress might provide further insights into how to effectively reduce or overcome the negative consequences of customer shopping stress.

This research has focused on the consequences of stress in a shopping environment and only briefly explored the causes of stress. A more systematic understanding of the drivers of customer shopping stress and their relative importance may help retail management take appropriate action to reduce (for task-oriented shoppers) or potentially increase (for recreation-oriented shoppers) the level of stress felt by consumers in the store. Finally, in Studies 1a, 1b, and 2, we accounted for the salespersons' presence in a store as one potential stressor. Future studies could not only look at whether employees are present or not but also investigate how their physical proximity, whether they initiate a conversation, and how blatant their sales pitch is influence stress and purchasing (Esmark and Noble 2016). We hope to see future research that explores these and other issues.

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## Appendix

**Table 8** Measures and reliabilities

Variable	Cronbach's alpha			
	Study 1a	Study 1b	Study 2	Study 3
Purchase abandonment (Kukar-Kinney and Close 2010)	.89	.95	.85	
I abruptly ended my shopping trip in this store.				
I left the store without buying anything.				
I abandoned the shopping trip.				--
Consumer shopping stress (Baker and Wakefield 2012)	.90	.88		
While I was shopping in the store, I felt...				
...tense				
...panicky				
...hectic				
...frenzied				
...rushed				
Consumer shopping stress (manipulation check in Studies 2 and 3) (Atalay et al. 2016; Miller et al. 2008)			--	--
While I was shopping in the store, I felt stressed.				
Motivational orientation (Wagner and Rudolph 2010)	--	--		
I needed to buy something vs. I wanted to go shopping for its own sake.				
Motivational orientation (task) (manipulation check in Study 2; on-site recall in Study 3) (Kaltcheva and Weitz 2006)			.81	.80
In the store, I primarily wanted...				
...to get things done.				
...to be task-focused.				
Motivational orientation (recreational) (manipulation check in Study 2) (Kaltcheva and Weitz 2006)			.72	
In the store, I primarily wanted...				
...to have fun.				
...to relieve boredom.				
Shopping involvement (Wakefield and Baker 1998)	.90	.92		
In general, going shopping is important to me.				
In general, going shopping is exciting to me.				
In general, going shopping means a lot to me.				
In general, going shopping is fun.				
Frequency of store visit (Desai and Talukdar 2003)	---	---		
Do you regularly shop in this store?				
Confusion of the store layout (Dickson and MacLachlan 1990)	.93	.95		
In the store, it was difficult for me to find the product required because of the arrangement of the shelves.				
The store layout did not really make it easy for me to find certain products.				
The arrangement of the shelves in the store did not make it easy to find my way.				
Spatial density (Machleit et al. 1994)	.89	.95		
There was not enough space between the shelves in the store.				
The arrangement of the shelves and counters in the store did not allow the customers enough space for shopping.				
The store was not designed to be spacious.				
Presence of salespersons (Baker et al. 1992)	---	---		
In the store, there were not enough employees present: agree vs. do not agree				
Presence of salespersons (manipulation check in Study 2) (Baker et al. 1992)			---	
There were many salespersons present in the store: yes vs. no				



**Table 8** (continued)

Variable	Cronbach's alpha			
	Study 1a	Study 1b	Study 2	Study 3
Waiting time (Grewal et al. 2003)	.96	.98		
The waiting time in the store (e.g., at the checkout counter) was too long.				---
I had to wait too long in the store (e.g., at the checkout counter).				
It seemed to me as if I had to wait forever in the store (e.g., at the checkout counter).				
Choice overload (Dickson and Albaum 1977)	.93	.97		
The store offered too many items in the product category I was interested in.				
In the store, the choice of products I was interested in was too wide.				
In the store, there was an overchoice of items in the product category I was interested in.				
Crowding (Baker and Wakefield 2012; Machleit et al. 1994)	.92	.94		
There were too many people in the store.				---
The store was jammed with people.				
The store was crowded with customers.				
Goal reengagement (Wrosch et al. 2007)				.88
I think about other goals than the intended one to pursue in the store.				
I seek other meaningful goals than the intended one in the store.				
I start working on other goals in the store.				
Direction of reengagement (bipolar scale from 1 to 7; self-provided)				---
Indicate the goal you would like attain now after having read the scenario: getting making a purchase vs. enjoyment from shopping				
Purchase acceleration (Byun and Sternquist 2012)				.68
I buy something as quickly as possible in order to get out of the store.				
I just grab something without really looking at it in detail.				
Switching from offline to online (Gupta et al. 2004)				.92
I do not buy anything in the store, but try to buy something later online from the same retailer				
I decide to buy clothing online from the same retailer and to abandon my shopping trip in the store now.				
Arousal (King et al. 1983)				.88
While I was shopping in the store, I felt alert.				
While I was shopping in the store, I felt active.				
Realism evaluation (Du et al. 2011)				.72
I think there are similar shopping situations in everyday life.				
I could imagine myself to be the customer in the described scenario.				

Notes: — not applicable because the respective variable was either single-item measured or manipulated. Cells were left blank if the variable was not part of the respective study

## References

- Arnold, M. J., & Reynolds, K. E. (2003). Hedonic shopping motivations. *Journal of Retailing*, 79, 77–95.
- Arnold, M. J., Reynolds, K. E., Ponder, N., & Lueg, J. E. (2005). Customer delight in a retail context: investigating delightful and terrible shopping experiences. *Journal of Business Research*, 58, 1132–1145.
- Atalay, A. S., Bodur, H. O., & Bressoud, E. (2016). When and how multitasking impacts consumer shopping decisions. *Journal of Retailing*, forthcoming.
- Aylott, R., & Mitchell, V.-W. (1999). An exploratory study of grocery shopping stressors. *British Food Journal*, 101, 683–700.
- Babin, B. J., Darden, W. R., & Griffin, M. (1994). Work and/or fun: measuring hedonic and utilitarian shopping value. *Journal of Consumer Research*, 20, 644–656.
- Baker, J., & Wakefield, K. L. (2012). How consumer shopping orientation influences perceived crowding, excitement, and stress at the mall. *Journal of the Academy of Marketing Science*, 40, 791–806.
- Baker, J., Levy, M., & Grewal, D. (1992). An experimental approach to making retail store environmental decisions. *Journal of Retailing*, 68, 445–460.
- Beasty, C. (2005). The ideal shopping experience. Retrieved 16 December 2016 from <http://www.destinationcrm.com/Articles/CRM-News/CRM-Featured-News/The-Ideal-Shopping-Experience-43640.aspx>.

- Brandtstädter, J., & Renner, G. (1990). Tenacious goal pursuit and flexible goal adjustment: explication and age-related analysis of assimilative and accommodative strategies of coping. *Psychology and Aging, 5*, 58–67.
- Brown, M., Pope, N., & Voges, K. (2003). Buying or browsing? An exploration of shopping orientations and online purchase intention. *European Journal of Marketing, 37*, 1666–1684.
- Burke, R. R. (2002). Technology and the customer interface: what consumers want in the physical and virtual store. *Journal of the Academy of Marketing Science, 30*, 411–432.
- Büttner, O. B., Florack, A., & Göritz, A. S. (2013). Shopping orientation and mindsets: how motivation influences consumer information processing during shopping. *Psychology and Marketing, 30*, 779–793.
- Büttner, O. B., Florack, A., & Göritz, A. S. (2014). Shopping orientation as a stable consumer disposition and its influence on consumers' evaluations of retailer communication. *European Journal of Marketing, 48*, 1026–1045.
- Büttner, O. B., Florack, A., & Göritz, A. S. (2015). How shopping orientation influences the effectiveness of monetary and nonmonetary promotions. *European Journal of Marketing, 49*, 170–189.
- Byun, S.-E., & Sternquist, B. (2012). Here today, gone tomorrow: consumer reactions to perceived limited availability. *Journal of Marketing Theory and Practice, 20*, 223–234.
- Campbell, M. C. (1999). Perceptions of price unfairness: antecedents and consequences. *Journal of Marketing Research, 36*, 187–199.
- Caughy, C. C., Francis, S. K., & Buasri, V. (1999). An exploratory study of exit behavior and the appearance of retail stores. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior, 12*, 155–161.
- Chebat, J.-C., Gélinas-Chebat, C., & Therrien, K. (2005). Lost in a mall, the effects of gender, familiarity with the shopping mall and the shopping values on shoppers' wayfinding processes. *Journal of Business Research, 58*, 1590–1598.
- Close, A. G., & Kukar-Kinney, M. (2010). Beyond buying: motivations behind consumers' online shopping cart use. *Journal of Business Research, 63*, 986–992.
- Desai, K. K., & Talukdar, D. (2003). Relationship between product groups' price perceptions, shopper's basket size, and grocery store's overall store price image. *Psychology and Marketing, 20*, 903–933.
- Dickson, J. P., & Albaum, G. (1977). A method for developing tailor-made semantic differentials for specific marketing content areas. *Journal of Marketing Research, 14*, 87–91.
- Dickson, J. P., & MacLachlan, D. L. (1990). Social distance and shopping behavior. *Journal of the Academy of Marketing Science, 18*, 153–161.
- Du, J., Fan, X., & Feng, T. (2011). Multiple emotional contagions in service encounters. *Journal of the Academy of Marketing Science, 39*, 449–466.
- Duckro, P. N., Korytnyk, N. X., & Vandenberg, B. R. (1989). The stress-arousal checklist as a measure of situational stress versus simple arousal. *Psychological Reports, 64*, 239–242.
- Duhachek, A. (2005). Coping: a multidimensional, hierarchical framework of responses to stressful consumption episodes. *Journal of Consumer Research, 32*, 41–53.
- Duhachek, A., & Kelting, K. (2009). Coping repertoire: integrating a new conceptualization of coping with transactional theory. *Journal of Consumer Psychology, 19*, 473–485.
- Durante, K. M., & Laran, J. (2016). The effect of stress on consumer saving and spending. *Journal of Marketing Research, 53*, 814–828.
- Elliot, A. J., Thrash, T. M., & Murayama, K. (2011). A longitudinal analysis of self-regulation and well-being: avoidance personal goals, avoidance coping, stress generation, and subjective well-being. *Journal of Personality, 79*, 643–674.
- Emmons, R. A. (1986). Personal strivings: an approach to personality and subjective well-being. *Journal of Personality and Social Psychology, 51*, 1058–1068.
- Esmark, C. L., & Noble, S. M. (2016). Retail space invaders: when employees' invasion of customer space increases purchase intentions. *Journal of the Academy of Marketing Science, forthcoming*.
- Garen, J. (1984). The returns of schooling: a selectivity bias approach with a continuous choice variable. *Econometrica, 52*, 1199–1218.
- Gollwitzer, P. M., Heckhausen, H., & Steller, B. (1990). Deliberative and implemental mind-sets: cognitive tuning toward congruous thoughts and information. *Journal of Personality and Social Psychology, 59*, 1119–1127.
- Grewal, D., Baker, J., Levy, M., & Voss, G. B. (2003). The effects of wait expectations and store atmosphere evaluations on patronage intentions in service-intensive retail stores. *Journal of Retailing, 79*, 259–268.
- Grewal, R., Chakravarty, A., & Saini, A. (2010). Governance mechanisms in business-to-business electronic markets. *Journal of Marketing, 74*, 45–62.
- Gupta, A., Su, B.-C., & Walter, Z. (2004). An empirical study of consumer switching from traditional to electronic channels: a purchase-decision process perspective. *International Journal of Electronic Commerce, 8*, 131–161.
- Hair Jr., J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis: a global perspective*. Upper Saddle River: Pearson/Prentice Hall.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: a regression-based approach*. New York: Guilford Press.
- Holmqvist, J., & Lunardo, R. (2015). The impact of an exciting store environment on consumer pleasure and shopping intentions. *International Journal of Research in Marketing, 32*, 117–119.
- Huang, S.-C., Zhang, Y., & Broniarczyk, S. M. (2012). So near and yet so far: the mental representation of goal progress. *Journal of Personality and Social Psychology, 103*, 225–241.
- Jones, F., & Bright, J. (2001). *Stress: myth, theory, and research*. Harlow: Prentice Hall.
- Jones, M. A., Reynolds, K. E., & Arnold, M. J. (2006). Hedonic and utilitarian shopping value: investigating differential effects on retail outcomes. *Journal of Business Research, 59*, 974–981.
- Kaltcheva, V. D., & Weitz, B. A. (2006). When should a retailer create an exciting store environment? *Journal of Marketing, 70*, 107–118.
- Kim, Y. K., Kang, J., & Kim, M. (2005). The relationships among family and social interaction, loneliness, mall shopping motivation, and mall spending of older consumers. *Psychology and Marketing, 22*, 995–1015.
- King, M. G., Burrows, G. D., & Stanley, G. V. (1983). Measurement of stress and arousal: validation of the stress/arousal adjective checklist. *British Journal of Psychology, 74*, 473–479.
- Kozinets, R. V., Sherry, J. F., DeBerry-Spence, B., Duhachek, A., Nuttavuthisit, K., & Storm, D. (2002). Themed flagship brand stores in the new millennium: theory, practice, prospects. *Journal of Retailing, 78*, 17–29.
- Kukar-Kinney, M., & Close, A. G. (2010). The determinants of consumers' online shopping cart abandonment. *Journal of the Academy of Marketing Science, 38*, 240–250.
- Laungani, P. (1993). Cultural differences in stress and its management. *Stress Medicine, 9*, 37–43.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Lewandowsky, S., Duncan, M., & Brown, G. D. A. (2004). Time does not cause forgetting in short-term serial recall. *Psychonomic Bulletin & Review, 11*, 771–790.
- Loewenstein, G. F. (2000). How people make decisions: costs and benefits of health- and retirement-related choice. In S. Burke, E. Kingdon, & U. Reinhardt (Eds.), *Social security and medicare: individual*

- versus collective risk and responsibility* (pp. 87–113). Washington: Heldref Publications.
- Lunardo, R., & Mbengue, A. (2009). Perceived control and shopping behavior: the moderating role of the level of utilitarian motivational orientation. *Journal of Retailing and Consumer Services*, *16*, 434–441.
- Machleit, K. A., Kellaris, J. J., & Eroglu, S. A. (1994). Human versus spatial dimensions of crowding perceptions in retail environments: a note on their measurement and effect on shopper satisfaction. *Marketing Letters*, *5*, 183–194.
- Maier, E., & Wilken, R. (2014). The impact of stress on consumers' willingness to pay. *Psychology and Marketing*, *31*, 774–785.
- Martin, L. L., & Tesser, A. (1996). *Striving and feeling: interactions among goals, affect, and self-regulation*. Mahwah: Erlbaum.
- McGinnies, E. (1949). Emotionality and perceptual defense. *Psychological Review*, *56*, 244–251.
- Miao, C. F., & Wang, G. (2016). Effects of work–family interface conflicts on salesperson behaviors: A double-edged sword. *Journal of the Academy of Marketing Science*, *forthcoming*.
- Mick, D. G., & Fournier, S. (1998). Paradoxes of technology: consumer cognizance, emotions, and coping strategies. *Journal of Consumer Research*, *25*, 123–143.
- Miller, E. G., Kahn, B. E., & Luce, M. F. (2008). Consumer wait management strategies for negative service events: a coping approach. *Journal of Consumer Research*, *34*, 635–648.
- Moschis, G. P. (2007). Stress and consumer behavior. *Journal of the Academy of Marketing Science*, *35*, 430–444.
- Petrin, A., & Train, K. (2010). A control function approach to endogeneity in consumer choice models. *Journal of Marketing Research*, *47*, 3–13.
- Poole, D. (2015). *Cart abandonment: what are merchants getting wrong?* Retrieved 16 December 2016 from <http://internetretailing.net/2015/12/guest-comment-cart-abandonment-what-are-merchants-getting-wrong/>.
- Rajamma, R. K., Paswan, A. K., & Hossain, M. M. (2009). Why do shoppers abandon shopping cart? Perceived waiting time, risk, and transaction inconvenience. *Journal of Product and Brand Management*, *18*, 188–197.
- Skinner, E. A. (1995). *Perceived control, motivation, & coping*. Thousand Oaks: SAGE.
- Srinivasan, R., & Moorman, C. (2005). Strategic firm commitments and rewards for customer relationship management in online retailing. *Journal of Marketing*, *69*, 193–200.
- Suls, J., & Fletcher, B. (1985). The relative efficacy of avoidant and nonavoidant coping strategies: a meta-analysis. *Health Psychology*, *4*, 249–288.
- Uhrich, S., & Tombs, A. (2014). Retail customers' self-awareness: the deindividuation effects of others. *Journal of Business Research*, *67*, 1439–1446.
- van Rompay, T. J. L., Tanja-Dijkstra, K., Verhoeven, J. W. M., & van Es, A. F. (2012). On store design and consumer motivation spatial control and arousal in the retail context. *Environment and Behavior*, *44*, 800–820.
- Wagner, T., & Rudolph, T. (2010). Towards a hierarchical theory of shopping motivation. *Journal of Retailing and Consumer Services*, *17*, 415–429.
- Wakefield, K. L., & Baker, J. (1998). Excitement at the mall: determinants and effects on shopping response. *Journal of Retailing*, *74*, 515–539.
- Wang, K., & Goldfarb, A. (2016). Can offline stores drive online sales? *Journal of Marketing Research*, *forthcoming*.
- Wang, R., Saboo, A. R., & Grewal, R. (2015). A managerial capital perspective on chief marketing officer succession. *International Journal of Research in Marketing*, *32*, 164–178.
- Westbrook, R. A., & Black, W. C. (1985). A motivation-based shopper typology. *Journal of Retailing*, *61*, 78–103.
- White, H. (1980). A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica*, *48*, 817–838.
- Winer, B. J., Brown, D. R., & Michels, K. M. (1971). *Statistical principles in experimental design*. New York: McGraw-Hill.
- Wolfenbarger, M., & Gilly, M. C. (2001). Shopping online for freedom, control, and fun. *California Management Review*, *43*, 34–55.
- Wrosch, C., Scheier, M. F., Miller, G. E., Schulz, R., & Carver, C. S. (2003). Adaptive self-regulation of unattainable goals: goal disengagement, goal reengagement, and subjective well-being. *Personality and Social Psychology Bulletin*, *29*, 1494–1508.
- Wrosch, C., Miller, G. E., Scheier, M. F., & de Pontet, S. B. (2007). Giving up on unattainable goals: benefits for health? *Personality and Social Psychology Bulletin*, *33*, 251–265.
- Zboja, J. J., Clark, R. A., & Haytko, D. L. (2016). An offer you can't refuse: consumer perceptions of sales pressure. *Journal of the Academy of Marketing Science*, *44*, 806–821.