The role of store environmental stimulation and social factors on impulse purchasing

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Abstract
Purpose – This study aims to examine the role of environmentally induced stimulation in influencing impulse buying. In addition, the authors seek to investigate the impact of two social factors (perceived crowding and employee friendliness) on unplanned purchases.

Design/methodology/approach – A wide variety of retail outlets in Singapore were selected as the context for this field study, ranging from small cosmetics shops (e.g. Body Shop) to mega furniture outlets (i.e. IKEA).

Findings – The results of this study indicate that perceived over-stimulation (higher than desired) has a positive impact on impulse buying. Moreover, the two social factors jointly influence consumers’ unplanned purchases.

Research limitations/implications – The sample size was relatively small (n = 138) and data collection took place in Singapore. Thus, future research with a bigger sample and tested in other cultures is needed to enhance the generalizability of the findings.

Practical implications – The study findings suggest that over-stimulation has a positive impact on impulse purchases. Store managers can look at a number of environmental design variables to increase stimulation in their shops. The findings further indicate that perceived crowding and employee friendliness jointly influence impulse buying, and hence these two factors need to be considered together in store design.

Originality/value – Retailers are fully aware of the power of impulse buying in enhancing their revenues, yet little is known about how the store environment influences unplanned purchases. This study addresses that gap in the services literature.

Keywords Buying behaviour, Consumer behaviour, Shopping, Retailers, Singapore

Paper type Research paper

An executive summary for managers and executive readers can be found at the end of this article.

Introduction
Retailers have long realized the power of impulse buying, which is indeed a central point in many purchasing activities. For example, unplanned purchases accounted for 27-62 percent of purchases in a department store context (Bellenger et al., 1978). Although the topic has received considerable research interest in the marketing literature (e.g. Beatty and Ferrell, 1998; Rook and Fisher, 1995; Jones et al., 2003), little is known about how store environment influences unplanned purchases. In this study, we propose that environment-induced affect has a positive impact on impulse buying. More specifically, the primary objective of this paper is to gain a richer understanding of the role of stimulation in driving impulse purchases in retail settings. Since the 1950s, the notion that human behavior is at times instigated by the mere desire to attain stimulation has figured prominently among psychological theories investigating motivational tendencies as causes of people’s actions (e.g. Berlyne, 1960; Fiske and Maddi, 1961; Mehrabian and Russell, 1974; Zuckerman, 1979, 1988). Arousal as an affective dimension has increasingly received attention in service research (e.g. Rafaeli and Kluger, 2000; Steenkamp and Baumgartner, 1992; Mattila and Wirtz, 2000, 2001, 2006; Wirtz and Bateson, 1999; Wirtz et al., 2000, 2007), yet it has largely been ignored in prior studies examining impulse buying.

In this paper, we first examine the role of under- and over-stimulation in driving impulse purchases in pleasant store environments. We propose that it is not the mere level of stimulation that matters; rather it is stimulation in reference to the consumer’s idiosyncratic expectations that drive impulse buying. To that end, we explicitly measured perceived under- or over-stimulation as opposed to prior studies that focused on the absolute value of environmentally induced excitement (i.e. high to low). We then examine the combined effects of two types of human factors (i.e. perceived crowding and employee friendliness) on impulse buying. Prior research has studied these factors in isolation, while their joint impact on impulse buying remains unknown. An overview of the research design is shown in Figure 1.

Conceptual framework
Impulse buying can be defined as an immediate purchase with no pre-shopping intentions (Beatty and Ferrell, 1998).
Previous research has linked unplanned purchases to consumer moods (Beatty and Ferrell, 1998; Rook, 1987; Rook and Gardner, 1993) and pleasant environments (Donovan and Rossiter, 1982; Donovan et al., 1994). Yet, the role of stimulation remains unclear. For example, arousal in pleasant environments was related to extra time and unplanned spending in Donovan and Rossiter’s (1982) study, but such a relationship was insignificant in their later study (Donovan et al., 1994). Since desired arousal tends to vary across consumers depending on personality traits such as arousal-seeking tendency (Raju, 1980; Revelle and Loftus, 1990), we propose that anchoring arousal around consumers’ desired arousal levels enables us to gain a richer understanding of arousal effects on impulse buying.

In this study, we suggest that over-stimulation (i.e. higher than desired excitement) leads to a momentary loss of self-control, thus enhancing the likelihood of impulse purchases. Prior research in psychology shows that self-regulation is reduced when the self’s crucial resources have been depleted (Baumeister et al., 1998; Muraven et al., 1998). This ego-depletion is also applicable to consumer settings. For example, Baumeister (2002) suggests that people’s ability to resist temptation is at its lowest level at the end of the day as the self’s resources become progressively depleted during the day. We argue that the high level of excitement in a store enhances the loss of self-control. Previous research indicates that high arousal reduces people’s ability to think through the implications of their actions (e.g. Leith and Baumeister, 1996; Tice et al., 2001). Moreover, research in online shopping suggests that highly interactive websites might undermine self-regulation, thus leading to impulse buying (LaRose, 2001; LaRose and Eastin, 2002; Kim and LaRose, 2004). Finally, prior research suggests that people tend to engage in approach behaviors in highly arousing retail environments (Roehm and Roehm, 2005). Following the above arguments, we propose that store environments that are perceived as over-stimulating lead to lower levels of self-control, and therefore to high levels of impulse purchases. Store environments that are perceived as under-stimulating or neutral in terms of arousal, on the other hand, are likely to lead to lower levels of impulse buying. In other words, such environments will not threaten self-regulation, thus minimizing the likelihood of unplanned purchases. Taken together, we put forth the following hypothesis:

**H1.** Over-stimulating store environments (higher than desired excitement) will lead to higher levels of impulse buying than environments perceived as neutral (as desired) or under-stimulation (lower than desired excitement).

In addition to stimulation level, we investigate the role of social factors in influencing impulse buying. Social factors include two types: 1 store employees; and 2 other customers (Turley and Milliman, 2000).

It is important to understand the interactive effects of these two factors as they are present in most store environments. Previous research shows that employee behaviors predict customer evaluations (Bitner, 1990; Gwiner and Bitner, 2005; Kelly and Hoffman, 1997; Spiro and Weitz, 1990). Moreover, prior work indicates that helpfulness of salespeople in assisting customers influences consumers’ willingness to buy (Baker et al., 1992). Conversely, research on perceived crowding postulates that human density is negatively correlated with satisfaction (e.g. Hui and Bateson, 1991; Machleit et al., 2005) and number of purchases (Grossbart et al., 1990). In this study, we extend previous research by proposing that the two types of social factors jointly influence impulse buying. In other words, the perceived friendliness of store employees might mitigate the negative impact of perceived crowding on unplanned purchases. These predictions are formalized as followed:

**H2.** Employee assistance will moderate the impact of perceived crowding on impulse buying.

**Methodology**

**Research setting and sample**

A wide variety of retail outlets in Singapore were selected as the context for our field study, ranging from small cosmetics shops (e.g. Body Shop) to mega furniture outlets (i.e. IKEA). The breakdown of store types is shown in Table I. Respondents were randomly intercepted while exiting the store. People who failed to make any purchase were screened out. Respondents were asked to put themselves in the service setting, looking back into the store if necessary, to answer the survey to their best ability. A total of 138 consumers participated in our field study. The sample was slightly dominated by female shoppers (52 percent). In terms of age distribution, nearly 90 percent of the respondents were between 21 and 35 years old, and overall they were familiar with the store (51 percent had shopped in the store 1-2 times during the past month, 38 percent 3-5 times).

**Measures**

Perceived stimulation was measured via a two-item scale tapping into the store environment’s excitement and stimulation level (1 = much lower than desired, 4 = just as desired).

<table>
<thead>
<tr>
<th>Store type</th>
<th>Frequency (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Book and music stores (e.g. Borders)</td>
<td>27</td>
</tr>
<tr>
<td>Cosmetics</td>
<td>21</td>
</tr>
<tr>
<td>Clothing stores</td>
<td>20</td>
</tr>
<tr>
<td>IKEA</td>
<td>17</td>
</tr>
<tr>
<td>Discount stores</td>
<td>7</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
</tr>
</tbody>
</table>

**Table I Frequency of store types**
desired and 7 = much higher than desired; \( r = 0.86 \) (cf. Wirtz et al., 2007). A two-item scale was used to measure impulse buying (“I ended up spending more money than I originally set out to spend”, and “I bought more than I had planned to buy”). These two items were highly correlated \( (r = 0.77) \), and thus they were summed up as an index for impulse buying.

Perceived crowding was captured via a three-item scale (“The store was crowded”, “The store was a little too busy”, and “There were a lot of customers in the store”); Cronbach’s \( \alpha \) of 0.85). Employee friendliness was measured via a single-item scale (“The employees in this store were friendly”).

Mehrabian and Russell’s (1974) semantic differential scales were employed to measure arousal and pleasure associated with the store environment. Six item pairs measured the arousal dimension of emotions (i.e. stimulated-relaxed, calm-excited, dull-jittery, aroused-unaroused, wide awake-sleepy, sluggish-wild), whereas the other six items tapped into the pleasure dimensions (i.e. unhappy-happy, despairing-hopeful, melancholic-contented, annoyed-pleased, bored-relaxed, satisfied-dissatisfied). The Cronbach’s \( \alpha \) for arousal was 0.78, and for pleasure 0.78.

**Results**

To rule out the argument that store type is a driving force behind environment-induced affect, we ran a one-way ANOVA on the pleasure and arousal scales. The results for both scales were insignificant. The overall means indicate that respondents in this study rated the store environment as pleasant (M = 4.71), while the corresponding figure was lower for the arousal dimension (M = 4.01). To show that it is not the mere arousal that drives impulse buying, we ran a multiple regression with arousal and pleasure scales as independent variables. The results indicate that pleasure is linked to impulse buying (standardized beta coefficient of 0.24, \( p < 0.01 \)), while the impact of arousal is insignificant \( (p > 0.10) \).

To test \( H1 \), we split respondents into three categories based on their responses to the stimulation scale:

1. under-stimulation (scale values 0 to 3.5);
2. neutral (scale values 3.6 to 4.5); and
3. over-stimulation (scale values of 4.6 to 7).

Frequency of store visits per month and store type were run as covariates.

The results from an ANCOVA table indicate significant differences between the group means for impulse buying: \( F(2, 138) = 3.64 \) respectively, \( p < 0.05 \). In addition, frequency of store visits had a positive impact on impulse buying \( (F(1, 138) = 7.5, p < 0.01) \), while store type as a control variable was insignificant. An examination of the cell means shows that over-stimulation led to the highest amount of impulse buying: M = 4.13, M = 3.53 and M = 3.75 for the over-stimulation, neutral and under-stimulation groups, respectively. The planned contrast between over-stimulation versus the other two groups is statistically significant: \( t = 2.62, p < 0.05 \). These results provide support for \( H1 \).

Hierarchical regression analyses were used to test the second hypothesis taking into consideration the effects of the two control variables (i.e. frequency of store visits and store type). The control variables were entered on the first step followed by the two social factors (perceived crowding and employee friendliness) and the interaction term. Overall, the two social factor variables accounted for a significant increase in \( R^2 \) (change in \( R^2 = 0.20, F(3, 132) = 11.7, p < 0.001 \)), indicating that these factors explained a significant amount of the variation in impulse buying beyond that explained by the control variables. As predicted in \( H2 \), perceived crowding and employee friendliness had a joint impact on impulse buying, standardized beta coefficient for the interaction term was 1.51, \( t = 3.68, p < 0.001 \). Frequency of store visits was also significant: standardized beta coefficient of 0.17, \( t = 2.07, p < 0.05 \), while store type failed to influence impulse buying.

**Discussion and implications**

Our study findings make a two-fold contribution to existing literature on impulse buying. First, our results indicate that it is not the actual level of arousal that drives impulse buying; rather it is the comparison to the consumer’s desired stimulation that influences impulse buying. Second, this study examined the interactive effects of two social factors – i.e. namely employee assistance and perceived crowding – on unplanned purchases. Understanding the joint effects is important in managing retail environments.

**Implications for theory**

The results of this study suggest that highly stimulating and pleasant store environments lead to enhanced impulse buying. Self-reported impulse buying was maximized when the store environment was perceived as over-stimulating (i.e. higher than desired in terms of excitement and stimulation). The positive effect of a highly exciting store environment on unplanned purchases is consistent with research in psychology suggesting that high arousal lessens people’s self regulation (Baumeister et al., 1998; Baumeister, 2002). High arousal also tends to reduce people’s ability think through their actions (Leith and Baumeister, 1996; Tice et al., 2001). Hence, it is not surprising that store excitement can influence consumers’ spending patterns.

Interestingly, familiarity with the store had a positive impact on impulse buying, thus suggesting that frequent buyers might be more prone to unplanned purchases. A highly unfamiliar environment, on the other hand, might make people more cautious of their actions, and therefore, inducing higher levels of self-control than familiar stores. This issue warrants future research.

**Managerial implications**

From a managerial perspective, our findings suggest that it is better to stimulate and excite customers in a store environment to the extent to over-stimulation to increase impulse purchases. Store managers can look at a number of environmental design variables to increase stimulation in their shops. For example, fast tempo and high volume music increase arousal levels (Holbrook and Anand, 1990), warm colors such as orange, yellow and red are associated with elevated arousal (Valdez and Mehrabian, 1994), and ambient scents such as grapefruit or other citrus fragrances increase stimulation levels (e.g. Mattila and Wirtz, 2001).

Our study findings also indicate that social factors influence impulse buying. The interactive effect of perceived crowding and employee friendliness shows that these two factors need to be considered together in store design. Previous studies indicate that perceived crowding tends to have a negative
impact on consumers’ evaluations and behavioral responses (Bitner, 1990; Van Dolen et al., 2002; Hui and Bateson, 1991; Machleit et al., 2005). The results of this study suggest that store managers might be able to reduce the negative effect of crowding by training their employees to be extra friendly at busy times.

**Limitations and future research**

This study has several limitations that need to be highlighted. The sample size was relatively small ($n = 138$) and data collection took place in Singapore. Thus, future research with a bigger sample, and tested in other cultures, is needed to enhance the generalizability of our findings. Moreover, the study context included a wide range of store types, and it can be argued that impulse buying might be highly context specific. Future work focusing on a single store type might provide additional insight into the role of store-induced stimulation and social factors in influencing impulse buying. Our study established that overstimulation leads to increased impulse purchasing. We hypothesized that this effect is driven by reduced self-control and depletion of self-resources. Further work, perhaps conducted in a controlled laboratory setting, can explore the precise psychological processes that link excitement to impulse purchasing.

In addition, different causes of over-stimulation may have differential impact on impulse purchasing. For example, over-stimulation caused by a pleasant, highly stimulating and exciting store environment leads to increased impulse purchasing as shown in our study. However, over-stimulation due to crowding or other dimensions with negative associations may reduce rather than increase impulse purchasing. Our study focused on highly pleasant environments, and future work may want to disaggregate positive and negative stimuli and their impact on in-store behavior.

Finally, past studies examining arousal effects suggest that consumers hold arousal-level expectations prior to consumption. For example, in Wirtz et al.’s (2007) study, the expected arousal level was determined by specific consumption goals (e.g., to relax in a bookstore, or to be stimulated in a music store). Their findings showed that any deviation from the desired level of stimulation (i.e., both over- and under-stimulation) led to lower in-store approach behaviors (including spending time and money). In other service contexts outside retailing, similar findings were reported where deviations from strongly held arousal-level expectations resulted in negative consumer responses (e.g., Mattila and Wirtz, 2006). These findings suggest that strongly held arousal-level expectations may constitute a boundary condition for our findings in this present study. Specifically, when customers want to wind down and relax, over-stimulation may backfire and result in lower impulse buying. Future research is needed to explore this possibility.

**References**


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**Executive summary and implications for managers and executives**

This summary has been provided to allow managers and executives a rapid appreciation of the content of the article. Those with a particular interest in the topic covered may then read the article in toto to take advantage of the more comprehensive description of the research undertaken and its results to get the full benefit of the material present.

Even if customers believe stores exist to clothe them, feed them, or help them acquire all the things they might need to live their lives, marketers know better – the truth is that the stores are there to make money for their owners or shareholders. Whether you want it or need it is secondary to a “What will it take to make you buy it?” strategy.

Pet-shop owners have it easier than most. Stick a cute kitten, or a dog with appealing eyes in the shop window and the pet is as good as sold, even if the purchaser comes to regret the impulse buying when they get their new companion home and realize the commitment involved in caring for an animal.

Credit-card use and the convenience of internet shopping has also increased impulse buying, with nine out ten people in a British survey saying they had made an impulse purchase which they regretted in 2007.

Who hasn’t gone into a store for a particular item and come out with bags full of wares they hadn’t intended purchasing? Why? “But it was in the sale. It was a bargain. I would have to a “What will it take to make you buy it?” strategy.

Although retailers have long realized the power of impulse buying, Anna S. Mattila and Jochen Wirtz maintain that little is known about how store environment influences unplanned purchases. They propose that environment-induced affect has a positive impact on impulse buying. In examining the role of under- and over-stimulation in driving impulse purchases in
pleasant store environments, they propose that it is not the mere level of stimulation that matters; rather it is stimulation in reference to the consumer’s idiosyncratic expectations that drive impulse buying.

They suggest that over-stimulation (i.e. higher than desired excitement) leads to a momentary loss of self-control, thus enhancing the likelihood of impulse purchase. It seems that it is not the actual level of arousal that drives impulse buying; rather it is the comparison to the consumer’s desired stimulation that influences it.

A high level of excitement in a store enhances the loss of self-control, and high arousal reduces people’s ability to think through the implications of their actions. It’s also likely that many people’s ability to resist temptation is at its lowest level at the end of the day.

Study findings suggest that it is better to stimulate and excite customers in a store environment to the extent of over-stimulation to increase impulse purchases. Store managers can look at a number of environmental design variables to increase stimulation in their shops. For example, fast-tempo and high-volume music increase arousal levels, warm colors such as orange, yellow and red are associated with elated arousal, and ambient scents such as grapefruit or other citrus fragrances also increase stimulation levels.

Study findings also indicate that social factors influence impulse buying. The interactive effect of perceived crowding and employee friendliness shows that these two factors need to be considered together in store design. Perceived crowding tends to have a negative impact on consumers’ evaluations and behavioral responses. But store managers might be able to reduce the negative effect of crowding by training their employees to be extra friendly at those busy, more crowded, times.

However, impulse buying might be highly context-specific. Few book-lovers would be encouraged to seek out a favorite author’s latest work and calmly leaf through a synopsis if bombarded with fast, loud music, for instance. The older customer in a clothing shop is unlikely to be excited, and put in a mood to buy, by being given the impression they are in a garish discotheque setting rather than a fashionwear store. Doing a swift “about turn” at the doorway may be their likely response to such stimulation.

Increased stimulation due to dimensions with negative associations (and these include the shopping experience being too crowded) may reduce rather than increase impulse purchasing. This study focused on highly pleasant environments, and future work may want to disaggregate positive and negative stimulants and their impact on in-store behavior.

Past studies examining arousal effects suggest that consumers hold arousal-level expectations prior to consumption (e.g. to relax in a bookstore, or to be stimulated in a music store). Any deviation from the desired level of stimulation (i.e. both over- and under-stimulation) led to fewer of the desired behaviors of spending time and money.

Strongly held arousal-level expectations may constitute a boundary condition for the findings in this present study. Specifically, when customers want to wind down and relax, overstimulation may backfire and result in lower impulse buying.

(A précis of the article “The role of store environmental stimulation and social factors on impulse purchasing”. Supplied by Marketing Consultants for Emerald.)