Arousal expectations and service evaluations

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Abstract
Purpose – This paper aims to test a theoretical framework that explains arousal congruency effects on consumer perceptions of intrinsically pleasant service environments.

Design/methodology/approach – A 3 (low and high target-arousal manipulation plus control group) by 3 (low, medium and high actual arousal) true experimental design was used to test our research hypotheses in a café context. The research methodology involved video simulations and role-playing instructions.

Findings – The findings from our experiment indicate that an intrinsically attractive store environment can be perceived as unpleasant if it fails to match the consumer’s desired level of stimulation (arousal congruency). Similar congruency effects were found for satisfaction with the experience. The control group, on the other hand, responded positively to all levels of actual arousal, thus suggesting that arousal expectations are an important moderator of customer evaluations of service environments.

Practical implications – The findings of this study suggest that an intrinsically pleasant service environment might not be enough to guarantee pleasure and satisfaction. Specifically, the amount of pleasure and satisfaction derived from the service experience might be dependent on the degree of congruency between consumers’ target-arousal levels and the actual arousal levels of the service environment. High arousal congruency would greatly enhance consumers’ perceptions of pleasure and satisfaction, while high arousal incongruency would adversely affect the level of pleasure and satisfaction derived.

Originality/value – This paper advances and tests a theoretical framework that explains arousal congruency effects on consumer perceptions of intrinsically pleasant service environments.

Keywords Customer satisfaction, Service levels, Consumer psychology, Behaviour

Paper type Research paper

Introduction
Previous satisfaction research has mainly focused on cognitive expectations in explaining consumers’ responses to service experiences. Yet, a prominent development in recent satisfaction literature is the inclusion of affective processes in the conceptualization of satisfaction evaluations (Oliver, 1997; Wirtz and Bateson, 1999). Despite the importance of affect in explaining consumer evaluations in service settings, arousal as an affective dimension has been largely under-developed in the field of services marketing (Rafaeli and Kluger, 2000). To bridge that gap, this study examines two relatively unexplored concepts: target-arousal and arousal congruency. Target-arousal refers to the level of arousal or stimulation a consumer desires or looks forward to in a service environment prior to actual service consumption (Wirtz et al., 2000). For example, consumers are likely to seek low arousal and high pleasure in a fine dining experience, and to seek high stimulation and high pleasure in an amusement park (Ang et al., 1997). In other words, consumers may
differ in the “target/desired arousal states” or the preferred level of stimulation they hold prior to actual service consumption (Wirtz et al., 2000). Conversely, arousal congruency refers to a condition in which the actual arousal level in the environment matches the consumer’s target-arousal level. We extend Wirtz et al.’s (2000) work by providing a theoretical explanation for the arousal congruency effect. In their study, the arousal congruency effect was an unexpected finding which was left unexplained.

This study aims to advance our understanding of the moderating effects of arousal congruency on consumer evaluations in an intrinsically attractive store environment. Numerous past studies have employed Russell’s circumplex model of affect to study the traditional pleasure-arousal interaction (Amato and McInnes, 1983; Dubé et al., 1995; Hui et al., 1997; Mattila and Wirtz, 2000; Sherman et al., 1997). However, in this study we isolated the effects of arousal on pleasure and satisfaction. Pleasure is an affective evaluation felt during actual service consumption (Alford and Sherrell, 1996; Westbrook, 1987), while satisfaction is an overall judgment reflecting consumption related fulfillment (Oliver, 1997). Our goal is to demonstrate that a fundamentally pleasant servicescape can be perceived in negative light, if such a store environment fails to match the consumer’s pre-consumption target-arousal levels. If so, then retailers need to understand the level of excitement desired by their various target markets in order to enhance pleasure and satisfaction.

Conceptual background and hypotheses
Affect in consumption experiences
Past researchers have proposed numerous theoretical constructs to examine the antecedents of satisfaction. Of these, the confirmation/disconfirmation paradigm (Cadotte et al., 1987; Oliver, 1977, 1980) has emerged as the most widely accepted framework (Wirtz and Mattila, 2001; Yi, 1990). Similar to the concept of job satisfaction (Locke, 1976), satisfaction is increasingly acknowledged to be based on both consumers’ cognition and affective responses to a product stimulus (Oliver, 1997; Wirtz and Bateson, 1999). Accordingly, this study focuses on consumers’ affective responses to service environments.

Consistent with prior work on servicescapes (Bitner, 1992), we use Russell’s circumplex model of affect as a framework. Russell’s (1980) model suggests that two orthogonal dimensions of pleasure and arousal can represent consumers’ emotional responses to environments. Pleasure is a direct, subjective response to the environment, depending on the individual’s degree of liking of the environment. The arousal dimension, on the other hand, depends largely on the information rate or load of an environment. For example, environments are highly arousing (i.e. have a high information rate) when they are complex, have change or movement in them, and have new and unexpected elements. Arousal refers to how stimulated a person feels, ranging from deep sleep (lowest level of internal activity) to highest levels of adrenaline in the bloodstream such as during skydiving (highest level of internal activity).

Our discussion will now turn to the main tenet of this paper – that is the moderating effect of arousal congruency on consumer feelings of pleasure and satisfaction in an intrinsically pleasant service environment.

Arousal congruency
The present study builds on an empirical finding reported in Wirtz et al.’s (2000) study. The arousal congruency effect was an empirical byproduct in Wirtz et al.’s study.
In contrast, in the present paper we present a theoretical framework, the affective expectations model, to explain the arousal-matching hypotheses. Unlike in Wirtz et al.’s (2000) study, where both pleasure and arousal were manipulated, pleasure served as a dependent variable in the present study. Furthermore, we manipulated perceived crowding as an additional dimension of arousal and included a control group to directly contrast the responses of high (low) target-arousal subjects with those having minimal arousal-level expectations.

According to the affective expectations model, consumers’ preferences are highly influenced by two factors: their pre-consumption affective expectations and stimulus level information (Dodges and Klaaren, 2000; Geers and Lassitier, 2002; Wilson et al., 1989). Similar to cognitive expectations, affective expectations are postulated to guide an individual’s perceptions of stimulus information and facilitate the processing of congruent information (Bower, 1981; Niedenthal and Setterlund, 1994 for studies supporting emotion-congruent information processing). When the stimulus information is expectation-consistent, then matching effects should occur (Geers and Lassitier, 1999; Wilson et al., 1989). In Wilson et al.’s (1989) two studies, subjects who expected the cartoons that they were shown to be funny, laughed at them and rated them as very funny even though they were mediocre. In a later study, Geers and Lassitier (1999) replicated the assimilation effects and also found support for the contrast effect when the individuals were apt to notice the discrepancy between affective expectations and the stimulus. In sum, these studies provide support for the argument that people’s expectations about how they will feel in a particular situation (i.e. their affective expectations) influence their subsequent evaluations.

Prior research in consumer behavior also supports the argument that consumers might use affective expectations in categorizing consumption experiences (Dabholkar, 1992; Dubé-Rioux, 1990; Jayanti, 1998). For instance, Jayanti (1998) shows that consumers’ affective expectations influence their satisfaction with health care providers. Moreover, Bitner’s (1992) model of servicescapes suggests that situation specific goals might be highly influential in shaping consumers’ affective expectations for the consumption experience. The concept of arousal congruency is also consistent with Berlyne’s (1960, 1967) work in psychology, which postulates that the impact of arousal on response behavior can be situation, time and place-specific.

Following the above arguments, we propose that consumers’ perceptions of pleasure in the service environment are moderated by arousal congruency. Even if the service environment is perceived as attractive, a mismatch between the desired and actual arousal levels is expected to lead to low levels of pleasure associated with the environment. We further suggest that as the magnitude of the incongruency increases, pleasure and satisfaction will be reduced. In sum, arousal congruency should lead to high levels of pleasure and satisfaction. Conversely, a discrepancy between the desired and actual arousal is expected to result in low satisfaction levels regardless of the objective pleasantness of the surroundings. The formal hypotheses are as follows:

**H1.** The perception of an intrinsically attractive service environment is moderated by arousal congruency. Specifically, pleasure is maximized at the point of arousal congruency, and is reduced at incongruency. The higher the deviation from the point of arousal congruency, the lower the level of pleasure.
Post encounter satisfaction with a service encounter in an intrinsically attractive environment is moderated by arousal congruency. Specifically, satisfaction is maximized at the point of arousal congruency, and is reduced at incongruency. The higher the deviation from the point of arousal congruency, the lower the satisfaction.

Research design and procedures
A 3 (high and low target-arousal, and a control condition) $\times$ 3 (high, medium, and low actual arousal) factorial between-subjects design was employed to test our predictions. The research design involved video simulations and role-playing instructions. The service setting of a café was chosen for two reasons. First, a café setting allows the realistic manipulations of high and low target-arousal levels as compared to other service settings such as a bank, where consumers’ affective expectations of the service encounter are more limited (Wirtz and Bateson, 1999). Second, a café environment has high relevance to a wide spectrum of people.

Subjects were randomly assigned to one of the nine experimental conditions. At the beginning of the experimental session, respondents were requested to imagine themselves as a customer in a new café and to put aside any prior experiences or personal opinions about coffee shops that they might have visited in the past. After reading some background information on the newly opened café respondents were exposed to the role-play scenario and given verbal instructions to imagine themselves as the character described in the scenario. They were then instructed to imagine that they had arrived at the new café and to imagine themselves in the service environment depicted in the video simulation. Having viewed the video clip, participants completed a self-administered questionnaire.

The scenario method used for this study was chosen for several reasons. First, this method enables the researcher to inject sufficient variance into the independent variables, plus it reduces issues involving individual differences in responses and personal circumstances to the research context (Havlena and Hoolbrook, 1986; Wirtz and Bateson, 1999). These two advantages enhance internal and statistical conclusion validity by controlling extraneous and manipulated variables, and by reducing random noise with a standardized setting for all respondents (Cook and Campbell, 1979). Finally, the scenario method has been shown to have ecological validity in service research in the context of quite complex cognitive processes and affect, involving perceived control, perceived choice and emotions (Bateson and Hui, 1992). Other merits of the scenario and role-playing method have been discussed elsewhere (Bitner et al., 1990). The scenario method works best when respondents are familiar with the scenarios they are asked to imagine (Dabholkar, 1996). We, therefore, ensured that our scenarios described common day events and feelings, and that respondents were familiar with the service context. Although not without shortcomings (our discussion in the limitations and directions for further research section), we believe the benefits of the scenario method make it well suited for the context of the present research.

Target-arousal manipulation
The manipulation of high and low target-arousal levels was elicited through the use of a short narrative. For subjects in the control group, target-arousal was not manipulated
and respondents were left to their natural expectations. The scenario narrative was as follows for the low (high) target-arousal manipulations:

You have had a very mundane and unexciting (stressful and hectic) week at work. It has been one of those weeks that seem to last forever (drain you of all your energy). You can’t wait to get out of the office and have some fun (rest and relax) over the weekend.

Having heard about the opening of a new outlet of the famous Chrystal Café in your neighborhood, you have decided to give it a try.

Since, you want to escape from your boring (stressful) workweek, you would like the new café to have a very lively and rejuvenating (soothing and calming) environment. You really want to feel hyped up and invigorated (relaxed and peaceful) while enjoying your favorite beverage.

**Actual arousal manipulation**

The three levels of actual arousal were manipulated via differing levels of background music, lighting and crowding. Among the multitude of environmental stimuli that a consumer is exposed to in a service environment, music is recognized as one of the most influential and easy-to-manipulate elements (Milliman, 1982, 1986). Music comprises multiple time, pitch and texture-related variables (Dowling and Harwood, 1986). To control for interactive effects of musical elements (Bruner, 1990), we manipulated music tempo and volume. Three levels of music tempo were engineered using the COOL EDIT PRO™ and ANALOGXTM software into 145, 105 and 60 bpm (beats per minute) for high, moderate and low levels of actual arousal levels (Miles, 1997). Music volume was manipulated at loud (above 100 decibels), moderate (90 decibels), and soft (60 decibels) levels (Kellaris and Altsech, 1992).

In addition to music, colors have a strong impact on consumers’ affective states (Crowley, 1993; Gorn et al., 1997). The most popular system used in academic research is the Munsell System, which defines colors in the three dimensions: hue, value and chroma (Munsell, 1996). Hue refers to the color pigment, that is, red, orange, yellow, green, blue or violet. Hues are classified into warm colors (red, orange and yellow) and cool colors (blue and green), and are frequently employed to manage the warmth of an environment. Value is the degree of lightness or darkness of the color, and chroma refers to hue-intensity, saturation, or brightness. Lighting manipulations were achieved by changing the color filters, and the hue, saturation and brightness levels in the video clips. The original café lighting was kept intact for the moderate actual arousal condition, and the hue, saturation and brightness were increased and decreased for the high and low levels accordingly. A yellow filter was employed for high actual arousal condition, while a blue-filter was used to elicit low actual arousal in the café environment.

Since, perceived crowding is another factor that influences consumer reactions in service settings (Hui and Bateson, 1992), we also varied the number of customers present in the café. The density was the highest in the high arousal condition (high density such as in a Starbucks during peak hours with all tables being occupied and a few people waiting at the counter), followed by a moderate number of customers for moderate actual arousal (medium density with plenty of space to move around in the café and about 75 percent of tables being occupied), and the least number of customers for the condition of low actual arousal (with only about one third of the tables being occupied with parties of one to three).
The video was about three minutes in duration, and was shown in a darkened seminar room via an LCD projector and a good quality sound system giving a realistic and vivid representation of the café environment (i.e. similar to watching a film in a small movie theater). The video showed three key stages in the service encounter: seating, being served and consuming the drinks with plenty of time to get into the atmosphere of the cafe. The video camera was strategically placed behind the customer yet the actual customer was never shown in the video clips. In order to avoid confounding effects with our music manipulations, no voice interactions with staff or other customers were included in the video. We recorded three different versions of the video clip in order to capture the three levels of customer density. The guests were mostly actors, thus enabling us to keep the steps and the videos virtually identical except for the number of guests shown in the cafe. The other manipulations (music and lighting) were digitally manipulated after the videos were recorded.

Measurement scales

Manipulation checks. The manipulation checks for this study included target-arousal and actual arousal. Mehrabian and Russell’s (1974) six-item semantic differential scale of emotional situations and environments for arousal was employed to measure target and actual arousal levels. For target-arousal, respondents were asked to indicate how they had hoped to feel prior to their visit to the service environment. Specifically, they were asked: “Think back about the feelings, moods and emotions that you hoped to feel prior to viewing the video clip”. A pretest indicated that the item pair “dull-jittery” was not applicable in a pre-consumption setting, and hence it was dropped from the target-arousal measure. Target-arousal was measured after the manipulation and before watching the video.

Actual arousal and pleasure during the service experience were measured after respondents viewed the video. Respondents were primed to think about how they felt during the service encounter and were asked: “Now take about five seconds to get into the mood of the service environment you were in. Close your eyes and try and think how did the cafe environment make you feel?” The original six items in Mehrabian and Russell’s (1974) were retained.

Dependent variables. Mehrabian and Russell’s (1974) six-item semantic differential scale of emotional situations and environments for pleasure was employed to measure pleasure experienced during service encounter (pleasure was measured together with the arousal manipulation check). The scale anchors were bored-relaxed, despair-hopeful, unhappy-happy, melancholic-contented, satisfied-dissatisfied, and annoyed-pleased.

Oliver and Swan’s (1989) six-item satisfaction differential scale was used to measure post-encounter consumer satisfaction. In Wirtz and Lee’s (2003) review of satisfaction scales, Oliver and Swan’s scale was the best performing measure across hedonic and utilitarian services, with the highest loadings on satisfaction, the highest item reliability and the lowest error variance among the satisfaction measures tested. We, therefore, chose this scale for our study. In this study, respondents were primed to think about the entire service experience shown in the video and then rate it along the following pair-items: very satisfied-very dissatisfied, the cafe did a good job-the cafe did a poor job, pleased-displeased, contented-disgusted, coming here was a wise choice-coming here was a poor choice, and I am happy with the cafe-I am unhappy with the cafe.
Questionnaire pretesting and assessment
A pretest conducted with 20 participants from convenience sampling in the actual experimental environment helped to solicit feedback to ensure that the questionnaire was readily comprehensible to all respondents. In particular, the “think aloud” method was used for evaluation. Minor changes to the phrasing of some sentences were made and comments from the feedback were incorporated into the final questionnaire.

Study procedures
The study was conducted over a three-day period where 178 part-time MBA and undergraduate students completed the study. Students tend to frequently patronize cafes, thus making them a justifiable subject pool in this research context. The respondents were randomly assigned to one of the nine experimental cells, with 19-20 participants in each condition. The experiment was run in groups. At the start of each session, respondents were requested to imagine themselves as a customer in a new café and to put aside any prior experiences or personal opinions about cafes that they might have visited in the past. After reading some background information on the newly opened café respondents were exposed to the role-play scenario and given verbal instructions to imagine themselves as the character described in the scenario. Study participants were then told that they had arrived at the new café and to imagine themselves in the service environment depicted in the video simulation. The average duration for each session was 15 minutes.

Data analysis
Assessment of manipulations
Two-way ANOVA tests were performed on the summated manipulation check scales to determine if the various levels of target and actual arousal had been achieved. As expected, a two-way ANOVA on target-arousal revealed a significant main effect for the target-arousal manipulation ($F(1,118) = 768.9, p < 0.001, \eta^2 = 0.87$). Neither the main effect for actual arousal manipulation nor the interaction effect between the manipulations was significant. The means for high and low target-arousal levels were 5.23 and 2.68 ($p < 0.001$), respectively. These results suggest that our target-arousal manipulations were effective.

Similarly, a two-way ANOVA on actual arousal showed a significant main effect for the actual arousal manipulation ($F(2,177) = 452.2, p < 0.001, \eta^2 = 0.84$), while both the main effect for target-arousal manipulation and the interaction effect between the manipulations failed to reach statistical significance. The means for high, moderate and low actual arousal were 5.42, 3.84 and 2.63 ($p < 0.001$), respectively. These results indicate that our actual arousal manipulations were successful.

Reliability, convergent and discriminant validity
The Cronbach’s $\alpha$ coefficients were 0.92 for target-arousal, 0.94 for actual arousal, 0.91 for pleasure, and 0.95 for satisfaction, suggesting high internal validity for the measurement scales employed.

In Mehrabian and Russell’s framework, satisfaction is included in the pleasure scale. To ensure that our dependent variables of pleasure and satisfaction represent two distinct constructs, an exploratory factor analysis was performed. The factor analysis resulted in two factors with eigen values of $>1$. The first factor consisted of six items,
comprising of all the satisfaction items, with loadings of 0.79 and higher, and an explained variance of 65.5 percent. The second factor included the six pleasure items, with loadings of 0.71 and higher, and an explained variance of 10 percent. These findings suggest that our measures are indeed two distinct responses to service environments. The low level of explained variance in the second factor may have been a result of the relatively high correlation between satisfaction and pleasure ($r = 0.75$).

To control for experiment-wide error rate (Hair et al., 1998), a MANOVA approach was used to test the hypotheses. The pleasure and satisfaction scales showed a relatively high correlation ($r = 0.75$), which indicates that, for the purpose of our analysis, the two measures can be viewed as measures of customers’ emotional responses to the service environment.

### Hypothesis testing

The pleasure and satisfaction mean ratings by the target-arousal and actual arousal conditions are shown in Table I, and the MANOVA results are shown in Table II. As expected, the interaction between target-arousal and actual arousal is significant (Wilks’ $\lambda$ $F$ approximation = 22.4, $p < 0.001$), indicating differences in the overall perceptions of the service environment. Moreover, univariate $F$-tests revealed significant interactions, $F(4, 178) = 42.9$ and $F(4, 178) = 35.4$ for pleasure and satisfaction, respectively, $p < 0.001$ for both. The interactions by dependent variable are shown in Figure 1.

As hypothesized, pleasure and satisfaction were maximized at the point of arousal congruency and were significantly lower during conditions of moderate and high mismatch. In the low target-arousal condition, arousal congruency produced the

<table>
<thead>
<tr>
<th>Target-arousal condition</th>
<th>Actual arousal condition</th>
<th>Pleasure (STD)</th>
<th>Satisfaction (STD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low target-arousal</td>
<td>Low</td>
<td>5.42 (0.55)</td>
<td>5.25 (0.60)</td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>4.84 (0.90)</td>
<td>4.23 (1.11)</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>2.76 (0.53)</td>
<td>2.96 (0.57)</td>
</tr>
<tr>
<td>High target-arousal</td>
<td>Low</td>
<td>3.19 (0.65)</td>
<td>3.24 (0.59)</td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>4.40 (0.85)</td>
<td>3.84 (0.65)</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>4.99 (0.73)</td>
<td>5.12 (0.67)</td>
</tr>
<tr>
<td>Control group</td>
<td>Low</td>
<td>4.63 (1.03)</td>
<td>4.44 (0.94)</td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>4.77 (0.69)</td>
<td>4.57 (1.01)</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>4.08 (0.75)</td>
<td>3.62 (0.91)</td>
</tr>
</tbody>
</table>

**Table I.** Pleasure and satisfaction mean ratings by experimental condition

**Note:** The Control group was not included in the MANOVA analysis for hypothesis testing

<table>
<thead>
<tr>
<th>Source</th>
<th>Multivariate: Wilks’s $\lambda$</th>
<th>Univariate: pleasure $F$-value</th>
<th>Univariate: satisfaction $F$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target-arousal (TA)</td>
<td>0.97</td>
<td>1.1**</td>
<td>0.5</td>
</tr>
<tr>
<td>Actual arousal (AA)</td>
<td>0.84</td>
<td>7.8**</td>
<td>4.2**</td>
</tr>
<tr>
<td>TA × AA</td>
<td>0.43</td>
<td>22.4**</td>
<td>35.4**</td>
</tr>
</tbody>
</table>

**Notes:** *$p < 0.05$; **$p < 0.001$
highest pleasure and satisfaction scores ($M = 5.42$ and $5.25$, respectively) as compared to moderate and high incongruency conditions, ($M = 4.84$ and $2.76$ for pleasure and $M = 4.23$ and $2.96$ for satisfaction). These contrasts between arousal congruency and the two incongruency conditions are statistically significant for both dependent variables $t = 2.65$ and $4.01$ for moderate incongruency, and $t = 12.17$ and $8.95$ for high incongruency, for pleasure and satisfaction, respectively, $p < 0.05$ for all comparisons.

Similar results were obtained in the high target-arousal condition. Both pleasure and satisfaction ratings were at their highest in the arousal congruency condition, $M = 4.99$ and $5.12$, respectively. Moreover, the planned contrast between arousal congruency and the two incongruency conditions is significant, $t = 5.03$ and $2.96$ for moderate incongruency and $t = 7.50$ and $9.19$ for high incongruency, for pleasure and satisfaction, respectively, $p < 0.05$ for all comparisons. Overall, these results provide support for both $H1$ and $H2$. 

Figure 1. Target-arousal and actual arousal interaction effects on pleasure and satisfaction
As expected, respondents in the control group rated the café environment as pleasant regardless of the actual arousal levels of the service environment (M = 4.63, 4.77, and 4.08 for low, moderate and high actual arousal conditions, respectively). This confirmed that the café setting employed in this study was intrinsically attractive.

**Discussion**

In sum, our results suggest that an intrinsically pleasant service environment might not be enough to guarantee pleasure and satisfaction. Specifically, the amount of pleasure and satisfaction derived from the service experience might be dependent on the degree of congruency between consumers’ target-arousal levels and the actual arousal levels of the service environment. High arousal congruency would greatly enhance consumers’ perceptions of pleasure and satisfaction, while high arousal incongruency would adversely affect the level of pleasure and satisfaction derived.

This study advances our understanding of affect in a fundamentally pleasant environment. Prior to service consumption, consumers already have in mind a certain level of stimulation that they seek during the service experience. This pre-consumption desired level of stimulation is termed “target-arousal”. For example, consumers going to a discotheque or amusement park are likely to have high target-arousal, while consumers going to a fine-dining restaurant or a bank are likely to have low target-arousal (Wirtz et al., 2000). Relying on the affective expectations model (Dodges and Klaaren, 2000; Geers and Lassiter, 2002; Wilson et al., 1989), we propose that the match between consumers’ desired level of stimulation prior to service consumption and the actual level of stimulation in the service environment during the service encounter, or “arousal congruency” influences the amount of pleasure and satisfaction derived.

As expected, the results from this study showed that in the state of arousal congruency both pleasure and satisfaction were maximized. Conversely, when the environment deviated from desired arousal levels, then pleasure and satisfaction levels were lowered. The observed moderation of arousal congruency on pleasure and satisfaction is consistent with past research. In Wirtz et al.’s (2000) study on the emotional role of satisfaction in the consumption of services, pleasure was found to be highly correlated with satisfaction. Under pleasurable conditions, increasing arousal levels enhanced satisfaction when consumers had high target-arousal, while having the opposite effects when consumers had low target-arousal. In other words, consumers were sensitive to their target-arousal levels such that satisfaction with the service experience decreased when actual stimulation level in the service environment departed from this targeted level (Wirtz et al., 2000).

Unlike in past research where pleasure and arousal were modeled to interact, we demonstrate that an intrinsically attractive store environment might be perceived as unpleasant or pleasant depending on whether the environment matches the consumer’s desired level of stimulation. Furthermore, the findings from a control group without a target-arousal manipulation confirmed that when consumers have no specific arousal-level expectations, then actual arousal levels had less impact on pleasure and satisfaction than when strong expectations were held.

**Managerial implications**

Our findings suggest that when consumers do not hold strong affective expectations (as in our control group), they respond positively to intrinsically pleasant servicescapes.
with varying levels of arousal. This finding is important since it suggests that service firms can get creative when designing typically neutral service environments such as banks or supermarkets. Consumers in such environments may be open to alternative arousal levels, and firms can creatively work on engineering service experiences to differentiate their service offering (Figure 2).

Yet, when consumers hold strong affective expectations (i.e. in our high and low target arousal manipulation conditions), our results indicate that providing an intrinsically attractive servicescape might not be enough to guarantee satisfaction. A mismatch between targeted-arousal and actual arousal led to low levels of pleasure and satisfaction. Hence, creating service experiences that deviate from strongly held arousal expectations may backfire. In other words, service firms need to first attract the right target segment whose affective expectations are consistent with the positioning of the service firm, and then to strive to engineer the implicitly promised excitement level.

To achieve such arousal congruency effect, managers need to first understand consumers’ desired stimulation levels. Although people certainly differ in their arousal seeking-tendencies (i.e. some people prefer razzle-dazzle type environments while others feel more comfortable in calm settings), service operators often have a good understanding of their target markets’ goal-specific arousal level expectations.

### CONCEPTUAL FRAMEWORK FOR UNDERSTANDING THE EFFECTS OF AROUSAL EXPECTATIONS ON CONSUMER RESPONSE BEHAVIORS

<table>
<thead>
<tr>
<th>Arousal Expectations</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weakly Held Arousal Expectations</strong></td>
<td>Potential for differentiating the service offering via arousal-inducing cues.</td>
<td>Moderate deviations from the norm are likely to be perceived as positive and enhanced response behaviors.</td>
<td>Reengineer branches towards the relaxing spectrum. Example: a banking experience is typically seen as neither calming nor as exciting. Reengineer branches towards the exciting spectrum.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Strongly Held Arousal Expectations</strong></th>
<th>Need to carefully match customers’ target arousal levels in order to maximize response behaviors.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Expectations (e.g., our high and low-target arousal groups)</td>
<td>e.g., a spa visit, or Starbucks</td>
<td>e.g., doctor’s office or a high-end grocery store</td>
</tr>
</tbody>
</table>
For example, consumers going to a football game are likely to have high target-arousal, while consumers patronizing a gourmet restaurant are likely to have low target-arousal. As a result, retailers need to match the actual store environment to customer expectations in terms of excitement level. There are several avenues for manipulating actual arousal levels in the store. For example, fast tempo and high volume music increase arousal levels, whereas low tempo low volume music tend to have the opposite effect on arousal (Holbrook and Anand, 1990). Similarly, warm colors such as orange, yellow and red are associated with elated arousal (Valdez and Mehrabian, 1994). Conversely, cool colors such as blue and green tend to elicit feelings of calmness (Zollinger, 1999). Arousal qualities in the environment can also be manipulated by ambient scents, as illustrated by the use of leather, citrus and baby powder scents in the Aventura Shoe Store in Chicago (Levy and Weitz, 2004). Alternatively, retail operators can manage consumers’ target-arousal levels via external communication efforts. For example, a clothing store can advertise itself as a cozy place for relaxed shopping (e.g. Victoria’s Secret), or it can portray itself to be hip and energizing for young people (e.g. Hot Topic). Proper communication messages would enable consumers to form appropriate and realistic expectations of the arousal level in the shopping environment, thus leading to pleasurable experiences.

Limitations and directions for future research
This study has several limitations. First, we only employed measures for two outcome variables, pleasure and satisfaction. Future research should include behavioral measures such as approach-avoidance behaviors, impulse buying, customer complaints and loyalty. Second, the single-service context of a café environment, and the use of a student sample limit the generalizability of our findings. Moreover, we used a scenario method to manipulate target-arousal. The potential disadvantage of this method is that subjects may not be able to fully project themselves into the imaginary scenarios, and therefore not respond in an identical manner as they would in a real life service consumption situation. Therefore, to establish external validity, sampling in actual retail environments using stores as units of analysis is needed to fully capture the “holistic effects of a store environment” (Chebat and Dubé 2000). Future research investigating different types of service settings, respondent groups, and a replication using a field experiment and/or survey would provide a richer understanding of the relative contribution of arousal congruency on pleasure and satisfaction.

Third, a design with repeated measures at different stages of the service encounter would be useful in examining arousal congruency effects during the entire consumption episode. Fourth, our arousal manipulations were limited to three types of environmental stimuli (i.e. music, lighting and crowding effects). It can be argued that these might not be sufficient to adequately reflect the interplay effects of myriad factors within a service environment. Future research might look into combining other atmospheric variables, such as scents, to provide additional insight into how arousal congruency impacts on customer evaluations of the service experience (Mattila and Wirtz, 2001). Finally, we only explored the impact of target-arousal in pleasant environments. It would be of interest to extend this research and explore whether, and if yes, how target-arousal shapes consumer responses to unpleasant service environments such as immigration offices, dental practices, and crowded underground systems.
References


**Further reading**


**About the authors**


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