The Effect of Perceived Control on Consumer Responses to Service Encounter Pace: A Revenue Management Perspective

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Abstract

The ability to manage the time involved in a service process is critical to effective revenue management (RM). At the same time, customer satisfaction is also a key element of time management in services. In this study, we explore the time component of RM in services that sell time implicitly by examining a dining experience. Although service managers can use pace to manage the duration of a service encounter and increase capacity during periods of high demand, manipulating the pace may interfere with customer satisfaction. Prior research has shown that the relationship of perceived pace with customer satisfaction follows an inverted U-shape. If the service pace misses the "sweet spot" that balances pacing with customer satisfaction, the revenue benefits of increasing pace may be short-lived. Using a survey-based approach, we examine the moderating effect of restaurant customers' perceived control of pace on the relationship between perceived pace and customer satisfaction. We found that when perceived control is low, perceived pace has a significant negative effect on customer satisfaction. However, when perceived control is high, consumers are less sensitive to variations in pace. This finding suggests that consumers' perceived control of pace is instrumental to attenuating the negative effect of a fast pace on customer satisfaction.

Keywords

revenue management, service encounter pace, perceived control, customer satisfaction, service stages

Revenue management (RM) aims to maximize the revenue per available time-based inventory unit. For example, airlines seek to maximize revenue per available seat mile, hotels focus on their revenue per available room night, and performing arts centers aim to maximize their revenue per available seat performance. Implicit in all of these definitions are the concepts of revenue, space, and time. In this article, we focus on the time element of RM.

Although time can be sold explicitly to the consumer in minutes, hours, or days (e.g., a thirty-minute spa treatment or a three-night stay in a hotel), the time element of a service is often implicit or open ended. When time is sold implicitly by proxy, the duration of customer use of the service is not set in advance (e.g., the length of a meal at a restaurant or of a gaming session in a casino). As time is not explicit in these instances, restaurants and casinos can experience variances in capacity utilization, and the actual duration for any particular service cannot be known. Thus, a potential goal of managing the time element of RM is to control duration for the most efficient possible use of a service facility, particularly during periods of high demand. By controlling service duration, firms can enhance revenue during times of excess demand (Kimes, Wirtz, and Noone 2002). Although some researchers have stated that the revenue impact of duration reduction is overstated (G. M. Thompson 2009), operators report that a reduction in meal duration can lead to significant increases in revenue (Bhatia 2002). As pace of service is a key driver of duration, pacing becomes an important component of a RM strategy (Lee and Liebenau 2000).

Although a faster pace can increase capacity during peak times, this benefit will be short-lived if consumers perceive the pace of the service experience in a negative light (see Wirtz et al. 2003; Wirtz and Kimes 2007). Research has shown an inverted U-shaped relationship between consumers' perceptions of pace and their satisfaction with service

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Exhibit 1:
Service Classification by Degree of Customer Contact and Method of Selling Time

		Degree of Customer Contact	
		Low	High
Method of selling time	Explicit	Hotel stay	Spa visit
		Car rental	Skiing instruction
		Meeting space	Consulting
	Implicit	Museum visit	Restaurant visit
		Game on a golf course	Health care treatment
		Visit to a zoo	Hair styling

experiences. When the experience is perceived as being too fast or too slow, customer satisfaction is diminished (Noone et al. 2007, 2009). We extend this research by exploring the moderating effect of personal control in this relationship between the pace of service and customer satisfaction.

Empirical evidence supports a positive relationship between perceived personal control and human physical and psychological well-being (e.g., Langer and Rodin 1976; Sherrod et al. 1977; Staub, Tursky, and Schwartz 1971; Szpiler and Epstein 1976). In this study, we focus on whether perceived control over service experience pace (i.e., an individual's belief regarding the extent to which she can control the pace of the service experience; Folkman 1984) can attenuate negative effects of an accelerated service pace on customer satisfaction.

The Firm's Perspective: RM, Time, and Pace

From the firm's perspective, managing the time component of RM involves three key issues: (1) how time is sold (i.e., explicitly or implicitly), (2) the degree of service provider control over the service's timing and pacing, and (3) time and pace management by service stage.

Explicit versus Implicit Selling of Time

When companies sell time explicitly, they are better able to manage their capacity because they (and their customers) know when and how long customers will be using the space (e.g., airlines, hotels, car rental companies, and spas). Conversely, companies that sell an event are selling time implicitly, for example, a restaurant meal or a round of golf. It would be rare for the golf course or restaurant to negotiate the length of the meal or the golf round in advance of purchase. Consequently, these companies must determine how to effectively control the event's duration such that profit can be maximized and consumers receive the service experience that they expect.

Degree of Service Provider Control over Time and Pace during Service Delivery

If customers stay longer than anticipated (whether it is time they contracted for or time based on implicit expectations), the operator has lost control of the time element of the service experience. Companies that sell time explicitly encourage customers to leave on schedule with policies such as late checkout fees, but restaurants and other businesses that sell time implicitly do not have this luxury. For these firms, it is often difficult to manage capacity, and when customers stay longer than expected during peak demand periods, the business may experience lower revenues and growing queues.

One way to control time is to train frontline employees to pace the service encounter, but the ability to control pace depends on the degree of customer contact (Exhibit 1). Companies with a relatively low degree of customer contact, such as most hotels and rental car companies, have little interaction with the customer once the check-in transaction has been completed. In contrast, high customer contact services, such as table service restaurants, spas, or professional services, entail direct contact between the customer and the company representative for the entire duration of the service encounter. This degree of customer contact means that frontline employees can exert considerable influence over the pace of the service experience. For example, while the guest may think otherwise, a significant portion of a dining experience can be paced by the restaurant staff and kitchen, from the speed with which a customer is greeted after being seated, to the rate at which food and drinks are delivered after customers place their order. The problem we are addressing here occurs when customers' expectations of the pace of their meal differ from those of the restaurant. If diners feel rushed, their satisfaction is likely to be diminished (Bhatia 2002; Noone et al. 2007, 2009; Szuchman and Won Tesoriero 2004). Thus, the service provider needs to be able to manage the pace of the service experience in a manner that does not obviously conflict with customers' expectations.

Time and Pace Management by Service Stage

Managing the duration and pace of a service requires service providers to consider the management of time by stage of the service experience. For this study, we divide service into three stages (Dubé-Rioux, Schmitt, and Leclerc 1989): a preprocess stage that involves initial processing of the customer (e.g., check-in at a spa, being seated and placing an order at a restaurant); the in-process stage, or the core of the service experience, where the true value or benefit is derived from the service experience (e.g., diagnosis and treatment at a doctor's office, treatment at a spa); and finally, the postprocess stage where the activities necessary to the termination of the experience are carried out (including billing and payment). Research has shown that consumers' evaluations of service experiences are influenced by the stage of service (e.g., Dubé-Rioux, Schmitt, and Leclerc 1989; Noone et al. 2009; Strombeck and Wakefield 2008). For example, Noone et al. (2009) found that consumers are more tolerant of a faster pace during the postprocess stage. Thus, when considering manipulating pace to better manage revenue, it is important to understand the role of service stage in shaping consumers' reaction to pace. Our investigation of the moderating role of perceived control in the relationship of perceived pace and satisfaction directly addresses the potential effect of service stage in that relationship.

Consumer Responses to Pace Perceptions

Elapsed Time and Pace of the Service Experience

Human interpretation of and reaction to elapsed time have been the subject of investigation across a number of fields, including clinical, developmental, and educational psychology; family studies; and marketing (e.g., Feldman and Hornik 1981; Houston, Bettencourt, and Wenger 1998; Lauer 1981; Levine and Norenzayan 1999; Levine and Wolff 1985; Taylor 1994). Studies such as Graham's (1981) examination of perceptions of time illustrate how people can perceive time and how those perceptions influence behaviors. Other research has focused on specific dimensions of time. For example, in their study of the time dimensions of work, Schriber and Gutek (1987) identify thirteen separate aspects of time in organizations (e.g., allocation, punctuality, scheduling, sequencing, deadlines, and pace).

Two dimensions of time are particularly pertinent to consumer evaluations of service experiences: duration and pace. Duration concerns how long situations and events last (Zerubavel 1981), and pace refers to the speed of activity or the number of activities that can be done within a given interval of time (Lee and Liebenau 2000). In the services literature, the duration dimension of time, specifically wait time has received much attention, with research indicating a negative relationship between wait time and consumer evaluations of service (e.g., Baker and Cameron 1996; Bitran, Ferrer, and Rocha e Oliveira 2008; Chebat and Filiatrault 1993; Davis and Heineke 1998; Davis and Maggard 1994; Davis and Vollmann 1990). The popular press (and logic) suggests that customer evaluations of service experiences are also influenced by pace. For example, Bhatia (2002) provides anecdotal evidence for the strong negative customer reactions that can be provoked by restaurant practices to reduce meal duration, especially when those practices do not match customers' time expectations. She reports on "rushed" dining experiences at a number of upscale restaurants across the United States (e.g., Le Cirque and Cello in New York, Tantra in Miami, and MK Restaurant in Chicago), where customers were dissatisfied by, for example, attempts by servers to take dishes before customers were finished, multiple visits to lingering customers by management, and a general lack of adherence to an expected leisurely paced dining experience.

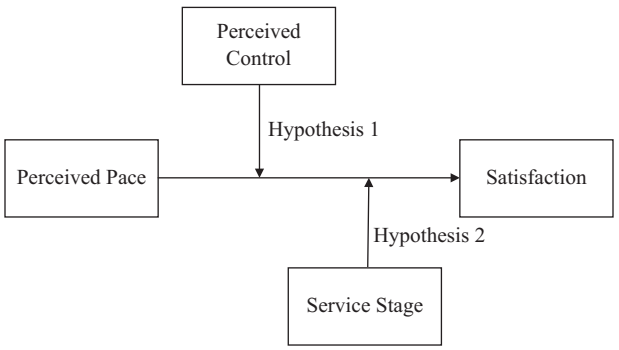
As we indicated, exploratory research in the context of hedonic service experiences by Noone et al. (2007, 2009) suggests an inverted U-shape in the relationship between pace and customer satisfaction. Drawing on optimal arousal theory, Berlyne (1971, 1974) and Anand and Holbrook (1986) propose that perceived pace can be experienced along a continuum from slow to fast, with satisfaction maximized when the perceived pace falls into the middle of the continuum. The notion that, for every stimulus characteristic, there is an optimal level that is most preferred (Berlyne 1967, 1971; McClelland et al. 1953; Steenkamp and Baumgartner 1992) stems back to the work of Wilhelm Wundt (see, for example, Berlyne 1974), who showed that as the intensity of the perceived stimulus increases, so does the extent to which the people find the perception pleasant. However, the pleasantness increases only up to a point. Thereafter, pleasantness decreases again. Similarly, Noone et al. (2007, 2009) found that satisfaction increased as the perceived pace of the service experience increased, but only up to a point, beyond which satisfaction decreased as perceived pace increased.

In this article, we propose that the degree of customer sensitivity to variations in pace is moderated by two variables: (1) *perceived control of pace* and (2) *service stage*. Exhibit 2 provides an overview of our theoretical model, as explained next.

Perceived Control of Pace

The need for control over one's environment is an important driving force in human beings (Bateson 2000). Research demonstrates the range of consequences that can result

Exhibit 2:
Study Model



from varying levels of personal control, including effects on performance (Bazerman 1982; Greenberger et al. 1989; Spector 1986), job satisfaction (Greenberger et al. 1989; Spector 1986), and stress (Averill 1973; Spector 1986; S. C. Thompson 1981). The importance of perceived control to consumers' evaluations of service encounters has been highlighted in the services marketing literature (e.g., Bateson 1985; Bateson and Hui 1992; Bitran and Hoech 1990; Klaus 1985; Silpakit and Fisk 1985). Perceived control has been shown to influence consumers' perceived pleasantness of, and satisfaction with, service experiences and their approach tendency in the service environment (e.g., Hui and Bateson 1991; Hui and Tse 1996; Langer 1983).

Control of pace has been examined before in an organizational context. According to Blauner (1964, 21), "The pace of work is probably the most insistent, the most basic aspect of a job, and retaining control in this area is a kind of affirmation of human dignity." Kohn (1977) supports this thesis of control over pace as it relates to human dignity, demonstrating that people who control their pace of work are likely to be self-confident, not to be self-deprecatory, and feel that they have some control over their fate. Personal control over the pace of work has also been shown to improve one's physiological well-being (Bohlin et al. 1986). For example, Steptoe et al. (1993) found that respondents showed greater stress-related cardiovascular responses when they performed tasks at a pace they could not control. While these studies focus on *actual* control of pace, other research has examined *perceived* control over pace in the workplace. In similar fashion, the findings show a strong relationship between perceived control of pace and positive job outcomes (Forsyth and Chen 2006).

While research has considered employees' control of pace and time in nonservice environments, our study is concerned with consumers' perceived control of pace within a service experience. In a service encounter, production and consumption occur simultaneously (Lovelock and Wirtz 2011). Therefore, three forces are at work: the consumer who wants to achieve satisfaction and value for money, the employee who wants to derive job satisfaction and remuneration, and the service firm that seeks to satisfy the consumer and the employee while also driving profitability (Bateson 2000). All three parties seek control over the service encounter (Bateson 2000). Like employees, consumers can have a high degree of actual or perceived control over the pace of the service experience, or they can feel that the experience is externally paced. For employees, externally paced work typically refers to the pace imposed by the firm through policies or standard operating procedures. For consumers, external pacing of the experience may be imposed directly by the employee or indirectly by the service firm through training and process design.

Drawing on the findings in organizational and educational settings (e.g., Burger and Solano 1994; Lahmers and Zulauf 2000; Macan et al. 1990; Nonis et al. 1998; Steptoe et al. 1993), we propose that the effect of the service experience pace on customer satisfaction is moderated by the consumer's level of perceived control over the pace of the experience, and furthermore that the relationship between pace and customer satisfaction will follow the inverted U-shape discussed above (Noone et al. 2007, 2009). We hypothesize that this inverted U-shape will be more pronounced and sharper when customers perceive a low level of control over pace than when they perceive a high level of control. Consistent with the notion that intermediate or moderate levels of a given stimulus will generate the greatest level of comfort and pleasure (Berlyne 1967, 1971), we expect that when the consumers' sense of control of pace is low, satisfaction will be maximized at a moderate pace. In the absence of a strong sense of control over the pace, stress and frustration can be caused by relatively small variations in pace (see Noone et al. 2007, 2009).

Conversely, when perceived control is high, we expect the effect of perceived pace on service experience satisfaction to diminish. With a strong sense of control, the consumer perceives that she has the capacity to "manage" the pace of the service experience to meet her expectations. Thus, when perceived control is high, perceived pace becomes less salient as an attribute of the service experience, and customers can tolerate larger deviations from optimal pacing levels without experiencing stress, frustration, and dissatisfaction. Thus, the range of pace that can be tolerated will be wider in a situation with high perceived control of pace than a low perceived control situation. We therefore advance this hypothesis:

> *Hypothesis 1:* Perceived control of pace moderates the perceived pace–customer satisfaction relationship. Specifically, when perceived control of pace is high, consumers will be less sensitive to variations in pace compared with when perceived control of pace is low.

The Moderating Role of Service Stage on the Pace–Customer Satisfaction Relationship

Even when consumers perceive low levels of control, we further propose that they will be more tolerant of a fast pace during the postprocess stage of the service experience than during the pre- and in-process stages. In their examination of the perceived pace–customer satisfaction relationship, Noone et al. (2009) used Lewin's (1943) field theory to suggest that consumers' goal orientation may explain the differences in consumer responses to pace during the three service stages. The foundation of field theory is that all behavior is determined by both the person and his or her environment. According to Lewin, the person and the environment together comprise the life space. Barriers in the life space, whether social, physical, or psychological, can create resistance to goal attainment. One such barrier is service pacing that is not conducive to the consumer's needs or goals, while congruence of environment (or pace) and consumer wishes supports customer satisfaction.

During the preprocess stage, the consumer typically seeks to get acquainted with the service environment and make selections from the service products on offer. The in-process stage represents the core of the service experience where the consumer seeks to enjoy and savor the experience. An undesired fast pace in either of these stages can act as a barrier to the attainment of these goals, although a customer who comes in for "the regular" or has theater tickets may welcome a brisk pace. Again, it is a matter of congruence of environment and customer wishes. At the postprocess stage, most consumers are motivated to pay and move on to their next activity. On occasion, guests will linger at this point, but most are receptive to a faster pace and, in fact, would prefer a quick settlement. In that situation, the consumer will become upset if the termination of the process is blocked (e.g., by a slow pace; Karsten 1976). Thus, we propose that consumers will be more accepting of a fast perceived pace during the postprocess stage of the service experience. This also means that while perceived control of pace is important to attenuate the effects of a faster pace on satisfaction in the pre- and in-process stages, perceived control will play a lesser role in the postprocess stage in making a *faster* pace more acceptable. Nevertheless, perceived control may still play a role in making a *slower* pace feel more acceptable in this postencounter stage. Note, however, that this latter effect is of little relevance from a RM perspective, which seeks ways to increase rather than decrease pace during peak periods. We therefore focus our hypothesis on the fast pace aspect of this relationship, as follows:

> *Hypothesis 2:* Service stage will moderate the perceived pace–customer satisfaction relationship. Specifically, customers will be less sensitive to a fast pace in the postprocess stage compared with the pre- and in-process stages.

Method

Survey Procedure and Sample

We studied full-service restaurants because they represent a high customer contact service, which has clear stages and where time is sold implicitly. Data were collected as part of a larger research project.[1] Using a mail-based survey, 580 people were invited to participate from a subset of a mailing list of undergraduate students' parents from a university located in the northeastern United States, and from a list of employees of a clinical research organization. Respondents were asked to recall a meal (either lunch or dinner) that they had experienced in a full-service restaurant within the prior three weeks, and then write a detailed description of that experience. In terms of restaurant type, respondents were asked to recall a restaurant experience that fell into one of the following three categories: casual (described as restaurants such as Applebee's or T.G.I. Friday, with an average check per cover in the $12-$20 range), upscale casual (described as restaurants such as PF Chang or Houstons, with an average check in the $20-$30 range), or fine dining (described as restaurants such as Ruth's Chris Steak House or Le Cirque, with an average check of above $30). Finally, respondents were required to classify their reason for dining as social, business, or convenience. They then completed the measures for pace, control, and satisfaction for each of the three dining stages.

Respondents were provided with a description of the relevant stage of the dining experience immediately before the pace, control, and satisfaction questions relating to that stage of the experience. The purpose of providing this information was to prime the respondent's memory and aid recall of experiences specific to each individual stage. The definitions of service stages used in the study were consistent with previous research (e.g., Dubé-Rioux, Schmitt, and Leclerc 1989). Pre-process is from arrival to delivery of the first food item, in-process continues from that first food item to when the check is requested or dropped, and post-process is from the time of the check drop to departure.

Although data were collected from each respondent on his or her entire restaurant experience, we randomly divided the sample into three equal subsets (n = 73, 73, and 72), one for each service stage. We then used only data corresponding to the designated stage for each respondent in the analysis. In this way, the independence of observations assumption required for regression analysis was satisfied.

We received 228 questionnaires of the 580 (42.2%), but we discarded 10 because the meal in question was more than three weeks previous. Thus, the final sample size for analysis was 218. Respondents were predominantly female (n = 150; 69%), and in the thirty-five to fifty-five age range (n = 189; 87%). The number of responses across the three restaurant types was approximately equal, with the majority of responses relating to dinner (n = 158; 72%). To test for

Exhibit 3:
Scale Measures

	Preprocess Stage		In-Process Stage		Postprocess Stage	
	M	*SD*	*M*	*SD*	*M*	*SD*
Perceived pace						
How would you describe the pace of this stage of your meal? (anchored in 1 = *extremely slow*, 7 = *extremely fast*)	4.42	2.05	4.00	1.11	4.53	1.35
How would you describe the duration of this stage of your meal? (anchored in 1 = *extremely short*, 7 = *extremely long*)	3.87	1.99	4.11	1.13	3.86	1.18
Pearson's correlation	.76		.81		.83	
Satisfaction						
Overall, how would you rate your impression of this stage of your meal?						
It displeased me - It pleased me	5.45	1.71	5.49	1.70	5.50	1.55
I was disgusted with it - I was contented with it	5.56	1.51	5.61	1.57	5.58	1.41
I was very dissatisfied with it - I was very satisfied with it	5.38	1.69	5.40	1.72	5.43	1.56
It did a poor job for me - It did a good job for me	5.40	1.64	5.33	1.70	5.48	1.52
I was unhappy with it - I was happy with it	5.46	1.70	5.46	1.71	5.53	1.55
This restaurant was a poor choice - This restaurant was a wise choice	5.55	1.64	5.47	1.79	5.74	1.42
Cronbach's alpha	.98		.99		.98	
Perceived control of pace						
I believe that I had the ability to influence the pace of this stage of my meal (anchored in 1 = *strongly agree*, 7 = *strongly disagree*; reverse coded for analysis)	4.21	1.51	4.18	1.98	4.91	1.75
How much control did you have over the pace of this stage of your meal? (anchored in 1 = *complete control*, 7 = *absolutely no control*; reverse coded for analysis)	3.50	1.39	4.21	2.08	4.70	1.86
Pearson's correlation	.92		.91		.93	

nonresponse bias, responses from early respondents were compared with those from late respondents on the key variables, *perceived pace, perceived control of pace*, and *satisfaction* (see Armstrong and Overton 1977). No significant differences were found ($p > .1$ in all analyses).

Measures

As we said, the key measures included were perceived pace (measured using a two-item, seven-point scale; Kellaris and Kent 1991), perceived control of pace (measured using two items adapted from Bansal and Taylor 2002), and satisfaction (measured using Westbrook and Oliver's 1981 six-item, seven-point bipolar scale). Scale items and their means, standard deviations, and correlation coefficients or Cronbach's alphas are provided in Exhibit 3. *Meal type, restaurant type, reason for dining, gender*, and *age* were included as control variables in the analyses.

Analysis and Results

Given the inverted U-shaped relationship between perceived pace and customer satisfaction (Noone et al. 2009), polynomial regression was used to test the study's hypotheses.[2] To reduce potential multicollinearity, the linear and quadratic terms for perceived pace were centered before inclusion in the analysis (Aiken and West 1991). A median split was used to recode the continuous perceived control of the pace variable into a categorical variable for each of the three service stages.[3] The means were significantly different for the high and low perceived control of pace groups (pre-process: $M_{\text{High Control}} = 5.86, M_{\text{Low Control}} = 2.65, t = -15.06$, $p < .001$; in-process: $M_{\text{High Control}} = 5.97, M_{\text{Low Control}} = 2.47$, $t = -16.43$, $p < .001$; post-process: $M_{\text{High Control}} = 6.09$, $M_{\text{Low Control}} = 3.14, t = -11.96, p < .001$).

Hypothesis 1 predicted that perceived control moderates the perceived pace–customer satisfaction relationship, whereby consumers will be less sensitive to variations in pace when they perceive having high levels of control. For each service stage, customer satisfaction was regressed on the linear and quadratic perceived pace terms, perceived control of pace, and two interaction effects of perceived control of pace with the linear and quadratic pace terms (see Exhibit 4). Of the control variables, we retained restaurant type, which was significant in the high-control cells of the three service encounter stages. We dropped the remaining control variables, because they were insignificant.

All regression equations had a significant *F*-statistic ($p < .001$), with associated R^2 values of .44 (pre-process), .40 (in-process), and .52 (post-process). The interaction of the quadratic pace term with perceived control of pace was significant for the pre- and in-process stages (pre-process:

Exhibit 4:
Regression Results

Independent Variables	Preprocess Stage Satisfaction		In-Process Stage Satisfaction		Postprocess Stage Satisfaction	
	Coefficient	*t*-value	Coefficient	*t*-value	Coefficient	*t*-value
Total sample						
Pace	0.35	2.59**	0.47	2.08**	0.81	4.04****
Pace^2	−0.27	−4.22****	−0.29	−2.63**	−0.03	−0.37
Control of pace[a]	0.49	1.34	0.73	2.11**	0.67	1.91*
Pace × control of pace	−0.28	−1.36	−0.45	−1.26	−0.68	−2.19**
Pace^2 × control of pace	0.24	2.29**	0.35	2.02**	0.09	0.56
F	10.45****		9.06****		11.68****	
R^2	.44		.40		.52	
Low-control subgroup						
Pace	0.34	2.43**	0.47	2.01*	0.81	3.49***
Pace^2	−0.27	−3.96****	−0.29	−2.53**	−0.03	−0.32
F	15.02****		11.19****		10.18***	
R^2	.46		.39		.48	
High-control subgroup						
Restaurant type[b]						
Upscale casual	0.89	2.11**	0.59	1.17	1.14	3.23***
Fine dining	1.37	2.08**	1.16	2.44**	0.72	1.58
Pace	0.16	1.19	0.13	0.49	0.33	1.59
Pace^2	0.02	0.37	0.07	0.58	−0.09	−0.86
F	1.63		1.61		3.46**	
R^2	.18		.17		.33	

a. Low control of pace group was used as the reference group in the regression.
b. Casual restaurants group was used as the reference group in the regression.
*p < .1. **p < .05. ***p < .01. ****p < .001.

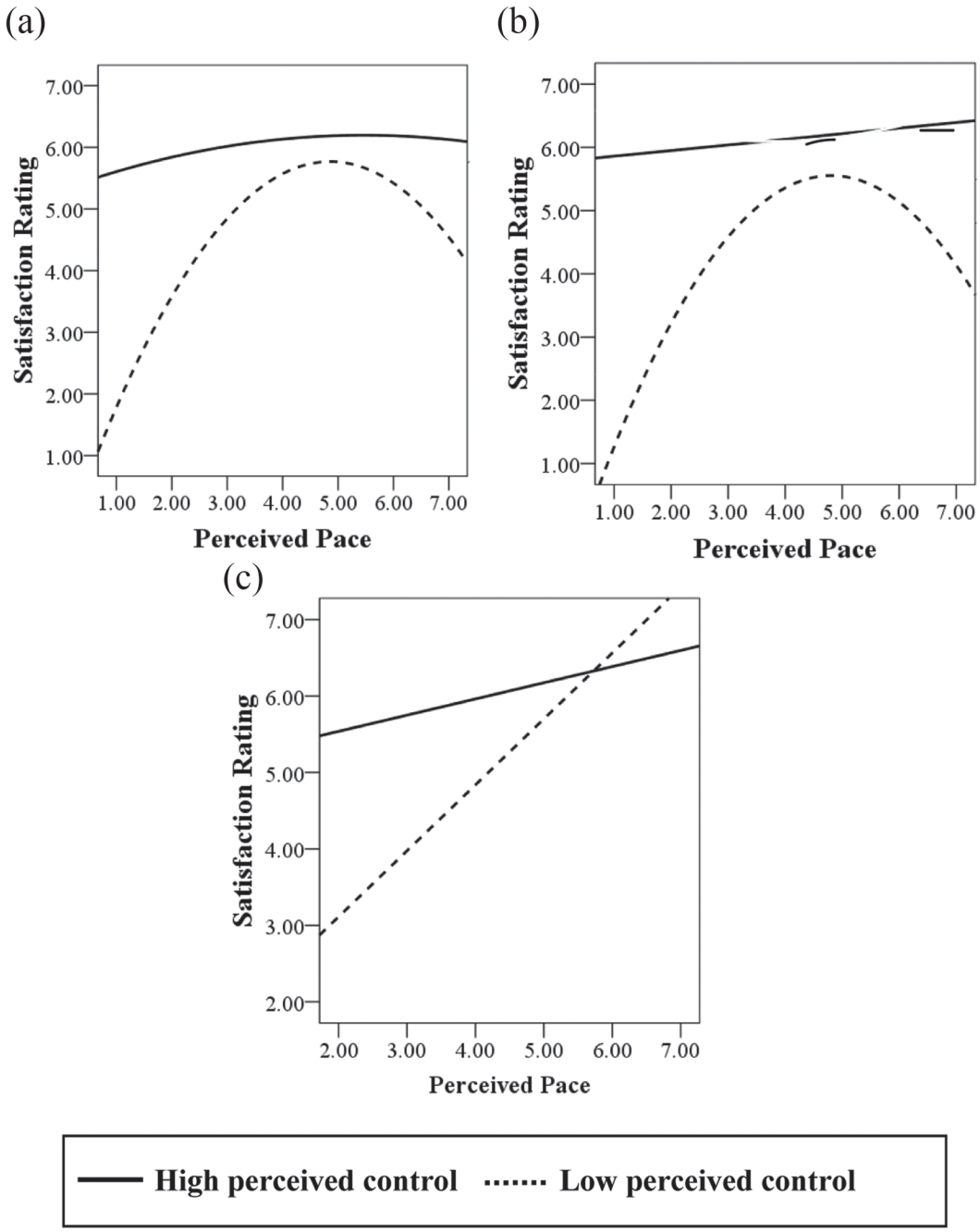
$t = 2.29$, $p < .05$; in-process: $t = 2.02$, $p < .05$). The interaction of the linear pace term with perceived control of pace was significant for the postprocess stage ($t = -2.19$, $p < .05$). Together, these results demonstrate a moderating effect of perceived control on the perceived pace–customer satisfaction relationship, as was predicted by Hypothesis 1.

The differential effect of perceived pace on satisfaction by level of perceived control is shown in Exhibit 5. As predicted by Hypothesis 1, there is visibly less variability in satisfaction with changes in perceived pace when perceived control of pace is high compared with when it is low across all three consumption stages.

To better interpret the interaction effects, and provide empirical support for Hypotheses 1 and 2, we independently analyzed the high and low perceived control of pace groups (Exhibit 4). We found that, for the low-control group, pace was significant in all three stages, whereas none of the pace effects (across any of the three stages) reached significance for the high-control group.[4] For the low-control group, both the quadratic and linear pace terms had a significant effect on satisfaction in the pre- and in-process stages (preprocess stage—quadratic pace term: $t = -3.96$, $p < .001$; linear pace term: $t = 2.43$, $p < .05$; and in-process stage—quadratic pace term: $t = -2.52$, $p < .05$; linear pace term: $t = 2.01$, $p < .1$). However, in the postprocess stage, the linear pace term was significant ($t = 3.49$, $p < .01$) for the low-control group, whereas the quadratic pace term was not significant ($t = -0.32$, $p > .1$). Together, these findings show that perceived control moderates the pace–customer satisfaction relationship, and that under high levels of perceived control, consumers are less sensitive to variations in pace (in our study, the pace effect even becomes insignificant for the high-control group).

Furthermore, Hypothesis 2 advanced that service stage would moderate the pace–customer satisfaction relationship in that a fast pace would be more acceptable to consumers in the postprocess stage compared with the pre- and in-process stages. As discussed in the previous section, the relationship of perceived pace with satisfaction approximates an inverted U-shape for the low perceived control group in the pre- and in-process stages, as shown in Exhibit 5 and by the significant quadratic pace terms in these two regression analyses. In contrast, the quadratic pace term was insignificant in the postprocess stage. Furthermore, the significant linear pace main effect in the postprocess stage was positive, suggesting that a faster pace led to higher rather than lower satisfaction ($t = 3.49$, $p < .01$). These findings

Exhibit 5:
Interaction Effects of Pace and Perceived Control on Customer Satisfaction: (a) Preprocess Stage, (b) In-Process Stage, and (c) Postprocess Stage



show that a faster perceived pace led to higher satisfaction in the low-control group, whereas in the high-control group, the pace effect was insignificant. This means that a fast pace was more acceptable in the postprocess stage (because a faster pace led to lower satisfaction in none of the perceived control conditions).

Together, these findings provide support for Hypothesis 2 as they show that a faster perceived pace had either a positive effect or no effect on satisfaction in the postprocess stage, whereas the quadratic pace terms in the pre- and in-process stages show that satisfaction was reduced at low levels of perceived control.

Discussion

Although the general notion of personal control has been examined in the services literature (e.g., Hui and Tse 1996; Langer 1983), this study explores a specific form of control, perceived control of pace. We suggest a boundary condition on the inverted U-shaped relationship between perceived pace and customer satisfaction with service experiences (Noone et al. 2009) demonstrating that the nature of the relationship is influenced by the consumer's perceived control of pace. When customers' perceived control of pace is low, the relationship between perceived pace and customer satisfaction follows an inverted U-shape. Conversely, when consumers perceive control to be high, they are less sensitive to variations in pace. In fact, in our study, the pace effect was insignificant for the high-control group. In addition, this research provides support for the hypothesis that service stage influences consumers' evaluations of multiple-sequence service experiences (e.g., Dubé-Rioux, Schmitt, and Leclerc 1989; Noone et al. 2009; Strombeck and Wakefield 2008). Perceived pace affects customer satisfaction in the pre- and in-process service stages when perceived control of pace is low, but consumers are more tolerant of a fast pace in the postprocess stage.

The revenue benefits associated with decreasing dining duration are not lost on restaurant operators. Many operators aim for speedy table turnover, manifested by standard dining times set to maximize table turns during high-demand periods (e.g., one large U.S.-based casual restaurant chain aims for a standard dining time of a forty-five-minute lunch and a one-hour dinner). According to the management of the popular Asia de Cuba restaurants (which allow ninety minutes for a table of two), if one of their restaurants achieved only two seatings in an evening, rather than three, it would lose up to $10,000 in revenue per night (Bhatia 2002). That said, the revenue-benefits-associated increased table turns will be short-lived if customers feel rushed. One of the key findings of our study is that giving customers a sense of control over the pace of their service experience enhances customer satisfaction. The obvious next question to ask is what can be done to enhance this sense of control?

Based on our results, efforts to increase perceived control of pace should focus on the pre- and in-process stages.[5] One way to enhance perception of control is to provide customers with information on the timing of the meal. Research has shown that providing relevant information can increase an individual's sense of control (e.g., Calvert-Boyanowsky and Leventhal 1975; Storms and Nisbett 1970). For example, Langer and Saegert (1977) found that giving grocery shoppers information about the effects of crowding provided them an increased sense of control in a crowded environment, which in turn, improved their emotional reaction and behavioral response to that environment. Theme parks, for instance, post wait time information at various points of a line so that people know how long they have to wait—giving them the decision on whether to stay in the queue or renege and try another ride. Similarly, restaurant operators can provide walk-in customers accurate wait time information and update their status while they wait. During the meal, servers can be straightforward and inform customers of when they will return to take an order (and then do it), update guests on the kitchen queue (if things are backed up), or explain that it will take ten minutes to prepare a made-to-order dessert. In these instances, the guests cannot influence the process, but they can see that their server is keeping them in the loop. For instance, if the kitchen is backed up, the server might quickly put in the starter order to make sure something is on the table until the entrées are ready, and if the kitchen is not backed up, this approach will accelerate the meal. With the server's information, guests can see enough of the system to know what will happen when, and in the process, their pace expectations can be shaped to align with the firm's pace and capacity management goals (Dasu and Chase 2010).

Service scripting can play an important role in offering the customer a sense of control (Bateson 1985). If a server follows a script, then, at the very least, the service will be predictable and timely. That predictability can offer a sense of control to both the server and the customer. Although both parties may have little direct control over what is happening, the predictability may give them a sense of control (Bateson 1985; Hui and Bateson 1990). Although the predictability afforded by service scripts can enhance the consumers' sense of control, they must be used appropriately, and be designed such that they allow for appropriate customization of service delivery (Victorino, Verma, and Wardell 2008).

Depending on the restaurant concept, technology can enhance customers' sense of control over the pace of the experience. For example, table kiosks, tablet, and smartphone applications are available that let customers place their own orders or settle checks without having to wait for a server. Likewise, if the restaurant's concept allows, customers can place their order before they arrive at the restaurant, and such online and mobile ordering gives customers more perceived control because they can choose the timing and circumstances of placing their order (Kimes 2011a). Online and mobile ordering is more commonly used by restaurants that offer takeout and delivery (Kimes 2011b) but has also been used by some casual chains for in-store meals.

Some table kiosk and tablet applications also allow customers to essentially page their server when they would like a refill or additional food items. Indeed, some restaurants achieve the same effect without the use of technology. For example, Brazilian steak houses often give customers two-colored disks or cards to signal when they are ready for additional food. Customers place the green side up when

they would like to be served and place the red side up when they do not want to be disturbed. Similarly, servers at an upscale casual Asian restaurant give customers a decorative set of chopsticks and ask them to place them upright in a glass when they want server attention. Although this approach to service delivery can yield a heightened sense of customer control, it can also lead to a faster paced experience, particularly where restaurant staff are either too inexperienced or have insufficient training to provide service in the timely manner expected by their customers.

Limitations and Further Research

The limitations of this study suggest a number of avenues for future research. First, the study focused on one industry in one country. Replications across other industries and countries are needed to examine whether the results hold or whether the need for control varies by industry and part of the world.

Second, future research should test other variables affecting the relationship of perceived pace with satisfaction. This study examined the interplay of perceived pace and perceived control of pace. As part of this design, we controlled for a number of potential confounding factors, including meal type, restaurant type, and reason for dining. However, there are additional factors influencing customer satisfaction, not least the quality of service provided, the quality of the food, and other elements of the servicescape. Both the relative effect of pace in the presence of those other service attributes and the interplay of perceived pace–perceived control of pace while controlling for those other attributes merit further examination. Further research regarding the effects of service stage on consumers' reaction to pace is also called for. Although we found consumers to be less tolerant of a fast pace in the preprocess stage than in the postprocess stage, there may be circumstances under which a faster preprocess pace does not act as a barrier to guests' goal attainment, but rather facilitates it. While we controlled for reason for dining, circumstances such as pronounced time pressure on the part of the consumer may shift the focus of the service experience to largely utilitarian in nature (i.e., they want a good meal, but quickly). In this context, the goals of the consumer (e.g., the desire for a "very quick" lunch) may render that consumer more amenable to a faster pace. Equally, other consumer attributes, for example, level of familiarity with a service outlet or its personnel, may influence consumers' goals for the service experience and, in turn, influence their reaction to service stage pace.

Third, this study used recall of recent service experiences. A field study in which customer control and pace are manipulated, and the impact on satisfaction is tracked, could enhance the internal validity of our findings. Equally, an experimental approach, where perceived pace and perceived control of pace are controlled across a range of service settings could be used to isolate and compare consumer reaction across service contexts.

Fourth, although we established the importance of perceived control of pace, we did not empirically assess means for enhancing this sense of control. Therefore, further research into the specific types of practices or methods that may be most effective in heightening the customer's sense of control of pace would be a logical next step.

Finally, the focus of this study was moderate levels of pace variation that are commonly observed in service delivery and are largely affected by service process design and staffing levels—all of which are under the control of the service firm. Under much more extreme pace situations, however (i.e., very high levels of pace variation), it is likely that regardless of the level of perceived control, a quadratic relationship between perceived pace and customer satisfaction may emerge (i.e., at some point, an excessively fast pace will reduce satisfaction regardless of control perceptions). Clearly, there is scope to further investigate the interplay of perceived control, pace and satisfaction, and explore opportunities for increasing pace during peak periods.

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Notes

1. For a detailed description of the research procedures and sample, please see Noone et al. (2007).
2. In polynomial regression, the linear and quadratic (i.e., the squared term) for the independent variable (here, the independent variable is the perceived pace term) are included in the analysis. This type of regression allows us to test the hypothesized relationship (vs. a strictly linear relationship) between perceived pace and satisfaction.
3. Although the use of continuous variables yields greater statistical power, it has been argued that the trade-off exists with the greater ease of interpretation and diagnosticity regarding theory testing associated with the use of categorical variables (Böckenholt et al. 2001). In this study, we dichotomized the perceived control of pace variable to enable interpretation of the perceived pace–perceived control of pace interaction. However, we also ran the regression analyses with perceived control of pace as a continuous variable. The analyses replicated the findings obtained when perceived control of pace was entered as a dichotomous variable, that is, the perceived pace–perceived control of pace interaction was significant ($p < .05$) across the three data sets corresponding to the three stages of the service experience.

4. Restaurant type had a significant effect on satisfaction in the high-control group. In the preprocess stage, satisfaction ratings were significantly higher for both fine dining and upscale casual restaurants compared with casual restaurants ($t = 2.08$, $p < .05$, and $t = 2.11$, $p < .05$, respectively). In the in-process stage, satisfaction ratings were significantly higher for fine dining restaurants compared with casual restaurants ($t = 2.44$, $p < .05$). Satisfaction ratings were also higher for upscale casual restaurants compared with casual restaurants, although the mean difference did not reach significance ($t = 1.17$, $p > .1$). In the postprocess stage, satisfaction ratings were significantly higher ($t = 3.23$, $p < .01$) for upscale casual restaurants compared with casual restaurants. Satisfaction ratings were also higher for fine dining restaurants compared with casual restaurants, although the mean difference did not reach significance ($t = 1.58$, $p > .1$). Together, these findings lend support to the notion that experiences in higher end restaurants are evaluated more positively compared with casual restaurants. This is possibly the case as the standard of service and product offering tends to be better in upscale and fine dining restaurants than in casual restaurants.
5. Note, the key point here is to give the customer a sense of control of pace (i.e., the perception of control) rather than actual control, such that a faster actual pace that fits the organization's capacity management goals can be achieved.

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