Journal of Consumer Behaviour

WILEY

RESEARCH ARTICLE OPEN ACCESS

Which Moments Matter Most? Investigating Boundary Conditions of the Effect of Specific Moments on Overall Evaluations of Customer Experiences

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Received: 19 January 2024 | **Revised:** 9 August 2024 | **Accepted:** 17 September 2024

Funding: This work was supported by the University of Mannheim's Graduate School of Economic and Social Sciences.

Keywords: customer experience | overall evaluations | perceived control | recency effects | temporal sequences

ABSTRACT

Customer experience (CE) often occurs as a temporal sequence of events that unfold over time. This research investigates the circumstances under which specific moments in the temporal sequence of a CE, such as the beginning or the end, have a disproportionate effect on customers' overall CE evaluations. Specifically, this research explores two boundary conditions of the effect of specific moments: incident valence and perceived control. The results of three scenario experiments, conducted with consumers in two contexts (hedonic and utilitarian), reveal that negative incidents at the end of a CE disproportionately influence overall CE evaluations across these different service contexts, demonstrating recency effects. However, these recency effects do not occur for positive incidents and are only present for individuals with heightened perceived control. Our findings address recent calls to further explore the role of timing and valence in CE evaluations and provide novel insights into the moderating role of perceived control on the effect of specific moments on overall CE evaluations. This research also offers practical guidance to help managers design more effective CEs.

1 | Introduction

Customer experience (CE) often consists of a sequence of events that unfold over time, defined as the temporal sequence of CE (Bhargave and Montgomery 2013). For example, when dining out, customers first arrive at a restaurant, settle in, order beverages and food, and then, after consumption, pay the bill and leave. This example represents a typical temporal sequence of a CE.

We sometimes recall instances where a specific moment, whether positive or negative, influenced our entire perception of an experience. For instance, consider dining at a restaurant where the food is excellent, but a rude comment from a waiter affects the overall experience. The timing of such incidents—whether they occur at the beginning or the end of the visit—might influence the overall evaluation of the CE. However, the effect of specific moments within the temporal sequence of a CE, and the boundary conditions under which these moments impact customers' overall CE evaluations, remains underexplored. Understanding the influence of specific moments of a temporal CE sequence could guide businesses in enhancing overall CE evaluations, such as repurchase intention, product evaluation, or word of mouth (WOM).

This research investigates the circumstances under which specific moments in the temporal sequence of a CE exert a disproportionate influence on customers' overall evaluations of these experiences. Previous studies have examined how the timing of positive and negative critical incidents influences customer

satisfaction in a hedonic context (Garnefeld and Steinhoff 2013). Their findings indicate that negative incidents particularly reduce customer satisfaction when they occur at the end of a hedonic service encounter. Building on these insights, our research aims to delve deeper by investigating the effects of specific moments in a temporal CE sequence across both hedonic and utilitarian contexts. Hedonic and utilitarian contexts differ in sensory and functional aspects (Baltas, Kokkinaki, and Loukopoulou 2017), and by exploring these contexts, the present study seeks to provide more generalizable insights applicable to a range of businesses.

Furthermore, while existing research often focused on customer satisfaction, this study extends the focus to the downstream consequences for companies, such as customer's repurchase intentions and WOM. This shift from assessing customer satisfaction to understanding behavioral intentions offers businesses actionable insights for CE management. Additionally, we go beyond considering the timing of positive and negative incidents to explore under which circumstances incidents are more likely to shape overall evaluations, thus examining boundary conditions within this context.

We identify incident valence and perceived control as two important boundary conditions affecting the impact of specific moments in a temporal sequence on customers' overall CE evaluations. Incident valence, which is the degree of positivity or negativity of an incident (Meier, Robinson, and Clore 2004), has been largely overlooked in the existing CE literature (De Keyser et al. 2020). Some examples of positive incidents include friendly and attentive staff in a hotel or restaurant, while negative incidents can be rude staff or long waiting times. Building upon prior research (Garnefeld and Steinhoff 2013), we propose that incident valence plays an important role in shaping CE evaluations.

Perceived control in the CE context refers to the extent to which customers feel they have control over a service encounter (Dabholkar and Sheng 2009). We argue that negative incidents in CEs can threaten customers' perceived control by introducing unforeseen disruptions, making customers feel less influential over their experience and diminishing their sense of agency. In the presence of such threats, perceived control can affect how customers process information and make choices (Chaxel 2016). Therefore, this research also investigates how different levels of perceived control influence overall CE evaluations depending on when a threat (i.e., a negative incident) occurs during the CE.

While research on temporal sequences in the CE domain is limited, insights can be drawn from social psychology on primacy and recency effects. Primacy effects occur when initial incidents or information shape overall evaluations, whereas recency effects imply that the final information disproportionately influences subsequent evaluations (Biswas, Grewal, and Roggeveen 2010). Strong evidence supports both primacy and recency effects (Hastie and Park 1986; Schreiber and Kahneman 2000), and our research aims to elucidate reasons for these divergent empirical findings. Understanding how customers form overall evaluations of their CEs has the potential to inform theory and provide important insights for companies striving to develop customer journeys that customers enjoy, wish to repeat, and recommend to others. Specifically, there is a need to better understand which moments, and under which circumstances, matter most for customers' overall CE evaluations. Our study aims to shed light on these issues.

This research provides important contributions to the marketing literature. First, we enrich the limited research on temporal sequences in CE management by identifying incident valence as a crucial moderator of recency effects in overall CE evaluations. Our findings demonstrate that recency effects for negative incidents hold across both hedonic and utilitarian service contexts, enhancing the generalizability of our results. Second, we contribute to existing conceptual frameworks (e.g., Sivakumar, Li, and Dong 2014) by showing that incident timing is important for overall CE evaluations, but only for negative incidents. Third, while previous studies focus on customer engagement, satisfaction, or perceived service quality, our study examines downstream behavioral intentions such as repurchase intention, product evaluation, and WOM, providing actionable insights for businesses. Fourth, our research is the first to explore the role of perceived control in the context of the temporal sequence of a CE. By focusing on the relationship between incident timing and perceived control in negative incident contexts, we uncover a novel boundary condition for the recency effects on overall CE evaluations. Finally, our findings support managerial decision-making in the resource allocation for CE management, an ongoing challenge for companies (Li et al. 2020).

2 | Theoretical Development

2.1 | Overall Evaluations of Temporal CE Sequences

Overall evaluations of CEs commonly form the basis for customers' choices and future behavior (Wirtz et al. 2003). Overall evaluations refer to customers' global, retrospective evaluations of temporal CE sequences. Peak-and-end research defines overall evaluations as the overall assessment of the pleasantness or unpleasantness of an experience, thus focusing on the affective component in overall evaluations (Schreiber and Kahneman 2000). In one of the few studies exploring the influence of specific moments in CEs, Bhargave and Montgomery (2013) use customers' willingness to pay as a proxy measure for overall evaluations of temporal CE sequences. We define overall evaluations as customer-related outcomes pertaining to loyalty and sharing behavioral intentions, such as repurchase intention, product evaluation, and word of mouth (WOM). In the following sections, we review relevant research on primacy and recency effects, to help inform our investigation of the effect of specific moments on overall CE evaluations.

2.2 | Primacy and Recency Effects

We define "primacy effects" as a strong impact of initial moments or early information in a temporal sequence on customers' overall evaluations of an experience. Primacy effects are grounded in research on impression formation and persuasion. For example, research on impression formation shows that when a person is described with a set of adjectives, individuals

evaluate this person in line with adjectives occurring early in the sequence (Hastie and Park 1986). Also, persuasion research finds that a first cue in a sequence is more persuasive than cues or arguments presented afterward (Biswas, Grewal, and Roggeveen 2010; Li 2010).

We define "recency effects" as a strong impact of the final moments or information at the end of a sequence on overall evaluations. Peak-and-end research identifies specific moments such as the most intense (i.e., peak) reported affect and the affect at the end of an experience as disproportionately influencing individuals' overall evaluations (Schreiber and Kahneman 2000). This strand of research suggests that ends influence overall sequence evaluations independently of the peak effects (Baumgartner, Sujan, and Padgett 1997). The importance of ends is documented in various studies, including those on general preference for events that end on a happy note (Ross and Simonson 1991) and preference for improving sequences of outcomes (Loewenstein and Prelec 1993).

Literature on primacy and recency effects reveals mixed findings regarding how specific moments in the temporal sequence of an experience, that is, in the beginning or the end, shape the perception and evaluation of that experience. In the marketing literature, Garnefeld and Steinhoff (2013) observe recency effects for overall satisfaction with a service encounter, but only for negative critical incidents. Conversely, Harman and Porter (2021) find that the final interaction in a service encounter has the strongest impact on customer engagement for both positive and negative experiences. We use these insights on primacy and recency effects to explore the moderating role of incident valence in customers' overall CE evaluations.

2.3 | The Moderating Role of Incident Valence

Incident valence refers to the degree of positivity or negativity of an incident during a CE (Meier, Robinson, and Clore 2004). Existing research indicates that recency effects typically arise from contexts characterized by negative incidents, such as adverse experiences (Kahneman et al. 1993), medical procedures (Redelmeier and Kahneman 1996), or disturbing sounds (Schreiber and Kahneman 2000). These studies demonstrate that in aversive contexts, events occurring at the end of an experience have a strong impact on overall experience evaluations. Additionally, evidence from service research supports the notion that negative events at the end of a hedonic service encounter disproportionately affect overall customer satisfaction, highlighting recency effects (Garnefeld and Steinhoff 2013).

In contrast, findings regarding the effect of positive incidents show no consistent primacy or recency effects. For instance, Forgas (2011) demonstrates that a positive mood can lead to primacy effects, with individuals processing information from a top-down approach, heavily weighting the initial information they receive. This study highlights how positive emotions might enhance the influence of early information in a sequence on overall perceptions, although this effect does not extend to individuals in a negative mood. However, Garnefeld and Steinhoff (2013) do neither observe primacy nor recency effects for positive critical incidents in a service encounter. Additionally, positive and negative incidents are likely processed differently (Lyubomirsky 2010), underscoring the need to investigate how the relationship between incident valence and timing shapes customer-related outcomes. While we expect that positive incidents generally enhance customer evaluations (Oliver 1997), we argue that the timing of positive incidents within a service encounter does not produce primacy or recency effects. Thus, we hypothesize:

H1. *Negative incidents at the end of a CE will worsen overall customer-related outcomes, including (a) repurchase intention, (b) product evaluation, and (c) WOM, to a larger degree than negative incidents at the beginning of a CE, due to recency effects. Positive incidents will have a positive effect on these customer-related outcomes independent of the timing of their occurrence in the CE.*

2.4 | Negative Incidents: The Moderating Role of Perceived Control

While positive incidents generally enhance the CE and are unlikely to be regarded as threats, negative incidents have the potential to threaten a customer's perceived control. Perceived control refers to individuals' belief in their ability to influence events and outcomes in their environment. Individuals with high perceived control feel confident in their capacity to navigate and manage their environment. Individuals with low perceived control have a sense of limited influence over external circumstances. Customers often perceive negative incidents in a service encounter, such as rude behavior by service staff, as a threat to their perceived control. The impact of such threats is more pronounced for individuals with a high (vs. low) perceived control, as these individuals feel more competent in managing their environment effectively (Gäthke 2020). Consequently, individuals with high perceived control are more likely to attempt to regain control when their control is threatened (Chaxel 2016).

We argue that the opportunity to regain control is significantly reduced if a negative incident occurs at the end of the CE, rather than at the beginning. For example, consider the scenario where a waiter is rude after the bill has been paid; in this case, the customer might perceive such behavior as a threat to control that cannot be compensated for, compared to the same situation occurring at the beginning of the restaurant visit, when there is still ample time to address and rectify the situation. Since the impact of threats is more pronounced for individuals with high (vs. low) perceived control due to their belief in their ability to influence events, we posit that perceived control moderates the impact of timing of negative incidents on customer's overall CE evaluations. Thus, we hypothesize:

H2. *The negative impact of a negative incident at the end of a CE on overall customer-related outcomes, such as (a) repurchase intention, (b) product evaluation, and (c) WOM, will be more pronounced for individuals with high levels of perceived control, leading to a greater decrease in these outcomes compared to individuals with low perceived control when a negative incident occurs at the end of a CE.*

Figure 1 provides an overview of our studies and their conceptual models.

3 | Empirical Overview

We conducted three scenario experiments in different service contexts: dining out and a first aid course. In addition, we conducted a pilot study in a dining out context, consisting of two separate online experiments. The results of the pilot study are shown in Table 1 (for study design, see Appendices A and B; and for measurements Appendix C). In the following, we report on the three scenario experiments. Across all studies, we used an experimental vignette method with short scenarios of different CEs to explore customers' intentions and attitudes.

3.1 | Study 1: Interaction Between Incident Timing and Incident Valence

We conducted Study 1 in the context of dining out to test our hypotheses. We chose this context because most customers are familiar with it and because dining out is an extended service encounter, which fits our depiction of CE as a temporal sequence.

3.1.1 | Design and Procedure

Before the study, we conducted a pre-test with 76 Amazon Mechanical Turk Masters from the US to identify a suitable incident pair. Comparing staff friendliness, service speed, and service convenience in a within-group design, we selected "waiter acts in a very friendly manner" and "waiter acts in a very unfriendly manner" as our positive and negative incidents, respectively. These incidents represented the best match in terms of perceived valence on a 7-point Likert scale ($M_{\text{friendly waiter}} = 6.55$, SD = 0.90; $M_{\text{unfriendly waiter}} = 1.84$, SD = 1.52). The selected incidents did not differ in (high) perceived realism.

In the main study, we applied a 3 (incident timing: beginning vs. middle [control] vs. end) × 2 (incident valence: positive vs. negative) between-group design, with a baseline (no incident) group. The "no incident" control condition presents a baseline scenario without any positive or negative interactions with service providers. We recruited a sample of 302 US consumers (51% female; $M_{age} = 43.56$, $SD_{age} = 14.37$) using a commercial consumer panel. We first instructed participants to imagine the described scenario of a dining out experience, manipulating the occurrence of the negative (positive) incident in the temporal sequence of the CE as either happening at the beginning, the middle, or the end. After the scenario, the participants engaged in a filler task to distract them with the intention to reduce potential artificial recency effects. The participants then completed our measurements. Finally, we asked the participants to answer some questions about their usual dining out behavior. Appendix A presents an overview of the experimental procedure across all studies.

3.1.2 | Measurements

We operationalized customer-related outcomes as repurchase intention (Dutta, Biswas, and Grewal 2011) and WOM (Fuchs, Prandelli, and Schreier 2010), which are commonly used as indicators of behavioral intentions in service contexts. In line with previous research (Garnefeld and Steinhoff 2013), we also measured customer satisfaction (Homburg, Koschate, and Hoyer 2005). For results pertaining to customer satisfaction, please refer to Table 1. However, we will focus on repurchase intention and WOM in the following discussion, as these outcomes have not been investigated in previous related research. We operationalized perceived control as locus of control (Kopalle, Lehmann, and Farley 2010), a stable and enduring personality trait measured on a continuum from chronically

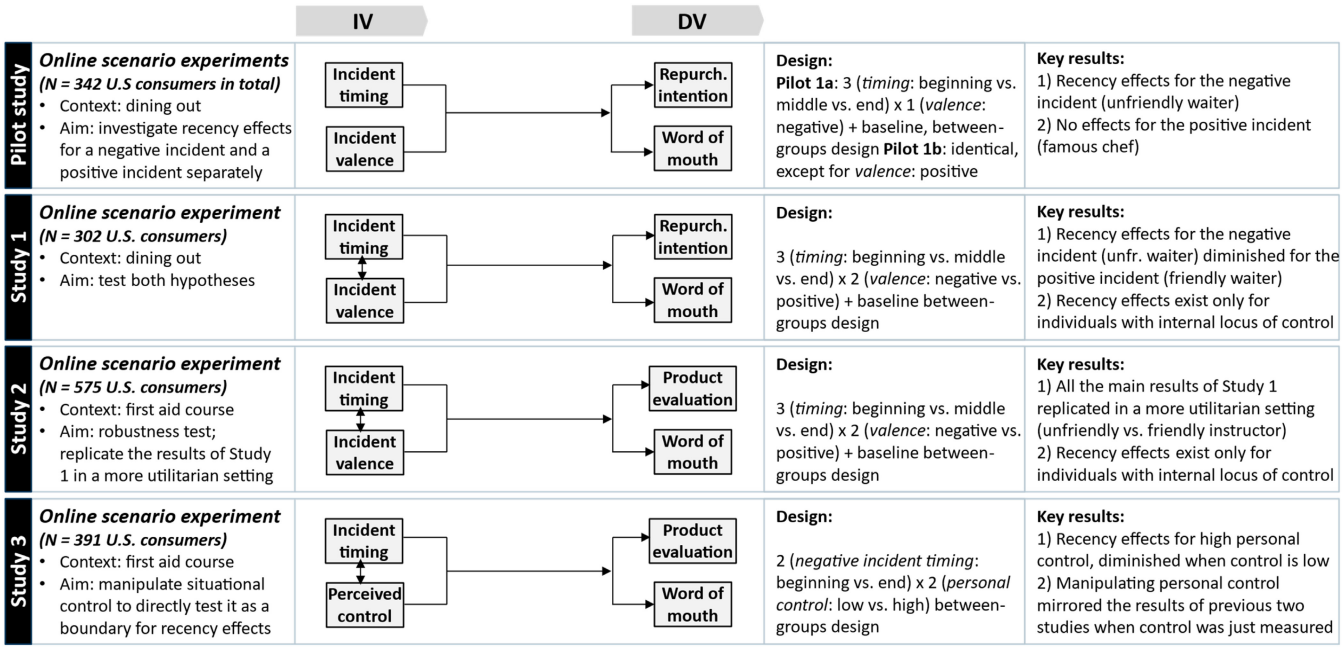

FIGURE 1 | Overview of studies and key results.

TABLE 1 | Results of planned contrasts for incident valence and incident timing.

Study	Dependent variable	Negative incident			Positive incident		
		Beginning	End	*p*	Beginning	End	*p*
Pilot 1a	Repurchase intention	4.41 (1.60)	3.50 (1.60)	**0.003**			
	Word of mouth	4.02 (1.56)	3.20 (1.68)	**0.008**			
Pilot 1b	Repurchase intention				5.83 (1.16)	5.72 (1.35)	0.661
	Word of mouth				5.90 (1.14)	6.03 (1.09)	0.568
Study 1	Repurchase intention	4.12 (1.55)	3.44 (1.51)	**0.017**	6.02 (0.98)	5.56 (0.98)	**0.032**
	Word of mouth	3.81 (1.47)	3.16 (1.22)	**0.012**	5.82 (1.10)	5.68 (1.13)	0.569
	Customer satisfaction	3.96 (1.44)	3.30 (1.33)	**0.012**	6.12 (0.77)	6.02 (0.77)	0.546
Study 2	Product evaluation	4.89 (1.18)	4.48 (1.12)	**0.004**	6.04 (0.87)	6.18 (0.78)	0.208
	Word of mouth	3.92 (1.56)	3.34 (1.34)	**0.001**	5.64 (1.25)	5.78 (1.21)	0.397
	Customer satisfaction	4.55 (1.41)	3.91 (1.44)	**<0.001**	5.83 (1.19)	6.13 (0.89)	**0.029**

Note: Standard deviations are in parentheses. Results for the control conditions (baseline and incident at the middle), which did not deviate from our expectations, are available on request. Values presented in bold indicate statistically significant results at the $p < 0.05$ level.

low to chronically high perceived control. Appendix C presents our measurements of focal variables across studies. Finally, we controlled for emotional contagion, which is the susceptibility to other individuals' emotions (Doherty 1997), mood (Allen and Janiszewski 1989), and socio-demographics, as variables potentially influencing the moderating role of incident valence.

3.1.3 | Results

We applied two manipulation checks, measuring whether participants accurately recalled the timing of the incident occurrence and the perceived incident valence. First, most of the participants (>90%) correctly identified the timing of incident occurrence. We did not remove participants who failed this manipulation check from the data analyses, in line with advice to analyze the data based on the intention to treat rather than the actual treatment (Meyvis and Van Osselaer 2018). We used the same approach across all studies. Second, participants perceived the negative (positive) incident as more negative (positive) than the scale mid-point ($M_{negative} = 2.64$, SD = 1.36, $M_{positive} = 6.18$, SD = 0.95, with 1 = very negative, 7 = very positive). Thus, our manipulations worked as intended. Because none of the controls had a significant influence on our results, we excluded them from the further analyses.

We conducted a two-way ANOVA that revealed a significant interaction between incident timing (beginning vs. end) and incident valence (positive vs. negative) on repurchase intention ($F(1, 175) = 8.63$, $p = 0.004$, $\eta^2 = 0.047$) and WOM ($F(1, 175) = 4.39$, $p = 0.038$, $\eta^2 = 0.024$). Specifically, for the negative incident, repurchase intention was significantly lower when the incident occurred at the end as compared to the beginning ($M_{beginning} = 4.12$, SD = 1.55, $M_{end} = 3.44$, SD = 1.51; $p = 0.017$). Similarly, WOM was lower when the incident occurred at the end than at the beginning ($M_{beginning} = 3.81$, SD = 1.47, $M_{end} = 3.16$, SD = 1.22; $p = 0.012$), demonstrating a recency effect.

For the positive incident, repurchase intention was significantly higher at the beginning as compared to the end ($M_{beginning} = 6.02$, SD = 0.98, $M_{end} = 5.56$, SD = 0.98; $p = 0.032$), indicating a primacy effect. In contrast, there was no difference in WOM when the incident occurred at the beginning as compared to the end ($M_{beginning} = 5.82$, SD = 1.10; $M_{end} = 5.68$, SD = 1.13; $p = 0.569$). The results of planned contrasts for both dependent variables provide partial support for H1, showing recency effects for negative incidents, as well as a primacy effect on repurchase intention and no effect on WOM for positive incidents (see Table 1). Finally, the results of the control conditions (i.e., positive incident in the middle, negative incident in the middle) did not differ from the baseline (with no incident), as expected.

Focusing on the negative incident context only, a moderation analysis (Hayes 2013; Model 1; 5000 bootstrap samples) showed that locus of control moderates recency effects, providing support for H2. Specifically, the interaction between incident timing and locus of control was significant for both repurchase intention ($b = -1.15$, $t(90) = -2.98$, $p = 0.004$) and WOM ($b = -0.91$, $t(90) = -2.63$, $p = 0.010$). To assess the nature of these interactions, we ran floodlight analyses (Spiller et al. 2013). The analyses showed that recency effects for the negative incident occur for the locus of control values higher than 4.43 for repurchase intention, and higher than 4.39 for WOM. These results demonstrate that recency effects for the negative incident are significant only for individuals with high chronic perceived control, thus providing support for H2.

3.1.4 | Discussion

The results of Study 1 provide support for our hypotheses. While we observe recency effects in customer-related outcomes for the negative incident, these effects dissipate for positive incidents, with repurchase intention even showing primacy effects. Further, recency effects for the negative incident context existed only for individuals with chronically high perceived control.

3.2 | Study 2: Validation Study

The aim of Study 2 was to assess whether our findings hold in a more utilitarian setting compared to the dining out context in Study 1. We chose the context of a first aid course as part of a mandatory job workshop. Because utilitarian experiences are more goal-directed and functional than hedonic experiences (Li et al. 2020), we intended to explore whether our findings from Study 1 generalize to a different CE context. Apart from a different context, Study 2 was conceptually the same as Study 1.

3.2.1 | Design and Procedure

We conducted a pre-test with 103 Amazon Mechanical Turk Masters from the US to identify a suitable incident pair. Using the same procedure as in the pre-test of Study 1, we selected "instructor answers your question in a very polite manner" and "instructor answers your question in a very impolite manner" as our positive and negative incident, respectively. These incidents represented the best match in terms of perceived valence on a 7-point Likert scale ($M_{\text{friendly instructor}} = 6.48$, SD = 0.80; $M_{\text{unfriendly instructor}} = 2.18$, SD = 1.65), and they did not differ in (high) perceived realism.

For the main study, the experimental procedure was the same as in Study 1. To determine the sample size for Study 2, we conducted a post hoc G*Power analysis based on Study 1's data. This analysis indicated that with a sample of 302 participants, we achieved a power of 0.78 at a conservative alpha level of 0.01, with Cohen's $f = 0.25$ for detecting interaction effects in a two-way ANOVA. Consequently, we recruited 575 US consumers (50% female; $M_{\text{age}} = 38.42$, $\text{SD}_{\text{age}} = 13.70$) from Prolific.

3.2.2 | Measurements

The measures were the same as in the previous studies, with one exception. We measured product evaluation (Mukherjee and Hoyer 2001) instead of repurchase intention as one of the customer-related outcomes, because attending a first-aid course is a functional experience that is not frequently repeated. In a pre-test, we found that 38.4% of participants had never attended a first aid course, and only 23.9% had participated in one within the past 3 years. These insights support our decision to measure product evaluation rather than repurchase intention in Studies 2 and 3, considering the functional and infrequent nature of first aid courses.

3.2.3 | Results

First, most of the participants (> 90%) correctly identified the timing of incident occurrence. Second, participants perceived the negative (positive) incident as more negative (positive) than the scale mid-point ($M_{\text{negative}} = 1.63$, SD = 0.74, $M_{\text{positive}} = 6.57$, SD = 0.76, with 1 = very negative, 7 = very positive). Thus, our manipulations worked as intended.

A two-way ANOVA indicated a significant interaction effect between incident timing (beginning vs. end) and valence (positive vs. negative) on product evaluation ($F(1, 460) = 235.53$, $p < 0.001$, $\eta^2 = 0.352$) and WOM ($F(1, 460) = 278.06$, $p < 0.001$, $\eta^2 = 0.389$). Specifically, for the negative incident, product evaluation was significantly lower when the incident occurred at the end compared to the beginning ($M_{\text{beginning}} = 4.89$, SD = 1.18, $M_{\text{end}} = 4.48$, SD = 1.12; $p = 0.004$), with similar results for WOM ($M_{\text{beginning}} = 3.92$, SD = 1.56; $M_{\text{end}} = 3.34$, SD = 1.34; $p = 0.001$). These results indicate a recency effect for the negative incident for both dependent variables. For the positive incident, differences between the incident occurring at the beginning and at the end were not significant for neither product evaluation ($M_{\text{beginning}} = 6.04$, SD = 0.87; $M_{\text{end}} = 6.18$, SD = 0.78; $p = 0.208$) nor WOM ($M_{\text{beginning}} = 5.64$, SD = 1.25; $M_{\text{end}} = 5.78$, SD = 1.21; $p = 0.397$). The results of planned contrasts, thus, provide support for H1.

Focusing on the negative incident context only, a moderation analysis (Model 1; 5000 bootstrap samples) provided partial support for H2. Specifically, the interaction between incident timing and locus of control was non-significant for product evaluation ($b = -0.24$, $t(228) = -1.45$, $p = 0.147$) but significant for WOM ($b = -0.46$, $t(228) = -2.24$, $p = 0.026$). Floodlight analyses revealed that recency effects for the negative incident hold only for individuals with high chronic perceived control—that is, for values of locus of control above 3.80 for product evaluation and above 3.79 for WOM.

3.2.4 | Discussion

The results of Study 2 provide additional support for our hypotheses, indicating that customers exhibited lower product evaluation and WOM when the negative incident occurred at the end of the first aid course than at the beginning (recency effects). As in Study 1, we observe recency effects for negative incidents only for individuals with chronically high perceived control, in line with H2.

3.3 | Study 3: Negative Incidents and the Impact of Situational Control

The results from Studies 1 and 2 establish the important role of locus of control—a stable and enduring manifestation of perceived control—as a moderator in recency effects observed in the context of negative incidents. Study 3 builds on this insight by focusing exclusively on contexts involving negative incidents to further explore for which individuals recency effects are most prominent. Specifically, this study aims to investigate the role of perceived control as another boundary condition for recency effects by directly manipulating situational control, which is a temporary, situation-dependent state. Such manipulation allows us to (1) thoroughly examine the spectrum of perceived control, from a stable personal trait to a dynamic situational variable, and its impact on customer-related outcomes, and (2) explore practical measures that businesses could implement to alleviate the negative impact of recency effects.

3.3.1 | Design and Procedure

We used the same scenario of a first aid course as in Study 2 but included the situational control manipulation at the beginning of the experiment in a 2 (situational control: high vs. low)×2 (negative incident: beginning vs. end) between-group design. The manipulation of situational control was a priming task asking participants to recall events where they either had no control or were completely in control (adapted from Whitson and Galinsky 2008) (see Appendix D for details). We successfully pre-tested this manipulation on Prolific, measuring perceived control as the main outcome variable. For the main study, we recruited 391 US consumers on Prolific (50.1% female; $M_{age} = 40.67$, $SD_{age} = 13.67$) based on a G*Power analysis similar to Study 2.

3.3.2 | Measurements

The measures were the same as in Study 2.

3.3.3 | Results

The manipulation check measuring perceived incident valence showed that participants perceived the negative incident as more negative compared with the scale mid-point ($M = 1.80$, SD = 0.94, with 1 = very negative, 7 = very positive). The manipulation check for incident timing was again successful.

A two-way ANOVA showed that incident timing and situational control had a marginally significant impact on product evaluation ($F(1, 387) = 3.479$, $p = 0.063$) and a significant impact on WOM ($F(1, 387) = 4.879$, $p = 0.028$). As predicted in H2, simple effects showed that customer-related outcomes depend on the timing of the negative incident (recency effects) only in the high-control condition. Specifically, the difference between negative incidents happening at the beginning and at the end of a first aid course was significant for individuals with high situational control for both product evaluation ($M_{beginning} = 5.02$, SD = 0.98; $M_{end} = 4.59$, SD = 1.36; $p = 0.006$) and WOM ($M_{beginning} = 4.12$, SD = 1.33; $M_{end} = 3.58$, SD = 1.63; $p = 0.006$) but non-significant for individuals with low situational control (product evaluation: $M_{beginning} = 4.72$, SD = 1.05; $M_{end} = 4.73$, SD = 1.28; $p = 0.938$; WOM: $M_{beginning} = 3.63$, SD = 1.38; $M_{end} = 3.75$, SD = 1.60; $p = 0.568$).

3.3.4 | Discussion

Manipulating situational control, Study 3 supports the notion that recency effects in terms of customer-related outcomes are more likely to occur for individuals with high (vs. low) levels of perceived control (H2). In this sense, the results of Study 3 mirror those of Studies 1 and 2, in which we measured rather than manipulated this variable.

4 | General Discussion

This research aims to identify which moments within the temporal sequence of CEs are most influential for overall CE evaluations, and the conditions under which these effects are most pronounced. In summary, our findings provide actionable insights for companies on how to strategically design CEs to enhance repurchase intention, product evaluation, and WOM. Across three studies conducted in different service settings (i.e., dining out and a first aid course), we find support for our hypothesis identifying perceived control as a novel and important boundary condition of the effect of specific moments on overall CE evaluations. Additionally, incident valence serves as an important moderator in shaping these evaluations. Overall, the present research shows that negative incidents occurring at the end of a CE have a disproportionate influence on overall CE evaluations, but these recency effects disappear when incidents are positive and they occur only for individuals with a heightened sense of perceived control.

4.1 | Theoretical Contributions

This research provides important contributions to marketing literature. First, we enrich the limited research on temporal sequences in a CE management context by conducting a series of studies identifying incident valence as an important moderator of the recency effects in the context of overall CE evaluations. Specifically, we contribute to previous research on the interaction between incident timing and incident valence (Harman and Porter 2021; Sivakumar, Li, and Dong 2014) by showing that recency effects for negative incidents in terms of overall CE evaluations hold across both hedonic (e.g., dining out) and utilitarian (e.g., first aid course) service contexts. This approach contrasts with research on a single service type (Harman and Porter 2021) and on general service encounters without distinguishing between different service types (Sivakumar, Li, and Dong 2014). By demonstrating that recency effects extend beyond hedonic context to utilitarian service contexts, which are more goal-directed and functional as compared to hedonic experiences (Li et al. 2020), we enhance the generalizability and applicability of our findings across a broader range of business settings.

Second, our results provide empirical evidence that contributes to existing conceptual frameworks on the influence of different service outcomes on customers' perceptions and evaluations (Sivakumar, Li, and Dong 2014). For example, Sivakumar, Li, and Dong (2014) examine the impact of frequency, timing, proximity, and sequence of service failures and delights on perceived service quality. Their research draws on prospect theory to argue that the timing of delights or failures should not matter for customers' perceived service quality when the reference levels remain unchanged—a situation common in many service encounters. In contrast, our findings show that incident timing is important for overall CE evaluations, but only in the case of negative incidents. Specifically, our results reveal that negative incidents at the end of a CE have a disproportionate influence on overall CE evaluations, demonstrating recency effects, while no recency effect is observed for positive incidents. Thus, our research also addresses calls to identify key pain points from the customer perspective (McColl-Kennedy et al. 2019). Although positive incidents can generally improve customers' overall CE evaluations, their timing within the temporal sequence of a CE seems to be less relevant.

In contrast to Harman and Porter (2021), who find that the most recent interaction during a service encounter has the strongest

impact on customer engagement regardless of the valence of CE, our findings provide a more nuanced view. Harman and Porter (2021) simulate customer interactions with consistently positive or negative experiences across three stages (beginning, middle, and end) of the CE, whereas our study focuses on the positive or negative *incidents* occuring at the beginning or end of the CE, using the middle as a control. Thus, our study isolates specific moments (i.e., beginning vs. end) to investigate how single incidents of varying valence impact overall CE evaluation. Overall, in comparison to previous findings that emphasize the importance of happy endings (Harman and Porter 2021), we suggest that effective CE is not about optimizing every customer interaction or creating happy endings; rather, it is about avoiding bad endings.

Third, while Harman and Porter (2021) explore customer engagement, Garnefeld and Steinhoff (2013) investigate customer satisfaction, and Sivakumar, Li, and Dong (2014) primarily focus on perceived service quality, our study examines downstream behavioral intentions such as repurchase intention, product evaluation, and WOM. This shift in focus provides actionable insights for businesses seeking to understand and influence customer loyalty and advocacy.

Fourth, our research is the first to explore the role of perceived control in the context of temporal sequences of CE. Previous studies in the customer behavior literature find that when customers' perception of control is threatened, they are more likely to prefer products and logos with clear boundaries (Cutright 2012) or acquire luxury possessions as a means of restoring control (Baek et al. 2023). To the best of our knowledge, our research is the first to show that heightened perceived control, both as a chronic variable (Studies 1 and 2) and when situationally induced (Study 3), acts as an important boundary condition of the recency effects for negative incidents. Specifically, our findings demonstrate that negative stimuli threaten perceived control, but only for individuals with high levels of control. High-control individuals' motivation to regain control over the environment (Chaxel 2016) prevents them from easily recovering the lost control if a negative event happens at the end of a CE.

4.2 | Managerial Implications

Managers need to make smart decisions about allocating their limited time and budgets across different stages of the extended service encounter to create CEs that are satisfying and generate positive WOM. Our research offers managers a better understanding of the circumstances under which specific moments within the temporal sequence of a CE can be more important for customer evaluations. We provide two specific managerial implications in this regard.

First, our findings indicate that managers should prioritize resources to avoid or prevent failures, especially at the end of service encounters. If a failure does occur at the end of a CE sequence, managers should aim to extend the service encounter by adding another point of interaction to change the perceived end of a CE and mitigate the negative event's impact to some extent. For example, asking customers to provide feedback before they leave the restaurant can alter the perceived end and lessen the recency effect's negative consequences. While ensuring completely error-free services may be impractical or too costly, companies can reduce the occurrence of failures by strategically allocating resources accordingly (Sivakumar, Li, and Dong 2014).

Additionally, our findings challenge the argument from Kranzbühler et al. (2020) meta-analysis, which suggests that managers should focus on triggering positive emotions rather than avoiding negative ones. Without directly exploring the role of discrete emotions, our studies suggest that preventing negative events, especially at the end of a CE sequence, should be a top priority for managers. Given our finding that the timing of positive events does not significantly impact overall CE evaluations, companies may want to reevaluate the practice of meticulously crafting happy endings of their service experiences (Verhoef, Antonides, and de Hoog 2004).

Second, companies can use our finding that recency effects only persist when perceived control is high to their advantage. One approach is to temporarily reduce customers' perceived control before the actual CE. For example, subtle changes in wording can alter individuals' mental states, which companies can use to design linguistic interventions that target situational control (Costello and Malkoc 2022). However, this strategy should be used cautiously, as reducing customers' control can also lead to unintended consequences, such as increased preference for high-effort products and services (Cutright and Samper 2014).

Alternatively, companies can add another interaction point with customers after a negative incident at the end of a CE. This additional interaction can help restore the customers' sense of perceived control. For instance, offering customers an option to provide feedback after a negative incident at the end of the service encounter may be more effective than providing a small giveaway. While these strategies cannot completely prevent the consequences of service failures, they can mitigate the disproportionately negative effects of failures occurring at the end of CE sequences.

4.3 | Limitations and Future Research

Our results hold in different service contexts, characterized by different customer expectations. To enhance generalizability, we drew participants from the general US population rather than specific groups (e.g., students). However, there are several limitations offering opportunities for future research.

First, conducting a field study would further increase the generalizability of the results. While we consistently show that our effects work for different behavioral intentions, such as repurchase intention or WOM, these measures are still evaluations without direct monetary consequences. Future research should explore whether and to what extent the effects of individual moments on customer evaluations observed in our studies translate into real customer behavior, as only actual purchases have monetary consequences and associated risks.

Second, we used visuals alongside textual descriptions to enhance the realism of our study scenarios. The high-perceived

realism across all studies lends support to our reasoning (see Appendix E for more details). We employed short, realistic scenarios of different CEs to assess subsequent intentions and attitudes, using the experimental vignette methodology (Aguinis and Bradley 2014). This method is frequently used in service contexts and provides a suitable balance between internal and external validity, especially when exploring sensitive topics (Aguinis and Bradley 2014). Given that our research involves negative events occurring at different time points within the CE sequence, ethical considerations make it difficult to study the impact of negative events in CEs in the field. A possible future research avenue is to further increase customer immersion in the scenarios by combining visuals with audio or using virtual and augmented reality.

Third, while we used different stimuli across studies, testing other stimulus types might enhance the internal validity of the results. Our focus was on social stimuli (i.e., those pertaining to the social aspects of a customer-company relationship). Thus, further studies could test whether our findings also hold for incidents that do not include a social component.

Fourth, exploring additional boundary conditions, such as construal level, offers a promising avenue for future research on CE dynamics. Consumers with high construal levels tend to focus more on intangible attributes in service evaluations (Ding and Keh 2017). Consequently, recency effects for negative incidents may be more pronounced for these consumers due to their attention to intangible aspects like staff interactions. Alternatively, consumers with high construal levels might perceive the CE more holistically and thus are less likely to fixate on the concrete instance of a service failure (Yang et al. 2024), potentially diminishing the impact of incident timing. Future studies should investigate how construal level moderates recency effects in CEs, providing insights for service design and recovery strategies.

Acknowledgments

Open Access funding enabled and organized by Projekt DEAL.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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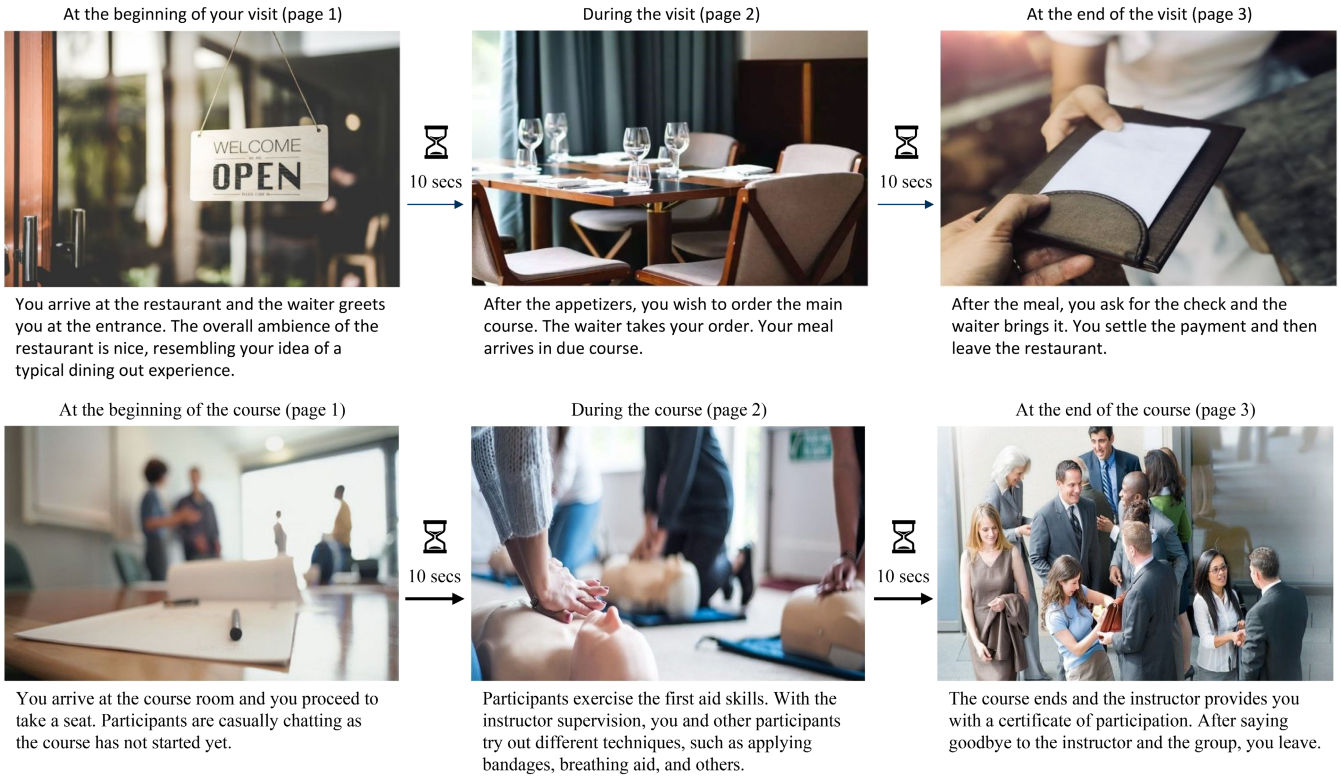
Appendix A

STUDY SCENARIOS—STUDY 1 (TOP PANEL), STUDIES 2 AND 3 (BOTTOM PANEL)

Across all studies, each scenario consisted of three temporal stages (e.g., beginning, halfway through, end). Each stage was presented on a separate page as a textual description, along with an appropriate visual to enhance realism of the scenario. After the scenario, a 1-min word search task was conducted to remove the artificial recency effect due to experimental design.



Appendix B

TIMING AND VALENCE MANIPULATION

	Pilot 1a	
	Beginning	**End**
Negative	"When you arrive, the waiter acts extremely unfriendly towards you and your friends. You and your friends get really annoyed about this behavior."	"Before you leave, the waiter acts extremely unfriendly towards you and your friends. You and your friends get really annoyed about this behavior."
	Pilot 1b	
	Beginning	**End**
Positive	"When you arrive, the famous chef drops by your table for a short chat about the food. You and your friends really enjoy this chat."	"Before you leave, the famous chef drops by your table for a short chat about the food. You and your friends really enjoy this chat."
	Study 1	
	Beginning	**End**
Negative	"When you arrive, the waiter is very unfriendly towards you and your friends. Without escorting you, the waiter points to the table where you should be seated. This encounter with the waiter makes you really annoyed."	"The waiter acts very unfriendly towards you and your friends. After you have paid, the waiter turns around and leaves. This encounter with the waiter makes you really annoyed."
Positive	"When you arrive, the waiter is very friendly towards you and your friends. The waiter kindly escorts you to the table you reserved. This encounter with the waiter makes you very happy."	"The waiter acts very friendly towards you and your friends. After you have paid, the waiter kindly thanks you and wishes you a nice day. This encounter with the waiter makes you very happy."

	Studies 2 and 3	
	Beginning	**End**
Negative	"Before the course starts, you have a couple of questions for the instructor. The instructor answers your questions in a very unkind and impolite manner. This interaction with the instructor makes you really annoyed."	"Before you leave, you have a couple of questions for the instructor. The instructor answers your questions in a very unkind and impolite manner. This interaction with the instructor makes you really annoyed."
Positive	"The instructor answers initial questions from you in a very kind and polite manner. This interaction with the instructor makes you very happy."	"Before you leave, the instructor answers your questions in a very kind and polite manner. This interaction with the instructor makes you very happy."

Note: Study 3 used only the negative incidents. Manipulations for the control conditions (middle and no incident) are available upon request.

Appendix C

MEASUREMENTS OF CORE CONSTRUCTS ACROSS STUDIES

Constructs/Items	Cronbach's alpha
Repurchase intention (adapted from Dutta, Biswas, and Grewal 2011); Pilot 1a, Pilot 1b, and Study 1	***0.94, 0.84, 0.95***
If you want to go outside for a dinner in the future, how likely are you to try this restaurant?	
When you want to dine out again, how likely are you to go to this restaurant?	
How likely are you to revisit this restaurant for your dining out needs?	
Word of mouth (adapted from Fuchs, Prandelli, and Schreier 2010); Pilot 1a, Pilot 1b, Studies 1–3	***0.95, 0.91, 0.95, 0.94, 0.94***
I would recommend this restaurant (first aid course) to my friends.	
I would talk very positively about this restaurant (first aid course) to others.	
I would try to spread the word about this restaurant (first aid course).	
Product evaluation (adapted from Mukherjee and Hoyer 2001); Studies 2 and 3	***0.93, 0.92***
How would you evaluate this first aid course?	
bad–good, dislike–like, not useful–useful, undesirable–desirable, low-quality–high-quality, unfavorable–favorable	
Locus of control (adapted from Kopalle, Lehmann, and Farley 2010); Studies 1 and 2	***0.70, 0.72***
Becoming a success is a matter of hard work.	
Becoming a success has little or nothing to do with luck.	
Getting what I want has little or nothing to do with luck.	
I feel that I have little influence over the things that happen to me (reverse coded)	
What happens to me is my own doing.	
Most people don't realize the extent to which their lives are controlled by chance happenings (reverse coded)	
Customer satisfaction (adapted from Homburg, Koschate, and Hoyer 2005); Studies 1 and 2	***0.97, 0.93***
All in all, I was satisfied with this restaurant visit (course).	
This restaurant visit (course) met my expectations.	
This restaurant visit (course) compares well to an ideal restaurant visit (first aid course) experience.	

Note: Except for product evaluation, which was measured on a 7-point semantic differential scale, all other core constructs were measured on a 7-point Likert scale. Measurements for control variables are available upon request. Values of Cronbach's alpha equal to or higher than 0.70 indicate acceptable internal consistency (in italics).

Appendix D

SITUATIONAL CONTROL MANIPULATION (STUDY 3)

Low control	High control
"Please recall a particular incident in which something happened, and you did not have any control over the situation. Please describe the situation in which you felt a complete lack of control—what happened, how you felt, etc."	"Please recall a particular incident in which something happened, and you were in complete control of the situation. Please describe the situation in which you felt in complete control—what happened, how you felt, etc."

Note: Based on previous research, we pre-tested (Prolific; $n = 247$) priming task and an ease-of-retrieval task as potential manipulations of situational control. Our main pre-test measurement was perceived control, assessed with two items adapted from Kay et al. (2008): "The events in my life are mainly determined by my own actions." and "I am in control of most things that occur in my life." (reverse-coded), measured on a 7-point Likert scale, with 1 = fully disagree, 7 = fully agree. For the priming task, manipulation worked as intended ($M_{\text{low control}} = 4.52$, SD = 1.14, $M_{\text{high control}} = 5.01$, SD = 1.34, $p = 0.031$). To rule out confounding effects, we assessed the impact of cognitive load and perceived social power, but neither differed in the two priming conditions.

Continues

Appendix E

PERCEIVED REALISM ACROSS STUDIES

	Negative incident			Positive incident		
Study	**Beginning**	**End**	***p***	**Beginning**	**End**	***p***
Study 1	5.62 (1.63)	5.84 (1.48)	0.495	6.18 (1.19)	5.98 (0.92)	0.387
Study 2	6.16 (1.16)	6.17 (0.99)	0.982	6.28 (0.96)	6.42 (1.05)	0.292
Study 3	6.28 (0.96)	6.15 (1.13)	0.252		/	

Note: Standard deviations are presented in parentheses. The perceived realism of each scenario was assessed using a single-item ("I can imagine that situations similar to the one described in the scenario exist."), measured on a 7-point Likert scale, with 1 = fully disagree, 7 = fully agree. Across all studies, the perceived realism was significantly higher than the scale midpoint of 4, demonstrating that participants found the scenarios to be generally realistic. Additionally, statistical analysis revealed no significant differences in perceived realism when incidents occurred at the beginning or the end of the scenarios, for either positive or negative incidents. This highlights the consistency of realism perception irrespective of the timing and valence of the incidents.