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## Repository Citation

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## Original Publication Citation

Guo, L., Lotz, S. L., Tang, C. Y., & Gruen, T. W. (2016). The role of perceived control in customer value cocreation and service recovery evaluation. *Journal of Service Research*, 19(1), 39-56. doi:10.1177/1094670515597213

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# The Role of Perceived Control in Customer Value Cocreation and Service Recovery Evaluation

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Journal of Service Research  
2016, Vol. 19(1) 39-56  
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sagepub.com/journalsPermissions.nav  
DOI: 10.1177/1094670515597213  
jsr.sagepub.com



## Abstract

Treating customers as passive recipients of service recovery does not account for their naturally elevated desire for control following a service failure. Focusing on value cocreation by customers in service recovery, this study conceptualizes three types of customer perceived control in service recovery: process control, decision control, and information control. Using both a field study and a controlled experiment to test the conceptual model, this study reveals various ways service firms can engage customers in service recovery to enhance their service experience. The results show that customers are motivated to exert influence on and regain control over service recovery because they care not only about the economic gains rendered by control but also about their social self-esteem in their relationship with a service firm. An investigation of the interaction effects among the three types of control reveals either complementary or substitution effects between different pairings of the three types of control on customers' justice evaluations of service recovery and repurchase intentions. The findings provide managers with new guidance on developing and implementing successful service recovery programs.

## Keywords

perceived control, perceived justice, cocreation, service recovery, outcome favorability, relationship-based self-esteem

The role of the customer in the value cocreation of a firm's service offering has received considerable attention in service delivery and service evaluation research. However, less research attention has been paid to the role of the customer in service recovery (Dong, Evans, and Zou 2008; Karande, Magnini, and Tam 2007; Roggeveen, Tsiros, and Grewal 2012). Service recovery research mainly focuses on two aspects of firms' responses to service failures: (1) the form of compensation (e.g., refunds and replacements) provided to customers as service recovery outcomes (e.g., McCollough 2000; Sparks and McColl-Kennedy 2001) and (2) the attributes and behaviors of service employees in the service recovery process, such as speed of response, politeness, and empathy (e.g., Bitner, Booms, and Tetreault 1990; Tax, Brown, and Chandrasekaran 1998). Both aspects focus on the firm's role in service recovery and assume that customers are passive service recipients, ignoring their role as active value cocreators.

Consumers desire to exercise control at all stages of the service process (Bateson 1985; Van Raaij and Pruyn 1998). Service failures, in particular, may accentuate consumers' need for control during service recovery (Chang 2006) because loss of control during service failure may motivate them to influence service recovery in an effort to regain control (Langer 1983). When customers' desire to exercise control over either the outcome or the process of the service is high, firms may obtain a competitive advantage by offering them opportunities and resources to be involved in service recovery cocreation

(Lusch, Vargo, and O'Brien 2007). Thus, the primary purpose of this study is to understand how firms can facilitate customers' involvement in and influence on service recovery efforts after they have experienced a service failure.

To accomplish this, the study examines how three types of customer perceived control—process control, decision control, and information control—influence customers' perceptions of fairness and, ultimately, their repurchase intention after service recovery. We begin by incorporating the concept of value cocreation into control theories (Averill 1973; Folger 1987; Lusch, Vargo, and O'Brien 2007; Thibaut and Walker 1975) and showing how each type of control provides a way for customers to be involved in and exert influence at various stages of the service recovery. We then explore how perceived control affects customers' evaluations of service recovery with a dual process model. The two distinct psychological processes that

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link perceived control with customers' overall perception of justice and their repurchase intention include (1) customers' perceived outcome favorability, which involves the economic value of control and (2) relationship-based self-esteem, which pertains to the social and psychological value of control. In addition to the main effects, we examine the degree to which each type of control either substitutes or complements one another in influencing customer evaluations of service recovery. Figure 1 depicts the conceptual framework.

This study makes three contributions to the service recovery literature. First, it highlights the critical cocreation role of customers in shaping their justice perceptions of firms' service recovery efforts. By conceptualizing three types of customer perceived control and investigating their differential effects on customers' evaluations of service recovery, this study reveals previously unexplored cocreation opportunities a service firm can provide customers at various stages of the service recovery. Previous research (e.g., Karande, Magnini, and Tam 2007; Roggeveen, Tsiros, and Grewal 2012) on customer cocreation in service recovery has focused on customer control over the decision outcome, a stage when the firm is forming the service recovery solution. By examining process control and information control, our study reveals the impact of customer participation at other stages of service recovery. Second, in addition to the main effects of customer control, this study examines the ways that process, decision, and information control play either complementary or substitute roles in influencing consumers' evaluations of firms' service recovery. Although common wisdom suggests a "more is better" approach, this study shows that various types of recovery efforts to facilitate customer participation do not always reinforce one another when used simultaneously. Finally, by explicating two distinct psychological processes—outcome favorability and relationship-based self-esteem—this study provides a new explanation of how firms' recovery strategies may enhance customers' justice evaluations. In seeking justice, customers may not only care about the economic gain or loss but also value their relationship status conveyed by the firm's service recovery efforts.

## Perceived Control in Service Recovery

Consumers' perceptions of control are vital in shaping their justice evaluations of service recovery efforts. The services literature has long recognized control as a crucial factor in influencing consumers' affective and behavioral responses to the service encounter (Bateson and Hui 1990). In a legal dispute resolution context, Thibaut and Walker's (1975) control theory also suggests that an optimal distribution of control between parties during dispute resolution is the key driver of fairness evaluations.

Control is an important construct in psychology literature and has been conceptualized in various ways. Skinner (1996) highlights two fundamental distinctions. One distinction is between actual control and perceived control. The other lies in the different relationships among "agents" (people who

exert control), "means" (the pathways through which control is exerted), and "ends" (outcomes over which control is exerted) of control. Control, as used in our study, refers to perceived control, with a particular conceptual focus on the agent-means relationship. Specifically, it reflects beliefs about the extent to which a potential means is available to a particular agent.

The adoption of such a conceptual focus of control corresponds to the value cocreation concept described in the service marketing literature. The "means" represents the cocreation opportunities available to the "agents" (i.e., customers) through which they can exercise control over the service process and outcome and engage in value cocreation. In service recovery, when a firm's complaint handling procedure or process provides opportunities or resources to facilitate customers' participation in shaping the service recovery, customers cocreate value by alleviating their negative feelings about the service failure, restoring their sense of loss of control and, ultimately, producing more positive evaluations of service recovery experience (Roggeveen, Tsiros, and Grewal 2012).

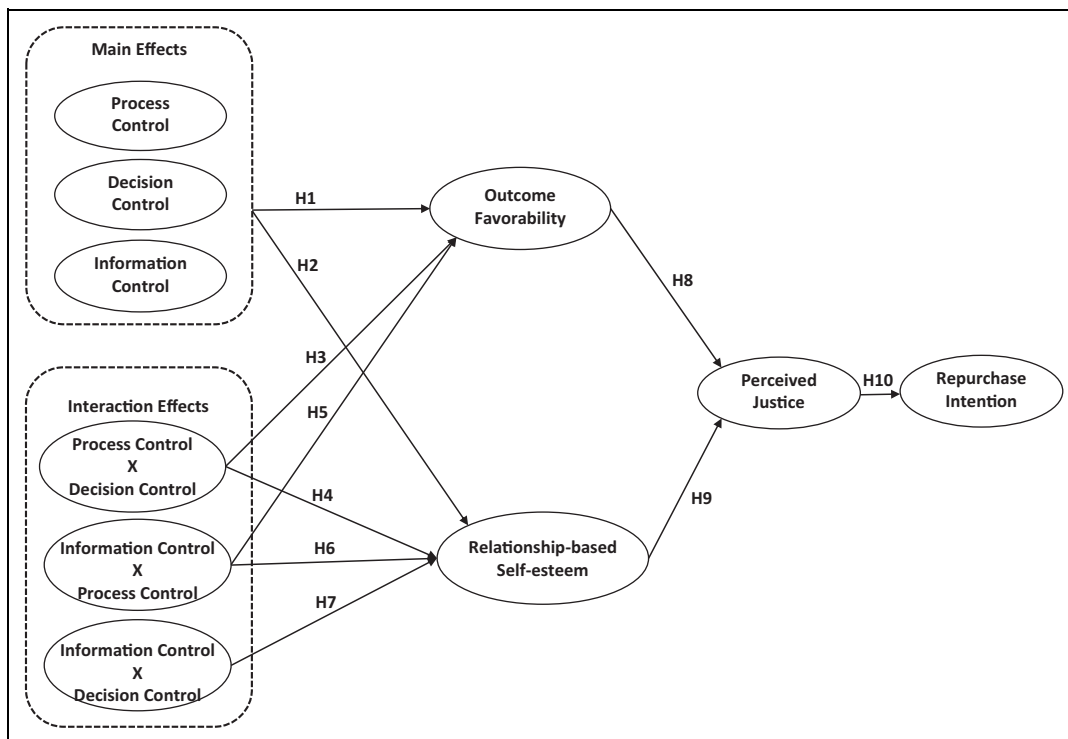
According to Thibaut and Walker's (1975) control theory, to achieve justice, people may try to exert control not only over the actual decision made (i.e., *decision control*) but also over the development, selection, and presentation of evidence on their side before the decision (i.e., *process control*). These two dimensions of control (i.e., decision and process control), derived from the legal setting, largely correspond to Averill's (1973) typology of decisional and behavioral control in psychology literature. In addition to decision and process control, one party's predictability and cognitive reinterpretation of a situation based on the information offered by the other party may also affect justice perceptions (Averill 1973; Folger 1987; Thompson 1981). We refer to this as *information control* in this study.

### Process Control

In service recovery, process control reflects consumers' perceptions of the extent to which a firm facilitates their participation in the dispute resolution process before the final decision (Averill 1973; Thibaut and Walker 1975). The greater the allowance for customers' participation in the process, the stronger is their sense of control. Offering customers opportunities to tell their side of the story and present evidence before the decision may assure customers that the service provider hears and understands the situation surrounding the present failure and that more information from their side is considered in the decision (Sparks and McColl-Kennedy 1998).

### Decision Control

*Decision control* refers to consumers' perceptions of the extent to which a firm facilitates their participation in their final decision-making outcomes (Averill 1973; Thibaut and Walker 1975). After determining the merits of the customer's



**Figure 1.** The role of perceived control in service recovery.

grievance, the company will reach the final decision-making stage to resolve the conflict. This final stage involves two factors: whether to compensate the customer and the form of compensation. Customers' sense of decision control may strengthen when they have the opportunity to influence either of these factors through facilitated participation. For example, providing customers with the opportunity to choose among different compensation forms (e.g., refund or upgrade), rather than imposing the decision outcome on them, may bolster their sense of control (Chang 2006). In addition, if customers have an opportunity to appeal the company's decision outcome, their sense of control may be strengthened.

### Information Control

Information control refers to consumers' perceptions of the extent to which the firm's provision of information during service recovery facilitates their cognitive appraisal and adaptation process after the service failure experience (Averill 1973; Thompson 1981). Providing information about the procedure or the cause of an event can aid in interpretation of the situation (Thompson 1981). This information can enhance the predictability of the situation, relieve stress, and result in feelings of increased personal control. During service recovery, providing information about the causes of the service failure or the progress of recovery efforts may signal that the firm wants to resolve the problem fairly, thereby reducing customers' psychological costs of adapting to the service failure. For example, during a flight delay, if the airline representative keeps customers updated on the status of the flight, they may

be able to reprocess the information regarding the negativity of the service failure and form a more positive expectation of the firm's recovery efforts. This positive expectation may relieve consumers' stress of adapting to the service failure and help them regain control over the service situation.

## Hypotheses Development

### *Perceived Control and the Dual Psychological Processes*

Researchers agree that endowing customers with a sense of control during service encounters has a positive impact on their evaluations of service experiences (e.g., Bendapudi and Leone 2003; Bitner, Booms, and Mohr 1994; Mattila and Cragg 2005). Integrating control and group value theories from the legal setting (Lind and Tyler 1988; Thibaut and Walker 1975), we argue that customer perceived control affects two distinct psychological processes: perceived outcome favorability, which involves the economic value of control, and relationship-based self-esteem, which reflects the social and psychological value of control.

### *Perceived Control and Outcome Favorability*

*Outcome favorability* refers to customers' perceived favorable ratio of outcome to input relative to that of referent others (i.e., interpersonal comparison) or that of past experiences (i.e., intrapersonal comparison; Adams 1965). Rather than objective verification, Adams (1965) proposes that people engage in a

social comparison process to make judgments about outcome fairness.

Thibaut and Walker's (1975) control theory, from an instrumental perspective, provides an explanation of the effect of control on customers' justice perceptions. They argue that the reason people want to gain control in a decision-making context is that control increases the probability of a favorable outcome. Wathieu et al. (2002) argue that offering consumers control over the composition of a choice set and facilitating evaluations of their progress in the overall choice process endows them with a sense of empowerment, which may contribute to their positive evaluations of the decision outcome.

**Hypothesis 1:** Customers' perceived (a) process control, (b) decision control, and (c) information control over the service recovery are positively related to perceived outcome favorability.

### *Perceived Control and Relationship-Based Self-Esteem*

Tyler (1989) argues that people's desire to have control over a decision-making process is not simply a means to achieve fair outcomes. Rather, regardless of whether a favorable outcome can be granted, people want to express themselves and be listened to through their participation in a decision-making process. In other words, people are attentive to cues conveying information about their status in a group, and they construct their social identities and feelings of self-worth from these social cues (Tyler 1997). Similar to organization-based self-esteem used in the organizational behavior literature, we use *relationship-based self-esteem* to capture these identity-related feelings in the services context. In the context of the employee-employer exchange, organization-based self-esteem manifests employees' self-perceived value with regard to their relationship with the organization (Pierce et al. 1989). In the consumer-service provider exchange, we argue that consumers form self-evaluations of their relationship with the service provider. Consumers with strong relationship-based self-esteem perceive themselves as important, meaningful, and worthwhile in the service relationship.

Group-value theory explicates that people derive status from membership in and identification with both small (e.g., family and work groups) and large (e.g., business firms) groups (Tyler 1989). In a service recovery context, the amount of control the firm allows customers to have over service recovery serves as a cue for customers to make identity-relevant judgments. By facilitating customers' participation in the firm's decision making and delivering information that aids in their appraisal and adaptation process after experiencing a service failure, a firm conveys that it recognizes their transactions and values their relationships. Thus, customers' feelings of self-worth and value to the firm (i.e., relationship-based self-esteem) may be enhanced. Accordingly, in addition to affecting perceptions of favorable economic outcomes (i.e., outcome favorability), customers' feelings of control over the service recovery may be socially and psychologically rewarding.

**Hypothesis 2:** Customers' perceived (a) process control, (b) decision control, and (c) information control over the service recovery are positively related to relationship-based self-esteem.

### *Substitution and Complementary Effects of Process, Decision, and Information Control*

In addition to the main effects, the three types of perceived control may interact with one another to influence customers' perceptions of outcome favorability and relationship-based self-esteem. We propose that process control works as a substitute for decision control, while information control works as a complement for both process control and decision control.

*Substitution effects.* We begin by explaining the potential substitution effects between process control and decision control on customers' outcome favorability and relationship-based self-esteem. We argue that when customers are offered higher levels of participation in the decision-making process (i.e., process control), their participation in the decision outcome (i.e., decision control) becomes less influential in determining their perceptions of service recovery. This occurs because when the firm facilitates higher process control, customers may believe that they can influence the outcome of service recovery in their desired direction (Brockner and Wiesenfeld 1996), causing them to assign lesser importance to decision control. In other words, heightened process control diminishes the effect of decision control on customers' perceptions of outcome favorability. Conversely, when process control is low, decision control becomes crucial in determining consumers' perceptions of the outcome. By the same token, we assert that the heightened process control may attenuate the effect of decision control on relationship-based self-esteem. By facilitating customers' process control, firms may communicate cues to customers that their relationship is highly valued. Because the decision-making process is considered relatively more stable than the decision-making outcome, when process control is high, customers may feel assured that their needs of self-esteem and identity will be fulfilled (Brockner and Wiesenfeld 1996). Consequently, decision control may become less important in determining their feelings of self-worth regarding their relationship with the firm. Thus, we propose that process control serves as a substitute for decision control.

**Hypothesis 3:** Customers' perceived process control weakens the positive relationship between perceived decision control and perceptions of outcome favorability.

**Hypothesis 4:** Customers' perceived process control weakens the positive relationship between perceived decision control and perceived relationship-based self-esteem.

*Complementary effects.* In contrast with the substitution effect of process control and decision control, we propose that process control and information control are complementary. When

process control is high, offering customers information control should strengthen their anticipation of a positive service recovery outcome. This is because informational acquisition helps customers make sense of their actions and update their anticipatory schemas regarding their actions (Ariely 2000). In other words, information control enhances customers' anticipatory schemas that their involvement in the decision-making process (i.e., process control) will lead to a positive outcome. Conversely, when process control is low, customers may not value information control as much. Cromwell et al.'s (1977) find that providing cardiac patients with information about the cause or treatment of their disease does not benefit their recovery unless it is accompanied by patients' participation in the treatment program. In summary, information control complements process control and strengthens the effects of process control on outcome favorability. We do not expect a similar complementary effect of information control on decision control because decision control directly addresses the final decision outcome, and additional information regarding the decision-making process may not affect how customers perceive their participation in choosing the compensation outcomes.

**Hypothesis 5:** Customers' perceived information control strengthens the positive relationship between perceived process control and perceptions of outcome favorability.

Information control also bolsters the impact of process control on customers' relationship-based self-esteem. During service recovery, customers seek information relevant to their self-worth from their interactions with the firm. The firm's facilitation of customers' participation in the decision-making process signals that they are valued and important in the relationship. The provision of information further increases customers' ability to interpret the firm's actions and to make sense of their relationship with the firm (Ariely 2000). When information control is high, consumers are more likely to derive higher relationship status from their participation in the decision-making process than when information control is low. By the same token, information control strengthens the effect of decision control on relationship-based self-esteem. Increased information control reinforces customers' beliefs that the firm's provision of decision control signals their relationship status with the firm, thus heightening their relationship-based self-esteem.

**Hypothesis 6:** Customers' perceived information control strengthens the positive relationship between process control and relationship-based self-esteem.

**Hypothesis 7:** Customers' perceived information control strengthens the positive relationship between decision control and relationship-based self-esteem.

### *Dual Psychological Processes and Perceived Justice*

*Outcome favorability and perceived justice.* Previous research (e.g., Tax, Brown, and Chandrashekar 1998) indicates that

customers' justice concerns in service recovery include three aspects: (1) fairness of the firm's decision-making outcome (i.e., distributive justice); (2) fairness of the firm's methods, mechanisms, and processes used in service recovery procedures (i.e., procedural justice); and (3) fairness in the way customers are treated during service recovery (i.e., interactional justice). According to equity theory, when service failure occurs, the distribution equity of the exchange relationship between consumers and firms is broken (Adams 1965). Customers may believe that their reward (the service they received) falls short of their investment (the price they paid), resulting in inequity. Thus, during service recovery, firms must restore the balance of the outcome to input ratio (i.e., outcome favorability) and regain equity to foster a more positive overall evaluation of justice.

Although closely related, outcome favorability and distributive justice are distinct constructs (Skitka, Winqvist, and Hutchinson 2003). An outcome can be perceived as favorable by means of social comparison, but it does not necessarily need to be fair according to a normative standard. Tyler (1989) finds that respondents' perceptions of outcome favorability explained 34% of the variance in their perceived fairness of outcomes.

**Hypothesis 8:** Perceived outcome favorability in service recovery is positively related to perceived justice.

*Relationship-based self-esteem and perceived justice.* Group-value theory stresses the relational importance of justice procedures (Lind and Tyler 1988). As mentioned previously, this theory purports that people seek self-relevant information from their interactions with organizations to assess their worth and value to that organization. Colquitt (2001) contends that fairness perceptions are augmented when people believe they are treated with respect and dignity. Analogously, in a service recovery situation, when evaluating a firm's decision-making process, customers may also be attentive to the identity and status information communicated through the recovery process. In other words, consumers evaluate the fairness of the service recovery process in terms of the symbolic meaning the firm conveys about their relationship status. When consumers feel valued by the firm, their perceptions of the fairness of the process may be bolstered.

The value-expressive concern of consumers' fairness evaluations is consistent with Smith, Bolton, and Wagner's (1998) social exchange view of service recovery. They contend that service recovery is an encounter, encompassing the exchange of psychological and social resources. When a service failure occurs, these resource exchanges become imbalanced, and enhanced perceptions of self-esteem and social standing may help restore balance. Consequently, customers may form more positive evaluations of the firm's fairness in service recovery.

**Hypothesis 9:** Relationship-based self-esteem in service recovery is positively related to perceived justice.

## Perceived Justice and Repurchase Intention

*Customer repurchase intention* reflects the extent to which customers will purchase from the service firm in the future (Blodgett, Hill, and Tax 1997). People care about justice because they are concerned about the long-term gains guaranteed by the fair methods and processes through which conflicts are resolved. Thus, when customers perceive the outcome and process of the service recovery as fair, they are more likely to engage in future transactions with the firm to achieve the benefits of the firm's fairness (Smith, Bolton, and Wagner 1999).

**Hypothesis 10:** Perceived justice in service recovery is positively related to repurchase intention.

## Study I

### Sample and Data Collection

We purchased a national sample of U.S. adult consumers from an online survey research firm that maintains a consumer panel containing approximately 2.5 million consumers closely representative of the U.S. population. We collected data with a web-based self-administered survey. Respondents were initially asked to recall and describe a memorable service-related complaint occurring within the last 6 months and then asked to answer structured questions related to this experience. Respondents who had not complained to a service retailer in the last 6 months or had complained but did not receive a response (i.e., service recovery) were not permitted to participate in the study. Based on these sample selection criteria, the online survey research firm solicited responses from a portion of the panel to obtain a representative sample. They collected responses from the panel until the desired sample size was reached.

In total, we obtained 310 completed responses, 27 of which we deemed unusable and excluded from the study, resulting in a sample size of 283. Respondents described a broad range of service failures from various service industries. The most frequently reported services were restaurants (28.6%,  $n = 81$ ), auto repair (9.8%,  $n = 28$ ), hotels (8.4%,  $n = 24$ ), and banks (7.4%,  $n = 21$ ).

### Measurement Development

We adapted some study measures from the existing literature and developed other measures specifically for this study. All constructs used 7-point Likert-type scales. With only one exception, all scales were anchored by *strongly disagree* (1) and *strongly agree* (7). Decision control was anchored by *not at all* (1) and *very much* (7). Appendix A presents the construct measures.

**Perceived control.** The measurement development of perceived control began with an extensive literature review of relevant studies (Ouschan, Sweeney, and Johnson 2006; Tax, Brown, and Chandrashekar 1998; Tyler 1997). Because existing scales for process, decision, and information control either are

based on non-service-recovery contexts or are somewhat inconsistent with the construct conceptualization in this study, we conducted a qualitative study using critical incident technique. We trained three independent coders to generate themes regarding customer control from the qualitative data. We included common themes not captured by the existent measures as additional items in the scales. All scale items were pre-tested for comprehension and relevance. After modification, we presented scale items to a panel of four academic experts to assess face validity.

**Other adapted scales.** To measure outcome favorability, we adapted 3 items of an established scale from Tyler (1997). To measure relationship-based self-esteem, we adapted 5 items of an established scale from Pierce et al. (1989). To measure perceived justice, we used a global measure to reflect the distributive, procedural, and interactional dimensions of justice (Blodgett, Granbois, and Walters 1993). Finally, to measure customer repurchase intention, we adapted 3 items from Blodgett, Hill, and Tax (1997).

**Control variables.** We included four variables to control for rival explanations and unexplained variance: age, gender, service failure severity, and compensation. Smith, Bolton, and Wagner (1999) show that age has an impact on customers' evaluations of service recovery. Previous research (e.g., Liao 2007) has also noted that men and women respond to service failures and evaluate service recovery differently. Moreover, service failure severity has an impact on customers' fairness evaluations of service recovery (e.g., Roggeveen, Tsiros, and Grewal 2012). Finally, whether or not (1 = *yes*, 0 = *no*) the customer had received a monetary compensation, such as refund, discount, or coupons, from the service firm was controlled (Grewal, Roggeveen, and Tsiros 2008).

## Analysis and Results

We tested the proposed model and its hypotheses with a structural equation model of latent interactions. This approach allows researchers to use continuous variables in interaction terms when testing interaction effects. We employed LISREL 8.8 to analyze the data, using raw data as input. We first established the measurement model and conducted confirmatory factor analysis (CFA) to assess construct validity. We then tested hypotheses in the structural model.

**Measurement model.** Table 1 provides the descriptive statistics and correlations of the study's constructs. The CFA results (see Appendix A) for the overall model fit,  $\chi^2(231) = 511.891$ ,  $p < .001$ , comparative fit index [CFI] = .988; non-normed fit index [NNFI] = .986, incremental fit index [IFI] = .988, root mean square error of approximation [RMSEA] = .0658, were satisfactory, suggesting unidimensionality (Anderson and Gerbing 1988). We verified convergent validity by checking the reliability, factor loadings, and extracted variance for each construct. The reliability of each scale indicated by Cronbach's  $\alpha$

**Table 1.** Descriptive Statistics and Correlations Among Constructs in Study 1.

	1	2	3	4	5	6	7	M	SD
1. Information control	1.00							4.36	1.86
2. Process control	0.68**	1.00						5.41	1.66
3. Decision control	0.46**	0.28**	1.00					2.83	1.92
4. Relationship-based self-esteem	0.72**	0.63**	0.35**	1.00				4.39	2.01
5. Outcome favorability	0.65**	0.53**	0.46**	0.68**	1.00			4.47	2.11
6. Perceived justice	0.71**	0.63**	0.39**	0.74**	0.87**	1.00		4.63	2.20
7. Repurchase Intention	0.67**	0.56**	0.29**	0.75**	0.77**	0.83**	1.00	4.44	2.23

\*\*Correlation is significant at the .01 level (2-tailed).

was consistently above .70 (Nunnally 1978). In addition, all items loaded on their respective constructs, and each loading was significant ( $p < .05$ ) and sufficiently high (Anderson and Gerbing 1988). Finally, the amount of variance extracted by each construct exceeded 50% (Fornell and Larcker 1981). Thus, all indices combined indicated good convergent validity of each construct. In addition, the amount of variance extracted by each construct was greater than the squared correlation between the two constructs (Fornell and Larcker 1981), confirming discriminant validity.

To test for potential common method bias, we compared two measurement models, one including only traits and one including both traits and a method factor (Williams, Cote, and Buckley 1989). The results of the method factor model only slightly improved model fit (RMSEA by  $-.018$ , CFI by  $.006$ , NFI by  $-.003$ , and IFI by  $.008$ ), with the common method factor accounting for a small portion of the total variance. This indicates that common method bias is not problematic in this study.

**Structural model of latent interactions.** To test the proposed model, consisting of both main and interaction effects, we derived a latent interaction from the observed covariation pattern among all possible indicators of the interaction. Specifically, all possible cross products of indicators of the two interacting latent factors served as indicators of the latent interaction factor. Furthermore, to avoid multicollinearity between the interaction term and its constituent main effects, we used a residual centering approach (i.e., orthogonalizing) to produce the indicators of the latent interaction factor (Little, Bovaird, and Widaman 2006).

The results of the proposed structural model indicate that the overall fit of all indices fell within satisfactory ranges ( $\chi^2 = 4,089.873$ ,  $df = 1,698$ ,  $p < .001$ ; CFI = .948; IFI = .948; NNFI = .944; and RMSEA = .0623). Most hypothesized paths were supported, and four paths—process control  $\rightarrow$  outcome favorability, process control  $\rightarrow$  relationship-based self-esteem, decision control  $\rightarrow$  relationship-based self-esteem, and Information Control  $\times$  Decision Control  $\rightarrow$  relationship-based self-esteem—were not significant and therefore dropped from the model. The fit for the parsimonious model remained unchanged ( $\chi^2 = 4,095.925$ ,  $df = 1,702$ ,  $p = .0$ ; CFI = .948; IFI = .948; NNFI = .944; and RMSEA = .0624).

Examination of modification indexes revealed two additional paths that were not proposed in the original model (Hoyle and Panter 1995). Specifically, process control had a direct effect on justice, and relationship-based self-esteem had a direct effect on repurchase intention. These two direct paths were freed in the modified model. The results for the newly modified structural model were  $\chi^2 = 4,059.916$ ,  $df = 1,700$ ,  $p = .0$ ; CFI = .948; IFI = .948; NNFI = .944; and RMSEA = .0619. Compared with the proposed model, excluding the four nonsignificant paths, the overall fit of the newly modified model was significantly improved as indicated by a significant  $\chi^2$  reduction ( $\Delta\chi^2 = 36.01$ ,  $\Delta df = 2$ ,  $p < .001$ ). Moreover, the addition of the two paths did not disturb the significance of the hypothesized paths. Table 2 provides standardized estimates,  $t$  values, and significance levels of the paths in the structural model.

To test how outcome favorability and relationship-based self-esteem mediated the main effects and interaction effects on perceived justice, we added several direct paths to justice (information control, decision control, Process Control  $\times$  Decision Control, and Process Control  $\times$  Information Control) to the model one at a time. None of these direct effects were significant. Combined with the aforementioned model results, these results indicate that both outcome favorability and relationship-based self-esteem fully mediate all the interaction effects as well as the main effect of information control. However, outcome favorability only partially mediates the main effect of decision control. Exerting a direct effect on justice, the main effect of process control is not mediated.

**Main effects.** As hypothesized, both information ( $\beta = .60$ ,  $p < .001$ ) and decision control ( $\beta = .13$ ,  $p < .001$ ) are positively related to outcome favorability, in support of Hypotheses 1c and 1b. However, process control has no impact on outcome favorability. Therefore, Hypothesis 1a is not supported. In accordance with Hypothesis 2c, only information control ( $\beta = .81$ ,  $p < .001$ ) is positively related to relationship-based self-esteem. Both process and decision control have no impact on relationship-based self-esteem. Thus, Hypotheses 2a and 2b are not supported. Both perceived outcome favorability ( $\beta = .70$ ,  $p < .001$ ) and relationship-based self-esteem ( $\beta = .16$ ,  $p < .001$ ) exert positive impacts on perceived justice, in



**Table 2.** Structural Model Results of Study 1.

Structural Relationships	Path Coefficient	t Value
Hypothesized Paths:		
Main Effects		
<b>H1a:</b> Process control → Outcome favorability	n.s.	
<b>H1b:</b> Decision control → Outcome favorability	.13**	2.51
<b>H1c:</b> Information control → Outcome favorability	.60***	8.11
<b>H2a:</b> Process control → Relationship-based self-esteem	n.s.	
<b>H2b:</b> Decision control → Relationship-based self-esteem	n.s.	
<b>H2c:</b> Information control → Relationship-based self-esteem	.81***	9.50
<b>H8:</b> Outcome favorability → Perceived justice	.70***	9.17
<b>H9:</b> Relationship-based self-esteem → Perceived justice	.16***	3.33
<b>H10:</b> Perceived justice → Repurchase intention	.67***	8.42
Interactive Effects		
<b>H3:</b> Process control × Decision control → Outcome favorability	-.13**	-2.13
<b>H4:</b> Process control × Decision control → Relationship-based self-esteem	-.15**	-2.44
<b>H5:</b> Process control × Information control → Outcome favorability	.11*	1.77
<b>H6:</b> Process control × Information control → Relationship-based self-esteem	.21***	3.23
<b>H7:</b> Decision control × Information control → Relationship-based self-esteem	n.s.	
$R^2$		
Outcome favorability	.63	
Relationship-based self-esteem	.69	
Perceived justice	.88	
Repurchase intention	.78	

Note. n.s. = not significant

\* $p < .1$ . \*\* $p < .05$ . \*\*\* $p < .01$ ; two-tailed tests.

support of Hypotheses 8 and 9. Perceived justice ( $\beta = .67, p < .001$ ) positively influences customers' repurchase intention, in confirmation of Hypothesis 10. Finally, as an added path, process control ( $\beta = .17, p < .001$ ) has a direct positive impact on perceived justice. Relationship-based self-esteem ( $\beta = .26, p < .001$ ) also has a direct positive impact on repurchase intention.

Regarding the effects of control variables, age is positively related to relationship-based self-esteem ( $\beta = .21, p < .05$ ), and monetary compensation (1 = yes, 0 = no) is positively related to outcome favorability ( $\beta = .39, p < .01$ ). Neither gender nor failure severity has any impact on the model variables.

**Interaction effects.** For the path coefficients of the latent interactions, customers' perceived process control weakens the positive relationship between perceived decision control and perceived outcome favorability ( $\beta = -.13, p < .05$ ) as well as the relationship between decision control and perceived relationship-based self-esteem ( $\beta = -.15, p < .01$ ). Thus, Hypotheses 3 and 4 are supported, confirming the substitution effect. In contrast, information control strengthens the relationship between process control and perceived outcome favorability ( $\beta = .11, p < .1$ ) as well as that between process control and perceived relationship-based self-esteem ( $\beta = .21, p < .01$ ), confirming Hypotheses 5 and 6 and the complementary effect. However, information control does not moderate the relationship between decision control and relationship-based self-esteem. Thus, Hypothesis 7 is not supported.

To provide greater insights into the substitution and complementary effects between process, decision, and information

control, we plot the interactions at 1 SD above and below the mean of process control in Figure 2 and conducted a simple slope analysis (Aiken and West 1991). The results indicate that decision control has a positive effect on outcome favorability ( $\beta = .37, p < .001$ ) and relationship-based self-esteem ( $\beta = .27, p < .001$ ) when process control is low but has no effect on either outcome favorability or relationship-based self-esteem when process control is high (see Figure 2A). In contrast, information control has a positive effect on outcome favorability ( $\beta = .29, p < .01$ ) and relationship-based self-esteem ( $\beta = .25, p < .001$ ) when process control is low. It has a larger positive effect on outcome favorability ( $\beta = .47, p < .001$ ) and relationship-based self-esteem ( $\beta = .68, p < .001$ ) when process control is high (see Figure 2B).

Study 1 demonstrates the substitution effect between process control and decision control as well as the complementary effect between information control and process control in influencing customers' service recovery evaluations. It also reveals the mediating role of outcome favorability and relationship-based self-esteem in carrying over the effect of perceived control on customers' fairness perceptions. To further validate these results and test the hypotheses in a controlled fashion, we conducted an experiment in a single context in Study 2 in which we manipulate, rather than measure, the different types of control. This also allows us to explore the hypothesized complementary effect between decision control and information control that was not supported in Study 1.

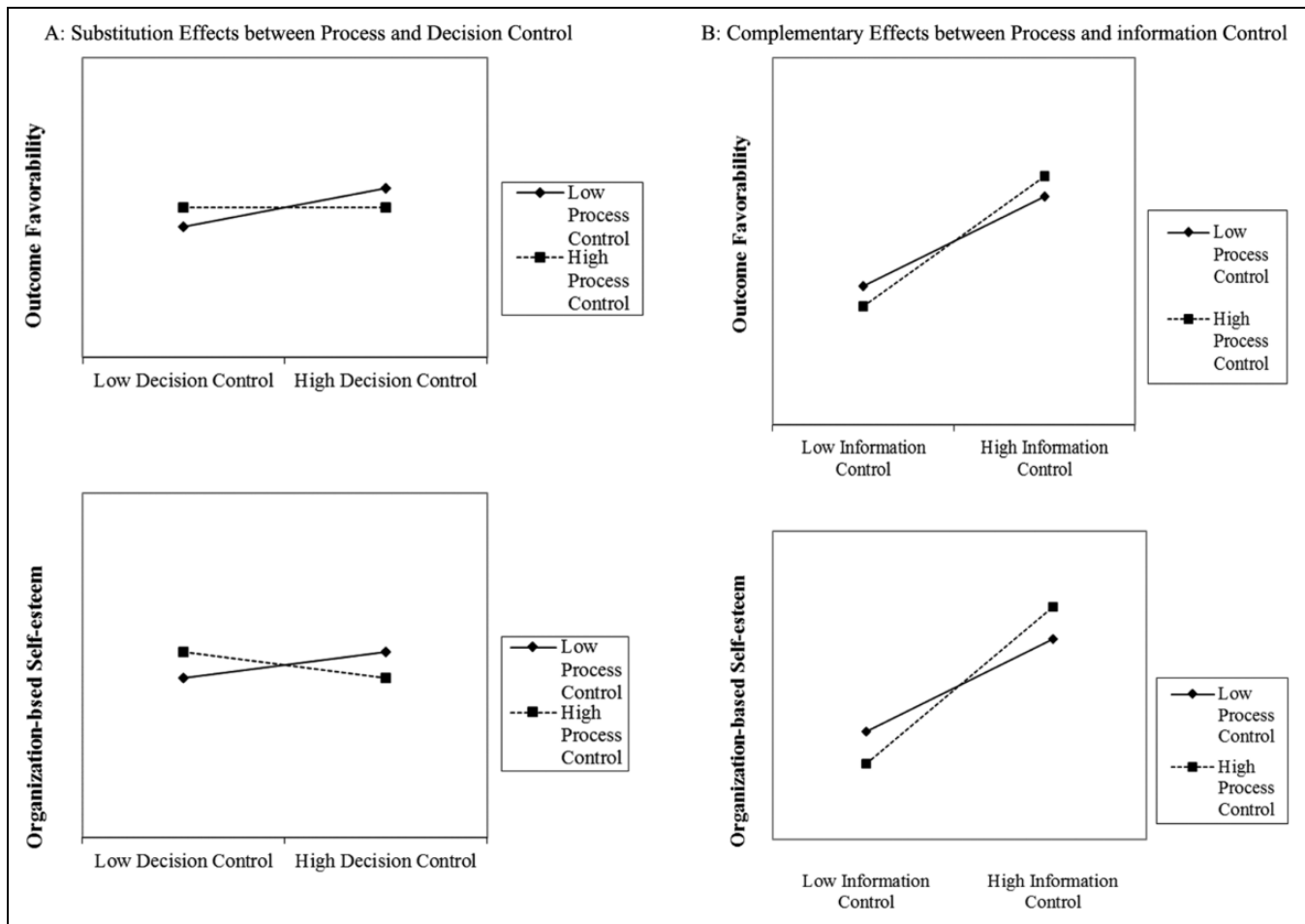


Figure 2. Substitution and complementary effects in Study 1.<sup>1</sup>

## Study 2

### Experimental Design and Procedure

We employed a 2 (information control: high vs. low)  $\times$  2 (process control: high vs. low)  $\times$  2 (decision control: high vs. low) between-subject factorial design. We recruited 240 participants from Amazon Mechanical Turk, 42 of whom we excluded from the study because of large amounts of missing data or short survey completion times. This resulted in a final sample size of 198 (42.9% female; age range: 18–65 years). We randomly assigned participants to one of the eight experimental scenarios that corresponded to a combination of the three manipulated factors at either a high or a low level.

The scenario described a service failure with a cable company, followed by a service recovery. Participants were asked to carefully read the scenario and assume that the scenario had happened to them. The manipulation of the three types of perceived control was embedded in the descriptions of the company's service recovery actions (for details, see Appendix B). In the high process control condition, customers were given the opportunity to participate in the service recovery process. They were allowed to tell their side of the story and present evidence before the compensation decision. In the low process control

condition, customer participation was not invited. Likewise, we manipulated decision control as whether or not customers participate in determining the form of compensation. In the high decision control condition, service employees sought customers' input in the compensation decision, while in the low control condition, employees suggested the form of compensation. We manipulated information control as whether or not customers were updated on the status of the final decision. After reading the assigned scenario, participants then reported their perceptions of outcome favorability, relationship-based self-esteem, perceived justice, and repurchase intention. They also answered several questions related to manipulation checks, realism checks, and control variables.

### Measures and Manipulation Checks

The same measures of outcome favorability, relationship-based self-esteem, perceived justice, and repurchase intentions as in Study 1 were used (for details, see Appendix A). The only difference was that 2 of the 5 items of relationship-based self-esteem ("I felt like I was trusted by this company"; "I felt that I was helpful to this company") did not appear in the scale because of low factor loadings.

All manipulations worked as intended. All manipulation checks were measured on a 7-point scale, with the information control and process control scales anchored by *not at all* (1) and *very much* (7) and the decision control scale anchored by *none* (1) and *quite a lot* (7). Participants in the high process control condition reported a significantly higher score on the question "To what extent do you feel like you are given adequate opportunities to describe your point of view of the problem" ( $M = 5.13$ ) than participants in the low process control condition ( $M = 2.91$ );  $F(1, 196) = 94.14, p < .001$ . Similarly, participants in the high decision control condition reported a significantly higher score on the question "How much input do you think you have over the type of compensation you received from the company,  $M = 3.53$  vs.  $2.58$ ;  $F(1, 196) = 22.15, p < .001$ . Finally, participants in the high information control condition reported a significantly higher score on the question "To what extent do you feel like you are kept updated with the progress of the company's complaint handling,"  $M = 4.35$  vs.  $1.81$ ;  $F(1, 196) = 164.69, p < .001$ .

To investigate the realism of the experimental design, we included two realism check items in the questionnaire. On 7-point scales, participants indicated whether the incident described in the scenario was likely to occur in real life ( $M = 6.31, SD = 1.05$ ) and whether the description of the situation in the scenario was realistic ( $M = 6.53, SD = .93$ ).

### Analysis and Results

We conducted a two-way multivariate analysis of variance (MANOVA) with relationship-based self-esteem and outcome favorability as dependent variables. Age, gender, and service failure severity again served as control variables. The analysis revealed a significant multivariate main effect for process control, Wilks's  $\lambda = .95, F(2, 187) = 5.42, p < .01$ , partial  $\eta^2 = .06$ , and decision control, Wilks's  $\lambda = .91, F(2, 187) = 8.99, p < .001$ , partial  $\eta^2 = .09$ , but not for information control ( $p > .1$ ). It also revealed a significant multivariate interaction effect for Process Control  $\times$  Decision Control, Wilks's  $\lambda = .93, F(2, 187) = 6.81, p < .05$ , partial  $\eta^2 = .07$ , Process Control  $\times$  Information Control, Wilks's  $\lambda = .93, F(2, 187) = 6.73, p < .01$ , partial  $\eta^2 = .07$ , and Decision Control  $\times$  Information Control, Wilks's  $\lambda = .97, F(2, 187) = 3.33, p < .01$ , partial  $\eta^2 = .03$ . For control variables, only service failure severity has a significant effect, Wilks's  $\lambda = .96, F(2, 187) = 4.22, p < .05$ , partial  $\eta^2 = .04$ . We then further examined the univariate effects for the main and interaction effects that were significant in the overall multivariate test.

As Table 3 shows, process control has a positive effect on outcome favorability,  $F(1, 188) = 6.95, p < .01$ , in support of Hypothesis 1a. Both decision control,  $F(1, 188) = 3.11, p = .08$ , and information control,  $F(1, 188) = 2.77, p < .1$ , have marginal positive effects on outcome favorability, in support of Hypotheses 1b and 1c. Both process control,  $F(1, 188) = 10.52, p = .001$ , and decision control,  $F(1, 188) = 16.42, p < .001$ , have positive effects on relationship-based self-esteem,

in support of Hypotheses 2a and 2b. Information control, however, has no impact on relationship-based self-esteem ( $p > .5$ ). Thus, Hypothesis 2c is not supported. Moreover, consistent with Hypotheses 4, 6, and 7, Process Control  $\times$  Decision Control,  $F(1, 188) = 7.60, p = .006$ , Process Control  $\times$  Information Control,  $F(1, 188) = 4.19, p < .05$ , and Decision Control  $\times$  Information Control,  $F(1, 188) = 6.69, p = .01$ , all exert significant impacts on relationship-based self-esteem. However, both Process Control  $\times$  Decision Control,  $F(1, 188) = .00$ , n.s., and Process Control  $\times$  Information Control,  $F(1, 188) = .803$ , n.s., exert no impacts on outcome favorability. Thus, Hypotheses 3 and 5 are not supported.

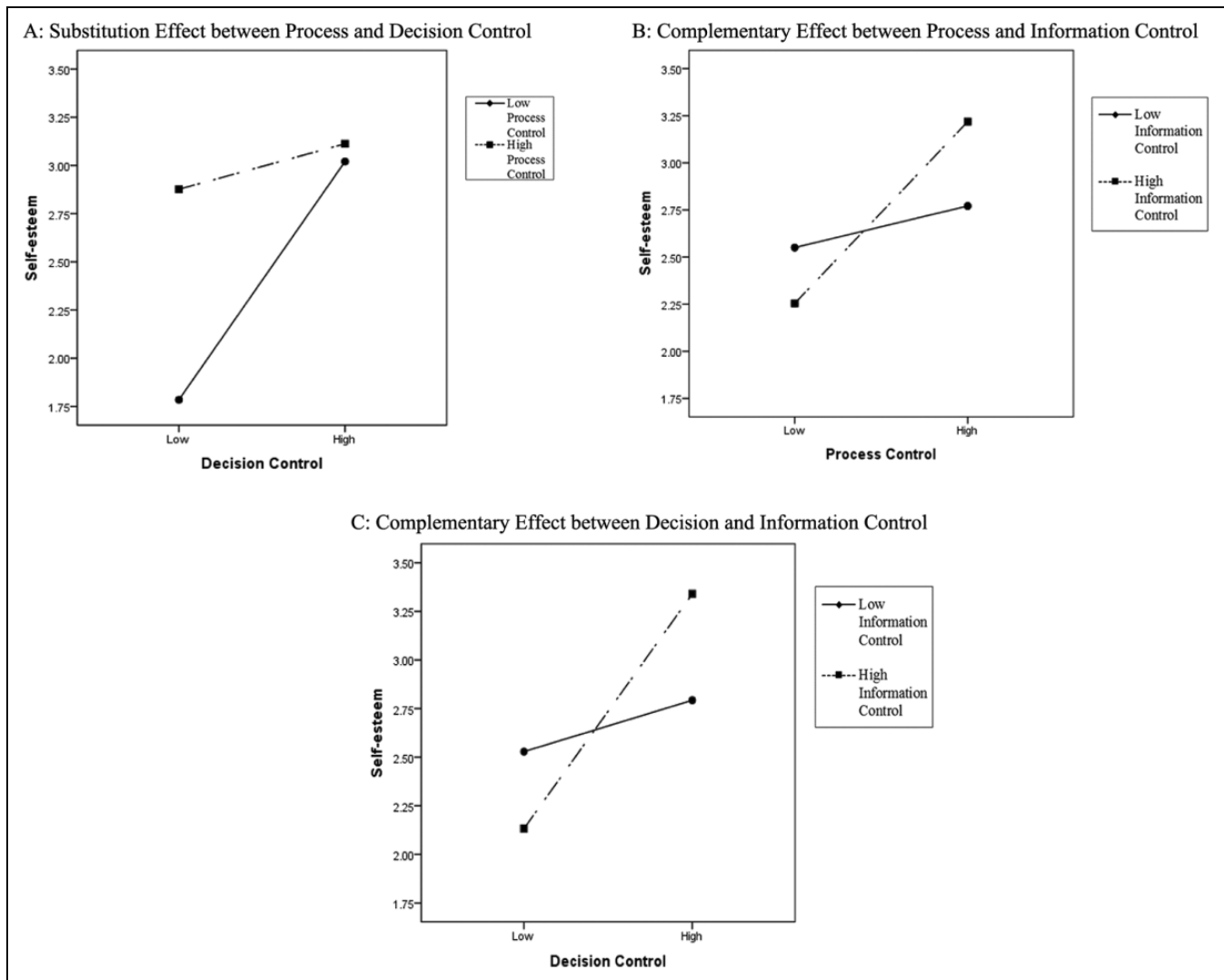
Contrast analyses further reveal that, decision control has a positive impact on relationship-based self-esteem,  $M_H = 3.07, M_L = 1.78, F(1, 90) = 23.78, p < .001$ , when process control is low but has no impact on relationship-based self-esteem,  $M_H = 3.06, M_L = 2.86, F(1, 98) = .43$ , n.s., when process control is high (see Figure 3A), confirming Hypothesis 4 and the substitution effect. In contrast, process control has no impact on relationship-based self-esteem,  $M_H = 2.72, M_L = 2.62, F(1, 96) = .90$ , n.s., when information control is low but has a positive impact on relationship-based self-esteem,  $M_H = 3.21, M_L = 2.21, F(1, 92) = 12.12, p = .001$ , when information control is high (see Figure 3B), confirming Hypothesis 6 and the complementary effect. Likewise, decision control has no impact on relationship-based self-esteem,  $M_H = 2.83, M_L = 2.50, F(1, 96) = .86$ , n.s., when information control is low but has a positive impact on relationship-based self-esteem,  $M_H = 3.33, M_L = 2.17, F(1, 92) = 18.39, p < .001$ , when information control is high (see Figure 3C), confirming Hypothesis 7 and the complementary effect. Two separate regression results also found support for Hypotheses 8–10, and both outcome favorability ( $\beta = .65, p < .001$ ) and relationship-based self-esteem ( $\beta = .29, < .001$ ) positively influence perceived justice, which, in turn, has a positive impact on repurchase intention ( $\beta = .87, p < .001$ ).

To explore the mediating role of outcome favorability and relationship-based self-esteem, we conducted a conditional process analysis on the effect of decision control on perceived justice (see Hayes 2013). As Table 4 shows, with 5,000 bootstrap samples, this procedure indicates that when process control is low and information control is high, outcome favorability (indirect effect =  $.54, 95\% CI = [0.03, 1.10]$ ) and relationship-based self-esteem (indirect effect =  $.55, 95\% CI = [.28, .93]$ ) fully mediate the effect of decision control on perceived justice. When process control and information control are both high, outcome favorability (indirect effect =  $.53, 95\% CI = [0.01, 1.06]$ ) and relationship-based self-esteem (indirect effect =  $.23, 95\% CI = [.03, .52]$ ) are only partial mediators, with decision control exerting a negative direct impact on perceived justice (direct effect =  $-.55, p = .02$ ). Furthermore, when process and information control are both low, only relationship-based self-esteem (indirect effect =  $.25, 95\% CI = [.06, .56]$ ) fully mediates the effect of decision control on perceived justice. Finally, when process control is high and information control is low, neither outcome

**Table 3.** MANOVA Results of Study 2.

Source	Sum of Squares	F	P <	Partial $\eta^2$
MANOVA-dependent variable: Outcome favorability				
Process control	16.66	(1, 188) = 6.95	.01	.04
Decision control	7.45	(1, 188) = 3.11	.1	.02
Information control	6.65	(1, 188) = 2.77	.1	.02
Process Control $\times$ Decision Control	0.001	(1, 188) < 1	n.s.	.00
Process Control $\times$ Information Control	1.93	(1, 188) = 0.80	n.s.	.00
Decision Control $\times$ Information Control	7.36	(1, 188) = 3.07	.1	.02
MANOVA-dependent variable: Relationship-based self-esteem				
Process control	16.98	(1, 188) = 10.52	.01	.05
Decision control	26.50	(1, 188) = 16.42	.001	.08
Information control	0.28	(1, 188) < 1	n.s.	.00
Process Control $\times$ Decision Control	12.27	(1, 188) = 7.60	.01	.04
Process Control $\times$ Information Control	6.76	(1, 188) = 4.19	.05	.02
Decision Control $\times$ Information Control	10.80	(1, 188) = 6.69	.05	.03

Note. MANOVA = multivariate analysis of variance; n.s. = not significant.



**Figure 3.** Substitution and complementary effects in Study 2.

**Table 4.** Conditional Direct and Indirect Effects of Decision Control on Perceived Justice.

Moderator		Direct Effect				Indirect Effect			
Process Control	Information Control	SE	$p$	Outcome Favorability		Relationship-Based Self-esteem			
				Point Estimate	95% Bias-Corrected Bootstrap CI	Point Estimate	95% Bias-Corrected Bootstrap CI		
Low	Low	n.s.	.20	.36	n.s.	[-.47, .52]	.25	[.06, .56]	
Low	High	n.s.	.22	.06	.54	[0.02, 1.1]	.55	[.28, .93]	
High	Low	n.s.	.17	.73	n.s.	[-.53, .52]	n.s.	[-.31, .12]	
High	High	-.55	.23	.02	.53	[0.01, 1.06]	.23	[.03, .52]	

Note. n.s. = not significant.

favorability (n.s., 95% CI = [-.53, .52]) nor relationship-based self-esteem (n.s., 95% CI = [-.31, .12]) plays a mediating role. Decision control also exerts no direct impact on justice ( $p > .1$ ) in this situation.

## Discussion and Implications

### Discussion of Study 1 and Study 2 Results

Study 1's results find support for 10 of the 14 hypotheses. The overall hypothesized model is fairly robust, demonstrating that customer control in the cocreation of service recovery positively affects several desirable consequences. The overall strength of the variance explained ( $R^2$ ) for each of the four dependent variables suggests that customer control plays an important role. The results for the interaction effects confirm the substitution effects of process control and decision control as well as the complementary effects of process control and information control.

Study 2's results also find general support for the hypothesized model, with 8 of the 11 hypothesized paths to outcome favorability and relationship-based self-esteem supported (Hypotheses 1–7). Similar to Study 1, the three hypothesized relationships among the outcome variables (Hypotheses 8–10) were supported. More importantly, Study 2 confirms the substitution effect of process control and decision control as well as the complementary effect of process control and information control on relationship-based self-esteem (Hypotheses 4 and 6).

Study 2, however, did not find interaction effects on outcome favorability (Hypotheses 3 and 5) as in Study 1. A possible explanation is that the variability of outcome favorability was more restricted in Study 2. In the field survey study, the compensations consumers received from the service providers varied greatly across service situations and service industries, ranging from no compensation to considerable compensation, while in the scenario-based experiment, consumers' service recovery experience was simplified and all were offered the same type and amount of compensation in a single service situation within a single service industry. The lower variability of outcome favorability in Study 2 likely prevented us from obtaining significant findings. Further research is needed to

confirm the interaction effects on outcome favorability found in Study 1.

The main effects of different types of control on consumers' perceptions of service recovery (Hypotheses 1 and 2) were also somewhat different between the studies. In Study 1, information control played a dominant role, while in Study 2, process control played an important role. This divergence may be attributable to the variation in the research design employed. In the scenario-based experiment, although consumers imagined that the service failure had happened to them, they may not have been as involved as consumers in the field study, who had a real stake in the service recovery. Thus, the level of consumers' uncertainty and perceived risk during service recovery was much higher than that in the scenario-based experiment, which might have intensified their need for information control. Moreover, the survey study examines consumers' memory of real experiences and the opportunity for information control spans the entire service recovery process. In the scenario, we manipulated information control only at the final stage of recovery, which likely limited its impacts on consumers' service recovery evaluations. In addition, in service recovery practice, process control may be uniformly offered to customers across different service situations. Compared to an experimental manipulation, its variability in the survey study was more restricted, which may have attenuated its overall effects on service recovery evaluations.

Finally, the complementary effect of decision control and information control on relationship-based self-esteem (Hypothesis 7) was supported in Study 2 but not in Study 1. In Study 1, the strong main effect of information control on relationship-based self-esteem may have simply overpowered any potential interaction effect with decision control. Thus, although information control affects relationship-based self-esteem in both studies, the effect only appears in Study 2 when complemented by decision control. Despite these differences, the findings of both studies are largely consistent with our conceptual model, offering important implications to services research.

### Theoretical Implications

*Role of perceived control in service recovery.* This study demonstrates that after services fail, customers' involvement in

resolving service failures plays a critical role in shaping their fairness perceptions and repurchase intentions at the stage of service recovery. Our study extends previous service research on customer control (e.g., Van Raaij and Pruyn 1998) and shows that the potential impact of perceived control on customers' evaluations of the service experience extends beyond regular service delivery to service recovery. These results resonate with Lusch, Vargo, and O'Brien (2007) who posit that when people desire to exercise control, firms can enhance their experience by engaging them in service cocreation.

With a particular focus on the agent-means relationship of the control construct, our study conceptualized three types of customer perceived control: process, decision, and information control. This conceptual focus integrates control theories in the psychology and legal literature with the value cocreation concept in services marketing literature. Different types of control demonstrate the various cocreation opportunities service firms can offer to customers at various stages of the service recovery to regain control and cocreate value. Our study extends previous research (Karande, Magnini, and Tam 2007; Roggeveen, Tsiros, and Grewal 2012) that examines customer cocreation only at the stage when the firm is forming the service recovery solution and shows that customer cocreation can be facilitated before, during, and after a service recovery decision.

*Substitution and complementary effects of information, process, and decision control.* Previous research on customer cocreation in service recovery simply focuses on the main effect of one type of customer cocreation strategy on customers' service recovery experiences (Karande, Magnini, and Tam 2007; Roggeveen, Tsiros, and Grewal 2012). Our study extends previous research by investigating the interaction effects among various customer cocreation strategies. By demonstrating both substitution and complementary effects of process, decision, and information control, our research reveals that firms' various strategies for involving customers in value cocreation during service recovery may not always reinforce one another when used simultaneously.

Process control works as a substitute for decision control. When the level of customers' participation in service recovery process is high, their perceived control over the compensation outcome has no effect on their fairness perceptions of the service recovery. Conversely, the lack of perceived control over the service recovery process may intensify customers' needs for control over the firm's decision on compensation outcomes. Thus, decision control plays a more crucial role in determining consumers' service recovery evaluations when process control is low. These results are consistent with the findings in organizational justice literature (e.g., Brockner and Wiesenfeld 1996; Tyler, Rasinski, and Spodick 1985) of a negative interaction effect between process and decision control on employees' perceived justice.

In contrast with the diminishing effects of process control on the relationship between decision control and the two psychological mediating variables, information control works as a complement to process and decision control in influencing

outcome favorability and relationship-based self-esteem. Greater information control reinforces the positive effect of process or decision control on customers' assessments of firms' service recovery performance. Conversely, the lack of information control may diminish this positive impact on customers' fairness evaluations.

*The dual psychological processes underlying perceived control and perceived justice.* By identifying and investigating the two mediating mechanisms, this study provides new insights into the psychological processes underlying the relationship between firms' service recovery strategies and customers' justice perceptions. This extends previous research by explaining how and why customer cocreation leads to enhanced customer experience of service recovery. Prior research on service recovery has focused on either antecedents (e.g., Smith, Bolton, and Wagner 1998) or consequences (e.g., Tax, Brown, and Chandrashekar 1998) of customers' fairness evaluations of service recovery. No known empirical research has examined mediating mechanisms of how firms' various service recovery efforts influence customers' justice perceptions.

Our findings across two studies reveal that the effects of customers' perceived control on their justice perceptions are at least partially derived from either, or both, of the two distinct psychological processes. Adapted from equity theory (Adams 1965), outcome favorability emphasizes the economic gain or loss of a service recovery. Stemming from group-value theory, relationship-based self-esteem pertains to customers' status in an organization. These results corroborate Smith, Bolton, and Wagner (1998) who contend that in service recovery, both economic resources and psychological and social resources are evaluated and exchanged. Furthermore, in line with Lusch, Vargo, and O'Brien (2007), the results provide direct evidence that consumers' participation in service coproduction is driven by both economic and psychological benefits.

### *Managerial Implications*

The results offer important implications to marketing managers. First, by examining three types of perceived control, this study helps marketing managers identify multiple value cocreating opportunities in service recovery and prioritize how and when to involve customers in service recovery. Specifically, firms can enhance customers' evaluations of service recovery and increase their repurchase intentions by involving them in the decision-making process when resolving service failures, facilitating their participation in determining the outcome of service recovery, and providing information to assist their appraisal of and adaptation to service failures.

Second, we show that process control can substitute for decision control, which may help marketing managers better prioritize service recovery strategies. In general, our findings suggest that service recovery efforts to increase process control will not be enhanced by simultaneous efforts that augment decision control. If firms devote greater efforts to aiding customers' involvement in the dispute resolution process,

additional investments that facilitate customers' participation in compensation decisions will not further improve customers' service recovery satisfaction. In contrast, if customers' participation in the dispute resolution process is hindered or not possible, allowing them to take part in compensation decisions may play a crucial role in shaping their fairness evaluations of the service recovery. In summary, our research suggests that managers can prioritize their investments in service recovery to emphasize customers' participation in either the complaint process or the compensation decision.

Third, the complementary effect of information control with process and decision control inform marketing managers that service recovery strategies that facilitate customers' participation in either the process of conflict resolution or the determination of final recovery outcomes should be accompanied by strategies that make information control feasible. Providing information about the progress of service recovery or the cause of the service failure reinforces the positive effects of process and decision control, boosting customers' evaluations of firms' service recovery performance. When customers are deprived of information during service recovery, simply involving them in the decision making will be less effective in enhancing their fairness evaluations of and satisfaction with service recovery. In many cases, firms naturally try to shield customers from the reasons for the service failure, to avoid exposing flaws in the service delivery. Our research suggests that more—rather than less—transparency will enhance the outcomes of service recovery efforts. In summary, our research suggests that investments in service recovery systems that keep customers informed will enhance the effects of investments in systems that facilitate greater participation in either the complaint process or the compensation decision.

Fourth, our findings of the dual psychological process inform marketing managers that in seeking justice, customers may not solely care about the economic benefits that can be enhanced by their control in service recovery. They may also be concerned about their self-value symbolized by firms' efforts to restore their control. Offering customers opportunities to appeal the firm's compensation decision or informing them of the recent progress of service recovery can enhance their perception of the service recovery outcome, and it can also communicate a symbolic meaning that the firm cares about them and values their relationship. Thus, customers' self-esteem and social standing with the firm may be restored after service recovery.

### **Limitations and Further Research**

This study examined three types of customer perceived control as the determinants of customer justice perceptions of

service recovery. Alternative means for firms to influence consumers' sense of control likely exist. For example, how easily customers can lodge complaints and how much access they have to policies and rules for complaint handling may also influence their perceived control. Further research could explore additional types of control in customers' complaint handling.

We provide two mediating mechanisms in this research and identify process and information control as moderators in affecting consumers' evaluations of service recovery. Other mediators or moderators may also affect the relationship between consumers' perceived control and justice perceptions. For example, the personality construct pertaining to a person's desire or preference for control and customers' attributions of service failures may be potential moderators (Grewal, Roggeveen, and Tsiros 2008). Furthermore, this study includes only firms' service recovery efforts pertaining to their facilitation of customer control. Questions remain about the extent to which these two mediators may mediate the effects of other service recovery effort variables, such as apology, employees' attentiveness, and promptness on customers' justice perceptions. Future research is warranted to explore these possibilities.

This study treats consumers' perceived justice as a global evaluation. It is possible that different types of control affect only certain dimensions of justice. For example, process control may be more likely to affect procedural justice than distributive justice. Such detailed examination is beyond the scope of this study, and further research is required to investigate these relationships.

Finally, although our experimental study confirms many findings of our field study, there are clear differences in the results. This might be due to our manipulations in the experiment, which are rather limited in their complexity and dimensionality compared with the multi-item scales used in the survey. Further experimental research would help unravel the subtle differences within the measurements of each type of control and validate the findings of this study.

Despite these limitations, this study makes theoretical contributions to service recovery research by identifying three types of perceived control as antecedents of customers' justice perceptions by recognizing the substitution and complementary effects of different types of control and by demonstrating the two distinct psychological processes regarding how and why customer perceived control may influence justice perceptions. In addition, this study provides various means for service firms to engage customers in complaint handlings so as to shape their perceptions of the exchange of economic and psychological resources and enhance their fairness evaluations of and satisfaction with firms' service recovery efforts.

## Appendix A

**Table A1.** Measures and Loadings.<sup>2</sup>

Measures	Std. Loading	Cronbach's $\alpha$	Average Variance Extracted (%)
Process control			
1. I was given opportunities to describe my point of view of the problem before any decision was made about how to handle it.	0.85	.87	71
2. I had a chance to express my feelings during my complaint.	0.83		
3. The employees listened to me when I express my point view of the problem.	0.84		
Decision control			
1. How much influence did you have over the decisions made by the company?	0.82	.92	
2. How much degree of freedom did you have to decide what you would receive as compensation?	0.91		
3. How much opportunity were you given to appeal the compensation decisions?	0.88		
4. To what extent were you informed of all possible compensation alternatives?	0.84		75
Information control			
1. The service provider quickly responded to my complaint.	0.74	.78	56
2. I was kept updated with the most recent progress of the complaint handling procedure.	0.81		
3. The company gave me a reasonable explanation as to why the original problem occurred.	0.68		
Outcome favorability			
1. The outcome I received from the company is favorable, relative to what I expected prior to the experience.	0.95	.96	88
2. The outcome I received from the company is favorable, relative to what others receive under similar circumstances.	0.92		
3. The outcome I received from the company is favorable, compared to what I generally receive in this situation.	0.94		
Relationship-based self-esteem			
1. I felt like I was trusted by this company. <sup>a</sup>	0.92	.96	83
2. I felt that I was helpful to this company. <sup>a</sup>	0.89		
3. I felt like I was a valuable customer to this company.	0.94		
4. I felt that I was an important part of this company.	0.93		
5. I felt I was a cooperative participant of the service delivery process of this company.	0.88		
Perceived justice			
1. Generally, the compensation result I received from the company was fair.	0.91	.95	
2. The procedures used by this company to handle the problem were fair.	0.95		86
3. I feel fairly treated in the process when the procedures were enacted by the employees.	0.92		
Repurchase intention			
1. It is very likely that I will patronize this company again.	0.92	.96	89
2. I intend to do business with this company again.	0.98		
3. I will recommend this company to my friends and/or family.	0.93		

<sup>a</sup> Items not used in Study 2.

## Appendix B

### Scenario Descriptions

Imagine that you just moved and you need the cable service to be installed in your new place. You called one of the cable service companies over the phone to make an inquiry. The sales agent you talked to mentioned to you that the company was running a promotion. If you order the cable service in the next few days, you can get the activation fee of US\$50 waived. After deliberating for some time, you decided to order the service from this company. Everything went smoothly until a couple of weeks later when you got your cable bill for the first month. The activation fee was not waived but charged to your account. You called the customer service number on the back of the bill to complain about this charge. The customer service agent you talked to reviewed your account information and told you that the date you ordered your service just passed the promotion deadline. You however felt that you were not properly informed of the promotion in the first place and were not aware of the deadline.

#### High process control

The service agent carefully listened to you when you were trying to explain what you had been told by the sales agent and why you felt you qualified for the promotion

#### Low process control

Before you had a chance to tell your side of the story, the service agent repeated the actual dates of the promotion period

(continued)



## Appendix B (continued)

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He (then) apologized for the inconvenience,

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**High decision control**

and asked that if there is anything he can do to make up for the situation. You suggest that you should still get at least a partial refund for the activation fee. The agent said that he would present your proposal to his supervisor for approval

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**Low decision control**

and said that he may be able to offer you a partial refund for the activation fee, but he would have to present this proposal to his supervisor for approval

---

**High information control**

The same agent called you back a couple of days later, assuring you that the refund request was in process

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**Low information control**

You did not hear anything more from the agent

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The partial refund showed up in your next bill eventually

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**Declaration of Conflicting Interests**

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

**Funding**

The author(s) received no financial support for the research, authorship, and/or publication of this article.

**Notes**

1. In Study 1, the interaction effects were estimated via Structural Equation Modeling (SEM). Because the intercept is not estimated in SEM, the scale of y-axis cannot be specified in the figure.
2. Decision control was anchored by *not at all* (1) and *very much* (7). All the other scales were anchored by *strongly disagree* (1) and *strongly agree* (7).

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