Why are we having this innovation? Employee attributions of innovation and implementation behavior

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We used attribution theory to explain employee behavior toward innovation implementation. We focused on employee innovation attributions to organizational intentionality as employees' sensemaking of why their organization has adopted an innovation. We identified two types of employee attributions: to constructive intentionality and to deceptive intentionality. We collected data from 397 employees and 84 managers of Chinese and Korean organizations. Results showed that employee attribution to constructive intentionality enhanced innovation effectiveness by increasing active implementation and decreasing implementation avoidance. By contrast, employee attribution to deceptive intentionality diminished innovation effectiveness by increasing implementation avoidance. These findings enrich the innovation implementation literature by introducing the attribution-based perspective of sensemaking.

Keywords
innovation attributions; attribution to constructive intentionality; attribution to deceptive intentionality; active implementation; passive implementation; implementation avoidance; innovation effectiveness

Innovation has been identified as the key to the survival and growth of firms in a rapidly changing and competitive business environment (Greenhalgh et al., 2005). In the past, researchers paid close attention to organizational innovation adoption, because they considered implementation to be a relatively automatic and static process (Choi & Chang, 2009). However, as researchers have recently realized that innovation success depends not only on the adoption of innovation, but also on employees' consistent use of the innovation, they have shifted their attention to implementation (Birken et al., 2015; Chung & Choi, 2018). As the role of employees in shaping implementation processes and outcomes is critical, the way in which they perceive and react to innovation needs to be understood.

Various theoretical models have been used to explain employee perceptions and behavior toward innovation. For example, the technology acceptance model suggests that individual cognitive evaluations, such as perceived usefulness and ease of use, are positively related to innovation use (F. D. Davis, 1989). Similarly, the theory of planned behavior identifies perceived behavioral control as a critical determinant of intention and behavior in relation to innovation (Ajzen, 1991). Researchers have drawn on coping theory to propose that innovation use depends on the cognitive appraisal of innovations as a threat or an opportunity (Beaudry & Pinsonneault, 2005). The focus in these theoretical accounts has mostly been on employee expectations of the cost and benefit of an innovation, with these expectations affecting subsequent implementation behavior.

Whereas previous researchers have focused on expectations of future utility functions of innovation use, we have examined innovation implementation by highlighting the role of attribution. Expectation refers to...
future consequences or the prediction of the result of an event, whereas attribution is related to the perceived cause of an outcome or the interpretation of the result of an event (Seifert, 2004). As a fundamental cognitive process, attributions are considered a core mechanism of sensemaking, influencing emotional, attitudinal, and behavioral reactions as well as expectations (Fiske & Taylor, 2013; Martinko & Gardner, 1982; Weiner, 1985). In this study, we proposed that attributions have incremental value in explaining employee implementation behavior over and above expectations. We drew on the attribution of intentionality model (Ferris, Bhawuk, Fedor, & Judge, 1995) and identified two types of employee attributions of an organization’s perceived intentionality in innovation adoption, that is, attributions to constructive and deceptive intentionality. We proposed that these attributions would engender distinct behavioral reactions to an innovation.

Although employees confronting innovation tend to exhibit different behaviors (Greenhalgh et al., 2005), previous researchers investigating behavioral reactions to innovation have examined only a single behavior of either innovation acceptance and use, or resistance to innovation (Choi & Moon, 2013). As employees may exhibit behavior beyond using or rejecting an innovation (Chung & Choi, 2018; Greenhalgh et al., 2005), in our examination of the role of attributions of an innovation, we used three forms of implementation behavior based on engagement level. These may offer a more realistic picture of innovation implementation in organizations. We identified active implementation, passive implementation, and implementation avoidance as employee behavior with high, medium, and low engagement with an innovation, respectively. We proposed that these implementation patterns would affect the ultimate outcome of innovation effectiveness, which refers to each employee’s performance gain or achievement of desired outcomes, such as skill acquisition and improved productivity through innovation (Klein, Conn, & Sorra, 2001).

**Literature Review and Hypothesis Development**

*Innovation* is defined as “an idea, practice, or object that is perceived as new by an individual or other unit of adoption” (Rogers, 2003, p. 12). Once an innovation is adopted by an organization, employees confront challenges, and are under pressure to change work routines, update skills, and adapt to different work styles and task roles. These equivocal circumstances trigger sensemaking (C. G. Davis, Nolen-Hoeksema, & Larson, 1998; Weick, Sutcliffe, & Obstfeld, 2005). Employees attempt to label and assign meaning to these situations by interpreting the cause of the innovation (Maitlis & Christianson, 2014; Park, 2010). As a core driver of sensemaking, attributions of intentionality underlying the adoption of an innovation play a crucial role in labeling the situation and determining subsequent behavioral reactions.

**Innovation Implementation Behavior**

Researchers in social psychology have demonstrated that behavior can be exhibited in various ways when individuals confront social situations (Fiske & Taylor, 2013). Social behavior is broadly classified into prosocial and antisocial, and prosocial behavior is specified as extrarole and role-prescribed (Dovidio, Piliavin, Schroeder, & Penner, 2006). Work-related behavior is categorized into extrarole, in-role, and counterproductive work behavior domains, which are relatively independent and characterized by different antecedents and consequences (Dalal, 2005; Spector & Fox, 2010). Accordingly, we applied these three domains to the innovation context and proposed three forms of implementation, namely, active, passive, and avoidance, on the basis of engagement level.

*Active implementation* refers to employees’ spontaneous and voluntary engagement in innovation implementation. Active implementation is a form of proactive extrarole behavior in an implementation context, and is characterized by the self-initiated action of challenging the status quo and creating favorable conditions for implementing the innovation (Parker, Williams, & Turner, 2006). By contrast, *passive implementation* refers to employees’ compliant implementation behavior in accordance with organizational requirements and directions. It is a form of in-role prescribed behavior in an implementation context (Klein
Employees engaging in passive implementation follow innovation-related instructions carefully (Chung & Choi, 2018; Dusenbury, Brannigan, Falco, & Hansen, 2003). Finally, implementation avoidance is the withdrawal of employees from an innovation implementation. Implementation avoidance is a passive form of counterproductive or deviant behavior whereby the employee avoids work or intentionally reduces attention to, or interest in, innovation (Dalal, 2005). To maintain the status quo, employees who avoid implementation fail to conform to innovation initiatives by refusing to, or even pretending not to, recognize such initiatives (Chung & Choi, 2018; Erwin & Garman, 2010).

**Employee Attribution of Innovation to Organizational Intentionality**

In social psychology, attribution theory proposes that to predict and control the environment, individuals tend to seek the causes of an event (Gilbert, 1998). The search for causal explanations involves ascribing meaning and labels to events or to other individuals’ actions, which affects subsequent attitudes and behavior (Fiske & Taylor, 2013). Causal attribution thus considerably influences individuals’ sensemaking of, and behavioral reactions to, events with or without expectations (Fiske & Taylor, 2013; Jacquart & Antonakis, 2015; Rodell & Lynch, 2016; Weiner, 1985).

According to Ferris et al. (1995), an observer attributes an actor’s behavior to positive (authentic and sincere) or negative (self-serving and manipulative) intentions. In an organizational context, employees tend to attribute decisions to the organization’s intentions or motives. For example, Nishii, Lepak, and Schneider (2008) divided employee attribution of motivation underlying human resource practices into commitment-focused (i.e., promoting service quality and employee development) and control-focused attributions (i.e., reducing costs and exploiting employees). These attributions affect employees’ interpretation and labeling of, and responses to, human resource practices.

In the innovation implementation context, attributions to intentionality trigger employees’ sensemaking of the organization’s innovation adoption. Accordingly, we proposed that employees would attribute an organization’s innovation adoption decision to either positive (i.e., constructive intentionality) or negative intentions (i.e., deceptive intentionality). Attribution to constructive intentionality refers to employees’ reasoning that their organization has adopted an innovation with authentic and sincere intentions of achieving desirable outcomes, such as organizational development and employee well-being. Attribution to deceptive intentionality is defined as employees’ reasoning that their organization has adopted an innovation with self-serving, manipulative intentions, such as catching up with a managerial fad or increasing political power and management control to exploit employees. Although these attributions are independent, they are not mutually exclusive. We expected them to trigger different labeling of innovation, thereby leading to disparate implementation.

**Attribution to constructive intentionality.** When innovation adoption is attributed to constructive intentionality, employees tend to develop favorable attitudes toward, and behavioral engagement with, the innovation (Ferris et al., 1995). Employees’ belief that the organization’s intentions are genuine increases their sense of control, satisfaction, and organizational commitment, thereby promoting proactive and extrarole behavior (Bala & Venkatesh, 2016; Dalal, 2005). Accordingly, we proposed that employees with attributions of constructive intentionality would implement an innovation with enthusiastic commitment. They would be unlikely to withdraw from its implementation because their positive attribution discourages negative reactions (Byrne, Kacmar, Stoner, & Hochwarter, 2005; Nishii et al., 2008; Parker et al., 2006). Thus, attribution of constructive intentionality stimulates employees to actively engage in implementation by identifying and addressing implementation barriers and modifying the features and components of an innovation to realize potential benefits for the organization and themselves.

This positive labeling of innovation adoption may engender employees’ affective commitment to innovation, and thus urge them to exhibit passive implementation, which is faithful innovation implementation by conforming to innovation-related directions and instructions (Parker et al., 2006). Therefore, we proposed...
the following hypotheses:

**Hypothesis 1a**: Employee attribution to constructive intentionality will be positively related to active implementation.

**Hypothesis 1b**: Employee attribution to constructive intentionality will be positively related to passive implementation.

**Hypothesis 1c**: Employee attribution to constructive intentionality will be negatively related to implementation avoidance.

**Attribution to deceptive intentionality.** When employees attribute an innovation to deceptive intentionality, they are likely to label the situation as unfavorable and harmful and to react negatively to implementation. As this attribution is likely to engender passive maladaptive behavior and reduced task engagement (Martinko & Gardner, 1982), employees’ passion and responsibility to implement the innovation is diminished, because they are unconvinced of the value and necessity of the innovation (Stanley, Meyer, & Topolnytsky, 2005). Therefore, employees with deceptive attribution exhibit neither active nor passive implementation. This negative labeling may render employees reluctant to implement an innovation even under pressure to do so (Chung & Choi, 2018). By justifying the withdrawal from, or rejection of, an innovation (Olson-Buchanan & Boswell, 2008), employees with attribution to deceptive intentionality are likely to withdraw support and avoid involvement with the innovation as much as possible. Therefore, we proposed the following hypotheses:

**Hypothesis 2a**: Employee attribution to deceptive intentionality will be negatively related to active implementation.

**Hypothesis 2b**: Employee attribution to deceptive intentionality will be negatively related to passive implementation.

**Hypothesis 2c**: Employee attribution to deceptive intentionality will be positively related to implementation avoidance.

**Implementation Behavior and Innovation Effectiveness**

The manner in which an innovation is implemented determines its success or innovation effectiveness, which refers to the extent to which each employee’s performance-related consequences, benefits, or outcomes are accrued as expected from the innovation (Klein et al., 2001). Previous findings have demonstrated a significant association between implementation behavior and innovation outcome (Choi & Chang, 2009; Klein et al., 2001). We therefore predicted that implementation behavior would affect innovation effectiveness in different ways.

First, as researchers have suggested a strong positive relationship between proactive behavior and innovative performance (Baer & Frese, 2003), employees exhibiting active implementation exert extra effort to fully use the innovation in their task roles and they optimize it in their work context. They can thus use the innovation effectively and fully accrue its expected benefits. Second, study findings on innovation implementation with a focus on employee compliance to implementation have revealed a positive relationship between this behavior and innovation effectiveness (Choi & Chang, 2009; Klein et al., 2001). By eliciting compliant effort toward implementation, passive implementation can generate the intended positive outcomes when employees use the innovation. Third, regardless of how useful an innovation is, it cannot achieve its potential or positive outcomes when employees avoid it and fail to use it (Real & Poole, 2005). When employees stop implementing an innovation, the expected outcome cannot be realized (Jones, 2001). Thus, implementation avoidance hinders the success of an innovation. We therefore proposed the following hypotheses:

**Hypothesis 3a**: Innovation effectiveness will be positively related to active implementation.

**Hypothesis 3b**: Innovation effectiveness will be positively related to passive implementation.

**Hypothesis 3c**: Innovation effectiveness will be negatively related to implementation avoidance.
Effectiveness

We thus proposed that employee innovation attributions to different intentionalities indirectly affect innovation effectiveness by shaping implementation behavior. Attribution to constructive intentionality may promote active and passive implementation and reduce implementation avoidance, leading to positive and negative innovation outcomes, respectively. We expected that employee attribution of an innovation to deceptive intentionality may lead to deterioration of innovation effectiveness by undermining active and passive implementation and by enabling implementation avoidance. Thus, we proposed the following hypotheses:

**Hypothesis 4a:** Attribution to constructive intentionality will have an indirect positive effect on innovation effectiveness through increased active and passive implementation and decreased implementation avoidance.

**Hypothesis 4b:** Attribution to deceptive intentionality will have an indirect negative effect on innovation effectiveness through decreased active and passive implementation and increased implementation avoidance.

Method

**Participants and Procedure**

To test our model, we collected field data from China and Korea, as the organizations in these countries frequently create and adopt innovations, and their employees are exposed to numerous innovation implementation events that require them to make sense of such events. We contacted managers enrolled in executive Master of Business Administration programs in two universities, one in China and one in Korea. With the consent of these managers, we mailed the survey packets to 127 teams. We received usable data from 84 managers and 397 employees (response rate = 66.1%), with the final sample consisting of 33 teams from Seoul, Korea, and 51 teams from Shanghai, China.

Of the participants, 76 managers identified administrative innovations (e.g., organizational culture change) as their target innovation, whereas eight managers named technological innovations (e.g., introduction of new information technology) as coded by two graduate research assistants. We adopted this innovation typology because of its prevalence and significance in the implementation context (Kim & Chung, 2017). Team manager participants were 16 women and 68 men, with an average age of 38.8 years (SD = 6.3) and an average tenure of 9.2 years (SD = 6.8). Eight managers held degrees from two- or three-year colleges or high schools (9.5%), 51 had a bachelor’s degree (60.7%), and 25 had graduate degrees (29.8%). Employee participants were 139 women and 258 men with an average age of 31.6 years (SD = 5.9) and an average tenure of 4.9 years (SD = 4.9). Of these participants, 80 employees had obtained degrees from two- or three-year colleges or high schools (20.2%), 280 had bachelor’s degrees (70.5%), and 37 had graduate degrees (9.3%).

We initially asked managers to identify an innovation that had been recently adopted and was in the process of implementation at the time of the data collection. Employees reported their attributions related to innovation, and their supervising managers rated implementation behavior and the outcome of their employees, that is, each employee’s performance gain or achievement of the desired outcomes, such as skill acquisition and improved productivity through the innovation.

**Measures**

We assessed all variables with multi-item measures rated on a 5-point Likert scale (1 = strongly disagree and 5 = strongly agree). All measures exhibited acceptable internal consistency reliability coefficients. We translated all items from English to Korean and Chinese using the standard translation/back-translation procedure (Brislin, 1986).
**Attribution to constructive intentionality.** We adopted Nishii et al.'s (2008) measure of human resource attributions. We used a four-item index (α = .86) to assess the employees’ attribution that their organization adopted an innovation to obtain organizationally desirable outcomes. The four items are (a) “This innovation was adopted because it would deliver high-quality service and products to customers,” (b) “This innovation was adopted because it would improve internal workflows and processes,” (c) “This innovation was adopted because it would increase productivity,” and (d) “This innovation was adopted because it would improve overall efficiency.”

**Attribution to deceptive intentionality.** We used human resource attribution items from Nishii et al.'s (2008) study, and constructed a four-item measure (α = .85) to assess the employees' attribution that their organization adopted an innovation for manipulation or exploitation. The four items are (a) “This innovation was adopted for no reason but to show someone's power,” (b) “This innovation was adopted just for political reasons,” (c) “This innovation was adopted because it was a kind of fad without any substantial benefit for my organization,” and (d) “This innovation was adopted with the goal of exploiting employees rather than enhancing employees’ income and well-being.”

**Active implementation.** We measured the employees’ active implementation of an innovation by adapting items from proactive behavior and innovative behavior scales (Choi, 2007; Morrison & Phelps, 1999). We developed a three-item index (α = .88) to measure the employees' active implementation of an innovation. The managers rated the three items: (a) “This employee provides suggestions to improve the process of implementing the innovation,” (b) “This employee actively solves problems occurring during the implementation of the innovation,” and (c) “This employee suggests ideas to enhance the quality of the implemented innovation.”

**Passive implementation.** We took the in-role behavior items from Van Dyne and LePine’s (1998) study to construct a three-item measure (α = .88) for managers to assess employees’ innovation-targeted in-role behavior. The three items are (a) “This employee fulfills his/her job responsibilities specified in the innovation,” (b) “This employee adequately completes his/her responsibilities related to the innovation,” and (c) “This employee meets job performance expectations related to the innovation.”

**Implementation avoidance.** We used three implementation ineffectiveness items (α = .84) from Klein et al.’s (2001) scale to measure employee avoidance of an innovation. The managers rated the three items: (a) “When this employee can do a task by either using or not using the innovation, he/she usually chooses not to use the innovation,” (b) “Even when this employee can do a task using the innovation, he/she still uses the old system or work process most of the time,” and (c) “I think that this employee believes that the innovation is a waste of time and money for the organization.”

**Innovation effectiveness.** We used three innovation effectiveness items (α = .90) from Klein et al.’s (2001) scale to assess the positive outcomes or performance gains from an innovation accrued to each employee. The managers rated the three items: (a) “Because of this innovation this employee improved the quality of his/her product, service, or administration,” (b) “Because of this innovation this employee’s morale improved,” and (c) “Because of this innovation this employee's productivity improved.”

**Control variables.** We controlled for gender (0 = female, 1 = male), age, education, employees’ organizational tenure, and managers’ tenure as the leader of the current team, because these demographics have been found to affect implementation behavior (Damanpour & Schneider, 2006). We included a country dummy (0 = Korea, 1 = China) because the data were collected from two countries. The innovation type (0 = administrative innovation, 1 = technological innovation) was controlled for because innovation types may stimulate different implementation behavior (Kim & Chung, 2017).

Finally, we controlled for employees’ innovation expectations to examine the incremental contribution of
employees’ attributions over and above innovation expectations (Ajzen, 1991; Beaudry & Pinsonneault, 2005). Innovation expectations were assessed by two items (α = .72) from Klein et al.’s (2001) study: (a) “I think my organization made a good decision in adopting the innovation,” and (b) “I think the innovation is a waste of time and money for my organization” (reverse scored). The hypothesis testing results were identical with and without these control variables in all analyses (Becker, 2005).

Results

We conducted a confirmatory factor analysis to investigate the empirical distinctiveness of the variables. The hypothesized six-factor model showed a satisfactory fit to the data, \( \chi^2(df = 134) = 275.60, p < .001 \), comparative fit index (CFI) = .97, root mean square error of approximation (RMSEA) = .05, and performed significantly better than the alternative measurement models (all \( \chi^2 \) tests = \( p < .001 \)). We then tested the hypothesized structural relationships. Means, standard deviations, and correlations among all the variables are presented in Table 1.

Table 1. Means, Standard Deviations, Reliability Coefficients, and Intercorrelations Among Study Variables

<table>
<thead>
<tr>
<th>Variables</th>
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<tbody>
<tr>
<td>1. Country*</td>
<td>0.61</td>
<td>0.49</td>
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<td>2. Innovation typeb</td>
<td>0.09</td>
<td>0.29</td>
<td>-0.08</td>
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<td>3. Genderc</td>
<td>0.65</td>
<td>0.48</td>
<td>-0.23**</td>
<td>0.09</td>
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<td>4. Age</td>
<td>31.55</td>
<td>5.91</td>
<td>-0.35**</td>
<td>-0.05</td>
<td>0.27**</td>
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<tr>
<td>5. Education</td>
<td>3.84</td>
<td>0.65</td>
<td>-0.26**</td>
<td>-0.07</td>
<td>0.03</td>
<td>0.08</td>
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<tr>
<td>6. Manager organizational tenure</td>
<td>4.92</td>
<td>4.93</td>
<td>-0.16**</td>
<td>-0.01</td>
<td>0.11*</td>
<td>0.67**</td>
<td>-0.08</td>
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<td>7. Innovation expectations</td>
<td>3.97</td>
<td>2.79</td>
<td>-0.00</td>
<td>-0.04</td>
<td>0.09</td>
<td>0.03</td>
<td>0.03</td>
<td>0.05</td>
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<tr>
<td>8. Innovation effectiveness</td>
<td>3.58</td>
<td>0.90</td>
<td>-0.13**</td>
<td>0.08</td>
<td>0.08</td>
<td>0.13**</td>
<td>-0.01</td>
<td>0.09</td>
<td>0.12*</td>
<td>0.72</td>
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<tr>
<td>9. Attribution to constructive intentionality</td>
<td>3.93</td>
<td>0.77</td>
<td>-0.02</td>
<td>-0.05</td>
<td>0.08</td>
<td>0.08</td>
<td>-1.0*</td>
<td>0.05</td>
<td>0.56*</td>
<td>0.86</td>
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<tr>
<td>10. Attribution to deceptive intentionality</td>
<td>2.11</td>
<td>0.86</td>
<td>-0.10</td>
<td>-1.12**</td>
<td>-0.08</td>
<td>-1.44**</td>
<td>-0.04</td>
<td>-1.44**</td>
<td>-0.05</td>
<td>0.66*</td>
<td>0.35**</td>
<td>0.85</td>
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<tr>
<td>11. Active implementation</td>
<td>3.30</td>
<td>0.76</td>
<td>-0.08</td>
<td>-0.03</td>
<td>0.09</td>
<td>0.13**</td>
<td>0.06</td>
<td>0.06</td>
<td>0.05</td>
<td>0.16*</td>
<td>0.17**</td>
<td>-0.08</td>
<td>(0.88)</td>
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</tr>
<tr>
<td>12. Passive implementation</td>
<td>3.80</td>
<td>0.72</td>
<td>-0.09</td>
<td>-0.05</td>
<td>0.07</td>
<td>0.02</td>
<td>-0.05</td>
<td>0.03</td>
<td>0.14**</td>
<td>0.09</td>
<td>0.09</td>
<td>0.05</td>
<td>0.53**</td>
<td>(0.88)</td>
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<tr>
<td>13. Implementation avoidance</td>
<td>2.38</td>
<td>1.01</td>
<td>-0.26**</td>
<td>-1.18**</td>
<td>-1.77**</td>
<td>-1.85**</td>
<td>-0.04</td>
<td>-0.06</td>
<td>0.06</td>
<td>-0.31**</td>
<td>-0.26**</td>
<td>0.33**</td>
<td>-0.38**</td>
<td>-0.40**</td>
<td>(0.84)</td>
</tr>
<tr>
<td>14. Innovation effectiveness</td>
<td>3.47</td>
<td>0.85</td>
<td>-0.20**</td>
<td>-0.05</td>
<td>-0.03</td>
<td>0.03</td>
<td>-1.11**</td>
<td>-0.01</td>
<td>0.16**</td>
<td>0.16**</td>
<td>0.23**</td>
<td>-0.15**</td>
<td>0.55**</td>
<td>0.63**</td>
<td>-0.43**</td>
</tr>
</tbody>
</table>

Note. \( N = 397 \). * Country (0 = Korea, 1 = China), b Innovation type (0 = administrative innovation, 1 = technological innovation), c Gender (0 = female, 1 = male). Internal consistency reliability coefficients are shown on the diagonal in parentheses.

* \( p < .05 \), ** \( p < .01 \).

Because of the high level of model complexity relative to the sample size, we tested the hypothesized model by employing path analysis and using the scale means of each construct rather than by incorporating item-level indicators to create latent factors (Bandolos & Finney, 2001). We employed the Mplus 6.12 software (Muthén & Muthén, 2010) for path analysis on the basis of the theoretical framework.

Hypothesized and Alternative Models

The path analytic model showed a good fit to the data, \( \chi^2(df = 16) = 39.89, p < .001 \), CFI = .98, RMSEA = .06. We used structural equation modeling to further examine if a theoretically plausible alternative model better explained the observed pattern in the data (Aziz, 2008). We tested an alternative model by adding direct links from two antecedents (attributions to constructive and deceptive intentionality) to the outcome (innovation effectiveness). The direct effect model had similar fit indices, \( \chi^2(df = 14) = 34.06, p < .01 \), CFI = .98, RMSEA = .06, but did not significantly improve the fit of the hypothesized model, \( \Delta \chi^2(df = 2) = 5.83 \), ns. In addition, no direct effect path was statistically significant. Thus, we adopted the original hypothesized
model as the best fitting and parsimonious model for the data (see Figure 1).

*Figure 1. Structural path analytic model of innovation attribution. The values are standardized path coefficients. Significant paths only for control variables are shown in the path diagram.

* *p < .05, **p < .01, ***p < .001.

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Independent variable</th>
<th>Indirect effect</th>
<th>SE</th>
<th>Bootstrapped 95% CI</th>
</tr>
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<tr>
<td>Innovation effectiveness</td>
<td>Attribution to constructive intentionality through active implementation</td>
<td>.05</td>
<td>0.02</td>
<td>.015 – .107</td>
</tr>
<tr>
<td></td>
<td>Attribution to constructive intentionality through passive implementation</td>
<td>.03</td>
<td>0.03</td>
<td>-.014 – .084</td>
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<tr>
<td></td>
<td>Attribution to constructive intentionality through implementation avoidance</td>
<td>.04</td>
<td>0.02</td>
<td>.007 – .085</td>
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<td></td>
<td>Attribution to deceptive intentionality through active implementation</td>
<td>.03</td>
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<td>-.004 – .084</td>
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<td>Attribution to deceptive intentionality through passive implementation</td>
<td>.01</td>
<td>0.02</td>
<td>-.002 – .058</td>
</tr>
<tr>
<td></td>
<td>Attribution to deceptive intentionality through implementation avoidance</td>
<td>-.04</td>
<td>0.02</td>
<td>-.078 – -.009</td>
</tr>
</tbody>
</table>

Note. N = 397. CI = confidence interval, LL = lower limit, UL = upper limit. Number of bootstrap resamples = 1,000.

**Hypothesis Testing**
As presented in Figure 1, path analysis indicated that employee attribution to constructive intentionality was positively and negatively related to active implementation and implementation avoidance (β = .16, p < .01; β = −.18, p < .05), respectively. Hypotheses 1a and 1c were thus supported. The effect of employee attribution to constructive intentionality on passive implementation was not significant (β = .14, ns). Thus, Hypothesis 1b was not supported.

By contrast, employee attribution to deceptive intentionality significantly predicted implementation avoidance alone (β = .17, p < .01), but it was unrelated to employees’ active and passive implementation (β = .10 and .04, respectively, both ns). Thus, Hypothesis 2c was supported but Hypotheses 2a and 2b were not supported.

Figure 1 also shows that all three forms of implementation were significant predictors of the ultimate innovation outcome. As hypothesized, active and passive implementations were positively related to innovation effectiveness (β = .33 and .39, respectively, both p < .001), whereas implementation avoidance was negatively related to innovation outcome (β = −.22, p < .001). Thus, Hypotheses 3a, 3b, and 3c, which involved innovation effectiveness, were supported.

Finally, we tested Hypotheses 4a and 4b by employing a bootstrapping procedure that computes unbiased indirect effect estimates with a 95% confidence interval (CI; Preacher & Hayes, 2008). As reported in Table 2, employee attribution to constructive intentionality had an indirect positive effect on innovation effectiveness through its direct effect on active implementation; indirect effect estimate = .05, bootstrapped SE = 0.02, 95% CI [0.015, 0.107], and implementation avoidance, indirect effect estimate = .04, bootstrapped SE = 0.02, 95% CI [0.007, 0.085], but not through passive implementation; indirect effect estimate = .03, bootstrapped SE = 0.03, 95% CI [-0.014, 0.084]. Hypothesis 4a was thus partially supported. By contrast, employee attribution to deceptive intentionality exhibited a significant negative indirect effect on innovation effectiveness through its effect on implementation avoidance; indirect effect estimate = −.04, bootstrapped SE = 0.02, 95% CI [−0.078, −0.009], but not through active and passive implementation behavior; indirect effect estimate = .03, bootstrapped SE = 0.02, 95% CI [−0.004, 0.084]; indirect effect estimate = .01, bootstrapped SE = 0.02, 95% CI [−0.032, 0.058], respectively. Thus, Hypothesis 4b was partially supported.

Discussion

In this study, we introduced a well-established social psychological theory of causal attribution to the organizational innovation literature. Our findings demonstrate that the attribution of constructive intentionality exerts positive indirect effects on innovation effectiveness through its positive direct effect on active implementation and negative direct effect on implementation avoidance, but not through passive implementation. By contrast, the attribution of deceptive intentionality exerts a negative indirect effect on innovation effectiveness through its effect on implementation avoidance but not through active or passive implementation.

Theoretical Implications

We have contributed to the innovation literature. We have advanced the current theoretical framework by applying attribution theory to a new context of innovation implementation in organizations. We have identified employees’ attributions of the cause of innovation adoption as a critical driver of their sensemaking of innovation implementation (C. G. Davis et al., 1998; Maitlis & Christianson, 2014; Weick et al., 2005). The results indicate the incremental effects of attributions on the implementation process are over and above expectations of costs and benefits (e.g., Ajzen, 1991; Beaudry & Pinsonneault, 2005; F. D. Davis, 1989).

Our theoretical and empirical analysis confirms that attribution to constructive intentionality is positively
related to active implementation but not significantly related to passive implementation. This pattern suggests that when employees attribute the organization’s intention of adopting an innovation to a genuine, constructive cause, they tend to implement it enthusiastically instead of being passive and simply following the minimum requirements for implementation (Parker et al., 2006). Further, attribution to constructive intentionality diminishes undesirable implementation behavior among employees, such as avoiding or ignoring innovation.

By contrast, attribution to deceptive intentionality increases implementation avoidance, although such negative attribution is unrelated to either active or passive implementation behavior. The negative effect of attribution on innovation may not reduce the positive forms of implementation behavior among employees when organizational forces for implementation and situational pressure are present (Marler, Fisher, & Ke, 2009).

We identified and empirically differentiated three forms of implementation behavior that are in line with the three domains of task behavior, namely, in-role, extrarole, and deviant behavior (Dalal, 2005; Klein et al., 2001). These behavioral reactions represent different levels of employee engagement in innovation implementation that may provide a finer grained explanation than that of previous findings based on typical dichotomization of either acceptance or rejection of innovation or a singular focus on resistance to change (Choi & Moon, 2013; Greenhalgh et al., 2005). These forms of implementation behavior exhibit disparate patterns relative to innovation-targeted attributions and exert varying effects on innovation effectiveness, thereby supporting their conceptual and functional distinctiveness in innovation implementation.

Limitations and Directions for Future Research

There are limitations in this study. First, as data were collected at a single point in time, this prevented us from making causal inferences. Although the causal flow of the attribution–behavior–outcome relationship is theoretically justifiable (Ferris et al., 1995; Nishii et al., 2008), the possibility of reversed causality that innovation outcomes affect employee attributions is plausible. Second, we assessed the innovation effectiveness measure at the individual level and evaluated specific employee performance gains (skill acquisition, improved morale, and productivity) attributable to the innovation. These measures may be insufficient to reveal the overall success or failure of an innovation. Finally, although we controlled for the effects of country settings and innovation types, we acknowledge that these cultural or innovation-specific factors can be critical in shaping innovation-related attributions and corresponding employee attitudes and behavior.

We have nevertheless advanced the innovation literature by applying attribution theory to explain multiple forms of implementation behavior. Thus, our findings enable future researchers to comprehensively investigate the cognitive processes underlying organizational innovation beyond the appraisal of anticipated outcomes or expectations based on the cost–benefit analysis of innovation implementation. Future empirical and conceptual researchers can integrate these cognitive underpinnings, namely, attributions and expectations, underlying innovation implementation with emotional dynamics induced by innovation adoption.

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References


