SOCIAL BEHAVIOR AND PERSONALITY, 2015, *43*(7), 1161–1180

http://dx.doi.org/10.2224/sbp.2015.43.7.1161

MECHANISMS UNDERLYING CREATIVE PERFORMANCE: EMPLOYEE PERCEPTIONS OF INTRINSIC AND EXTRINSIC REWARDS FOR CREATIVITY

HYE JUNG YOON
Cornell University
SUN YOUNG SUNG
Nanjing University
JIN NAM CHOI
Seoul National University

In this study, we clarified some of the ambiguities in the rewards–creativity relationship by focusing on creative performance in organizations that is contingent on intrinsic and extrinsic rewards. Participants were 241 employee–peer pairs working in various industries. The results indicated that, regardless of the degree of importance of the reward as perceived by the employee, intrinsic rewards exerted a significant direct positive effect on creativity. In contrast, extrinsic rewards exerted only a significant indirect effect on employee creativity via commitment to creativity. Moreover, the effect of extrinsic rewards on creative performance was moderated by the degree of importance of that reward as perceived by the employee. The reward promoted creativity only when the employee regarded that reward as important. Our findings demonstrate distinct underlying mechanisms and boundary conditions of intrinsic and extrinsic rewards in shaping individual employee creativity.

Keywords: employee creativity, intrinsic reward, extrinsic reward, commitment, reward importance.

Hye Jung Yoon, Johnson School of Business, Cornell University; Sun Young Sung, School of Business, Nanjing University; Jin Nam Choi, Graduate School of Business, Seoul National University.
This work was supported by grants from the National Research Foundation of Korea funded by the Korean Government (NRF-2011-327-B00208) and the Institute of Management Research and Institute of Industrial Relations at Seoul National University, Korea.
Correspondence concerning this article should be addressed to: Jin Nam Choi, Graduate School of Business, Seoul National University, 1 Gwanak-ro, Gwanak-gu, Seoul 151-916, Republic of Korea. Email: **jnchoi@snu.kr**

Scholars and practitioners alike agree that creativity is necessary for an organization's survival, whether that creativity introduces groundbreaking innovation or minor changes to the work setting (Anderson, Potočnik, & Zhou, 2014; Baer, 2012; Gong, Kim, Lee, & Zhu, 2013). For this reason, much research effort has been devoted to investigating the personal and contextual predictors of creativity (Byron & Khazanchi, 2012). Although previous researchers have identified various ways in which managers can promote creative performance among employees, the role of many workplace characteristics in relation to creativity is either still unknown or the reported findings have been ambivalent. In this study, we set out to identify the mechanism and boundary conditions through which both intrinsic and extrinsic types of rewards influence creativity.

Despite the benefits of creativity to the organization, it is difficult to encourage creativity because employees feel uncomfortable about performing creatively in the workplace (Janssen, 2004). Given that creativity often occurs by challenging the status quo and disrupting work procedures endorsed by others, workers who constantly suggest creative ideas may give the impression of being dissatisfied with their current job or the company and, thus, induce tension among members. This possibility prevents employees from actively expressing new or innovative ideas (Choi, 2007). In contrast, explicit organizational support in the form of creating an innovative climate and supervisor expectation for creative performance tends to increase employee creativity (Baer, 2012; Chen, Farh, Campbell-Bush, Wu, & Wu, 2013; Zhang, Kwan, Zhang, & Wu, 2014). In this respect, explicit organizational rewards for creative performance can be a plausible way to enhance workplace creativity.

Nevertheless, prior researchers have not provided a consistent view regarding the role of rewards in inducing individual creativity. Some scholars have suggested that rewards reduce intrinsic motivation and, consequently, undermine creativity (Putwain, Kearsley, & Symes, 2012). However, others maintain that rewards not only do not have any detrimental effects on intrinsic motivation but actually enhance creativity (Chen, Williamson, & Zhou, 2012; Malik, Butt, & Choi, 2015). Thus, scholars have started to examine the role of moderators that may explain the rewards–creativity relationship (Malik et al., 2015). In their meta-analysis, Byron and Khazanchi (2012) indicated that the rewards–creativity relationship becomes positive when the reward is contingent on creativity, is accompanied by positive performance feedback, and is given in a context that provides choice or autonomy that is related to the task.

In this study, we focused on intrinsic and extrinsic rewards and the ways they influence employee creativity. First, we focused specifically on intrinsic and extrinsic rewards targeted at creativity instead of on rewards in general. One reason for the inconsistency of previous research results on the effect of rewards may be the different interpretations or sense-making procedures that the concept

of rewards initiates. Byron and Khazanchi (2012) found that rewards contingent on general performance could decrease creative performance. Thus, we attended to the role of rewards contingent on creativity in predicting employees' creative performance in order to avoid the ambiguity caused by rewards described in general terms. Second, we proposed that the effect of rewards for creativity on creative performance might not be the same across all employees. Instead, the significance of rewards as a predictor of creativity might depend on the meaning that target employees attach to them. Thus, the value importance of intrinsic and/or extrinsic rewards as perceived by an individual might determine whether or not such rewards actually stimulate his/her creative performance (cf. functional significance; Mickel & Barron, 2008). Third, we submitted that rewards for creativity would promote creative performance by eliciting individuals' willingness or strong intention to perform creatively. This process approach offers a sophisticated psychological account of the route through which rewards for creativity might operate.

Literature Review

Rewards and Creativity in the Workplace

Contemporary organizations often use reward practices to encourage creative activities among employees (Chen et al., 2013; Malik et al., 2015). Fairbank and Williams (2001) found that most managers utilize extrinsic rewards for their employees to draw attention toward creativity. Nevertheless, the nature and direction of the effect of rewards on employee creativity are not yet clear, and empirical studies in organizational settings are particularly lacking.

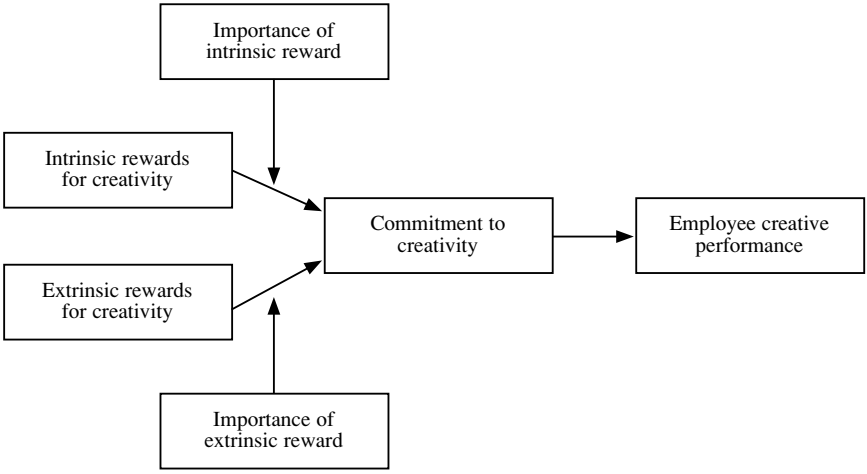

Figure 1. *Theoretical framework.*

Therefore, we examined the effects of intrinsic and extrinsic rewards for creativity on employee creative performance and suggested that employees' commitment to creativity might be a potential mediating psychological state in the relationship between rewards and creativity. In addition, to identify the boundary condition of the activation of different types of rewards for creativity, we proposed the relative importance of specific rewards as a potential moderator in the relationship between reward and creativity. Our overall conceptual model is depicted in Figure 1.

Contradictory Findings on the Effect of Rewards on Creativity

Despite the use of rewards as a tool for promoting employee creativity being a typical strategy in the workplace, there are contradictory viewpoints regarding the effect of rewards on creativity. According to self-determination theory (de Stobbeleir, Ashford, & Buyens, 2011; Deci, Koestner, & Ryan, 2001), an individual's perceived self-determination plays a crucial role in enhancing his or her intrinsic task interest, which is closely related to creativity. In contrast, if individuals perceive that the environment presents a barrier to their self-determination or autonomy, their intrinsic task interest tends to decrease or vanish, resulting in low creativity (Deci et al., 2001). For this reason, scholars warn of the detriment of extrinsic rewards because the employee could perceive these as a controlling mechanism and, thus, might feel that he or she is being deprived of his/her personal freedom (Latham, 2007; Putwain et al., 2012).

In contrast, other scholars have argued that receiving rewards could boost employees' perceived self-determination because, for example, receiving performance-related remuneration indicates the value of their performance and personal achievement and, thus, enhances the employees' feeling of competence (Malik et al., 2015). The sense of increased competence gained from repeatedly receiving rewards can even promote individuals' belief that they can control the work environment rather than being controlled by it (Chen et al., 2012; Eisenberger & Aselage, 2009). Further, individuals may believe that extrinsic rewards are offered because they are a way for the employer to control the situation and determine the employee's level of performance.

Empirical findings are also mixed, with some researchers having found a positive relationship between rewards and creativity (Friedman, 2009), but others reporting that this relationship was negative (Deci et al., 2001). In their meta-analysis, Byron and Khazanchi (2012) found that boundary conditions, such as the nature of rewards and the task context, can determine the implications of rewards for creativity. In their recent field study, Malik et al. (2015) also demonstrated that extrinsic rewards could enhance creative performance when employees had a disposition that included personal qualities such as an internal locus of control and creative self-efficacy.

Creativity-Contingent Intrinsic and Extrinsic Rewards

One plausible reason for the conflicting findings regarding the role of rewards as they relate to creativity may be the diffused definition of the term rewards, meaning that this invites differing interpretations by individuals. Because organizations demand that their members achieve several different goals (such as efficiency, error-free operation, and problem solving), organizational rewards may result in varying interpretations and stimulate different types of work effort (Eisenberger & Aselage, 2009; Malik et al., 2015). Similarly, in pointing out the ambiguity of the role of time pressure with respect to employee creativity, Baer and Oldham (2006) advocated the need for attending to "a specific form of time pressure that should be particularly relevant to creativity" (p. 963). In our research context, we reasoned that it would be helpful to avoid the lack of specificity of rewards by focusing on rewards contingent on creative performance. Chen et al. (2012) found that the impact of rewards tends to increase when task performers are clearly informed of the behaviors that will bring about subsequent rewards. Therefore, rewards targeted at creativity would show different outcomes compared with rewards lacking such specificity (Byron & Khazanchi, 2012).

In this study, we have based our research on the premise that it is necessary to focus on rewards for creativity in order to reduce the ambiguity caused by rewards described in general terms. In examining the effect of rewards on inducing creativity, we attended to both the intrinsic and extrinsic aspects of rewards that reflect two critical dimensions of motivational processes (Deci et al., 2001). In the setting of the workplace, *intrinsic rewards* come directly from the job itself and, typically, represent feelings of enjoyment, achievement, challenge, and personal and professional growth (Aletraris, 2010; Eisenberger & Aselage, 2009). In contrast, *extrinsic rewards* are external to the job, such as salary, fringe benefits, promotions, and vacation or time off as ways of remuneration (Malik et al., 2015).

Despite the continuing debate regarding the effect of rewards on creativity, there has been a consensus among scholars that intrinsic rewards and accompanying intrinsic task motivation are beneficial for creative performance. Intrinsic rewards are "satisfying in their own right and they provide direct satisfaction of basic psychological needs" (Vansteenkiste, Lens, & Deci, 2006, p. 22). Thus, intrinsic rewards tend to have a lasting impact on the individual's task motivation, resulting in persistent task efforts (Aletraris, 2010). When employees receive intrinsic rewards, they are motivated to work harder and produce quality performance because intrinsic rewards promote in-depth task processing and persistence (Vansteenkiste et al., 2006).

Hypothesis 1: Receiving intrinsic rewards for creativity will be positively related to employees' creative performance.

Although the role of extrinsic rewards in inducing creativity is not clear, meta-analytic findings (Byron & Khazanchi, 2012) indicate that rewards contingent on creative performance may increase creativity. Extrinsic rewards for creativity (e.g., promotions) function as distinct information that stimulates cognitive and affective changes in employees and directs their attention toward creativity (Malik et al., 2015). Employees will exhibit creative performance more frequently when their organization signals that creativity is needed and supported by providing incentives for creativity (Chen et al., 2012). In addition, extrinsic rewards for creativity set the role expectation for employees, according to which they are more likely to perform creatively in order to display role-consistent behavior.

Hypothesis 2: Receiving extrinsic rewards for creativity will be positively related to employees' creative performance.

Mediating Role of Commitment to Creativity in the Relationship Between Rewards and Creativity

Given that intrinsic and extrinsic rewards for creativity represent the motivating potential of the task and contextual variables, it is important to identify the psychological mechanisms through which they influence employee creative performance. Scholars have maintained that contextual factors shape behavior through the psychological meanings people attach to them (Baer, 2012; Chen et al., 2013; Gong et al., 2013; Zhang et al., 2014). In this study, our focus was on employees' psychological commitment to creativity as a mediator of the relationship between rewards and creativity.

Organizational researchers have identified attitude toward various targets, such as the job, coworkers, and the organization, as key predictors of both in-role and extrarole employee behaviors, and job performance (Gong et al., 2013). *Commitment* to a target represents a person's positive attitude and willingness to exert considerable effort toward achieving the target (Choi & Price, 2005). Thus, commitment to various targets, such as the team, organization, and innovation, may comprise a core psychological mechanism that determines the further behavioral reactions of an employee toward the given target (Sung & Choi, 2014). As commitment to task predicts the degree of task effort and level of performance, commitment to creativity may have direct implications for employees' creative behavior and performance. Commitment to creativity is likely to be influenced by the expectancy of reward for creative performance that drives positive evaluation concerning creativity (Lim & Choi, 2009). We, therefore, hypothesized that intrinsic and extrinsic rewards for creativity would enhance creative performance to the extent that the expectation of reward induces commitment to creativity among employees. In other words, unless intrinsic and extrinsic rewards initiate this intervening psychological state, which promotes

creativity, the prospect of reward may not lead to creative performance.

Hypothesis 3: Commitment to creativity will mediate the relationship between intrinsic and extrinsic rewards for creativity and employees' creative performance.

Moderating Role of Reward Importance in the Relationship Between Rewards and Creativity

Earlier, we suggested that inconsistent findings regarding the rewards–creativity link might be attributable to lack of specificity in terms of the target behavior to be rewarded. Extending this line of thinking to clarify the connection between rewards and creativity, we further suggested that individuals' value difference related to rewards might accentuate or nullify the effect of the prospect of receiving intrinsic and extrinsic rewards on creative performance. The rewards–performance relationship becomes stronger as the rewards become more highly valued by the performers (Malik et al., 2015). In strategic human resource management literature, it has been shown that human resource practices increase employee commitment and competence only when employees perceive that human resource programs are valuable for them (see e.g., Sung & Choi, 2014). Similarly, offering intrinsic and extrinsic rewards for creativity may increase employees' creative efforts only when employees value such rewards.

People have different values and pursue different goals. Salary and other extrinsic forms of rewards are, indeed, valuable given that they represent not only social status but also personal accomplishment (Mickel & Barron, 2008). Nevertheless, Aletraris (2010) reported that the correlation between income and employee satisfaction was small. Some people are driven by intrinsic rewards, such as sense of achievement, enjoyment, and challenge, whereas others focus on extrinsic rewards, such as financial incentives (Malik et al., 2015). Considering that people attach different values and emotional meanings to rewards (Mickel & Barron, 2008), it is reasonable to expect that employees may react differently to intrinsic and extrinsic rewards for creativity. As suggested in expectancy theory, the more attractive a certain kind of reward is to an employee, the more motivated the employee will be (Fairbank & Williams, 2001). Thus, we have submitted here that intrinsic rewards for creativity would stimulate creative efforts more strongly when the person valued intrinsic rewards than when they did not appreciate such rewards. Likewise, individuals who regarded extrinsic rewards as important in their career or life would be more sensitive and responsive to extrinsic rewards for creativity than they would to intrinsic rewards. We, therefore, proposed that the relative importance of different types of rewards could amplify or attenuate the effect of corresponding rewards on employee creative performance.

Hypothesis 4: The importance of an intrinsic reward to the employee will positively moderate the relationship between intrinsic rewards for creativity and that employee's creative performance.

Hypothesis 5: The importance of an extrinsic reward to the employee will positively moderate the relationship between extrinsic rewards for creativity and that employee's creative performance.

Method

Sample and Procedure

Participants were recruited from various industries in South Korea. We distributed our surveys to 270 employees and their peers. The focal respondents and their peers completed different surveys and returned them directly to the researcher by mail. After insincere responses and partial data with only self- or peer-survey responses were eliminated, the final sample consisted of 241 matching pairs of employees and their peers (final response rate = 89%). This final analysis sample represented 41 organizations, consisting of 21 manufacturing firms (51%), nine research and development organizations (22%), seven financial institutions (17%), and four business consultancy firms (10%). The number of participants from each company ranged between one and 20, with an average of 5.9. Of these, 27% were women, the mean age was 33.3 years (*SD* = 6.64), and the mean company tenure was 6.2 years (*SD* = 5.88). The majority held a bachelor's degree (53.8%) or other graduate degree (38.7%), and a small number of participants were high school (1.7%) or two-year college graduates (5.8%). The participants were responsible for various types of knowledge-intensive work, such as process design, inventory control, product development, laboratory experiments, financial analysis, and business consulting.

Measures

We employed multi-item scales with acceptable internal consistency to assess the study variables. Each item was rated on a 6-point Likert scale (ranging from 1 = *strongly disagree* to 6 = *strongly agree*).

Intrinsic rewards for creativity. On the basis of the measure developed by Baer, Oldham, and Cummings (2003), we constructed a seven-item scale (α = .91) to assess intrinsic rewards for creativity as perceived by the participants. Sample items include "Suggesting new solutions offers a personally rewarding experience for me," "When I perform creatively, I feel an increased sense of self-confidence," "Creative performance is beneficial for my personal growth," and "I feel self-achievement when I suggest innovative ideas."

Extrinsic rewards for creativity. Similar to Malik et al. (2015), we assessed extrinsic rewards for creativity using eight items (α = .86) that included "My company provides financial incentives for employees' creative performance," "My supervisor recognizes me when I perform creatively," and "Creative performance is related to promotion decisions."

Importance of intrinsic reward. To assess the importance of an intrinsic reward, we used the following three items (α = .90): "Intrinsic rewards, such as enjoyment, autonomy, and self-achievement, that I can get from my creative performance (1) are quite meaningful for me, (2) are worthwhile for me to try hard to perform creatively, and (3) are so important that they influence me to change my task behaviors."

Importance of extrinsic reward. We measured this construct using the following three items (α = .93), which were developed by Malik et al. (2015): "Extrinsic rewards, such as financial incentives, promotions, and respect, that I can get from my creative performance (1) are quite meaningful for me, (2) are worthwhile for me to try hard to perform creatively, (3) are so important that they influence me to change my task behaviors."

Commitment to creativity. Drawing on Choi and Price's (2005) measure of commitment to innovation, we used seven items (α = .88) to measure the participants' commitment to creativity. Sample items are as follows: "I am willing to perform creatively for my team and company," "Creativity is an essential element of my task," and "I think it is a waste of time and energy to suggest creative ideas in my company" (reverse coded).

Creative performance. Participants' creative performance was rated by their peers. To this end, we adopted five items (α = .94) from the creativity measure used by de Stobbeleir et al. (2011), comprising "[This person] comes up with new and practical ideas to improve performance," "…exhibits creativity on the job when given the opportunity to do so," "…comes up with creative solutions to problems," "…suggests new ways of performing work tasks," and "…often has a fresh approach to problems." Responses were made on a 6-point Likert scale (1 = *not at all* to 6 = *a great deal*).

Control variables. To control for the effects of meaningful individual differences, we included level of education (1 = *high school*, 2 = *2-year college*, 3 = *4-year college*, and 4 = *graduate degree*) and organizational tenure in our analysis, both of which have previously been reported to have significant implications for creative performance (Hirst, van Dick, & van Knippenberg, 2009).

Results

Before testing the hypotheses, we conducted a confirmatory factor analysis (CFA) to verify the empirical distinctiveness of the measures. This CFA included the five latent factors indicated by 28 items that were reported by the respondents. The hypothesized measurement model exhibited a good fit with the observed data, based on chi square, degrees of freedom, comparative fit index (CFI) and root mean square error of approximation (RMSEA) values, which were as follows: χ^2

($df = 242$) = 536.59, $p = .0008$; CFI = .93, RMSEA = .070. This five-factor model exhibited a significantly better fit than the alternative four-factor or three-factor models (χ^2 difference test, all $p = .0007$). In the hypothesized five-factor model, all scale items significantly loaded on their corresponding latent factors (all $p = .0005$), supporting the convergent validity of the present measures (Price, Choi, & Vinokur, 2002). In Table 1, the means, standard deviations, and interscale correlations among the constructs examined are presented.

Table 1. *Means, Standard Deviations, and Correlations Among Study Variables*

Variable	*M*	*SD*	1	2	3	4	5	6	7	8
1. Education	3.29	0.65	—							
2. Organizational tenure	6.19	5.88	−.02	—						
3. Intrinsic rewards for creativity	5.01	0.75	.17**	.13*	(.91)					
4. Extrinsic rewards for creativity	3.27	0.95	.06	−.06	.18**	(.86)				
5. Importance of intrinsic rewards	4.35	1.01	.17**	.16*	.58**	.32**	(.90)			
6. Importance of extrinsic rewards	4.27	0.97	.14*	.13*	.46**	.34**	.73**	(.93)		
7. Commitment to creativity	4.39	0.84	.30**	.03	.60**	.37**	.63**	.50**	(.88)	
8. Employee creative performance	4.20	0.95	.09	.03	.21**	.09	.18**	.22**	.28**	(.94)

Note. $N = 241$. Reliability coefficients are shown in parentheses on the diagonal.
* $p < .05$, ** $p < .01$.

Main Effects of Intrinsic and Extrinsic Rewards for Creativity

In Hypotheses 1 and 2, we proposed the direct effects of intrinsic and extrinsic rewards for creativity on employee creative performance. After controlling for level of education and organizational tenure, the results showed that intrinsic rewards for creativity were positively related to employee creative performance, whereas extrinsic rewards did not have any significant effect.

Mediating Effect of Commitment to Creativity in the Relationship Between Rewards and Creativity

In Hypothesis 3, we predicted that commitment to creativity would mediate the relationship between rewards and creative performance. To test this mediation hypothesis, we employed the procedure recommended by Mathieu and Taylor (2006). The first step involves examining the direct effects of the predictor (in this case, rewards for creativity) on the outcome (creative performance). This condition was satisfied for intrinsic, but not extrinsic, rewards for creativity (see Model 4, Table 2). In the second step, we examined the relationship between the predictor (rewards) and the mediator (commitment to creativity). Both intrinsic

Table 2. *Regression Results for Mediating and Moderating Effect*

Variable	Commitment to creativity		Employee creative performance				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Education	.21***	.17***	.01	.06	.01	.04	.01
Organizational tenure	−.03	−.08	.02	.01	.01	−.02	−.01
IR for creativity	.52***	.33***		.18**	.05	.08	.02
ER for creativity	.24***	.15**		.04	−.02	.01	−.03
Importance of IR		.37***				.11	.03
Importance of ER		.03				.07	.06
IR for creativity × Importance of IR		.00				−.06	−.06
ER for creativity × Importance of ER		.10*				.16*	.14*
Commitment to creativity			.27***		.25**		.21*
R^2	.45***	.55***	.08***	.04*	.08**	.08	.10*

Note. $N = 241$, * $p < .05$, ** $p < .01$, *** $p < .001$. IR = intrinsic reward; ER = extrinsic reward.

and extrinsic rewards for creativity were significantly related to commitment to creativity (see Model 1, Table 2). In the third step, the significant effect of the mediator (commitment to creativity) on the outcome (creative performance) is required (see Model 3, Table 2). In the fourth step, we tested to establish whether or not the effects of the predictors on the outcome would disappear with the introduction of the mediator. The results confirmed that the effects of both intrinsic and extrinsic rewards were insignificant, whereas commitment to creativity remained a significant predictor of creative performance (see Model 5, Table 2).

The four-step analysis results indicate that the significant direct effect of intrinsic rewards for creativity on creative performance was fully mediated by commitment to creativity. In the case of extrinsic rewards for creativity, although rewards of this type did not have a significant direct effect on creative performance, extrinsic rewards were significantly related to commitment to creativity, which, in turn, had a meaningful effect on creative performance. This relational pattern demonstrates that commitment to creativity operates as an *intervening* (instead of mediating) variable in the relationship between extrinsic rewards and creative performance (Mathieu & Taylor, 2006). Sobel test results revealed that both intrinsic and extrinsic rewards had significant indirect effects on creative performance via commitment to creativity ($z = 3.50$, $p = .0004$ and $z = 2.97$, $p = .001$, respectively).

Moderating Effects of Reward Importance in the Relationship Between Rewards and Creativity

In Hypotheses 4 and 5, we predicted that reward importance would moderate the rewards–creativity relationship. To test the hypothesized moderating effects, we entered the interaction terms after controlling for main effects. We centered all variables used in the interaction terms to reduce multicollinearity (Aiken & West, 1991). The hypothesized interaction was significant for the importance of extrinsic rewards but not for the importance of intrinsic rewards (see Model 6, Table 2). Figure 2 depicts the pattern of interaction obtained from two subgroups characterized by high and low importance of extrinsic rewards (operationalized as one *SD* above and below the mean). As expected, the effect of extrinsic rewards for creativity on creative performance was significant and positive when the employee's perception of the importance of the extrinsic reward was high ($\beta = .56$, $p = .0003$), but not when it was low ($\beta = -.17$, *ns*.). This pattern supports Hypothesis 5.

We further conducted a complementary analysis to examine the possibility of mediated moderation, in which commitment to creativity would mediate the moderating effect of reward importance variables. Following the procedure recommended by Muller, Judd, and Yzerbyt (2005), we tested the effect of the

hypothesized moderation on the mediator. As shown in Model 2 of Table 2, the interaction between extrinsic rewards for creativity and employee's perception of the importance of extrinsic rewards was a significant predictor of commitment to creativity (see Figure 3), demonstrating that extrinsic rewards significantly predicted commitment to creativity only when the extrinsic reward was perceived as being very important ($\beta = .71$, $p = .0001$), and not when it was perceived as being not important ($\beta = .27$, *ns*).

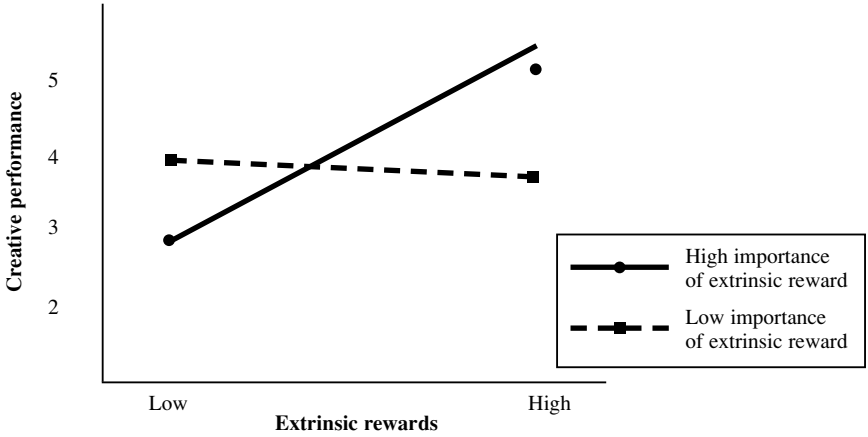

Figure 2. *Interaction effect of the importance of extrinsic rewards for creative performance.*

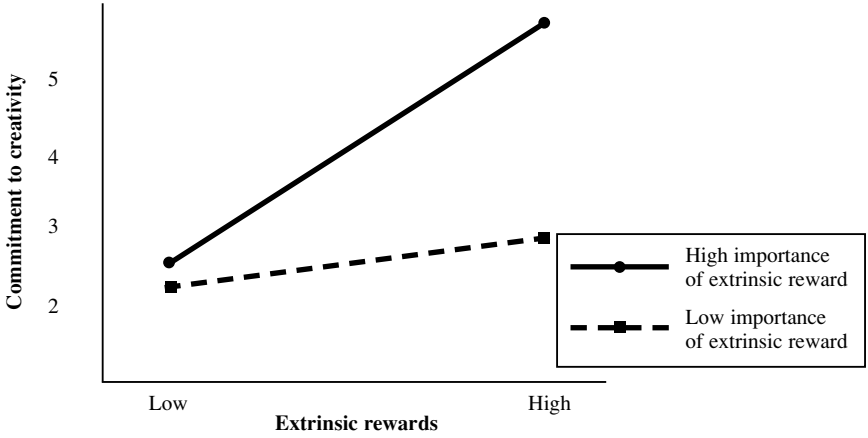

Figure 3. Interaction effect of the importance of extrinsic rewards for commitment to creativity.

Although the first three conditions of mediation (Mathieu & Taylor, 2006) were fulfilled for the present moderated mediation, the last condition was not satisfied (see Model 7, Table 2). Specifically, when the mediator (commitment to creativity) was introduced into the equation, the moderating effect of importance of extrinsic rewards remained significant with an almost identical effect size.

Post Hoc Analysis

Although we did not form any hypothesis in relation to the copresence of intrinsic and extrinsic rewards, it is plausible to assume that the copresence of intrinsic and extrinsic rewards for creativity might be the best condition for stimulating employees' creative performance (e.g., "I enjoy this creative job and, even better, I earn a good income by performing it!"). We tested for this potential interaction between intrinsic and extrinsic rewards and found it to be significant ($\beta = .13$, $p = .06$). As depicted in Figure 4, the combination of the potential for greatly valued intrinsic and extrinsic rewards for creativity provided the condition for the best employee creative performance. The subgroup analysis indicated that extrinsic rewards were a positive predictor of creative performance when the person perceived that he or she would receive highly valued intrinsic rewards from the task ($\beta = .25$, $p = .08$). In contrast, when the person would not receive intrinsic rewards that he or she perceived as being of high value, extrinsic rewards did not have any significant effect on creative performance ($\beta = -.12$, *ns*).

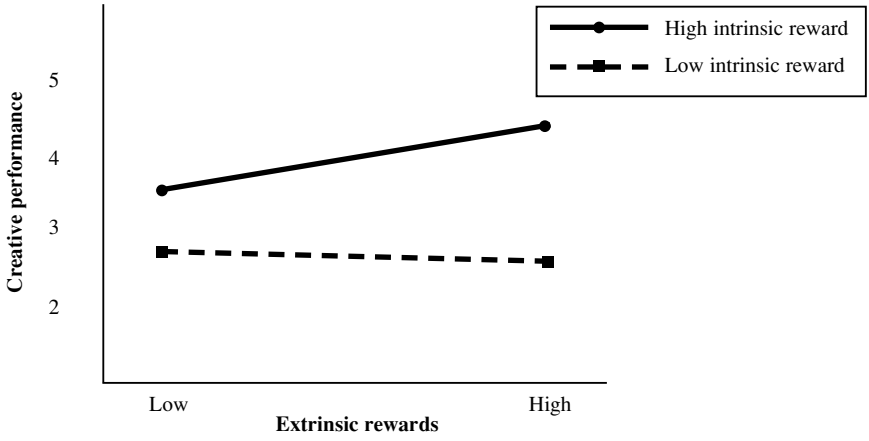

Figure 4. *Post hoc analysis of the interaction between intrinsic and extrinsic rewards.*

Discussion

In the present study, we have expanded the scope of existing literature by examining the effects of intrinsic and extrinsic rewards on creative performance. In this field investigation, we identified commitment to creativity as a mediator and reward importance as a moderator to further elaborate on the nature of the relationship between rewards and creativity. Through empirical analysis, we also revealed some of the boundary conditions that enrich understanding of the ways in which intrinsic and extrinsic rewards affect creative performance.

Theoretical Implications

The results demonstrated that both intrinsic and extrinsic rewards contingent on creativity did, indeed, enhance the creative performance of our participants. Consistent with the prevailing theoretical arguments and previous empirical findings that intrinsic rewards and accompanying intrinsic task motivation are critical for creativity (Anderson et al., 2014; Chen et al., 2013), our results showed that there was a significant direct effect of intrinsic rewards on employees' creative performance. Our mediation analysis further revealed that their commitment to creativity completely mediated the direct effect of intrinsic rewards on their creative performance. Thus, intrinsic rewards appear to increase employees' creative performance by enhancing their commitment to creativity (Baer, 2012; Zhang et al., 2014). In addition, intrinsic rewards were a significantly positive predictor of employee creative performance, as indicated by our finding of a nonsignificant interaction, regardless of the employee's perception of the value of the intrinsic reward. The patterns shown in these results demonstrate that intrinsic rewards constitute a relatively robust predictor of creative performance, exerting a significant direct effect on employees with differing perceptions of the value of the reward.

In contrast, our findings regarding extrinsic rewards clearly show that the function of extrinsic rewards may be contingent on personal characteristics (e.g., perceived value of extrinsic rewards, learning orientation) and/or other organizational contextual factors (e.g., innovative climate, perception of supervisory support), even in organizations where extrinsic factors can be the dominant reason for creative performance (Malik et al., 2015; Putwain et al., 2012). Specifically, unlike intrinsic rewards, extrinsic rewards did not have a significant direct effect on creative performance. Instead, our results showed that extrinsic rewards had a significant indirect effect on creative performance via commitment to creativity, suggesting that the intermediate psychological condition is critical for extrinsic rewards to influence creativity. Moreover, unlike the relatively general effect of intrinsic rewards for employees who had different perceptions of the value of the reward, according to our results, extrinsic rewards

were meaningful only for those who placed importance on this type of reward. Therefore, we found that extrinsic rewards were not related to commitment to creativity and creative performance when employees did not value this type of reward.

We found it interesting that our post hoc analysis revealed a significant interaction for both intrinsic and extrinsic rewards in predicting creative performance. This interaction suggested that extrinsic rewards may enhance the employee's creative performance in a situation where the employee perceives that there are sufficient intrinsic rewards from the task itself. This pattern offers an alternative theoretical perspective linking the intrinsic and extrinsic aspects of a task. With regard to creative performance, employees may need to perceive that the task itself has certain intrinsically fulfilling components before they can be influenced by conditions that are extrinsically rewarding. In other words, as illustrated in Figure 4, offering employees extrinsic rewards for creativity when the task itself is lacking in intrinsically rewarding properties may not lead to the desired outcome of creative performance. This picture is somewhat different from the classic theory of motivation upon which the two-factor theory is based. In this classic theory, it is suggested that the motivating aspects of a job may influence task performance only when the basic necessities (hygiene factors) are fulfilled (cf. the two-factor theory; Herzberg, 1987). At this juncture, we speculate that the role of intrinsic and extrinsic rewards and their functioning in developing human motivation and inducing work behavior could differ from their role for general task performance and creative performance. This possibility, which we find intriguing, should be further explored in future studies.

Study Limitations and Conclusion

In interpreting our findings the following limitations should be taken into account. First, the data we collected represent a wide array of industries and functions that expands the generalizability of the findings but, at the same time, industry-specific dynamics were ignored. It is plausible that preferred types of creative efforts could be different in teams involved in research and development, as compared to financial analysis teams. Second, we collected data on intrinsic and extrinsic rewards for creativity and their importance from the same source, which could potentially have caused common method bias. In particular, considering the quite strong antipathy regarding materialistic values that exists in South Korean society, the value importance measures could have been affected by social desirability bias. Nevertheless, we found comparable means and standard deviations for the importance of intrinsic and extrinsic rewards, thus attenuating the concern for such bias. In any case, it will be necessary to conduct further studies to validate the present findings empirically using additional design considerations, such as multiple sources and time-lagged

data collection, with samples sourced from other cultures or industries. Finally, because our focus was on rewards and individual differences relevant to the rewards, we excluded numerous other contextual and individual predictors that might prove to be crucial in explicating the rewards–creativity link. For instance, employees' justice perceptions (e.g., performance appraisal satisfaction, leader trust) and their trait motivation (learning vs. performance orientation) can shift the meaning and function of creativity-contingent intrinsic and extrinsic rewards.

Despite these shortcomings, we have made a meaningful contribution to the literature by revealing that the underlying dynamics initiated by intrinsic and extrinsic rewards in inducing creative performance are not the same. In contrast to the relatively consistent and stable effects of intrinsic rewards on creative performance, we found that the effect of extrinsic rewards was contingent on the activation of an intermediate psychological state (i.e., commitment to creativity) and individual values regarding rewards (i.e., the importance of extrinsic rewards). Our analysis further suggests the possibility that either the presence of intrinsic rewards or the intrinsically motivating potential of the task itself may serve as a precondition for the functioning of extrinsic rewards for creativity. To facilitate the capacity of organizations to accrue the intended benefits of employee creativity, it is necessary to expand understanding of the processes through which various types of rewards influence creative performance, as well as the boundary conditions that shape these processes.

References

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.

Aletraris, L. (2010). How satisfied are they and why? A study of job satisfaction, job rewards, gender and temporary agency workers in Australia. *Human Relations*, *63*, 1129–1155. **http://doi.org/bn4pj9**

Anderson, N., Potočnik, K., & Zhou, J. (2014). Innovation and creativity in organizations: A state-of-the-science review, prospective commentary, and guiding framework. *Journal of Management*, *40*, 1297–1333. **http://doi.org/32w**

Baer, M. (2012). Putting creativity to work: The implementation of creative ideas in organizations. *Academy of Management Journal*, *55*, 1102–1119. **http://doi.org/tvf**

Baer, M., & Oldham, G. R. (2006). The curvilinear relation between experienced creative time pressure and creativity: Moderating effects of openness to experience and support for creativity. *Journal of Applied Psychology*, *91*, 963–970. **http://doi.org/dd3rdw**

Baer, M., Oldham, R., & Cummings, A. (2003). Rewarding creativity: When does it really matter? *Leadership Quarterly*, *14*, 569–586. **http://doi.org/fgt7kw**

Byron, K., & Khazanchi, S. (2012). Rewards and creative performance: A meta-analytic test of theoretically derived hypotheses. *Psychological Bulletin*, *138*, 809–830. **http://doi.org/32x**

Chen, G., Farh, J.-L., Campbell-Bush, E. M., Wu, Z., & Wu, X. (2013). Teams as innovative systems: Multilevel motivational antecedents of innovation in R&D teams. *Journal of Applied Psychology*, *98*, 1018–1027. **http://doi.org/32z**

Chen, C. X., Williamson, M. G., & Zhou, F. H. (2012). Reward system design and group creativity: An experimental investigation. *The Accounting Review*, *87*, 1885–1911. **http://doi.org/322**

Choi, J. N. (2007). Change-oriented organizational citizenship behavior: Effects of work environment characteristics and intervening psychological processes. *Journal of Organizational Behavior*, *28*, 467–484. **http://doi.org/c75ktr**

Choi, J. N., & Price, R. H. (2005). The effects of person–innovation fit on individual responses to innovation. *Journal of Occupational and Organizational Psychology*, *78*, 83–96. **http://doi.org/d4fhtf**

Deci, E. L., Koestner, R., & Ryan, R. M. (2001). Extrinsic rewards and intrinsic motivation in education: Reconsidered once again. *Review of Educational Research*, *71*, 1–27. **http://doi.org/cv9qch**

de Stobbeleir, K. E. M., Ashford, S. J., & Buyens, D. (2011). Self-regulation of creativity at work: The role of feedback-seeking behavior in creative performance. *Academy of Management Journal*, *54*, 811–831. **http://doi.org/d2963k**

Eisenberger, R., & Aselage, J. (2009). Incremental effects of reward on experienced performance pressure: Positive outcomes for intrinsic interest and creativity. *Journal of Organizational Behavior*, *30*, 95–117. **http://doi.org/cphzgw**

Fairbank, J. F., & Williams, S. D. (2001). Motivating creativity and enhancing innovation through employee suggestion system technology. *Creativity and Innovation Management*, *10*, 68–74. **http://doi.org/dm6wrp**

Friedman, R. S. (2009). Reinvestigating the effects of promised reward on creativity. *Creativity Research Journal*, *21*, 258–264. **http://doi.org/fdpdt7**

Gong, Y., Kim, T.-Y., Lee, D.-R., & Zhu, J. (2013). A multilevel model of team goal orientation, information exchange, and creativity. *Academy of Management Journal*, *56*, 827–851. **http://doi.org/323**

Herzberg, F. (1987). One more time: How do you motivate employees? *Harvard Business Review*, *65*, 109–120.

Hirst, G., van Dick, R., & van Knippenberg, A. (2009). A social identity perspective on leadership and employee creativity. *Journal of Organizational Behavior*, *30*, 963–982. **http://doi.org/dx95dc**

Janssen, O. (2004). How fairness perceptions make innovative behavior more or less stressful. *Journal of Organizational Behavior*, *25*, 201–215. **http://doi.org/fk83d5**

Latham, G. P. (2007). *Work motivation: History, theory, research and practice*. Thousand Oaks, CA: Sage.

Lim, H. S., & Choi, J. N. (2009). Testing an alternative relationship between individual and contextual predictors of creative performance. *Social Behavior and Personality: An international journal*, *37*, 117–136. **http://doi.org/b2vc46**

Malik, M. A. R., Butt, A. N., & Choi, J. N. (2015). Rewards and employee creative performance: Moderating effects of creative self-efficacy, reward importance, and locus of control. *Journal of Organizational Behavior*, *36*, 59–74. **http://doi.org/325**

Mathieu, J. E., & Taylor, S. R. (2006). Clarifying conditions and decision points for mediational type inferences in organizational behavior. *Journal of Organizational Behavior*, *27*, 1031–1056. **http://doi.org/bq943b**

Mickel, A. E., & Barron L. A. (2008). Getting "more bang for the buck": Symbolic value of monetary rewards in organizations. *Journal of Management Inquiry*, *17*, 329–338. **http://doi.org/dsg7rs**

Muller, D., Judd, C. M., & Yzerbyt, V. Y. (2005). When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology*, *89*, 852–863. **http://doi.org/czt**

Price, R. H., Choi, J. N., & Vinokur, A. D. (2002). Links in the chain of diversity following job loss: How financial strain and loss of personal control lead to depression, impaired functioning, and poor health. *Journal of Occupational Health Psychology*, *7*, 302–312. **http://doi.org/dm2249**

Putwain, D. W., Kearsley, R., & Symes, W. (2012). Do creativity self-beliefs predict literacy achievement and motivation? *Learning and Individual Differences*, *22*, 370–374. **http://doi.org/bftmr7**

Sung, S. Y., & Choi, J. N. (2014). Multiple dimensions of human resource development and organizational performance. *Journal of Organizational Behavior*, *35*, 851–870. **http://doi.org/326**

Vansteenkiste, M., Lens, W., & Deci, E. L. (2006). Intrinsic versus extrinsic goal contents in self–determination theory: Another look at the quality of academic motivation. *Educational Psychologist*, *41*, 19–31. **http://doi.org/ccqkfv**

Zhang, H., Kwan, H. K., Zhang, X., & Wu, L.-Z. (2014). High core self-evaluators maintain creativity: A motivational model of abusive supervision. *Journal of Management*, *40*, 1151–1174. **http://doi.org/327**