

Print ISSN: 2288-4637 / Online ISSN 2288-4645
doi:10.13106/jafeb.2018.vol5.no4.161

The Effects of Job Characteristics on the Team Creativity of Distribution Companies: Moderating Effects of Transformational Leadership

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Received : September 15, 2018 Revised: October 10, 2018 Accepted: October 13, 2018

Abstract

The purpose of this study is to investigate the causal relationship between job characteristics and creativity. The role of transformational leadership is also examined. To identify the relationship between core team job characteristics and transformational leadership, an empirical survey was conducted through surveys of domestic distribution companies. Among the collected questionnaires, missing and insincere responses were excluded and 636 individuals of 107 teams were used for the SPSS 18 analysis. It was found that job meaningfulness was positively related to team creativity and transformational leadership also had a significant effect. Task feedback was shown to be an important factor on the motivation to perform tasks successfully. In the case of transformational leadership, this leadership style helped individuals overcome fear by providing support, sympathy, and consideration to create novel ideas. But, its effects were different on team creativity when it interacted with core job characteristics. Departments where creativity is highly emphasized within an organization are able to design job characteristics which fit the task at hand. Moreover, transformational leadership brings about different effects on team creativity when it interacts with job characteristics. The findings of this study suggest that organizations should consider characteristics of tasks and individuals as well when conducting education and training.

Keywords: Team Creativity, Job Meaningfulness, Task Identity, Job Characteristics, Transformational Leadership.

JEL Classification Code: L21, L26, L60, M12.

1. Introduction

In recent times, the Korean market is rapidly changing both qualitatively and quantitatively, at a pace that can be said to be almost revolutionary. This is a phenomenon that occurs across all industries. Not only has the economic growth rate halved from the past 30 years since the global financial crisis in 2007, but it has become a low-growth, low-consumption era with consumers closing their wallets with smart shopping and shared economy concepts. We have come to the age of New Normal, and experts in various fields are trying to find solutions to how companies will overcome and navigate this difficult environment.

An important way to ensure long-term survival of an organization in the face of intense environments is the creation and sharing of new knowledge and skills. In order to do this, organizational members need to have open space and competence, and more importantly, they need shared visions, goals, and enthusiasm among the members so that it can be implemented to the organization as a whole (Nonaka & Takeuchi, 1995). The key factor in this context is the core competence to create new and useful information and knowledge, which is creativity (Son, Hong, Jung, & Kim, 2002). The organizational characteristics of the employees and environmental characteristics of the jobs have been researched to some extent as well (Foder & Cover, 2000; Wolfradt & Pretz, 2001; Amabile & Conti, 1999; Andrew & Mann, 2004; Shin & Zhou, 2003). It can be seen that creativity can be exercised in conjunction with task performance, not manifesting separately but together from job performance.

The purpose of this study is to investigate the causal relationship between job characteristics and factors affecting

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the creativity of team members. In addition, we will examine the type of factors that influence the transformational leadership role in conducting that task. Transformational leadership is attracting attention as a major factor in enhancing creativity as it characterizes the future vision of the organization and brings about dynamic change, not to mention intrinsic motivation as well as the performance of new perspectives (Bass & Riggio, 2006; Pillai & Williams, 2004; Shin & Zhou, 2003). It encourages critical thinking about the way employees have repeatedly performed in the past. Therefore, we will examine the effect of these leaders' influences on job characteristics and team creativity.

In this empirical study, we examine the theoretical study on the previous studies on the subject of the first research and transformational leadership of indirect influencing factors of job characteristics that directly affect the manifestation of team creativity. Second, based on theoretical research, the research model design and hypotheses are set up and each variable are measured. For the study, data were collected for the distribution industry. Recently, it has been emphasized on the creativity of various industry groups due to the arrival of the 4th industry. However, the distribution industry is easy to integrate with other industries and as such it is suggested that it can serve as a driving force of the revolutionary era. For this reason, the study was conducted on 107 teams of 636 members of the distribution industry group. In order to lower the common method bias, the core job characteristics and transformational leaderships are given to the members of the team and to the team creativity. The questionnaire was conducted by the leader.

Finally, based on the collected data, we provide a framework of task design that maximizes the intrinsic motivation as well as various training programs to enhance the professional knowledge and thinking skills of the members through the analysis results. In addition, we propose the development and operation of the program as a result.

2. Literature Review

2.1. Team Creativity

Generally speaking, creativity means the ability of employees who work together under various social environment systems to produce useful, high-value products, work processes and ideas in new forms (Lee, 2008; Kim, 2008; Woodman, Sawyer, & Griffin, 1993; West & Farr, 1990; Brown, 1989). This creativity creation can be approached from three perspectives.

The first is that the personality, intelligence, and cognitive style of the individual are calculated as creative outcomes from the perspective of the individual's ability (Choi, 2008; Oldham & Cummings, 1996). The second is from the perspective of the problem solving process. In other words, cognitive flexibility and flexibility are the process of thinking about solving an organizational problem in a new way rather than a traditional way (Choi & Lee, 2008). The third is the situational perspective. It is divided into conditions that trigger creativity and the effects of those that are deteriorating, such as leadership, organizational culture and the environment (Choi & Lee, 2008; Amabile & Conti, 1999; Andrew & Mann, 2004; Shin & Zhou, 2003).

Team creativity research (Gilson & Shalley, 2004; Pirola-Merlo & Mann, 2004; Taggar, 2001, 2002) is usually based on input-process-output models on the above three perspectives. It focuses on how the creative processes in the team affect each other (Nemiro, 2002). Gilson and Shalley (2004) studied the pre-conditions of the creative process at the team level by studying the interaction of team attitudes, task design characteristics, and team characteristics on team activities. Studies have shown that creative teams are teams that perceive a high level of interdependence and creativity in their work. This is because the team showed a high goal of sharing common goals among members, a positive and supportive team atmosphere, and a team spirit. Leenders, Van Engelen, and Kratzer (2003) found that the new product development team showed the best creativity when the frequency of communication among the team members was moderate, and emphasized the importance of the value of information through the communication of team members to effectively share ideas and conduct constructive dialogue among team members.

In the study of Kim (2003), a study model of creativity influencing factors was presented which focused on employee motivation, supervisor's leadership, department (team) atmosphere, compensation and job characteristics. According to the research on food, beverage, distribution and transportation industry (Choi, Hong, Jeong, & Kim, 2002), creativity is divided into three dimensions: strategic creativity, administrative creativity and cultural creativity. In addition, the study of Lee and Kang (2003) proved that creativity is a leading factor of innovative behavior and that it should be considered first in the organization. In addition, a leader's supportive behaviors acted as a situational factor linking creativity with innovative behavior as well.

When the members of an organization creatively perform their tasks, they can prevail to gain competitive advantage (Lee & Duk, 2008; Amabile, 1988; Oldham & Cummings, 1996; Shally, 1995). This is because creative actions are more likely to be performed in the course of job performance

than the possibility of being out of scope. Therefore, team creativity is achieved through the process of interaction between the members and various situations, including team diversity, team size and cohesiveness such as team characteristics, team problem solving strategies, and information processing factors (Woodman, Sawyer, & Griffin, 1993).

2.2. Core Job Characteristics and Team Creativity

The creativity of members in the organization is closely connected with the field of job performance and can be generated or developed through the interaction of characteristics and the environment of individual members. Therefore, the members who belong to the work environment supporting and nurturing creativity are more likely to express more positively to create new ideas, be verified, and develop them to display creative outcomes. As a result, it can be deduced that factors that directly affect job performance, such as job characteristics, will be closely related to creativity (Song, 2005).

According to Amabile (1988), Hackman and Oldham (1980), and West and Farr (1989), job characteristics that enhance positive performance and enhance creative performance include job autonomy, job feedback, diversity, task identity, and task importance. First, autonomy refers to the independent discretion of the employee in performing the task. Thus, high autonomy can be seen in the increase of creativity and self-development tendencies due to the high level of control and ownership of ideas in the performance of tasks (Glassman, 1986; Nonaka & Takeuchi, 1985; Amabile, 1983, 1985). Second, job feedback refers to the degree of providing accurate information to recognize the progress, status, and results of a task. In other words, it gives information about the certainty and suitability of his / her work behavior like informational function. In addition, there is a significant difference in the motivational impact of employees on the nature of job feedback (Nadler, 1977; Ilgen, Fisher, & Taylor, 1979), because motivation is stimulated by information on compensation or punishment related to job performance. Therefore, it is highly related to a stable method of work for achieving performance rather than a new approach to work or creative perspectives (Adams, 1968; Nadler, 1977; Ilgen et al., 1979; Harackiewicz, Abrahams, & Wageman, 1987).

The remaining three characteristics of job characteristics are characteristics that emphasize the design aspect of the job with regard to the meaningful experience of the job. First, skill variety refers to the diversity of knowledge, skills, and functions used in tasks. In the case of various jobs, the scope of work is broadened, and at the same time, the members demonstrate their skills and abilities creatively

(Hackman & Oldham, 1976). In other words, they try to solve problems from a new field and make efforts such as acquiring skills and creating creativity of ideas (Payne, 1990; Caudron, 1994; Courger, There is no reference 1993).

Task identity refers to the overall scope of tasks in the category from one task completion to another. Completion of the employee's own work enables learning about the task, which leads to the accumulation of work knowledge, and then conceives as a flexible approach to the difficult problem (Coelho & Augusto, 2010). In addition, it can act as a motivating force for creating new perspectives by inducing active task motivations (Song, 2005; Coelho & Augusto, 2010).

Finally, task significance refers to the overall impact of the work itself on the importance and status of the work. Therefore, if the result of job performance directly affects the outside (safety and happiness of others), the employee will try to acquire more knowledge and information about the task to be undertaken (Amabile, 1983, 1993, 1995; Coelho & Augusto, 2010). In addition, it is important to understand the motivation of the worker.

In this research, as described above, it was found that the technical diversity, task identity, and task importance of the work at hand were considered as meaningful experiences for the job, and they were combined into one motivation potential score (MPS). Hackman and Oldham (1975, 1976) argue that MPS integrates all of the potential impacts of task on individual attitudes and behaviors (Ferris, 1987).

$$\text{MPS} = (\text{Technology Diversity} + \text{Work Identity} + \text{Work Importance})/3 \times \text{Job Autonomy} \times \text{Job Feedback}$$

According to the above formula, the technique diversity, task importance, and task identity are calculated as a mean of job meaningfulness considering the technique of motivating potential score (MPS) calculation method. According to the index, the level of job autonomy or job feedback is low and MPS is low as well. Therefore, to increase MPS, job autonomy and job feedback should be improved, and technology diversity, task identity, and task importance should be increased. This is because the higher the MPS of core job characteristics, the higher the level of motivation and job satisfaction (Robbins, 2003).

Based on the above theoretical and empirical basis, this study aims to demonstrate the relationship between core job characteristics and creativity through the following hypothesis:

- H1:** Job semantics will have a positive impact on team creativity.
- H2:** Job autonomy will have a positive impact on team creativity.

H3: Job feedback will have a negative impact on team creativity.

2.3. Moderating Effect of Transformational Leadership

Creativity in the organization has been known to play an important role in helping creativity to be appropriately manifested by the harmonious nature of various aspects of work (Amabile, Conti, Coon, Lazen, & Herron, 1996). This is because the factors of creativity are generated and grown through interaction with the environment of the organization. Although the work environment can be discussed in a variety of ways, Amabile and colleagues (1996) developed a measurement tool called KYES to analyze the differences between the job environment that promotes creativity and the job environment that inhibits it. These measures include eight items that examine various aspects of the work environment, including organizational encouragement, boss encouragement, sufficient resources, team support, challenge to work, and autonomy to measure productivity and creativity. The other is to divide into two items. In addition, an encouraging boss and organization, team support, freedom, and challenging duties are among the factors that promote emotional creativity in organizations.

In the case of the encouragement of bosses, it signifies the active help of a team leader, appropriate goal presentation, comprehensive support, and trusting action to the team members in conducting businesses. We can see that the presence of a team leader as a value model and role model is positively stimulated to improve the creativity of employees.

In order to express creativity, leadership has attracted much attention as an environmental factor that positively or negatively affects the creativity of the members as a whole (Jung, Chow, & Wu, 2003). In addition, Scott and Bruce (1994) considered leadership as a situational factor that has a significant impact on creativity when considering the dominant role of leadership in the organization. It also directly affects creativity creation. Deci and Ryan (1985) also argue that organizational performance in organizations act on sponsor leadership for employees, while inhibiting creativity in controlled or limited leadership styles. If leaders in the organization are supporters, they express active consideration for the emotions and desires of their members, encourage positive expressions of interest, and provide emotional and important information feedback to promote employees' technology development. In addition, Oldham and Cummings (1996) also pointed out that the leader who plays a leading role in the organization is an important variable that induces the creativity of the members in the organization.

Research on creativity and leadership shows that leadership often motivates members to perform tasks, which in turn leads to positive effects on the creativity of the team. Therefore, if the following environment is provided in the organization, it can be seen that creativity can be increased or decreased. The attributes include providing an environment that focuses on improving the ability of the members and providing an environment to support the joy of new discovery (Amabile & Grysiewicz, 1989). In addition, there is a need for an environment in which people are allowed to tolerate such activities. In this regard, the transformational leadership among the various leadership styles is the closest (Lee, 2009), and it is viewed as an important leadership to list the creativity of the members (Jeong & Kim, 2011).

Because leaders in transformative leadership encourage members to change their beliefs and values in order to think about new ways of existing problems in the team the team leader expects employees to approach problem solving in a new way, and this figure acts as a creative role model for the members (Bass & Avolio, 1990; Deci, Connel, & Ryan, 1989; Shin & Zhou, 2003).

Empirically, transformational leaders send support, care, and empathy to overcome the fear of challenge in a task that requires a variety of technical attributes of the task assigned to the organization, high importance of the task, and high responsibility. Because it encourages associate members to plan for creating new ideas, this can have a positive impact on creativity (Bass & Avolio, 1990). It is expected that this study will act as a constructive role model in encouraging the specificity of core job characteristics positively through the results of previous studies.

H4: Transformational leadership will positively control the relationship between job meaning and team creativity.

H5: Transformational leadership will positively control the relationship between job autonomy and team creativity.

H6: Transformational leadership will positively control the relationship between job feedback and team creativity.

3. Research Method and Measurement

3.1. Research Model

The purpose of this study is to examine the relationship between job satisfaction (job diversity, job identity, task importance), job autonomy, job feedback and team creativity, and the moderating effect of transformational leadership.

Therefore, based on the theoretical background and hypothesis described above, we set up a research model as shown in Figure 1.

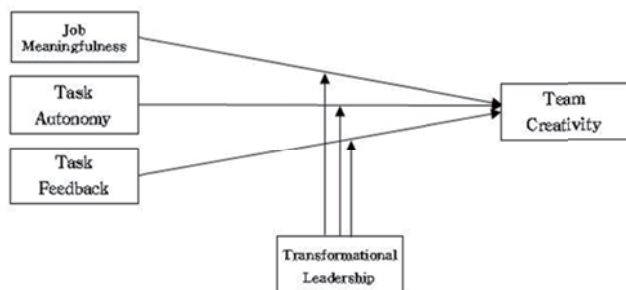


Figure 1: Research Model

3.2. Measurement and Variables

In this study, the questionnaires of all variables except the demographic data were measured by the Likert 7 point scale. In the case of core job characteristics in the organization, the design factors of the jobs constituted in the organization are largely composed of five dimensions. Based on the questionnaires of Hackman and Oldham (1980), the measures were measured using four technical diversity items, task identity items, task importance items, job autonomy items, and job feedback items. In the case of technical diversity, “Our team work is done through the utilization of various abilities and qualities of team members”, “Our team has a lot of opportunities to learn various abilities of team members”, and in the case of work identity, “our team usually performs tasks that are clearly beginning and ending”, “the vast majority of tasks performed by our team have a clear identity.”

In the case of task importance, “the results of our team have an absolute impact on the company”, “the work of our team is a large part of the company’s competitiveness”, etc., and in the case of job autonomy, Most decisions are made within the team and decisions are made.” “Decisions on the direction and performance of our team work are entirely delegated to the team. “Finally, in the case of job feedback questions, The team has feedback and external information as much as possible.”, “The degree of achievement of our team’s job goal is feedback periodically.”

In the case of transformational leadership, Bass (1990) argues that the four factors are divided into the ideal influence of the leader: charisma, empowerment, individual consideration, and intellectual stimulation. These influences exert a creative action on the task for the employees. Therefore, to measure this, the MLQ questionnaire of Avolio and Bass (1995) was used and 14 items were measured. As

a representative item, this included “Our team leader inspires team members with the vision of the team.” “Our team leader stimulates curiosity so that the team can look at difficult problems from a new perspective.” “We will try our best to get an interest in emotions.”, “Our team leader helps our team members to do self-development.”

In the case of team creativity, “the creativity needed to produce a functionally useful new solution that meets the original task or problem solving goal when solving a task or problem of producing or developing a new product or system in the team” was true. Based on the research of Cropley (2005) and Pirola-Merlo and Mann (2004), 13 items were measured and the team’s leader measured the evaluation of the creativity of the team. These criteria include novelty, usefulness, creativity, innovativeness, functionality, and effectiveness on creativity in the team. As a representative item, it included “Our team tries to compensate for the shortcomings of the existing products of the company”, “Compared to other teams, our team’s results give us a new perspective”, “The result of our team is useful”.

Finally, it is necessary to consider the control variable insertion in order to prevent the research result from being distorted from exogenous factors which the researchers have not adopted in verifying such influences. It needs to be taken into consideration that the analysis level of this study is not based on the individual but the size of the team, the average number of months worked in the team to which the team members belong, the sex ratio, and the industrial group as control variables.

3.3. Sampling and Survey Methods

This study conducted an empirical survey through a survey on domestic distribution companies and the level of research analysis as a team. As a result, questionnaires were distributed from the employees of the distribution industry who implemented the team system. After excluding questionnaires whose responses were missing or unreliable among the collected questionnaires and team questionnaires which were missing team leader questionnaires, the final questionnaires used for the analysis were 636 copies of 107 teams.

Of the total 636 men, 231 (36.3%) were male and 400 (62.9%) were female. The age group was the highest with 322 (52.4%) in the 30s, followed by 231 (37.8) 48 (6.1%) and 50 (7) (1.1%). The final degree of education was 425 (66.8%) of college graduates, 132 (20.8%) of professional college graduates, 38 (6.0%) of high school graduates, 31 (4.9%) of those holding a master’s degree, and 1.2%). The average number of team members is 5.49. On the other hand, in the questionnaire construction of this study, the

questionnaires of the team members and team leaders were separately measured to reduce the common method bias.

4. Empirical Analysis

4.1 Validation of Measured Variables

In this study, construct validity was confirmed through confirmatory factor analysis (CFA). For this, confirmatory factor analysis was performed using the structural equation model (Lisrel 8.52). The results are shown in Table 1 and Table 2, respectively.

As described above, in this study, the independent variables and the responses to the outcome variables were obtained from all other team members, including leaders, including team leaders and team leaders, in order to reduce the common method bias. As a result, the team creativity of the result was analyzed by the leader's team leader's response, followed by the factor analysis of the independent variables surveyed to the whole team members and then the factor analysis of the team creativity surveyed to the team leader.

As a result of the confirmatory factor analysis, when looking at the model fit index, Hair and his colleagues generally claimed to need to report an incremental fit index (IFI), and thus the comparative fit index (CFI), Chi square (χ^2), and degree of freedom (DF) as representative indexes (Hair, Rolph, Ronald, & William, 2006). In addition, since the fit index is 0.80 or more, the measured variables are significantly loaded in all the originally intended variables, the validity is confirmed.

Table 1: Confirmatory Factor Analysis for the Team Members

Items	Factor Loadings	
task autonomy	task autonomy1	.79
	task autonomy2	.84
	task autonomy3	.87
task feedback	task feedback1	.89
	task feedback2	.78
	task feedback3	.79
skill variety	skill variety1	.88
	skill variety2	.88
	skill variety3	.59
task identity	task identity1	.75
	task identity2	.59
	task identity3	.81
task significance	task significance1	.89
	task significance2	.88
	task significance3	.82

Charisma	Charisma1	.93
	Charisma2	.95
	Charisma3	.93
	Charisma4	.92
	Charisma5	.87
Intellectual stimulation	Intellectual stimulation1	.93
	Intellectual stimulation2	.76
	Intellectual stimulation3	.92
Individualized consideration	Individualized consideration1	.79
	Individualized consideration2	.94
	Individualized consideration3	.95
inspirational motivation	inspirational motivation1	.85
	inspirational motivation2	.91
	inspirational motivation3	.92
Model's goodness of fit	$\chi^2 = 1490.27$ (df=341), CFI=0.99, IFI=0.99, RFI=0.98, RMR=0.075	

Table 2: Confirmatory Factor Analysis for the Leaders

Items	Factor Loadings	
creativity	creativity1	.61
	creativity2	.67
	creativity3	.77
	creativity4	.78
	creativity5	.69
	creativity6	.68
	creativity7	.69
	creativity8	.74
	creativity9	.85
	creativity10	.77
	creativity11	.86
	creativity12	.90
	creativity13	.88
Model's goodness of fit	$\chi^2 = 273.22$ (df=65), CFI=0.93, IFI=0.93, RFI=0.89, RMR=0.092	

4.2. Verification of Reliability of Measured Variables

In the study, the variables were measured using the questionnaire response method of the Likert 7-point scale for all the items except the three for demographic characteristics. As a result of analyzing the reliability of the

measurement tools used in this study, the reliability of all variables and Cronbach's alpha (Cronbach's alpha) were found to be higher than 0.6 as shown in Table 3. In general, the reliability coefficient required for analysis in the organizational field is considered to be adequate when the reliability coefficient is 0.6 or more, and therefore, the measurement tools used in this study are judged to have the appropriate level of reliability (Chai, 1999; Van de Ven & Ferry, 1980).

Table 3: Reliability of the Variables

	variables	number of questions	reliability coefficient
independent variable	task autonomy	3	.870
	task feedback	3	.749
	skill variety	3	.862
	task identity	3	.820
	task significance	3	.897
moderator variable	transformational leadership	14	.975
dependent variable	creativity	13	.949

4.3. Correlation Analysis

Table 4 summarizes the results of the Pearson correlation analysis. The analysis showed that the correlation between the main research variables was significant. Specifically, the autonomy, job feedback, and job semantics of the team characteristics in the organization were positively correlated with the team creativity. There is a significant correlation with transformational leadership, which is a controlling variable, so that a hypothetical relationship can be expected.

Table 4: Means, Standard Deviations, and Correlations of the Variables

	(1)	(2)	(3)	(4)	(5)
(1) task autonomy	1				
(2) task feedback	.598**	1			
(3) job Meaningfulness	.583**	.650**	1		
(4) transformational leadership	.388**	.545**	.482**	1	
(5) creativity	.247*	.321**	.146	.545**	1
Means	4.581	4.769	4.811	5.002	5.527
Standard deviations	.762	.786	.639	.790	.783

+ <0.1, * p<.05, ** p<.01, *** p<.001, N=636

4.4. Preliminary Analysis

In this study, we need to examine the degree of agreement among the members to use team level variables (Chan, 1998). To achieve this, we used the RWG and ICC (Intraclass Correlation Coefficient) (1) and ICC (2) tests as statistical techniques to justify the aggregation of individual level data to the team level (Park, Kim, & La Voie, 1985; McGraw & Wong, 1996). In this paper, we propose a methodology to solve this conundrum by applying the method described in the previous paper (Shrout & Fleiss, 1979; Simons & Peterson, 2000). In this case, ICC (1) is the ratio of variance that can be explained by the difference of the group in the total variance, that is, the difference of the team, which means that the average value of the group members can be used as the group representative value as the corresponding value is higher (Kim, 2010; James, 1982, Simons & Peterson, 2002). ICC (2) means the reliability of ICC (1) (Barkto, 1976) and needs to be calculated to ensure the feasibility of summing at the team level.

On the other hand, ICC (1) generally considers the sum to be valid if it exceeds .2 (Avolio, Zhu, Koh, & Bhatia, 2004; Bliese, 2000; Ostorff & Schmitt, 1993). The results of this study are summarized in Table 5.

Table 5: ICC(1) and ICC(2)

	rwg	F	p-value	ICC(1)	ICC(2)
task autonomy	.72	3.00	.000	.25	.67
task feedback	.80	3.43	.000	.29	.71
skill variety	.76	3.71	.000	.31	.73
task identity	.71	3.38	.000	.28	.70
task significance	.81	3.92	.000	.33	.75
transformational leadership	.85	4.02	.000	.33	.75

4.5. Hypothesis Testing

4.5.1. Effect of Core Job Characteristics on Team Creativity

Regression analysis was conducted to analyze the effects of the core job characteristics of this study on team creativity. The results of the analysis are shown in Table 6. In first place, job creativity was positively influenced by team meaning (B = .158, p <.05) and job autonomy (B = -.113, p <.05) .01), which negatively affect team creativity. Therefore, Hypothesis 1 and Hypothesis 3 were adopted through the analysis and Hypothesis 2 was rejected as a negative direction.

Table 6: Regression Analysis for Team Creativity

	team creativity	
	B(Unstandardized Coefficients)	t-value
industry1	.787***	3.821
industry2	.240	.870
team size	-.022	-1.514
age	.025	1.226
gender	.254	1.009
team tenure	-.008	-1.340
workload	.072	.860
job Meaningfulness	.158*	2.079
task autonomy	-.113*	-1.981
task feedback	-.195**	-2.486
F	4.921**	
R ²	.360	
Adjusted R ²	.293	

+ <0.1, * p<.05, ** p<.01, *** p<.001, N=636

4.5.2. Analysis of Adjustment Effects

We conducted a hierarchical regression analysis to determine the moderating effects of transformational leadership in the relationship between core job characteristics such as job satisfaction, job autonomy, and

job feedback and team creativity. Table 7 shows the results of the analysis.

In order to verify the moderating effect in Model 4, the interaction term centered on the three-step variable (meaningfulness of job-mean of job x) (transformational leadership-transformational leadership mean), (job autonomy-job autonomy mean) (Transformational Leadership - Transformational Leadership Mean), (Job Feedback - Mean Job Feedback) × (Transformational Leadership - Mean Transformational Leadership).

The results of the analysis showed that the moderating effects of transformational leadership were influenced by the moderating influence of transformational leadership (B = .169, p <.05) in the case of job semantics. In the case of job autonomy B = -.178, p <.05) and job feedback (B = -.132).

5. Research Results and Discussion

This study verified the influence of the core job characteristics such as job satisfaction, job autonomy, and job feedback on team creativity and the moderating effect of transformational leadership in that relationship. The results of the study are summarized as follows.

Table 7: Hierarchical Regression Analysis for the Moderating Effect of Transformational Leadership

	team creativity				t-value
	Step1	Step2	Step3	Step4	
constant	3.764***	4.283***	3.522***	3.716***	4.076
industry1	.746***	.787***	.846***	.737***	3.643
industry2	.108	.240	.395	.220	.809
team size	-.022	-.022	-.024	-.031*	-2.182
age	.027	.025	.027	.017	.863
gender	.262	.254	.288	.478	1.918
team tenure	-.007	-.008	-.006	-.008	-1.464
workload	.044	.072	-.008	.148	1.454
transformational leadership(a)			.200*	.102	1.091
job Meaningfulness(b)		.158*	.160*	.112	1.454
task autonomy(c)		-.113*	-.145**	-.137*	-2.442
task feedback(d)		-.195**	-.195**	-.165*	-2.158
a * b				.169*	2.225
a * c				-.178*	-2.569
a* d				-.132	-1.722
F	4.943***	4.921***	4.804*	3.208*	
R ²	.261	.360	.391	.450	
Adjusted R ²	.208	.293	.320	.365	
ΔR ²	.261	.099	.031	.058	

+ <0.1, * p<.05, ** p<.01, *** p<.001, N=636

First, job semantics had a positive (+) effect on team creativity. This implies that task identity and task importance play an important role in developing team creativity within an organization. Creativity is the ability to combine or interlock employee ideas in a unique way, not in existing organizations. In addition, it is possible that these new and inventive abilities cannot be achieved only by individual employees, but rather by the combination of various knowledge and perspectives within the team, as shown by previous studies (Payne, 1990; Caudron, 1994)

Second, it was shown that job autonomy had a negative effect on team creativity. In the case of job autonomy, it is presented as mixed results in existing creativity studies, which may also be related to the characteristics of job autonomy. In the course of carrying out the tasks, it can be said that the characteristic that the employees are provided with substantial freedom, independence, and free discretion is given to the discretionary category in which the employee can act independently. However, if the staff is not set on maturity, motivation, and aggressiveness in their work (Hackman & Oldham, 1980), it can have a negative impact on creativity. These results can be deduced from the work of Kelloway and Barling (1991). In that study, the autonomy of employees was negatively related to the job exhaustion phenomenon, which shows that they negatively affect job performance. In addition, Gaines and Jermier (1983) argue that autonomy is likely to result in a decrease in job achievement if it is judged that the employee's job is difficult.

Third, job feedback has a negative effect on team creativity. The performance of the task is not always made according to a certain plan, but it can be flexibly influenced by various external environments. Therefore, the relevance of job feedback cannot always be positive. In addition, since the quality and quantity of information input through job feedback during tasks is directly linked to the capabilities that individuals can cover, a reasonable amount of information and knowledge may be useful. This is because the research of Bulter (1987, 1988) suggests that the motivation of employees to perform tasks may be reduced according to job feedback, and the relevance of job feedback, quality, and individual competence have a complex impact. If job feedback is negatively affected, it may lower the competence and achievement of the individual and may even become a phenomenon of job exhaustion (Han & Goh, 2002).

Fourth, transformational leadership has a significant positive effect on the relationship between job meaning and team creativity. Leaders who engage in transformational leadership encourage changes in values and beliefs to think of new task challenges as new perspectives (Bass & Avolio, 1990). This leads organizational members to approach problems in new ways rather than monotonously repeating

the old way of working, and eventually it can have a synergetic effect on technical diversity, job identity, and job importance. In other words, the figure of the transformational leader can encourage the difference of thought in technological diversity, and job identity can help new advances by suggesting goals and visions for the task. In addition, job importance helps to encourage new ideas (Bass & Avolio, 1990) as members show support, sympathy and consideration on the pressures felt for performance or in overcoming the fears of the present challenges.

Fifth, transformational leadership has a significant negative effect on controlling the relationship between job autonomy and team creativity. Job autonomy is closely related to job accountability (Hackman & Oldham, 1980). In other words, it is permissible to control and decide for themselves their own tasks through job autonomy, and at the same time, motivation to increase self-determination is given as tasks are performed. These results suggest that the influence of transformational leadership may seem to be a factor that hinders the autonomy of a members' job, which can have an adverse effect on creativity.

Finally, transformational leadership has a meaningless effect on controlling the relationship between job feedback and team creativity. In the case of job feedback, the effect of task performance is concentrated on the employees who perform the task. In other words, it can be seen as a factor to focus more on performance rather than to explore and utilize new directions, knowledge and technology. This is because, in terms of job feedback, employees are highly related to external rewards (money, position, etc.) from their standpoint, resulting in the achievement of tasks (Deci, Koestner, & Ryan, 1999; Han & Ko, 2002). Job feedback that is closer to external rewards than implicit rewards associated with creativity (Amabile, 1982), self-development (Ryan, 1993), high performance (Utman, 1997), and happiness (Deci & Ryan, 1991). It can be said that the work promotion and the active support of the worker cannot act as an influence.

6. Conclusion and Research Limitations

The results of this study provide the following theoretical implications:

First, in this study, the empirical study on the relationship between the core job characteristics in the organization and the team creativity has confirmed that it plays a part in contributing to team creativity by setting transformational leadership as a control variable. In Korea, there are only a few studies focusing on organizational performance such as job satisfaction and organizational commitment rather than team creativity research, and research on transformational

leadership, core job characteristics, and creativity are lacking. Therefore, it is meaningful that to have more a realistic approach to identify the relationships between organizational structural characteristics and leadership. In addition, we conducted a questionnaire based on the team. This is because it reflects the organizational characteristics of Korea and can be said that it is more suitable for understanding the organization and applying the results than other individual level studies.

Second, the study of the teams' creativity deeply considers the characteristics of the organizational structure as a factor affecting creativity in the organization. If we look at the factors of core job characteristics, each factor does not always have a positive effect on team creativity. In particular, in the case of job autonomy, team creativity is negative. In the follow-up study, it is necessary to study the organizational culture related to job autonomy, the background and maturity of employees, and so on. Based on the results, it can be said that it is desirable to design the organization considering the characteristic of the job as the organization and the department where the creativity is emphasized.

Finally, transformational leadership is leadership that keeps organizations healthy by encouraging the morale of their members and showing them human interest. However, this leadership cannot always be positive depending on the characteristics of the job. Therefore, coordination and use of leadership in consideration of core job characteristics will positively improve organizational creativity.

Despite the theoretical and practical implications, this study has several limitations.

First, there is a limit to the generalization of the results of the study because the subject of the survey is a limited sample of the retail industry. Therefore, it is necessary to carry out a comparative analysis study on various regions, industries and industries. In addition, cross-sectional study method at a certain point of time has been carried out, but in future studies, explanation processes of causal relationships such as maturity and learning should be supplemented through a longitudinal study method.

Second, core job characteristics and transformational leadership do not influence team creativity. Therefore, it is necessary to investigate directly or indirectly on the influence of various organizational effectiveness such as organizational culture, organizational support recognition, and empowerment, for future research.

Finally, research on creativity and innovation should be linked to each other in a more macroscopic perspective. Creativity is a fundamental condition of innovation and is the starting point for innovative behavior. In addition, the 'direct and immediate member encouragement of the manager', which is a positive factor in the organization, is likely to

affect the creativity of the individual or the team, but the 'structure to help create new ideas' strengthens the creativity of the individual, there is a high probability that it will have an impact. In this study, team creativity has been studied as a dependent variable, but it is necessary to develop a relationship between team creativity and team innovation behavior in the future.

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