
Managing Team Diversity: Effects of Shared Leadership and Dynamic Capability^a

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Abstract

The purpose of this study is to consider the implications of diversity management by investigating the influence of team diversity on team effectiveness and the mediating effects of shared leadership and team dynamic capability. Sixty four teams were selected from Korean companies and 292 team members participated in the questionnaire survey. Collected data was analyzed using SPSS 23. The results of the study shows that there were significant correlations among team diversity, shared leadership, team dynamic capability and team effectiveness, and that team diversity had a negative correlation with the rest of the variables. Second, team diversity had a negative influence both on shared leadership and team effectiveness, and did not have a valid influence on team dynamic capability. Shared leadership and team dynamic capability both had a positive influence on team effectiveness. Third, shared leadership partially mediated between team diversity and team effectiveness, and fully mediated team diversity and team dynamic capability. Lastly, shared leadership and team dynamic capability had double mediated effect between team diversity and team effectiveness. The findings of the study implies that in order to minimize the negative influence of team diversity, sharing visions, objectives, task method or norms with team members is crucial and providing diversity management systems and educational programs could be a starting point for developing organizational culture for managing team diversity. Facilitating shared leadership among team members will enhance team dynamic capability that could bring out the positive influence of team diversity and ultimately lead to company's success.

Keywords: Team diversity, team effectiveness, shared leadership, dynamic capability

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Introduction

The 21st century is faced with dynamic changes and challenges through global competition, rapid development of information technology, diversification of social composition and the proliferation of humanistic values. In the course of this global change, companies are faced with a situation in which they have to prepare for uncertainties that did not previously exist. To adapt to the constantly changing business environment, companies need to focus on maintaining an efficient organizational structure and use a 'team system'. Thus, it has become critical to explore the factors that can improve and develop effective team building.

Numerous studies (i.e., Ancona & Caldwell, 1992; Braun, Peus, Weisweiler, & Frey, 2013; Campion, Medsker, & Higgs, 1993; Cheney, 1984; Cohen & Bailey, 1997; Gladstein, 1984; Gundersen, Hellesoy, & Raeder, 2012; Guzzo & Dickson, 1996; Hackman, 1987; Matieu, Ieffner, Goodwin, Salas, & Cannon-Bowers, 2000) have considered influencing factors related to team effectiveness. However, since studies on team effectiveness show that it is primarily determined by job design or process-related factors (Silver & Bufanio, 1996), there is not much research on the relationship between team composition and team effectiveness, which is another important factor in improving team success (Mayo, 1998). Kozlowski and Sales (1997) argue that team building has a strong influence on team effectiveness by using the attributes of individual members to the benefit of the team. In other words, team effectiveness can vary depending on the diversity of members in the team.

Since teams in organizations today have become more diverse as result of mergers, acquisitions, joint ventures, and cross-functional project teams, team diversity has been emphasized as an important feature of team effectiveness. Current studies on the effects of diversity on team members have produced contradictory results (Levi, 2010). Pfeffer (1983) takes the view that heterogeneity of team organization, that is, diversity, or working with people of different backgrounds, is a dangerous factor to the enterprise. This diversity can have both a positive and negative impact on team effectiveness. Nevertheless, Levi (2010) argues for the existence and management of diversity within the organization. While diversity is a natural reality for most organizations, the importance is to organize groups with various members so that teams move more efficiently.

Diversity is an essential factor that must be managed to ensure the perpetuation of the enterprise and its continuous competitive advantage. In this aspect, it is important to add an understanding of the relationship between diversity, team processes and effectiveness. Studies have yet to produce consistent results in the research outcomes. This requires an accurate conceptualization and differentiation of the type of diversity (Harrison & Klein, 2007), more attention to depth attributes such as the values and attitudes of the members (Harrison, Price, Gavin, & Florey, 2002; van Knippenberg & Schippers, 2007), and additional research on the process elements and components that control or mediate the effects of diversity on team effectiveness (Joshi & Roh, 2009; van Knippenberg & Schippers, 2007).

Existing diversity studies have mainly demonstrated direct effects between the variables that make up team diversity and team effectiveness variables (van Knippenberg, Dreu, & Homan, 2004; Williams & O'Reilly, 1998). Recently, as part of efforts to overcome these limitations, studies have been conducted to verify various mediators and moderating variables, but these studies are limited in that they do not take into account leadership in which is the most important situational factor is understanding group dynamics. Leadership has been addressed as an important topic in relation to organizational effectiveness and has been identified as the most important variable, especially in relation to the effectiveness of groups or teams (Cohen & Bailey, 1997).

Understanding the relationship between team members and team leaders, that is, understanding leadership, is important to the way diversity affects teams (Tsui, Egan, & Xin, 1995). In line with the suggestions of previous studies (Homan, van Knippenberg, van Kleef, & De Dreu, 2007; Williams & O'Reilly, 1998), this study focused on leadership variables, specifically how fully active mutual leadership relationships are within the team (Carson, Tesluk, & Marrone, 2007). The mediating effects of shared leadership variables are examined. Shared leadership is a theory that has recently attracted much attention in leadership studies, and includes a new interpretation of leadership arguing that teams can be effective when leadership is shared and distributed to team members beyond the traditional and vertical leadership paradigm.

Shared leadership influences team effectiveness by activating the sharing of information, experience, knowledge and skills among team members through the belief that shared leadership can compensate for the shortcomings of each member, and that not only the team leader but also all members can be leaders. In other words, shared leadership promotes the use of a variety of resources, or diversity, of team members. In this respect, the diversity of team composition is meaningful as an effective resource for the implementation of the strategy and performance of the organization (McMahan, Bell, & Virick, 1998), and shared leadership influences the use of the diversity of the team. Thus, it can be inferred that dynamic capacity which emphasizes the importance of processes and routines for using existing resources to achieve performance may also impact team effectiveness (Eisenhardt & Martin, 2000; O'Reilly & Tushman, 2004). Dynamic capability is one of the two theoretical perspectives that explain the effectiveness of management. Even if the organization has a distinctive resource, the dynamic capability can be created only by the unique ability to arrange, use and apply the resources according to the purpose of the organization (Eisenhart & Martin, 2000; Zhan & Luo, 2008).

Regarding team diversity as an input for team performance, team dynamics can be a valid factor in the relationship between team diversity and team effectiveness. In addition, the development of knowledge utilization processes and routines for the use of existing resources, which explains team dynamic capabilities, requires the sharing and activation of various resources of team members. Homan, van Knippenberg, van Kleef, and De Dreu (2007) found that positive effects on diversity in teams arise from in-depth diversity of

abilities, knowledge and skills. In other words, cognitively diverse teams in four aspects, such as absorption capacity, essential diversity, network diversity and group thinking, have more pre-requisites for innovation, such as information creation, processing and application. It is more academically meaningful to focus on the intervention variables that mediate or control the relationship between variables than the direct influencing relationship between the two variables to confirm the effect of double-sided factor, such as diversity on the team effectiveness.

In this vein, this study aimed to verify the mediating effect of team dynamic capability on a relationship between team diversity and team effectiveness, as well as the effect of shared leadership and dynamic capability as a process factor and elements on team effectiveness.

Literature review

Effects of team diversity on team effectiveness

Diversity is a group that includes the individual's attributes (race, gender, etc.) as well as differences such as education, longevity and marital status, including differences in values, beliefs and attitudes (van Knippenberg & Schippers, 2007). In other words, diversity is a concept that explains differences in knowledge, skills, abilities, experiences, etc. of the individuals who make up an organization or a team. Based on the categorization-elaboration model (van Knippenberg & Schippers, 2007), workgroup or team diversity is defined as the degree to which group's characteristics reflect objective or subjective differences between people within the group.

There are two traditional perspective that exist in diversity research. Social categorization perspective asserts that similarities and differences between group members form the basis for distinguishing between similar ingroup members and dissimilar outgroup members. Research (O'Reilly, Caldwell, & Barnett, 1989) show that people tend to favor ingroup members over outgroup members in that group members are more satisfied with and attracted to the group when they have similar attributes. In contrast to the social categorization perspective, the information/decision-making perspective focuses on the positive effects of work group diversity. Diverse groups have broader range of resources, such as knowledge, skills, competencies, and these will be valuable in solving unconventional problems.

Many different scholars have different definition of team effectiveness (Cohen & Bailey, 1997; Sundstorm, De Meuse, & Futrell, 1990). However, team effectiveness is mainly defined in terms of 'team's output,' 'attitude', and 'behavior'. For team effectiveness, there are three main elements: team commitment, team innovation and perceived team results.

First, team commitment is the most presented variable used in team effectiveness

studies (Cohen & Bailey, 1997; Cordery, Mueller, & Smith, 1991; Fry & Slocum, 1984). The immersion of team members is considered to be essential for the team's long-term success (Pearce & Manz, 2005). Team commitment is defined as the psychological attachment that a team member feels toward a team (Pearce & Herbik, 2004), which, in turn, is defined as the strength of identity and involvement of a team that team members perceive (Bishop, Scott, & Burroughs, 2000). Team commitment can be characterized by strong trust and acceptance of team members' goals and values, a tendency to make more efforts for the team and a strong aspiration to maintain identity as a team member (Bishop et al., 2000).

Second, team innovation is the act of deliberately creating, introducing and applying new ideas (Scott & Bruce, 1994), creating changes that are believed to be new in an organization-related environment (van de Ven, 1986), and which attempts to suggest ideas and behaviors and outline ways to implement them. Therefore, team innovation means team members actively adapt and utilize new ideas and processes for the improvement of team performance and better task performance (Scott & Bruce, 1994).

Third, for perceived team result, there are many studies that have been conducted (e.g. Henderson & Lee, 1992; Janz, Colquitt, & Noe, 1997). In particular, Henderson and Lee (1992) defined team performance as the level of team operation efficiency, budget and schedule achievement level, quantity and quality of work and ability to achieve goals and measured perceived team performance. Therefore, in this study, the perceived subjective evaluation of team performance was measured. The perceived team performance, as defined in this study, is the result of the team's input of various resources for the purpose or goal that the team must achieve and the subjective performance perceived by the team on the outcome of the process (Henderson & Lee, 1992).

Although different aspects of diversity have different effects on team effectiveness in relation to this phenomenon of team diversity, the general conclusion about the relationship between diversity and team effectiveness is that the diversity of team members can have both positive and negative effects. In teams with a high level diversity among team members and have many members who have various types of knowledge, the varying knowledge and experiences of the members increase the level of communication and cooperation because they increase the understanding of the needs and situations. In addition, information and decision-making perspectives suggest that diversity brings broader task-related knowledge, skills and perspectives as cognitive resources and that increased cognitive resources have a positive impact on team effectiveness (De Dreu & West, 2001).

Mediating effect of shared leadership and team dynamic capability

In order to understand the effects of diversity on the performance of a specific role in the interaction processes of a team, the common assumption of previous studies has been that diversity affects the relationship between heterogeneity caused by diversity and team effectiveness, and that it is necessary to consider the mediation process. This study examined

the mediating effect of dynamic capability and shared leadership between team diversity and team effectiveness.

Although there is limited research to identify the direct relationship between team dynamic capability and shared leadership, some studies related to organizational learning or team learning have inferred the relationship between the two variables. Argyris (1994) points out the problem of defensive thinking as an obstacle to learning. In this context, Edmondson (1999) suggests a 'shared belief' among members as a precondition for team learning to take place. It is important for team members to be free to actively express individual opinions, and shared beliefs, and that they will be perceived as facilitating team learning. Considering the characteristics of team learning, people believed that they make up for the shortages of each member. They encourage sharing of information, experience, knowledge and technology among team members through shared spirit and the belief that all members can become leaders. Thus, shared leadership can be a predictor of team dynamic capability which will ultimately lead to team effectiveness.

Fiol and Lyles (1985) found that dynamic capability, organizational learning and innovation are linked, while Ambrosini and Bowman(2009) found that dynamic capability is developed as an outcome of organizational experience and learning. A number of studies (see for example Eisenhardt & Martin, 2000; Zollo & Winter, 2002) argue that the intentional learning mechanism of experience plays an important role in creating and developing dynamic capabilities by creating new processes and routines. In the end, as they point out, dynamic capability arises from repeated learning and evolutionary processes through learning mechanisms. Therefore, learning is an important preconceived notion of dynamic capability (Teece, Pisano, & Shuen, 1997).

Despite the possibility of diversity as a leading factor for dynamic capability, there are not many studies that show a relationship between diversity and dynamic capability. In term of team dynamic capacity, there have been no studies related to dynamic capacity and performance at the team level, as previous studies on dynamic capability have been conducted mainly at the strategic and organizational levels (Gibson & Birkinshaw, 2004). However, the results of previous studies (Benner & Tushman, 2003; Gibson & Birkinshaw, 2004; He & Wong, 2004; Luo, 2002; Teece et al., 1997) suggest that organizational dynamic capability has a positive effect on organizational performance. In light of this, it can be similarly applied at the team level, which is the basic operating unit of the organization.

This study considers the diversity of team composition as a prerequisite to influencing shared leadership. Since shared leadership is based on the interdependence of the team members, it can be inferred that the diversity of members influences the shared leadership. While there are not many studies demonstrating the relationship between team diversity and shared leadership, Muethel, Gehrlein and Hoegl (2012) found that gender diversity and ethnic diversity are positively related to shared leadership in a study of 96 virtual teams and that age diversity had a negative impact on the overall effect.

Leadership influence occurs in the context of team members and assumes there are

followers of leadership or influenced people (Bedeian & Hunt, 2006). Shared leadership has an interdependent nature, where interdependence means mutual reciprocal dependence between two or more members. This interdependence is caused by the mutual need of information and support (Stewart, 1991) and mutual reinforcement allows team members to lead each other in a better direction for success (Heller & Firestone, 1995). The interdependence of shared leadership is to complement the role of physical or emotional aspects. In terms of physical aspects, members with different abilities and skills are able to complement each other's weaknesses through a variety of skills and abilities. Therefore, shared leadership has the effect that team members with different abilities, skills, and perspectives, that is, diverse team members can have mutual support and support from other members. From this point of view, it can be inferred that shared leadership has enough potential as a mediator to influence team effectiveness with diversity as a leading factor.

As a number of researchers agreed that shared leadership has a strong influence on team effectiveness (e.g. Avolio, Jung, Murry, & Sivasubramaniam, 1996; Ensley, Pearson, & Pearce, 2003; Pearce, Manz, & Sims, 2008) and as shared leadership has emerged as a concept of alternative leadership for shared empathy, there are a lot of studies conducted by multiple researchers. Carson et al. (2007) conducted a survey of consulting groups composed of MBA students to see the relationship between shared leadership and vertical leadership and how such leadership actually affects performance. They found that, the higher the level of team internal environment (shared purpose, social support, voice), the higher the level of shared leadership in the team and that there is a correlation between shared leadership and team performance.

Since diversity explains differences in knowledge, skills, abilities, experiences, etc. of the individuals who make up a team, team diversity may influence team dynamic capability. Cohen and Levinthal (1990) explain the relationship between diversity and absorptive capacity, as interpersonal interactions with diverse and different knowledge structures increase organizational capacity to create new associations and connections. It is possible to deduce that team dynamic capability can be affected by team diversity in terms of absorptive capacity, information acquisition capacity, and adaptive capacity.

Method

Participants

The survey questionnaire was distributed to small scaled teams that were suitable for the research purpose. Team with over three people and less than 20 people were chosen. The questionnaire was distributed to 87 teams from 39 companies, and 326 questionnaires were collected from 79 teams. Male participants comprised 68.2% of the sample, while females comprised 31.8%. The distribution by age was 13.7% for 20-29 years old, 56.5% for 30-39

years old, 28.1% for 40-49 years old, and 1.7% for over 50 years old. The distribution by educational background was 1.7% for high school graduates, 82.2% for college graduates, and 16.4% for postgraduates. The distribution by rank was 24.3% for staff, 54.1% for middle manager, and 21.2% for senior managers. In the total number of years of work experience, 29.8% for 1-4 years, 31.5% 5-10 years, and 21.6% for 10-15 years. The distribution of working years in the current team was 28.4% for 1-2 years, 24.7% for 3-4 years, and 23.3% for less than one year.

Instruments

Team diversity

To measure team diversity, in-depth diversity which includes value diversity and perceptual diversity was used. Value diversity means the extent to which team members do not agree with their beliefs about the task, method of work, purpose and goals of the group to which they belong and visions (Jehn, Northcraft, & Neale, 1999). In order to measure value diversity, six items of Jehn et al. (1999) were used. Perceptual diversity measures how members perceive each other in terms of objective differences, attributes, beliefs, etc. (Clark, 2001). In this study, three items (beliefs, abilities, and knowledge differences) by Harrison, Price, and Bell (1998) were also used.

Team effectiveness

Team commitment, representing commitment to a team member, can be defined as a strong belief and acceptance of a specific goal and value set by the team, a willingness to work hard for the team, and a desire to belong to the team. Using the items developed by Bishop and Scott (2000), seven questionnaires were constructed and measured. Team innovation is defined as the extent to which members voluntarily try to suggest new ideas or actions in relation to their work in the team and actively participate in the innovation process, and the items of Scott and Bruce (1994) were used in this study. This research measured the objective performance of the team as perceived by the team members. Five questions which asks the extent to which team members perceived the quality and achievement of team outcomes by Henderson and Lee (1992) was used for this study.

Shared leadership

To measure shared leadership, the questionnaire items of Hiller, Day, & Vance (2006) were used. The questionnaire consists of 25 questions, covering four types of leadership influences and the degree to which team members perceive them. The four sub-dimensions of leadership influence consist of planning and organizing, problem solving, support and care, and development and mentoring.

Team dynamic capability

Team dynamic capability is defined as the ability to utilize the existing resources of the team to create sustainable performance, the ability to build new team capabilities and the ability to achieve higher levels of learning by seeking and exploiting skills or knowledge at the same time. The questionnaire that were used in the study of Luo (2002) according to the team dimension was utilized. The questionnaire consists of 11 items including six items related to the utilization aspect of existing resources and five items related to the new competency search aspect by dividing the team dynamic capability into two dimensions.

Data analysis

Statistical analysis was conducted using SPSS 23. The analysis phase was as follows. First, frequency analysis was performed to identify demographic characteristics of survey respondents. Second, the validity and reliability of the measurement tool were verified. In order to verify the validity, exploratory factor analysis using principal component analysis and Varimax's quadrature rotation method was performed. Third, descriptive statistical analysis was conducted to derive the mean and standard deviation of the measured variables and to identify the distribution. Fourth, an independent sample t-test and one-way ANOVA were performed to verify differences among major variables according to demographic characteristics. Fifth, the correlation between major variables was identified by deriving Pearson correlation coefficient. Sixth, multiple regression analysis was performed to verify the relationship between the independent and dependent variables established in this study. Seventh, the mediating effect analysis was conducted to identify the indirect effects of independent variables on dependent variables. In particular, the model of this study is a serial multiple mediator model with two parameters between independent and dependent variables. All dual mediating effects were analyzed. In order to analyze the mediation model, a total of three regression equations were required. Therefore, a regression coefficient for each path was derived through a total of three steps. The first step is the coefficient derivation and statistical significance test for the independent variables predicting the first parameter. The regression verifies the relationship between the independent variable and the first parameter. The second step is to derive the regression coefficients of the independent and first parameters and predict the statistical significance of the second parameter. The third step is to derive the regression coefficients of the independent variable, the first parameter, the second parameter, and the statistical significance test to predict the dependent variable. The bootstrapping method was used to test the statistical significance of the coefficients derived from the three-step regression equation, and a bias corrected confidence intervals at the 95% confidence level was applied to a total of 5,000 bootstrapping values. If the value did not contain 0, they were considered to be statistically significant. For the mediating effect, we used PROCESS, a macro of the SPSS program.

Results

Pearson's correlation coefficient was used to analyze the correlations between research variables. The correlation between variables is needed to establish the significance of the influence relations between variables. If there is no correlation, it is meaningless to analyze the influence relations. The correlation between the study variables is shown in Table 1. In the results of the correlation analysis, the value diversity showed a negative correlation with the remaining variables except for the whole team diversity at the level of $r = -.123 \sim -.817$. In the case of team diversity as a whole, negative correlation was found at the level of $r = -.477 \sim -.567$, with the exception of value diversity and perceived diversity. The relationship between the remaining variables was found to be significantly correlated at $r = .123 \sim .964$.

The relationship between team diversity and shared leadership is negatively correlated with the level of shared leadership ($-.562$), team dynamic capability ($-.522$), and team effectiveness ($-.555$). Shared leadership has positive correlation with team dynamic capability ($.929$), with team effectiveness ($.927$) team dynamic capability has positive correlation team effectiveness ($.927$).

For some questionnaires, the correlation coefficient was .7 or higher. In the results confirming the possibility of multi-collinearity, the tolerance was $.099 \sim .944$. As the tolerance limit is 0.1 or more, in line with the general multi-collinearity judgment criterion, the problem of multi-collinearity is not large.

The first step is a process of verifying the relationship between the independent variable and the first mediator. A regression model was used to analyze the relationship between team diversity and the first mediator, shared leadership. As a result of the regression analysis, the regression model verification value was 60.361 ($p < .001$), and for the regression model was rejected. In other words, as team diversity (X) increases by 1, the first mediator, shared leadership, was found to have a negative influence relationship that decreased by 1.567, and this relationship was statistically significant at the level of $p < .001$. In other words, the relationship between team diversity and shared leadership was confirmed as a negative influence relationship in which the level of shared leadership decreased as the team diversity increased.

The second step is the process of putting the independent variable and the first parameter as predictors and examining the influence relation to the second parameter. Therefore, a regression model was set up to analyze the relationship between team diversity and the first mediator, shared leadership, as an independent variable and the second mediator, team dynamic capability.

As a result of the regression analysis, the regression model verification value was 330.695 ($p < .001$), and the regression model was rejected. If team diversity increases by 1 when controlling for shared leadership, the dynamic impact increases by .110, but it is not statistically significant. In other words, team diversity has no significant effect on team dynamic capability. On the other hand, shared leadership has a statistically significant effect on team dynamic capability ($b = .895$, $p < .001$). In other words, as the level of shared

leadership increases, it can be inferred that the team dynamic capability increases.

The third step is the process of putting the independent variable, the first mediator and the second mediator as predictors and examining the influence relation to the dependent variable. Therefore, a regression model was set up to analyze the influence of team diversity, the first mediator on shared leadership, the second mediator, team dynamic capability as a predictor and the influence on team effectiveness as a dependent variable.

As a result of the regression equation, the regression model test value was 353.112 ($p < .001$), and the null hypothesis for the regression model was rejected. First, team diversity negatively affects team effectiveness, which is statistically significant ($b = -.159, p < .05$). As the team diversity increases, team effectiveness decreases. In the case of shared leadership, team effectiveness was statistically significant ($b = .458, p < .001$), indicating that team effectiveness increased as the level of shared leadership increased. The results of this study are as follows. The effects of team dynamic capability on team effectiveness were statistically significant ($b = .483, p < .001$).

Table 1. Correlation matrix between variables

	Team diversity				Shared leadership				Team dynamic capability				Team effectiveness		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	1														
Team diversity	2	-.123	1												
	3	.737	.580	1											
	4	-.774	.146	-.536	1										
Shared leadership	5	-.785	.123	-.561	.913	1									
	6	-.791	.161	-.540	.857	.877	1								
	7	-.770	.179	-.511	.861	.897	.902	1							
	8	-.817	.159	-.562	.950	.964	.952	.957	1						
Team dynamic capability	9	-.771	.188	-.505	.863	.908	.878	.907	.930	1					
	10	-.752	.168	-.503	.789	.832	.796	.860	.857	.861	1				
	11	-.790	.185	-.522	.859	.904	.871	.917	.929	.969	.960	1			
Team effectiveness	12	-.797	.129	-.567	.827	.833	.897	.842	.889	.839	.799	.850	1		
	13	-.751	.205	-.477	.826	.860	.825	.865	.883	.877	.885	.913	.862	1	
	14	-.782	.151	-.539	.808	.858	.835	.829	.871	.860	.838	.881	.842	.862	1
	15	-.817	.170	-.555	.863	.895	.896	.890	.927	.904	.885	.927	.947	.956	.948

All variables were significant at $p < .05$ level (Variable Name: 1. Value diversity 2. Perceptual diversity 3. Team diversity overall 4. Planning and organizing 5. Problem solving 6. Support and care 7. Development and mentoring 8. Shared leadership whole 9. Leverage existing resources 10. New capability search 11. Team dynamic competency whole 12. Team commitment 13. Team innovation 14. Perceived team performance 15. Team effectiveness all)

There are four indirect effects: total indirect effect, first mediation path, second mediation path, and dual mediation path. The statistical significance of this effect was confirmed by the bias corrected value of 95% confidence level for 5,000 bootstrap samples. First, the 95% confidence interval (-1.119, -.392), of the size of the specific indirect effect ($X \rightarrow M1 \rightarrow Y$; $a_1b_1 = -1.567 (.458) = -.718$), of which effects team diversity through shared leadership via team effectiveness did not contain 0, so the indirect effect of negative (-) was significant. This result shows that the team with high level of team diversity lowered the shared leadership ($a_1 = -1.567, p = .000$) and the lower the shared leadership, the lower the team effectiveness level ($b_1 = .458, p = .000$). Consequently the team effectiveness is reduced by .718.

The indirect effect of the following $X \rightarrow M2 \rightarrow Y$ ($a_2b_2 = .110 (.483) = .053$) can be said to have no indirect effect because it included 0 in the bootstrap confidence interval (-.042, .172).

Next, the bootstrap confidence interval (-1.017, -.407) of the specific indirect effect ($a_1d_2b_2 = -1.567(.895) .483 = -.677$) of $X \rightarrow M1 \rightarrow M2 \rightarrow Y$ does not include 0 or negative (-) values. As the team diversity level increases, the level of shared leadership decreases, which in turn decreases the team's dynamic capability ($d_2 = .895, p = .000$), and this decrease team effectiveness ($b_2 = .483, p = .000$), and as a result, the team effectiveness decreased by .677. The total indirect effect is the sum of all the specific indirect effects ($-.718 - .677 + .053 = -1.342$) and the bootstrap confidence interval (-1.718, -.895) of total indirect effect.

Discussion

Team diversity negatively affects both team effectiveness and shared leadership and does not affect team dynamic capability. First, the negative impact of team diversity on team effectiveness is consistent with the results of previous studies. In this study, value diversity and perceived diversity were set as the main sub-variables of team diversity. As a result, these findings suggest that the more the team members perceive the team's goals, visions and methods of work in a heterogeneous manner, members are less engaged in the teams, creative activities are reduced, and the team's performance is undervalued. This negative effect on team diversity is supported by a number of previous studies (Harrison et al., 2002; Jehn, 1995; Jehn & Mannix, 2001; Kirkman & Shapiro, 2005; O'Reilly, Chatman, & Caldwell, 1991).

The results of the relationship between team diversity and shared leadership are significant in that there are no previous studies that deals directly with the relationship between value diversity, perceived diversity, and shared leadership. Team diversity negatively affects shared leadership in this study. To be specific, when the relative influence of team diversity on the regression coefficient was examined, the influence on the shared leadership was much higher than the team effectiveness. In this study, shared leadership is

characterized by interdependence, which is how active the leadership relationship is between members. In addition, Carson et al. (2007) present shared goals, social support and communication as the leading factors of shared leadership. In this aspect, the results of this study suggest that when the diversity of values and perceived diversity are high, that is, the perception of heterogeneity of beliefs in team visions, goals and method of work it, causes a different awareness of the goals that exist in the team. This can result in interdependence being neglected by a member of the task group performing the goal. Moreover, different perceptions of goals can serve as an impediment to the frequency and quality of communication within a team. In other words, team diversity can be interpreted as having a negative effect on shared leadership by lowering the level of interdependence and communication, which is the main feature of shared leadership and weakens the activation of leadership relations among members.

In order to improve team effectiveness (or reduce negative impacts) by managing and utilizing these complex and multidimensional features of diversity, organizations must first strive to transform existing members' perceptions of diversity. In addition to diversity education for members, it is necessary to promote changes in the organizational culture, diversity system and leadership roles. Education-related systems should be integrated and managed with diversity in order to promote diversity, increase compensation and provide evaluation. Moreover, efforts to revitalize shared leadership will be needed to reduce the negative effects of diversity. This can be realized by granting discretion to individuals who have professionalism. However, discretion is not handled by individuals but by leaders, so the empowerment of leaders is highly important. To do this, the organization must support the establishment of related systems and the training of leaders.

On the other hand, there is no direct relationship between team diversity and team dynamic capability. Team diversity discussed in this study explains team characteristics that include differences in the team's organizational characteristics, that is, the personal attributes of the individuals that make up the team as well as differences in knowledge, skills, abilities, experiences, values, beliefs and attitudes. Moreover, the composition of these teams has been regarded as an input resource to calculate the team's performance, mainly as an input factor in traditional team effectiveness research. In other words, the knowledge, skills, abilities, values and attitudes of the members in the team are meaningful as resources for the team to produce a specific performance. In this respect, the relationship between the two variables, which are not valid, is the result of several prior studies (Adner & Helfat, 2003; Cohen & Levinthal, 1990). Results of Lockett and Thompson (2001) argue that the heterogeneous, path-dependent resources that make up the organization have dynamic capability to the organization. In addition, studies show that the effects of team diversity on knowledge creation and functional diversity positively influences absorptive capacity, which is the concept of dynamic capability, and negatively affects sub-dimension of absorptive capacity through conflicts.

The results of this study can be found from the attributes of diversity classification.

Value diversity and perceived diversity in the classification criteria of diversity are the diversity with in-depth and invisible attributes. When team dynamic capability is considered as a team's resource exploration and resource utilization and its ability to make such an activity process or routine, value diversity and perceived diversity are not recognized as distinct resources, or information or methodology that are directly related to exploration and utilization processes and routines and so on. For example, in the case of functional diversity, it is demonstrated that knowledge, skills, abilities and experiences of members can be directly used to provide information resources for team dynamic capability or to create team activity routines. However, Loden and Rosener (1991) pointed out that individuals' beliefs, attitudes, emotions and values are potentially the most broadly influential factors, and Jehn et al. (1999) pointed out that if surface diversity is not linked to in-depth diversity, the value of diversity and perceived diversity of a team are likely to have a potent impact on team activity, and they argued that direct association cannot be explained theoretically. Therefore, managers and leaders who are interested in how their members perceive the organization's goals, visions, methods of work and norms, are working to establish systems related to visions, core values and internalization so that members can share and integrate them.

The following shared leadership has a positive effect on both team effectiveness and team dynamic capability. In particular, the influence of the regression coefficient on the team dynamic capability was higher than the team effectiveness. The results of this study are based on the mutual dependence characteristics of shared leadership and the belief that mutual support and support among members can be expanded. As the shared leadership relationship is activated, the members of the team are more immersed in the team to which they belong, leading to more creative activities that improve the performance of the team and recognition that the team performance created through such activities is more positive. Moreover, the team with shared leadership increases active usage of existing knowledge and new capability search activities to improve performance.

These findings are consistent with the results of previous studies (Avolio et al., 1996; Carson et al., 2007; Sivasubramaniam, Murry, Avolio, & Jung, 2002) on the relationship between shared leadership and team effectiveness. This study expands the results of previous studies on shared leadership, team learning, and team dynamic capability by identifying the direct impact of shared leadership and team dynamic capability.

The results of previous studies on shared leadership, team learning and team dynamic capability identify the direct impact of shared leadership and team dynamic capability. Shared leadership influences team learning or team learning behavior by enabling all members, including leaders, to share knowledge, skills, information and experiences among team members through a shared spirit. It can affect team dynamic capability by creating new processes and routines through the iterative and evolutionary process of team learning (Eisenhardt & Martin, 2000; Zollo & Winter, 2002). This study suggests the possibility of this shared leadership, team learning and the influence of team dynamic capability. In terms of contextual aspects in which leadership in the team is exerted, it affects shared purpose,

supportive team atmosphere, productive communication and remark. The study supports the results of this research in that it shows that shared leadership receiving leadership ability is a leading factor of team dynamic capability. This is because team members share common goals and responsibilities. Less hierarchal and more open communication means that information is freely communicated, and team leadership is exercised not just by formal leaders, strengthening dynamic capability.

As described earlier, organizations should give their members discretion and impingement to promote shared leadership. However, this will be more effective when conducted in parallel with the organization's culture. Therefore, the team leader should try to direct the team and the behavioral norms/rules of its members, so that they can be internalized in the members' actions through continuously sharing with the members. Moreover, the transition of these cultural elements will require a lot of time and effort, so the management should provide continuous support and attention.

Finally, results confirmed that team dynamic capability has a positive effect on team effectiveness. These results suggest that dynamic capability has a positive effect on organizational performance (Allred, Fawcett, Wallin, & Magnan, 2011; Eisenhardt & Martin, 2000; Heimeriks & Duysters, 2007; Pavlou & El Sawy, 2011; Teece et al., 1997). Companies should create sustained performance based on superior competitive advantage. However, in today's business environment, where uncertainty is increasing and the boundaries of corporate competition are falling, businesses today can be eliminated at any time. In this sense, if a team, which is the optimal unit of performance creation that a company has built to respond quickly and effectively to such a business environment, adheres to routines based on past successes, companies face limits of growth and the possibility of culling becomes high. Therefore, leaders must build and support a team environment that enables teams to increase their dynamic capabilities, explore new resources on their own and better coordinate, integrate, learn and relocate their resources.

Shared leadership partially mediated the relationship between team diversity and team effectiveness. In addition, shared leadership was found to mediate the relationship between team diversity and team dynamic capability, and it was found that the relationship between team diversity and team effectiveness was double mediated with team dynamic capability. This study identifies another mechanism by which team diversity reaches team effectiveness by demonstrating the effects of team diversity through shared leadership and team dynamic capability through mediating effects.

First, shared leadership has a relatively high indirect effect on shared team leadership rather than a direct effect on team diversity and team effectiveness, so team diversity has a different effect on team effectiveness depending on the mediating effect of shared leadership. This can be interpreted as that the team effectiveness is lowered it is difficult to share the goals and responsibilities of team members, faith in interdependence and activation of mutual leadership influence.

In addition, team diversity has no direct effect on team dynamic capability, so shared

leadership is found to mediate the relationship between team diversity and team dynamic capability. In other words, the difference in values, beliefs and attitudes toward the team's goals and visions do not directly affect the formation of the team's dynamic capability, but rather affect the process of lowering the level of shared leadership. This lowers the team's dynamic capability by lowering the perception of quality, lowering the frequency and quality of communication among members and making it difficult to establish interdependence. In addition, the relationship between team diversity and team effectiveness can be confirmed through shared leadership and team dynamic capability. The direct effect between team diversity and team effectiveness is comparably lower than the indirect effect by dual mediation path. This is because, as discussed above, the differences in values, beliefs and attitudes of members due to team diversity do not directly lower team effectiveness, but rather they lower the activation of shared leadership so that team members can search for resources existing inside and outside the organization. It can be interpreted as reducing team effort by reducing the effort to switch and making it harder to develop efficient use routines.

It is difficult to find prior research that considers the mediation of shared leadership and team dynamic capability related to team diversity and team effectiveness. Team learning is a preconceived notion of team dynamic capability (Teece et al., 1997), which supports this study. Nicolaidis et al. (2014) and Wang, Waldman, and Zhang (2014) conducted a meta-analysis of shared leadership empirical research results, team efficacy, group empowerment, team trust, psychological stability and mutual respect as mediating variables between shared leadership and team performance. The results of this study suggest that there is an additional mediation path in the relationship between shared leadership and team effectiveness.

In this way, the shared leadership and team dynamic capability in this study are factors to that increase team effectiveness. As a relatively recently proposed concept, the team, is the optimal unit for creating the performance of the company, so strengthening the capacity to explore, coordinate, integrate and relocate resources within and outside the team, through the transfer of authority, can lead to higher team members' immersion in the team, team innovation and team performance. Moreover, it can play an important role in reducing the negative effects of team diversity on team effectiveness.

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Korean Abstract

팀 다양성과 팀 효과성과의 관계에서 공유리더십과 팀 동적역량의 매개효과

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본 연구는 팀 구성원들의 다양성, 공유리더십, 팀 동적역량, 팀 효과성과의 영향관계를 파악하고, 공유리더십과 팀 동적역량의 매개효과를 검증하는데 목적을 두었다. 국내 기업 사무직에 종사하는 292명 64개팀을 대상으로 설문 조사하였고, 회귀분석과 연속다중매개분석을 SPSS 23.0 통계분석 프로그램을 활용하여 분석하였다. 연구분석결과 첫째, 팀 다양성, 공유리더십, 팀 동적역량, 팀 효과성에 대해 상관관계를 분석한 결과 모두가 유의한 상관관계를 보였으며 이중 팀 다양성은 나머지 변인 모두와 음의 상관관계를 갖는 것으로 나타났다. 둘째, 팀 다양성은 공유리더십과 팀 효과성에 부정적인 영향을 미치는 것으로 나타났고, 팀 동적역량에는 유효한 영향을 미치지 못하는 것으로 확인되었다. 또한 공유리더십과 팀 동적역량은 모두 팀 효과성에 긍정적인 영향을 미치는 것으로 나타났다. 셋째, 공유리더십은 팀 다양성과 팀 효과성을 부분매개하고, 팀 다양성과 팀 동적역량을 완전매개 하는 것으로 나타났다. 특히 공유리더십과 팀 동적역량은 팀 다양성과 팀 효과성과의 관계를 이중매개하는 것이 확인되었다. 이러한 연구결과는 기업의 성과단위인 팀이 목표와 책임의 공유, 수평적인 의사소통, 권한이양을 통한 구성원간 리더십 영향력의 활성화를 이루고, 자원을 탐색, 조정, 통합, 재배치하는 역량을 강화하게 된다면 더 높은 팀 효과성을 기대할 수 있으며, 팀 다양성의 부정적 효과를 줄이는 중요한 역할을 할 수 있음을 시사한다.

주요어: 팀 다양성, 공유리더십, 팀 동적역량, 팀 효과성
