진성리더십이 창의성에 미치는 영향:
심리적 안전과 협력행동의 다중매개효과

The Effect of Authentic Leadership on Creativity: the Multiple Mediating Effect of Psychological Safety and Cooperation Behavior

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요약
본 연구의 목적은 기업의 혁신 수단으로서 구성원들의 창의성을 높이기 위해서 진성리더십이 창의성에 미치는 영향과 심리적 안전, 협력행동의 매개효과를 실증하는 것이다. 각 변인별 관련 이론 및 선행 연구를 토대로 가설을 설정하였다. 국내 기업 근무자 353명에게 수집한 자료들 CFA를 통해 신뢰도와 타당성을 검증하였고, 가설검증을 위해 SPSS25, AMOS25, Macro Process3.0을 사용하였다. 연구 모형에 대한 가설 검증 결과 진성리더십은 심리적 안전, 협력행동, 창의성에 유의한 영향을 주는 것으로 나타났으며, 심리적 안전과 협력행동의 매개효과도 유의한 것으로 나타났다. 본 연구는 진성리더십이 조직원들에게 어떤 과정을 거쳐 창의성을 높이는지를 창의성의 요인분석적 모델 중 내재적 동기부여를 중심으로 검증한 결과 구성원의 창의성을 높이기 위한 조직문화 변화를 통해 높일 수 있는 방향성을 제시하였다는 점에서 연구의 의미를 찾을 수 있다.

■ 중심어 : 진성리더십 | 창의성 | 심리적 안전 | 협력행동 |

Abstract

The purpose of this study is to demonstrate the effects of authentic leadership on creativity, psychological safety, and the mediating effects of cooperative behavior in order to enhance the creativity of personnel as a means of innovation in enterprises. The hypothesis was established based on the theory and prior study of authentic leadership, creativity, psychological safety, cooperation behavior. The data collected from 353 employees of domestic enterprises were verified for reliability and validity through CFA, SPSS 25, and AMOS 25. Macro Process 3.0 was used for hypothesis testing. Verification of the hypothesis of the study model showed that authentic leadership had a significant positive effect on psychological safety, cooperation behavior and creativity, and that the mediating effect of psychological safety and cooperation behavior was also significant. The significance of this study can be found in the fact that the impact of authentic leadership has been verified based on motivation among the CMC (Componential Model of Creativity) and that it has suggested that creativity of an organization’s personnel may be enhanced by changing organizational culture through leadership.

■ keyword : Authentic Leadership | Creativity | Psychological Safety | Cooperation Behavior |
I. Introduction

Today’s business environment, represented by VUCA and Digital Transformation, is difficult to respond to with only structured information and processes from the 20th century. Creative management is emerging as a new alternative to building a creative organizational culture, responding to markets and customers through the creation of strategies based on creative thinking, and developing creative use of resources and innovation and creative value activities[1]. In addition to individual-level learning and knowledge for the development and manifestation of the creativity of members in this elevated organization, leadership has recently been consistently emphasized among many concepts presented and studied to enhance creativity[2]. Leadership is important among the various roles of leaders because the creativity of personnel defined as new and useful ideas applied within the organization is likely to be stimulated by leaders who constantly interact with team members in the field[3].

The U.S. Enron incident in early 2000 has been a reflection of the fact that moral hazard within the organization has been overlooked or underestimated[4]. This has led to deeper and more fundamental concerns and discussions about leadership, which have in turn resulted in a focus on authentic leadership. Among the various kinds of leadership, authentic leadership is notable because true leadership is centered on clear self-awareness and self-discipline, which was found to have a higher influence on members’ attitudes and achievements than traditional technique-oriented leadership[5][6].

This relationship between authentic leadership and creativity, according to social exchange theory, leads to a sense of obligation to repay members, and members’ creativity can also be seen as voluntary behavior that helps organizations[7]. In addition, authentic leadership without pretensions based on moral beliefs is likely to increase the creativity that is beneficial to the organization[8].

The reason for using the Component Model of Creativity (CMC) of Amabile as the basic framework of the study was that the CMC in Amabile[9][10] explicitly addressed social and environmental factors and working environment factors, as well as the major factors of creativity development that reflect both individual and context-oriented creativity studies[11]. The representative environmental factors of Amabile CMC that enhance creativity through intrinsic motivation, include direct and immediate encouragement from managers, safety from within the organization, cooperation and collaboration. These were expressed by environmental factors that occur within the organization, such as authentic leadership, psychological safety, and cooperation behavior.

Through this, we are going to identify the process and relationship of authentic leadership impacting creativity. We also pay attention to verify the mediated effectiveness of the environment in the organization in a mechanism in which authenticity leadership affects creativity, we want to verify the mediated effectiveness of psychological safety and cooperation behavior, which are representative environmental factors in the organization. Finally, through the impact and importance of authentic leadership, creativity, and the environment in the organization on
II. Theoretical Background and Research Hypotheses

1. Authentic Leadership and Creativity

Authentic leadership can be defined as a leader’s true self, values, and leadership that matches his words and actions[12]. According to Walumbwa et al.[13], four components of authentic leadership were presented: self-awareness, internalized moral perspective, relational transparency, and balanced information processing. Integrity is to act in accord with the true self, with one’s values, thoughts, feelings and beliefs[14], and a sincere leader truly understands and reflects himself and communicates transparent decisions and communications based on moral behavior[5][13]. Avolio & Gardner[15] said that authentic leadership supports frank communication and knowledge sharing with members of the organization, and that such a leader’s behavior has a positive effect on improving organizational creativity by promoting communication among team members[16]. In a study of office workers, Rego, Sousa, Marques, and & Cunha[17][18] identified the positive (+) relationship between authentic leadership and creativity as variables that can be formed by authentic leadership. In addition, Avolio & Gardner[15] said that authentic leadership stimulates frank and transparent communication and knowledge sharing among members, and knowledge sharing functions to enhance creativity.

Therefore, based on the related theories and prior studies, the following hypotheses were established.

Hypothesis 1: Authentic leadership will have a positive effect on Creativity.

2. Authentic Leadership, Psychological Safety and Cooperation Behavior

Psychological safety is defined as a psychological cognitive state in which members can express their opinions or arguments without worrying about the negative impact on an individual’s image, status and career[19]. Edmondson[20] saw the trust shared among members as a kind of assurance that the organization would not easily reject or negatively respond to members’ ideas or opinions.

The relationship between authentic leadership and psychological safety can be explained by processes of identification, empathy, positive behavior modeling, and social exchange with the leader[21], in which frankness shows the self as it is rather than external image. Management of the true leader allows members to perceive the leader as a transparent, open, predictable, and consistent person. This allows members to feel trust and psychological safety for the leader[22][23], and a sincere leader creates trust among members and highlights positivity to promote team creativity by creating a psychological safety zone where various opinions can be expressed[16]. In addition, Liu, Liao, and & Wei[24] suggested that the psychological safety of individuals due to authentic leadership affects the psychological safety climate of the team.
Therefore, based on the related theories and prior studies, the following hypotheses were established.

Hypothesis 2: Authentic leadership will have a positive effect on Psychological safety.

Cooperation Behavior can be expressed as a joint effort aimed at achieving an individual or organizational goal and aimed at achieving mutual benefit[25]. In order for the actions of two or more people to be realized through cooperation, interaction between personal motives and collective objectives is important[26]. Cooperation is the act of members interacting with each other to achieve common goals effectively with expertise[27].

Among the descriptions of the process in which cooperation behavior arises, and from the social psychology point of view, authentic leadership facilitates collaborative action, which provides increasing unity among group and organization members, and shows that it is a phenomenon that occurs when four factors are promoted: group trust, social favorability and emotional empathy among members, and self-presentation within the group[28].

Relational transparency when working with subordinates is an honest presentation of one’s true self to others[13], which values openness and integrity and allows those close to the leader to see their strengths and weaknesses together[29]. This behavior minimizes inappropriate expression of emotion, increases trust through information sharing and honest expression of one's thoughts and feelings[30], thereby promoting cooperation behavior.

Therefore, based on the related theories and prior studies, the following hypotheses were established.

Hypothesis 3: Authentic leadership will have a positive effect on Cooperation Behavior.

3. Psychological Safety, Cooperation Behavior and Creativity

Creativity is the creation of unique and useful ideas related to products and services and practices or processes within an organization [2][10]. It is defined as the ability to create knowledge to ensure an organization's continued competitiveness in a diversified society[31][32].

According to the theory of social exchange[33], when the one in the middle of the interaction provides a positive exchange, the other reciprocates in accordance with the reciprocity norms, which in turn induces a friendly exchange, creating a stable interaction. It can be expected that if psychological safety is enhanced by authentic leadership, members will be more likely to repay their bosses and organizations with creativity. Creativity can be largely burdensome and risky[35], new ways of thinking may bring ignored suggestions and threats from people invested in existing practices and procedures. Thus, in order for creativity to appear, it is very important to be sure that such challenging attempts do not result in personal risks and that psychological safety can play its role[35][36]. According to a prior study in Korea, members who feel psychological safety expressed more creativity by reducing the burden of expressing creativity[37], and said that an atmosphere that guarantees psychological safety enhances creativity and team performance[38].

Therefore, based on the related theories and prior studies, the following hypotheses were established.

Hypothesis 4: Psychological Safety will have a
positive effect on Creativity.

In order to increase the level of creativity of the entire organization, high individual creativity is important, but in order to develop organizational competitiveness, it is necessary to form a team that can create synergy through mutual cooperation among members and link it to organizational capabilities[39], which can be expressed as a cooperative action within the organization.

Zhou & George[40] said that cooperative actions and support between colleagues can promote creativity, and that cooperative actions can have a positive impact on creative product elicitation by boosting social interaction[41]. According to Ferrell[42], highly creative organizations value teamwork among their members and support cooperative relationships. According to a prior study in Korea, Ryu, Hyung Sun, Hah, Juhyun and Lee, Byung Lim[43] confirmed that the cooperative team environment, in which opinions and diversity among members are accepted, has a positive impact on creativity by allowing them to share their knowledge and experiences. Hahm, Kyue-Jeong and Yun, Wi-Seok[44] argued that increased cooperation, unity, attachment levels and participation among the members of the organization have a positive impact on collective creativity.

Therefore, based on the related theories and prior studies, the following hypotheses were established

Hypothesis 5: Cooperation Behavior will have a positive effect on Creativity.

4. The mediating effect of psychological safety and cooperation behavior between authentic leadership and creativity

As the social and environmental factors of the three creative manifestations of Amabile’s CMC[10] model, it can be inferred that psychological safety and cooperation behavior strengthen intrinsic motivation, thus mediating the relationship between authentic leadership and creativity. Kark and Carmeli[45] confirmed a study that high psychological safety strengthens creative work immersion. Liu, Liao, and Wei[24] confirmed that authentic leadership affects the team’s psychological safety culture that guarantees individual psychological safety, and Avolio, Luthans, and Walumbwa[5] confirmed that a variety of changes in the attitude and behavior of the members of the authentic leadership led to various changes. According to a prior study in Korea, personal creativity is found to have a positive effect on team creativity by interacting with creative character, technological diversity, and working environment [46], and in this process, authentic leadership has been found to have a positive effect, and the psychological safety of the members completely mediated this process. It also found that authentic leadership enhances the psychological safety of its members, which in turn manifests their creativity[47].

Therefore, based on the related theories and prior studies, the following hypotheses were established

Hypothesis 6: Psychological Safety will have a mediating effect between Authentic Leadership and Creativity.

Hypothesis 7: Cooperation Behavior will have a mediating effect between Authentic Leadership and Creativity.

Hypothesis 8: Cooperation Behavior will have a multiple mediating effect between Authentic Leadership and Creativity.
III. Research Method

1. Research Model

![Research Model Diagram]

Figure 1. shows the research model of this study

2. Defining and Measuring Variables

The variables used in this study were authentic leadership, psychological safety, cooperation behavior, and creativity, and the 5-point scale method (1=not at all, 2=not generally, 3=yes, 4=alternatively, 5=very so) was used to measure the variables.

2.1 Authentic Leadership

Authentic leadership has been defined as a leadership whose true self, values, and actions match[12]. The measuring tools were measured by modifying 16 items developed by Walumbwa et. al[13] to suit the purpose of this study. Examples questions include, "My boss is consistent between his beliefs and actions." and "My boss acts according to his inner moral standards."

2.2 Psychological safety

Psychological safety is defined as an implicit belief in which members may believe that no matter what opinions or ideas they may raise in the organization, other members will not have a negative response to their image, status, or career[20]. The measuring tools were created by modifying seven items developed by Edmondson[20] to suit the purpose of this study. Examples questions include, "I tend to help other employees do their jobs well." and "I tend to encourage and support my colleagues."

2.3 Cooperation Behavior

Cooperation Behavior defined the group’s task as a process in which members interact in order to achieve the goal more effectively[48]. The measuring tools were created by modifying the four items developed by Tjosvold[49] to suit the purpose of this study. Example questions include, "I tend to look for new ideas and methods to solve the problem." and "I can be called a role model of creativity."

2.4 Creativity

Creativity has been defined as the creation of unusual and useful ideas related to products and services, practices, or processes within an organization[10][2]. The measuring tools were created by modifying the four items utilized by Wu et al[50] to suit the purpose of this study. Example questions include, "I tend to help other employees do their jobs well." and "I tend to encourage and support my colleagues."

IV. Research Results

1. Demographic Characteristics of Samples

<table>
<thead>
<tr>
<th>Classification</th>
<th>N</th>
<th>%</th>
<th>Classification</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td>Education</td>
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<td>265</td>
<td>75.1</td>
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<td>College</td>
<td>23</td>
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<tr>
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<td>Bachelor’s or doctorate degree</td>
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<td></td>
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<tr>
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<td>43.9</td>
<td>University</td>
<td>250</td>
<td>70.8</td>
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<tr>
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<td>56.1</td>
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<td></td>
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<tr>
<td>30s</td>
<td>208</td>
<td>58.9</td>
<td></td>
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</tbody>
</table>
In this study, 353 responses were used in the final analysis from 400 surveys distributed to employees aged 19 or older who were engaged in general enterprises, in various industries and roles, such as sales, management and support, and research and development. The data collection was conducted for two weeks from March 15 to March 29, 2020. The demographic characteristics of those surveyed are as shown in [Table 1].

2. Verification of reliability and validity of measuring tools

The Cronbach’s Alpha coefficient was validated by the SPSS 25.0 program to verify the internal consistency of this study. The reliability analysis determined that the Cronbach’s Alpha value of all variables was higher than 0.7 as shown in [Table 2]. Reliability was ensured.

To verify the single dimensionality of the measurement variables used in this study, the AMOS 25.0 program was used for Confirmation Factor Analysis(CFA). [Table 2] Reliability and the confirmatory factor analysis results:

First, the goodness of fit for the study model was evaluated in consideration of the simplicity of the model, and the verification results were $\chi^2=364.213(p=0.000)$, GFI=.902, AGFI=.875, IFI=.951, CFI=.951, RMSEA=.059 The acceptance level of goodness of fit was excellent, so eligibility of the research was found. In addition, 2 variables with significantly lower factor loadings were eliminated and the t-values ($t>12.892$) were all statistically significant. As shown in [Table 2], the Average Variance Extracted (AVE) and the Construction Reliability (CR) respectively meet the reference values (AVE > .5, CR > .7) to verify the validity of the measured items, which are considered to have convergent validity.

3. Correlation analysis result of latent variables

Prior to the hypothesis test, looking at the correlation of the variables included in the study model showed that all the variables of authentic leadership, psychological safety, cooperation behavior, and creativity had positive correlation.
In particular, the higher the position, the higher authentic leadership, psychological safety, cooperation behavior, and creativity, and the higher the final education, the higher the authentic leadership, psychological safety, cooperation behavior, and creativity. In addition, gender, age, and job position are not related to the major variables.

4. Hypothesis test

In this study, the bootstrap method was used to verify the correlations, authentic leadership, psychological safety, cooperation behavior and creativity on SPSS Process Macro 3.0[51]. In addition, gender, education, job position, and age were used as control variables based on prior research. The results were presented as follows.

According to analysis of the results, authentic leadership gives significant positive effects on creativity (t=3.8489) psychological safety (t=9.5189) and cooperation behavior (t=5.7472) respectively. Therefore, hypotheses 1, 2 and 3 have been supported. The bootstrap confidence intervals do not include zero [.0917, .2832], [.2952, .4490], [.1414, .2886]. Therefore, this hypothesis test shows that authentic leadership increases creativity, psychological safety and cooperation behavior. It was also shown that psychological safety(t=5.2961) and cooperation behavior(t=7.9374) have a significantly positive relation with creativity. Therefore, hypotheses 4 and 5 were supported. The bootstrap confidence intervals do not include zero [.4679, .1487], [.6374, .2214]. Therefore, this hypothesis test shows that psychological safety and cooperation behavior increase creativity.

<table>
<thead>
<tr>
<th>Hypothesis (path)</th>
<th>Path coefficient</th>
<th>t</th>
<th>LLCI</th>
<th>ULCI</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>(AL → CR)</td>
<td>.1874</td>
<td>3.8489**</td>
<td>.0917</td>
<td>.2832</td>
<td>.0796</td>
</tr>
<tr>
<td>(AL → PS)</td>
<td>.3721</td>
<td>9.5189**</td>
<td>.2952</td>
<td>.4490</td>
<td>.2195</td>
</tr>
<tr>
<td>(AL → CB)</td>
<td>.2150</td>
<td>5.7472</td>
<td>1</td>
<td>.1414</td>
<td>.2886</td>
</tr>
<tr>
<td>(PS → CR)</td>
<td>.3412</td>
<td>5.2961*</td>
<td>.2145</td>
<td>.4679</td>
<td>.1487</td>
</tr>
<tr>
<td>(CB → CR)</td>
<td>.5108</td>
<td>7.9374**</td>
<td>.3843</td>
<td>.6374</td>
<td>.2214</td>
</tr>
</tbody>
</table>

Table 4. Hypothesis test

Table 5. Result of mediating effect by bootstrapping method

<table>
<thead>
<tr>
<th>Hypothesis (path)</th>
<th>Indirect effect</th>
<th>Bootstrap LLCI</th>
<th>Bootstrap ULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>(AL → PS → CR)</td>
<td>.1269</td>
<td>.0686</td>
<td>.1942</td>
</tr>
<tr>
<td>(AL → CB → CR)</td>
<td>.1098</td>
<td>.0607</td>
<td>.1655</td>
</tr>
<tr>
<td>(AL → PS → CB → CR)</td>
<td>.0739</td>
<td>.0359</td>
<td>.1213</td>
</tr>
</tbody>
</table>
The results of the analysis show that parameter psychological safety and the indirect effects of cooperation behavior are .1269, .1098 respectively and the bootstrap confidence intervals were also [.0686, .1942], [.0607, .1655] does not contain zero so hypothesis 6 and 7 have been supported. Therefore, psychological safety and cooperation behavior are considered to take a positive mediating role between authentic leadership and creativity. In addition, the psychological safety and cooperation behavior showed that there were multiple mediator effects (.0739) between authentic leadership and creativity. Hypothesis 8 has been supported.

V. Conclusions and Suggestions

The main findings of this study are summarized as follows.

First, authentic leadership has been shown to have a significant positive influence on creativity.

This is in line with prior research that authentic leadership supports frank communication and knowledge sharing among members[12] and has a positive effect on improving organizational creativity[16]. Second, authentic leadership has been shown to have a significant positive influence on psychological safety and cooperation behavior respectively. This is due to the trust that a leader can give to members through authentic leadership, communication based on authentic leadership, and knowledge sharing activation. Third, psychological safety and cooperation behavior have been shown to have a positive influence on creativity. This promotes psychological safety in the inherent motivation of Amabile’s CMC model[10], and cooperation behavior contributes to the expansion of creative output by promoting social interaction and teamwork within the organization.

Fourth, in the relationship between authentic leadership and creativity, psychological safety and cooperation behavior were shown to have multiple mediator effects, respectively, with a mediated effect. As a medium between authentic leadership and creativity, psychological safety and cooperation behavior serve as a psychological medium for communication and collaboration among the members of the organization. In addition, the two factors were found to promote creativity by strengthening the intrinsic motivation among the three factors of creativity manifestation in Amabile’s CMC model.

The theoretical implications of this study are as follows. First, by setting the environmental factors, authentic leadership, psychological safety, and cooperation behavior, in the organization as major variables, away from human cognitive factors that were mainly discussed as conditions of creativity in previous studies, we identified the impact of the organization’s environment on individual creativity. This shows that the achievement of personal needs should be predicated on the ongoing interaction between the members and the environment within the organization, as noted in Deci and Ryan’s theory of self-determination, which is one of Amabile’s CMC model factors. Second, as Millennial and Generation Z have emerged as the main players in the organization, it has been established that authentic leadership based on leadership and ethics rather than leadership centered on
leadership skills and charisma promotes creativity through psychological safety and cooperation behavior. To this end, it can be confirmed that leadership needs to be linked to the psychological process of the members, not the skills of the leader. Third, psychological safety, the most important of Amabile’s CMC model factors, was verified to enhance creativity by strengthening cooperation behavior. Therefore, all leaders must strive to secure an organizational culture that guarantees psychological safety.

The limitations of this study and the possibilities of further study are as follows. First, this study applied transversal research design to establish the relationship between authentic leadership and creativity. However, it is necessary to clearly identify changes in the relationship between authentic leadership and psychological safety, cooperation behavior, and creativity over time through end-to-end research. Second, this study has identified the relationship between creativity based on psychological safety and cooperation behavior when the positive (+) factor of authentic leadership is applied, but suggests a study to identify the effects of applying leadership other than authentic leadership or the negative (-) effect of inauthentic leadership. Third, the prior studies at home and abroad confirmed that various variables within individuals and organizations affect creativity. However, the study did not control potential leading factors, and there are also various variables that can play a role in psychological safety and cooperation behavior in the relationship between authentic leadership and creativity. I also believe that studies that consider variables such as gender, educational background, and working period as control variables will be necessary in the future.

Fourth, data used in the empirical analysis of this study is obtained in the same way using questionnaire methods, which may lead to problems with the use of the same method. Therefore, future research should precede efforts to address these problems more actively.


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