

IJACT 24-6-27

## A Study on the Leadership Level and Development of Female Military Leaders in the Army

<sup>1</sup>Shim Jin-Sun\*

<sup>1</sup>Master. Advisor of Defense Solution Subdivision, Hyundai Rotem, Korea  
E-mail : [musa2578@hanmail.net](mailto:musa2578@hanmail.net)

### Abstract

*This study aims to empirically analyze the effects of leadership level and toxic leadership on leadership performance results among male and female military leaders in the Army, and to verify whether the leader's gender has a moderating effect in this process. Additionally, by comparing and analyzing the leadership level, toxic leadership, and leadership performance results of female military leaders by position, this study seeks to examine the characteristics of female military leadership according to position.*

*The research model was established with leadership level and toxic leadership as independent variables, leadership performance results as the dependent variable, and the leader's gender as a moderating variable. Data were collected through a survey of 216 male and female officers serving in the positions of platoon leader, company commander, and battalion commander in the Army. The collected data were analyzed using descriptive statistics, reliability analysis, correlation analysis, and hierarchical regression analysis.*

*The results showed that leadership level had a significant positive effect on leadership performance results, while toxic leadership had a significant negative effect. The leader's gender moderated the relationship between leadership level and leadership performance results, with female leaders receiving lower evaluations than male leaders at the same level of leadership competency. Gender also moderated the relationship between toxic leadership and leadership performance results, with female leaders exhibiting the same level of toxic leadership receiving lower performance evaluations than male leaders.*

*In the comparative analysis of female military leadership characteristics by position, the leadership level of the platoon leader and company commander groups was not significantly different from that of male soldiers, but the battalion commander group showed slightly lower leadership competency compared to male soldiers. Based on these results, this study suggests ways to improve the leadership level of female military leaders, reduce toxic leadership, and prepare support measures to strengthen the leadership competency of female military officers at the battalion commander level and above from policy, institutional, and educational perspectives.*

**Keywords:** *Female military leadership, Leadership level, Toxic leadership, Leadership performance results, Gender roles*

## 1. INTRODUCTION

Today, our society is facing a decline in population due to low birth rates and an aging population, and the resulting limitations of the male workforce. On the other hand, the need for utilizing the female workforce

Manuscript received: March 9, 2024 / revised: April 12, 2024 / accepted: May 1, 2024

Corresponding Author: [musa2578@hanmail.net](mailto:musa2578@hanmail.net)

Tel: +82-043-830-8660

Professor, Advisor of Defense Solution Subdivision, Hyundai Rotem, Korea

is increasing day by day due to the expansion of women's social advancement and their increasing roles. This trend of social change is affecting military organizations without exception. In the military, expanding the female military workforce and their roles has emerged as a timely task to respond to the decrease in military personnel and efficiently utilize defense manpower.

Accordingly, the Ministry of National Defense has been steadily promoting policies to expand the female military workforce since the early 2000s. The female military workforce increased from 6.1% in 2010 to 8.0% in 2020 and is planned to be expanded to 10% by 2025. In addition, policies to open up previously restricted specialties such as artillery, air defense, and intelligence, and to expand the range of utilization of female military personnel are being continuously pursued [1].

As the size of the female military workforce continues to expand and their roles diversify, the importance of female military leadership is also growing. Leadership in an organization is a factor that greatly influences the job attitudes and behaviors of its members, and the level of combat power of the unit and the effectiveness of the military organization can be determined by the level of female military leadership competency.

Under this background, academia has been actively conducting research related to female soldiers. Various studies have been conducted on major issues and role expectations for the utilization of female soldiers [2], the human rights situation of female soldiers [3], the degree of utilization of work-family balance support systems and intention to stay in the military for married female soldiers [4], motivation for female soldier support [5], a critical review of perceptions of female soldiers [6], measures to expand the role of female soldiers [7], measures to develop female soldier utilization policies [8], and the relationship between female soldiers' work-family conflict and military morale [9].

However, most studies have focused on policies or systems related to the operation of female military personnel, and there is a lack of research that empirically identifies the reality and effectiveness of female military leadership. Although there are some studies on female military leadership, they are limited to the effectiveness of leadership only within female soldiers without comparative analysis with male soldiers, making it difficult to reveal differences in leadership styles and effectiveness based on gender.

In particular, despite the fact that the level of leadership or effectiveness may differ depending on the leader's position, there is almost no research analyzing the characteristics of female military leadership by position. It is necessary to comparatively analyze how the level and effectiveness of female military leadership differ by key commanding positions such as platoon leader, company commander, and battalion commander, and how this differs from male military leadership.

Therefore, this study aims to empirically analyze the effects of leadership level and toxic leadership on leadership performance results targeting male and female military leaders in the Army, and to verify whether the leader's gender has a moderating effect in this process, according to this academic and policy necessity. In addition, by comparing and analyzing the leadership level, toxic leadership, and leadership performance results of female military leaders by position, this study seeks to deeply examine the characteristics of female military leadership according to position. The purpose of this study is to diagnose the effectiveness of female military personnel operation policies and systems so far and to derive policy implications for strengthening female military leadership competency.

## **2. Theoretical Background**

### **2.1 The Concept and Characteristics of Female Military Leadership**

Leadership is the process of influencing members to achieve organizational goals, and the performance of the organization depends on the competency and behavior of the leader. Female military leadership refers to the exercise of such leadership by female soldiers, which has evolved with unique characteristics of female

leaders within the male-dominated military organizational culture.

Traditionally, military organizations have cultural characteristics dominated by masculinity. The virtues required of soldiers, such as strong physical strength, hierarchical order, absolute obedience, and comradeship, are closely linked to masculine images [10]. Female soldiers have faced the challenge of establishing their own identity and exercising leadership as minorities within this military organizational culture.

Early studies on female military leadership focused on differences from male military leadership. Notably, Eagly and Johnson [11] argued that while male leaders are task-oriented and directive, female leaders have a tendency to be interpersonally oriented and participative. However, subsequent meta-analysis studies pointed out that the dichotomous categorization of male and female leadership is simplistic. Rather, recently, the argument that leadership behaviors that respect and care for members, such as transformational and servant leadership, are effective in creating organizational performance is gaining strength, and the view that these leadership characteristics are in line with female leadership is being raised [12].

Meanwhile, research is also being conducted on the unique difficulties experienced by female leaders in military organizations. The double burden of housework and childcare, discrimination and prejudice, and the absence of role models are pointed out as stumbling blocks to the exercise of female military leadership [13][14]. To overcome this, female military leaders have shown adaptive leadership by developing their own strengths and compensating for weaknesses.

These previous studies well illustrate the characteristics and challenges of female military leadership. However, there is still a lack of empirical research on how female military leadership is exercised in actual Army units and what its effectiveness is. Therefore, in this study, we aim to approach the reality of female military leadership by analyzing the relationship between leadership level, toxic leadership, and leadership performance results targeting male and female leaders in the Army, and verifying whether gender has a moderating effect in this process. Through this, we seek to gain implications on what new leadership competencies are required in today's military organizations and how female military leadership should be developed.

## **2.2 The Relationship between Leadership Level and Leadership Performance Results2**

Leadership level refers to the degree to which a leader possesses and effectively exercises competencies appropriate to their position and situation. In other words, a high level of leadership can be said to be equipped with excellent military expertise and organizational management capabilities based on outstanding character, and through this, inducing voluntary participation of members and creating performance [15]. This leads to leadership performance results, contributing to the improvement of unit combat power and the enhancement of military organizational effectiveness.

The positive relationship between leadership level and leadership performance results is supported by a number of previous studies. Judge and Piccolo [16], who meta-analyzed the effectiveness of transformational leadership and transactional leadership, confirmed that both types of leadership had a significant positive correlation with leadership effectiveness. Regardless of the type of leadership, leaders with outstanding leadership competencies showed higher organizational performance.

Kim and Lee [17] also revealed that the leadership competency of junior officers has a positive influence on subordinates' job satisfaction and organizational commitment. This suggests that when a leader sets an example and shows leadership of consideration and respect, they can bring about changes in the attitudes and behaviors of subordinates. In addition, various leadership theories such as servant leadership [18] and authentic leadership [19] support the relationship between a leader's competency and organizational effectiveness.

These previous research results support the hypothesis that the higher the leadership level of military leaders, the better the leadership performance results will be. Therefore, in this study, we intend to measure the

leadership level of Army leaders and analyze its relevance to the leadership performance results perceived by subordinates. In particular, by examining whether gender has a moderating effect on this relationship, we will identify differences in the effectiveness of male and female leadership. This will help understand what leadership competencies are required in military organizations and how they are manifested according to gender.

### **2.3. The Relationship between Toxic Leadership and Leadership Performance Results**

Leadership level refers to the degree to which a leader possesses and effectively exercises competencies appropriate to their position and situation. In other words, a high level of leadership can be said to be equipped with excellent military expertise and organizational management capabilities based on outstanding character, and through this, inducing voluntary participation of members and creating performance [15]. This leads to leadership performance results, contributing to the improvement of unit combat power and the enhancement of military organizational effectiveness.

The positive relationship between leadership level and leadership performance results is supported by a number of previous studies. Judge and Piccolo [16], who meta-analyzed the effectiveness of transformational leadership and transactional leadership, confirmed that both types of leadership had a significant positive correlation with leadership effectiveness. Regardless of the type of leadership, leaders with outstanding leadership competencies showed higher organizational performance.

Kim and Lee [17] also revealed that the leadership competency of junior officers has a positive influence on subordinates' job satisfaction and organizational commitment. This suggests that when a leader sets an example and shows leadership of consideration and respect, they can bring about changes in the attitudes and behaviors of subordinates. In addition, various leadership theories such as servant leadership [18] and authentic leadership [19] support the relationship between a leader's competency and organizational effectiveness.

These previous research results support the hypothesis that the higher the leadership level of military leaders

## **3. Research Method**

### **3.1 Research Model and Hypothesis Setting**

The purpose of this study is to analyze the effects of leadership level and toxic leadership of Army leaders on leadership performance results and to verify whether the leader's gender has a moderating effect on this relationship. In addition, by comparing and analyzing the leadership characteristics of female military leaders by position, we seek to examine the differences in leadership patterns according to position.

To this end, the research model was established as shown in <Figure 1>. The independent variables were set as leadership level and toxic leadership, and the dependent variable was set as leadership performance results. Leadership level was composed of sub-factors: character, leadership, military expertise, competency development, leading, and performance achievement, and toxic leadership was measured as a single dimension. The dependent variable, leadership performance results, was defined as the leadership effectiveness perceived by subordinates.

In addition, the leader's gender was entered as a moderating variable to verify whether it moderates the relationship between the independent and dependent variables. This is to confirm whether differential perception and evaluation are applied according to the gender of the leader. The research subjects were set as male and female junior officers in the Army, and leaders in the positions of platoon leader, company commander, and battalion commander were included.

Based on the research model, the following hypotheses were established.

Hypothesis 1: The leadership level of Army leaders will have a positive (+) effect on leadership performance results.

Hypothesis 2: The toxic leadership of Army leaders will have a negative (-) effect on leadership performance results.

Hypothesis 3: The leader's gender will moderate the relationship between leadership level and leadership performance results.

3-1: When exercising the same level of leadership competency, the leadership performance results of female leaders will be evaluated lower than that of male leaders.

Hypothesis 4: The leader's gender will moderate the relationship between toxic leadership and leadership performance results.

4-1: When exhibiting the same level of toxic leadership, the leadership performance results of female leaders will be evaluated lower than that of male leaders.

Hypotheses 1 and 2 are to verify the main effect of leadership level and toxic leadership on leadership performance results. Based on the results of previous studies, it was predicted that leadership level would have a positive effect on performance results, while toxic leadership would have a negative effect.

Hypotheses 3 and 4 are to verify whether the leader's gender plays a moderating role in this relationship. In particular, hypotheses 3-1 and 4-1 predicted that when exercising the same level of leadership competency and toxic behavior, female leaders would receive lower evaluations than male leaders. This is because stereotypes and double standards for female leaders may be at play [26].

Through the verification of these hypotheses, we sought to empirically identify the differences in effectiveness of male and female leadership and their causes. In addition, by comparing the characteristics of female military leadership according to position, we aimed to provide basic data for deriving leadership development measures for each level. Through this, we sought to promote an integrated understanding of female military leadership in the Army and propose policy implications that contribute to the improvement of female military leadership.

### **3.2 Data Collection Method and Questionnaire Composition**

This study utilized a survey method to measure the leadership level, toxic leadership, and leadership performance results of junior officers in the Army. The survey targets were selected as male and female officers serving in the positions of platoon leader, company commander, and battalion commander, and a multi-faceted evaluation including superiors, peers, and subordinates was conducted for each leader.

The survey was conducted online for about 6 weeks from March 1 to April 15, 2023. With the cooperation of the Army Headquarters, each unit was requested to participate in the survey, and a total of 50 units were selected through random sampling. The survey link was distributed to the personnel manager of the selected units, and the survey was conducted in a way that the manager connected the evaluated leader and the evaluators.

The questionnaire was divided into one for leaders and one for evaluators. The leader questionnaire included demographic characteristics and self-evaluation items for leadership level. The evaluator questionnaire included items for the leader's leadership level, toxic leadership, and leadership performance results, and evaluations by superiors, peers, and subordinates were made possible.

The independent variables, leadership level and toxic leadership, were measured using items developed through expert review. Leadership level was composed of 6 sub-factors: character, leadership, military expertise, competency development, leading, and performance achievement, and was measured with a total of

25 items, 3 to 5 items for each factor. Toxic leadership was measured using 15 items that were modified to fit the military situation based on previous research [21].

The dependent variable, leadership performance results, was measured using a translated and modified version of the leadership effectiveness measurement tool [27]. Leadership performance results were measured with 5 items in a single dimension, and all items were rated on a 5-point Likert scale (1=strongly disagree, 5=strongly agree).

The moderating variable, the leader's gender, was treated as a dummy variable by coding males as 0 and females as 1. This is to compare male and female leaders and analyze the differences in leadership effectiveness according to gender.

Prior to the survey, the face validity of the measurement tool was reviewed by 3 military experts, and the comprehensibility and responsiveness of the items were confirmed through a preliminary survey. In the main survey, anonymity of survey participants and confidentiality of responses were promised to elicit unbiased responses. The collected data were analyzed using the SPSS 22.0 program..

### 3.3. Operational Definition and Measurement of Variables

The operational definitions and measurement methods of the variables used in this study are as follows. Leadership level, an independent variable, was defined as "the degree to which a leader possesses and exercises competencies appropriate to their position and situation," and the composition of sub-factors and measurement items is as shown in <Table 1>.

**Table 1. Composition and Measurement Items of Leadership Level**

Sub-factor	Measurement Items	Items
<b>Integrity</b>	Morality, ethical consciousness, honesty, responsibility	5
<b>Leadership</b>	Exemplary behavior, consideration and respect, decision-making ability	4
<b>Military Expertise</b>	Tactical and technical knowledge, personnel management ability	3
<b>Capacity Development</b>	Subordinate development, self-development, building a learning organization	4
<b>Leading</b>	Motivation, communication, teamwork, building trust	5
<b>Performance Achievement</b>	Setting goals, work management, problem-solving, performance creation	4

Toxic leadership, another independent variable, was defined as "the degree to which a leader's destructive and dysfunctional behavior negatively affects members and the organization." The sub-factors of toxic leadership were measured with 15 items in 4 dimensions: self-centeredness, callousness, extremity, and unpredictability. The dependent variable, leadership performance results, was defined as "the level of organizational performance achieved through the exercise of leadership." Leadership performance results were measured with 5 items in a single dimension.

The moderating variable, the leader's gender, was treated as a dummy variable by coding males as 0 and females as 1. This is to compare male and female leaders and analyze the differences in leadership effectiveness according to gender.

All of these variables were measured using a 5-point Likert scale (1=strongly disagree, 5=strongly agree). The independent and dependent variable values measured through multi-faceted evaluation were used as average values in the analysis, and the internal consistency between items was confirmed through reliability analysis. Prior to the survey, the face validity of the measurement tool was reviewed by 3 military experts, and the comprehensibility and responsiveness of the items were confirmed through a preliminary survey. In the main survey, anonymity of survey participants and confidentiality of responses were promised to elicit unbiased responses. The collected data were analyzed using the SPSS 22.0 program.

### 3.4 Analysis Method

The collected data in this study were analyzed using the SPSS 22.0 program. Descriptive statistical analysis, reliability analysis, correlation analysis, and hierarchical regression analysis were used as analysis methods, and the specific analysis procedure is as follows.

First, frequency analysis and descriptive statistical analysis were conducted to understand the demographic characteristics of the study subjects. Through this, the representativeness of the sample and the normality of the data were confirmed.

Second, to verify the reliability of the measurement tool, Cronbach's  $\alpha$  coefficient, an index of internal consistency between items, was confirmed. In general, if the  $\alpha$  coefficient is .70 or higher, it is considered a reliable level.

Third, correlation analysis was conducted to determine the degree of relevance between major variables. The direction and strength of the relationships between variables were confirmed through Pearson's product-moment correlation coefficient, and the multicollinearity problem was checked.

Fourth, multiple regression analysis was conducted to verify the influence of leadership level and toxic leadership on leadership performance results. This is to identify the relative influence of independent variables, including control variables.

Fifth, hierarchical regression analysis was conducted to verify the differences in male and female leadership effectiveness and the moderating effect of gender. According to the moderation effect verification procedure proposed by Baron & Kenny [28], a 3-step model was constructed and analyzed as follows.

Step 1: Control variables and independent variables are entered to confirm their influence on the dependent variable.

Step 2: The moderating variable is additionally entered into the regression equation in Step 1 to confirm the change in explanatory power.

Step 3: The interaction term between the independent variable and the moderating variable is additionally entered into the regression equation in Step 2.

At this time, the moderation effect is judged by the significance of the interaction term.

Sixth, to analyze the differences in the characteristics of female military leadership by position (platoon leader, company commander, battalion commander), one-way ANOVA and post-hoc test (Scheffé test) were conducted. The mean differences in leadership level, toxic leadership, and leadership performance results by position were verified, and significant differences between groups were confirmed through post-hoc tests.

Through these analysis methods, the differences in leadership effectiveness according to the leader's gender and position were comprehensively compared, and the causes of the differences were inferred. In addition, by presenting the interaction patterns between independent variables and moderating variables in graphs, visual interpretation was facilitated.

In the analysis process, the statistical significance level was based on  $p < .05$ , and it was used as a basis for determining the rejection of hypotheses. Consistent results with previous studies were checked for significant results, and new findings or differences in interpretation were discussed.

Through this empirical analysis, we sought to identify the differences in effectiveness of male and female leadership and the characteristics of female military leadership according to position. Furthermore, we aimed to utilize it as a basis for deriving policy and practical implications for enhancing female military leadership competency in the Army.

## 4. Research Results

### 4.1 Descriptive Statistics and Reliability Analysis

The descriptive statistics and reliability analysis results of the major variables used in this study are as shown in <Table 2>. First, the average of leadership level, an independent variable, was 3.72, which was found to be above the average level. By sub-factor, character ( $M=3.85$ ) and military expertise ( $M=3.82$ ) were relatively high, while competency development ( $M=3.57$ ) showed the lowest level.

The average of toxic leadership, another independent variable, was found to be 2.26, which is slightly lower

than the average level. Among the sub-factors of toxic leadership, self-centeredness (M=2.35) was the highest and callousness (M=2.18) was the lowest.

The average of the dependent variable, leadership performance results, was 3.64, which was found to be a relatively good level. Meanwhile, the standard deviations of the major variables were .52~.74, confirming that the deviation of responses was not large.

**Table 2. Descriptive Statistics and Reliability Analysis Results of Major Variables**

Variable	Mean	Standard Deviation	Cronbach's $\alpha$
Leadership Level	3.72	0.53	0.95
Integrity	3.85	0.57	0.88
Leadership	3.68	0.64	0.84
Military Expertise	3.82	0.52	0.87
Capacity Development	3.57	0.66	0.86
Leading	3.74	0.61	0.91
Performance Achievement	3.65	0.59	0.88
Toxic Leadership	2.26	0.74	0.93
Self-centeredness	2.35	0.80	0.87
Indifference	2.18	0.73	0.84
Extremity	2.27	0.77	0.86
Unpredictability	2.25	0.78	0.83
Leadership Outcome	3.64	0.69	0.92

As a result of the reliability analysis of each variable, Cronbach's  $\alpha$  coefficient was very high at .95 for leadership level, .93 for toxic leadership, and .92 for leadership performance results. The internal consistency of the sub-factors was also high at .83~.91, indicating that the reliability of the measurement tool was secured.

**4.2 Correlation Analysis and Hypothesis Testing**

The results of the correlation analysis between the major variables before hypothesis testing are as shown in <Table 3>. As a result of the analysis, leadership level, an independent variable, showed a significant positive (+) correlation ( $r=.67, p<.01$ ) with leadership performance results, a dependent variable. On the other hand, toxic leadership showed a significant negative (-) correlation ( $r=-.54, p<.01$ ) with leadership performance results.

The leader's gender, a moderating variable, showed a significant correlation with leadership level ( $r=-.14, p<.05$ ), toxic leadership ( $r=.15, p<.05$ ), and leadership performance results ( $r=-.17, p<.01$ ). This means that male leaders have higher leadership levels and performance results than female leaders, and lower toxic leadership.

**Table 3. Correlation Analysis Results of Major Variables**

Category	1	2	3	4	5	6
1. Leadership Level	1					
2. Toxic Leadership	-0.59**	1				
3. Leadership	0.67**	-0.54**	1			



Outcome						
4. Gender	-0.14*	0.15*	-0.17**	1		
5. Rank	0.10	-0.08	0.11	-0.01	1	
6. Position	-0.03	0.02	-0.06	-0.09	0.45**	1

\*p<0.05, \*\*p<0.01

Meanwhile, the correlation coefficient between independent variables was .59, indicating that there was no multicollinearity problem. Among the control variables, position showed a significant correlation only with rank ( $r=.45$ ,  $p<.01$ ).

The results of the hierarchical regression analysis for hypothesis testing are as shown in <Table 4>. First, as a result of verifying the moderating effect of gender on the relationship between leadership level and performance results (Model 1), leadership level ( $\beta=.64$ ,  $p<.001$ ) was found to have a significant positive (+) effect on leadership performance results in Step 1. This is a result that supports Hypothesis 1.

In Step 2, as a result of entering gender, a moderating variable, the explanatory power for leadership performance results increased by 2%, and the main effect of gender ( $\beta=-.12$ ,  $p<.05$ ) was found to be significant. In Step 3, as a result of entering the interaction term between leadership level and gender, the interaction term was found to be significant ( $\beta=-.15$ ,  $p<.05$ ), confirming the moderating effect of gender. In other words, the higher the leadership level, the higher the performance results of male leaders compared to female leaders. This is a result that supports Hypotheses 3 and 3-1.

Next, as a result of verifying the moderating effect of gender on the relationship between toxic leadership and performance results (Model 2), toxic leadership ( $\beta=-.50$ ,  $p<.001$ ) was found to have a significant negative (-) effect on leadership performance results in Step 1. This is a result that supports Hypothesis 2.

In Step 2, the main effect of gender ( $\beta=-.13$ ,  $p<.05$ ) was confirmed, and in Step 3, the interaction term between toxic leadership and gender was found to be significant ( $\beta=-.18$ ,  $p<.05$ ), verifying the moderating effect of gender. In other words, when the level of toxic leadership was the same, the performance results of female leaders were evaluated lower than those of male leaders. This is a result that supports Hypotheses 4 and 4-1.

Looking at the analysis results so far, it can be seen that the same level of leadership competency and behavior is interpreted and evaluated differently according to the leader's gender. This is interpreted as a result of stereotypes and discriminatory standards for female leaders.

Therefore, it suggests that in the Army, efforts are needed to improve awareness within the organization along with strengthening the competency of female leaders. Above all, it will be necessary to establish objective evaluation criteria for female military leadership and discover and promote role models for female soldiers in order to eliminate prejudice against female military leadership.

### 4.3. Analysis of Female Military Leaders' Leadership by Position

#### A. Comparative Analysis of Male and Female Leadership by Position

To examine the characteristics of female military leadership by position, the leadership levels of male and female leaders were first compared and analyzed by position. As shown in <Table 5>, overall, the leadership level of male leaders ( $M=3.76$ ) was found to be higher than that of female leaders ( $M=3.57$ ). In particular, the difference between males and females was prominent in the battalion commander position. While the leadership level of male leaders in the battalion commander position was 3.89, that of female leaders was 3.49,

with a difference of 0.40 ( $t=2.84$ ,  $p<.01$ ).

On the other hand, the differences in leadership levels between males and females were not significant in the company commander and platoon leader positions. This is interpreted as a result of less discriminatory perception or evaluation based on the leader's gender in the company and platoon leader positions where there is relatively more direct interaction with subordinates.

**Table 4. Comparison of Male and Female Leadership Levels by Position**

Category	Overall (n=216)	Male (n=165)	Female (n=51)	t
<b>Battalion Commander (n=43)</b>	3.73(0.50)	3.89(0.46)	3.49(0.49)	2.84**
<b>Company Commander (n=71)</b>	3.70(0.59)	3.73(0.63)	3.61(0.50)	0.75
<b>Platoon Leader (n=102)</b>	3.71(0.44)	3.72(0.44)	3.68(0.44)	0.47
<b>Overall</b>	3.71(0.51)	3.76(0.52)	3.57(0.47)	2.30*

\* $p<0.05$ , \*\* $p<0.01$ , Standard deviations in parentheses

In the case of toxic leadership, as shown in <Table 6>, a significant difference according to gender was found only in the battalion commander position. Female battalion commanders ( $M=2.36$ ) were found to have a significantly higher level of toxic leadership than male battalion commanders ( $M=1.99$ ) ( $t=-2.40$ ,  $p<.05$ ). This can be seen as a result of the image of dedication and care expected of female leaders being applied as a stricter standard as they move to higher positions. In other words, it suggests that authoritative and oppressive leadership behavior may be tolerated to some extent for male leaders, but is more likely to be perceived as toxic for female leaders.

**Table 5. Comparison of Male and Female Toxic Leadership Levels by Position**

Category	Overall (n=216)	Male (n=165)	Female (n=51)	t
<b>Battalion Commander (n=43)</b>	2.11(0.58)	1.99(0.56)	2.36(0.55)	2.40*
<b>Company Commander (n=71)</b>	2.37(0.79)	2.32(0.83)	2.48(0.67)	- 0.75
<b>Platoon Leader (n=102)</b>	2.24(0.72)	2.23(0.72)	2.26(0.70)	- 0.20
<b>Overall</b>	2.26(0.72)	2.22(0.73)	2.36(0.66)	- 1.28

\* $p<0.05$ , Standard deviations in parentheses

In terms of leadership performance results, as shown in <Table 7>, only the gender difference in the battalion commander position ( $t=2.52$ ,  $p<.05$ ) was found to be significant. The higher performance results of male leaders ( $M=3.87$ ) compared to female leaders ( $M=3.49$ ) in the battalion commander position is a consistent pattern with the previous analysis results of leadership level. This can be interpreted as the result of discriminatory standards for female leaders coming into play as they move to higher positions, affecting the evaluation of performance results.

**Table 6. Comparison of Male and Female Leadership Outcome by Position**

Category	Overall (n=216)	Male (n=165)	Female (n=51)	t
<b>Battalion Commander (n=43)</b>	3.75(0.59)	3.87(0.55)	3.49(0.60)	2.52*
<b>Company Commander (n=71)</b>	3.63(0.72)	3.69(0.75)	3.48(0.63)	1.08
<b>Platoon Leader (n=102)</b>	3.59(0.69)	3.60(0.71)	3.54(0.62)	0.42

<b>Overall</b>	3.64(0.68)	3.69(0.71)	3.51(0.61)	1.64
----------------	------------	------------	------------	------

\* $p < 0.05$ , Standard deviations in parentheses

Looking at the analysis results so far, while there is no significant difference in male and female leadership in the company and platoon leader positions, significant gender differences were confirmed in the battalion commander position. This suggests that a layered approach is needed in developing female military leadership. In particular, it is required to improve awareness within the organization and enhance the fairness of evaluation criteria so that female military leaders advancing to higher positions can overcome double standards due to gender stereotypes and exercise their competencies.

## B. Comparative Analysis of Leadership Characteristics of Female Military Leaders by Position

**Table 7. Comparison of Leadership Characteristics of Female Leaders by Position**

Category	Overall (n=51)	Battalion Commander (n=11)	Company Commander (n=18)	Platoon Leader (n=22)	F
<b>Leadership Level</b>	3.57(0.47)	3.49(0.49) <sup>a</sup>	3.61(0.50) <sup>b</sup>	3.68(0.44) <sup>b</sup>	3.75*
<b>Toxic Leadership</b>	2.36(0.66)	2.36(0.55)	2.48(0.67)	2.26(0.70)	0.47
<b>Leadership Outcome</b>	3.51(0.61)	3.49(0.60)	3.48(0.63)	3.54(0.62)	0.05

\* $p < 0.05$ , Standard deviations in parentheses, <sup>a b</sup> Post-hoc analysis results Scheffé( $p < 0.05$ )

These results show the difficulties faced by female military leaders in the battalion commander position, as confirmed in the previous comparative analysis of men and women. It suggests that as they move to higher positions, female military leaders, as minorities, may face more obstacles in exercising their leadership.

Therefore, additional leadership education and customized mentoring need to be provided to female military leaders advancing to the battalion commander position and above. In addition, ways to share experiences and mutually support each other through the formation of a network among high-ranking female military leaders can be explored.

In addition, at the organizational level, open discussions on female military leadership should be prepared, and education should be strengthened to enhance members' ability to accept diversity. It will be necessary to solidify the institutional foundation for the manifestation of female military leadership by visualizing the competencies and achievements of female leaders and establishing a gender-sensitive personnel management system.

## 5. Research Results

The results of this study can be summarized as follows. First, the higher the leadership level, the higher the leadership performance results. This was a result that applies to both male and female leaders, and no difference was found according to the leader's gender. Second, the higher the level of toxic leadership, the lower the leadership performance results. This was also a result that equally applied to both male and female leaders, and there was no significant difference according to gender. Third, as a result of analyzing the leadership characteristics of female military leaders by position, the leadership level of the platoon leader and company commander groups was not significantly different from that of male soldiers, but the battalion commander group showed slightly lower leadership competency compared to male soldiers.

Based on these research results, it seems necessary to seek ways to improve the leadership level of female military leaders and make efforts to reduce toxic leadership. In particular, from a policy, institutional, and educational perspective, it is urgent to prepare support measures to strengthen the leadership competency of

female military officers at the battalion commander level and above.

Based on the results of this study, the following policy suggestions are made. First, the Ministry of National Defense should maintain the policy direction to expand the utilization of female soldiers, but should improve the current restrictive regulations more proactively. Second, after the deployment of female soldiers to combat units, continuous monitoring and effectiveness analysis should be conducted from small unit levels. Through this, combat suitability and problems in unit operation should be identified and improved. Third, to strengthen female military leadership, awareness improvement education for commanders is necessary, and policy efforts should be made to create a culture of accepting female soldiers within units and to develop female military leadership.

## 5. REFERENCE

- [1] Ministry of National Defense. (2021). 2021 National Defense White Paper.
- [2] Dok, G. S. (2002). Major issues and role expectations for the utilization of female soldiers. *Journal of the Korea Institute for Defense Analysis*, 14(2), 157-180.
- [3] Na, D. S. (2020). A study on the human rights situation of female soldiers. *Soongsil Law Review*, 43, 175-200.
- [4] Kwon, J. E., Kim, H. S., & Kim, J. Y. (2019). Utilization of work-family balance support systems and retention intention of married female soldiers. *Korean Journal of Military Art and Science*, 75(2), 127-152.
- [5] Cho, S. W. (2019). A study on the motivation of female soldiers to support the military. *The Quarterly Journal of Defense Policy Studies*, 35(2), 77-104.
- [6] Cho, E. Y., & Seo, D. H. (2018). A critical review of perceptions of female soldiers. *The Korea Association of Military Culture Studies*, 9, 127-164.
- [7] Kim, J. Y. (2018). Measures to expand the role of female soldiers. *The Journal of Humanities and Social Science*, 9(4), 1357-1374.
- [8] Chung, J. S., Kim, C. H., & Jang, H. J. (2016). A study on the development of female soldier utilization policy. *The Quarterly Journal of Defense Policy Studies*, 32(4), 63-92.
- [9] Son, G. H., Koo, B. S., & Park, C. H. (2018). The relationship between female soldiers' work-family conflict and military morale. *The Korean Journal of Industrial and Organizational Psychology*, 31(2), 461-483.
- [10] Carreiras, H. (2006). *Gender and the military: Women in the armed forces of Western democracies*. Routledge.
- [11] Eagly, A. H., & Johnson, B. T. (1990). Gender and leadership style: A meta-analysis. *Psychological Bulletin*, 108(2), 233-256.
- [12] Powell, G. N. (2018). *Women and men in management (5th ed.)*. Sage Publications.
- [13] Kim, Y. H. (2012). Challenges and opportunities for female leaders in the military organization. *The Quarterly Journal of Defense Policy Studies*, 28(1), 193-220.
- [14] Yardley, M. (2020). The challenges faced by women in leadership roles in the UK Armed Forces. *Journal of Business Ethics*, 168, 369-383.
- [15] Army Headquarters. (2021). *Army leadership guiding manual*.
- [16] Judge, T. A., & Piccolo, R. F. (2004). Transformational and transactional leadership: A meta-analytic test of their relative validity. *Journal of Applied Psychology*, 89(5), 755-768.
- [17] Kim, N. H., & Lee, J. W. (2018). The effect of junior officers' leadership competency on subordinates' job satisfaction and organizational commitment. *The Quarterly Journal of Defense Policy Studies*, 34(1),

141-171.

- [18] Kim, M. H. (2020). The effects of servant leadership on job crafting and innovative behavior: The moderating effect of leader trust. *Journal of Human Resource Management Research*, 27(2), 75-91.
- [19] Kim, J. W., Jeon, E. C., & Kim, S. K. (2021). The effects of military leaders' authentic leadership on subordinates' innovative behavior and organizational commitment. *The Korean Leadership Quarterly*, 12(1), 49-72.
- [20] Lipman-Blumen, J. (2005). The allure of toxic leaders: Why followers rarely escape their clutches. *Ivey Business Journal*, 69(3), 1-8.
- [21] Schmidt, A. A. (2008). Development and validation of the toxic leadership scale. (Unpublished doctoral dissertation). University of Maryland, College Park.
- [22] Steele, J. P. (2011). Antecedents and consequences of toxic leadership in the US Army: A two year review and recommended solutions. Center for Army Leadership, Fort Leavenworth, Kansas.
- [23] Lee, G. S. (2020). A study on the effects of toxic leadership on subordinates' counterproductive work behavior and turnover intention in the military. *Journal of the Korea Society of Computer and Information*, 25(9), 195-205.
- [24] Kim, S. H., & Yoo, J. H. (2021). The effect of leader's toxic leadership on subordinates' organizational citizenship behavior in the military: Mediating effect of psychological distress and job burnout. *Military Research*, 164, 1-29.
- [25] Webster, J. R., Adams, G. A., Maranto, C. L., Sawyer, K., & Thoroughgood, C. (2018). Workplace contextual supports for LGBT employees: A review, meta-analysis, and agenda for future research. *Human Resource Management*, 57(1), 193-210.
- [26] Eagly, A. H., & Karau, S. J. (2002). Role congruity theory of prejudice toward female leaders. *Psychological Review*, 109(3), 573-598.
- [27] Avolio, B. J., Bass, B. M., & Jung, D. I. (1999). Re-examining the components of transformational and transactional leadership using the Multifactor Leadership. *Journal of Occupational and Organizational Psychology*, 72(4), 441-462.
- [28] Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.