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Human Capital Management CRISIS for Indefinite-Term Contract Workers in Local Governments: Focusing on Education & Training and Performance

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Abstract

The human resources that make up the local government organizations in Korea can be broadly divided into local civil servants under the Local Public Officials Act and indefinite-term contract workers and fixed-term workers under the Labor Standards Act. The main purpose of this study is to statistically verify if the education and training provided to indefinite-term contract workers in local government organizations have a positive effect on their performance. In addition, this study performs an empirical analysis on the moderating effect of the variable of feedback of education and training on the relationship between education/training and the performance of the indefinite-term contract workers. As a result of analyzing perception survey data among local government organizations' personnel managers, education and training provided to indefinite-term contract workers were found to have a statistically significant positive effect on the workers' performance. Moreover, feedback of education and training, that is, the level at which result from education and training provided to indefinite-term contract workers reflected in the personnel management showed an effect as a moderating variable that controls the positive relationship between education/training and performance, although not statistically significant.

The analysis results of this study have the following importance and expected effects. First, theoretically expected effects of this study; majority of previous studies on the indefinite-term contract workers of local governments were exploratory studies discussing the concept, status, or related regulations of such workers. In contrast, this study contributes to the theoretical expansion of existing studies on the indefinite-term contract workers by providing empirical evidences through quantitative analysis on the relationship between education/training and performance, which is one of the main areas of personnel management. Second, practically expected effects of this study; the positive relationship between education/training and performance of indefinite-term contract workers and moderating effect of the feedback of education and training on the positive relationship make contribution to presenting concrete grounds for policy and institutional preparation for the design and operation of education/training programs for indefinite-term contract workers in local governments and linkage between results of education/training and personnel management.

[Keywords] Human Capital Management Crisis, Indefinite-term Contract Workers, Education & Training, Performance, Local Governments

1. Introduction

The human resources that make up the local government organizations in Korea can be broadly divided into local civil servants under the Local Civil Service Act and indefinite-term contract workers and fixed-term workers under the Labor Standards Act. In other words, local government organizations that carry out local public affairs and functions are jointly made up of civil servants and civilian workers[1]. The proportion of indefinite-term contract workers of local governments in Korea has

been increasing compared to the local government officials. This is also the case for central administrative agencies, performing state affairs and central administrative functions[2]. A further important consideration is that the quantitative scale of indefinite-term contract workers of local governments is highly expected to continue increasing in the future according to the government's plans and guidelines for continuous conversion of fixed-term workers to indefinite-term contract workers[3].

Despite the quantitative increase in the number of infinite-term contract workers of local governments, current level of human resource management for the infinite-term contract workers is significantly low and it would not be exaggerating to say that infinite-term contract workers have faced a serious crisis of human capital management. This is not only for the local governments but the same goes for public organizations including central administrative agencies and public enterprises. In fact, the local governments in Korea lack systematic and unified human resource management guidelines for indefinite-term contract workers, resulting in human resource managements of indefinite-term contract workers based on each individual governmental organization's own policy[2][3]. In other words, since local governments have varying personnel management policy for indefinite-term contract workers, personnel management, including working condition and welfare of indefinite-term contract workers with similar abilities and expertise, shows considerable differences among local governments[1]. In addition, due to the absence of uniform and systematic personnel managements and regulations for indefinite-term contract workers, those civil servants in charge of personnel management of indefinite-term contract workers in local governments have been overloaded with tasks, carrying significant level of confusion and stress which can be pointed out as a serious administrative waste.

Insufficient quantitative level of previous research based on academic and theoretical discussions on indefinite-term contract workers can also be pointed out as a limitation in establishing personnel management plans for indefinite-term contract workers. In fact, majority of previous studies on the indefinite-term or fixed-term contract workers of public organizations were mere conceptual and exploratory studies discussing the concept, related regulations or characteristics of indefinite-term contract workers[4][5][6]. Certainly, early research involving exploratory studies is necessary to some extent in all areas of study but there are not enough substantial nor empirical studies on personnel management of indefinite-term contract workers. The importance of continuing such research must be emphasized. In other words, the results of quantitative research analyzing the empirical relationship between the sub-factors of personnel management(e.g., recruitment and quota management, position and path design, training, remuneration, evaluation and ethics) and various important outcome variables(e.g. performance, job satisfaction and organizational commitment) are expected to play a very crucial role in the personnel management and implementation of guidelines for indefinite-term contract workers.

This study has a distinctive characteristic compared to other studies previous conducted on the indefinite-term contract workers in government organizations with its main objective of further developing academic and theoretical research on indefinite-term contract workers while making practical and political contribution for personnel contract management of indefinite-term contract workers. Specifically, this study has the following objectives and importance. First, this study analyzes the empirical relationship between the level of education & training provided to indefinite-term contract workers in local governments and the workers' performance. In addition, this study also investigates the moderating effect of feedback of education & training on the relationship between education/training and performance. Subsequently, this study carries significant importance and necessity as it can be used as an important basis for the design of human resource management of indefinite-term contract workers in local governments not only by making contribution to the theoretical development of previous research on indefinite-term contract workers which was conducted at the exploratory and conceptual level but

2

also presenting empirical evidences among the variables of training/education, performance, and feedback of education & training.

2. Literature Review

2.1. The concepts and related regulations of indefinite-term contract workers

Indefinite-term contract workers of local governments can be briefly defined as the 'civilians working in a local government organization without a fixed working period in the organization'[2]. According to 'the Operation Regulations of the Ministry of Public Administration and Security for the Indefinite-term or Fixed-term Contract Workers'(Article 106 of the Ministry of Public Administration and Security), an indefinite-term contract worker is "a non-public servant who has concluded a labor contract to assist the public servants in a regular and continuous basis without a fixed working period"[7]. The main affairs of indefinite-term contract workers in central departments and local governments include administrative affairs, park and green space management, roadside management, environment and hygiene management and management of other facilities[1][3].

The main differences among local civil servants, indefinite-term contract workers and fixed-term workers are as follows. First of all, civil servants are full-time employees subject to Local Public Officials Act which means they are public officials under the public service law. Whereas, indefinite-term contract workers are quasi-regular workers who are subject to the Labor Standards Act without a fixed working period and fixed-term workers are non-regular workers who are also subject to the Labor Standards Act with a fixed working period. In addition, civil servants and indefinite-contract workers have a guaranteed retirement age and status. On the other hand, fixed-term workers have no guaranteed status as the end of their contract signifies the date of their retirement, showing a distinct difference of having an indeterminate retirement age. The characteristics and differences among civil servants, indefinite-term contract workers and fixed-term workers in terms of personnel management can be summarized as in the table below.

Table 1. Comparison of civil servants, indefinite-term contract workers and fixed-term workers[6].

Type	Civil servants (Full-time employees)	Indefinite-term contract workers (Quasi-regular workers)	Fixed-term workers (Non-regular workers)
Definition	Public officials under the public service law	Employees without a fixed working period	Employees with a fixed working period
Applicable rules	Local public officials act	Labor relations act including labor standard act	Labor relations act including labor standard act
Job security	Guaranteed status	Guaranteed status - Dismissal after prior notice (Article 26 of the labor standards act)	No Guaranteed Status - Automatic retirement at the end of contract - Can be dismissed without prior notice(Article 24 of the labor standards act)
Employment condition	Specifically stipulated by the law(Civil officials uniform regulations, remuneration regulations and compensation regulations)	Internal regulation of individual organization (Application of anti-discrimination regulations) (Act on the protection, etc. of fixed-term and part-time employees)	Internal regulation of individual organization (Application of anti-discrimination regulations) (Act on the protection, etc. of fixed-term and part-time employees)
Retirement age	Guaranteed retirement age (Local public officials act)	Guaranteed retirement age (Internal regulation of	Not guaranteed retirement age

				organization)
Severance pay		Applied (Public officials pension act)	Applied (Law of employment retirement benefit security)	Applied (Excluding less than 1 year of employment) (Law of employment retirement benefit security)
Four major insur-ances	Pension	Applied (Public officials pension act)	Applied (National pension act)	Applied (Excluding day worker and those with less than 1 month of employment) (National pension act)
	Health	Applied (National health insurance act)	Applied (National health insurance act)	Applied (Excluding part-timers) (National health insurance act)
	Employ-ment	Not applied	Applied (Employment insurance act)	Applied (Excluding those who work less than 60 hours a month) (Employment insurance act)
	Indus-trial acci-dent	Accidents while working (Public officials pension act)	Applied (Industrial accident compensation insurance act)	Applied (Industrial accident compensation insurance act)

2.2. Relationship among education & training, performance and feedback of education & training in the public sector

Education refers to an effort made to improve an individual's competence whereas training refers to an effort made to increase the knowledge and skills needed to better perform a specific job and task given to the trainee[8]. When these definitions are applied to public officials who perform public affairs in government organizations, education and training can be described as a "human resource function that will sharpen the knowledge and skills necessary for the per-formance of officials and improve their values and attitudes"[9][3]. In other words, education and training in a government organization can be regarded as an activity that seeks to enhance the ability of public officials necessary to perform their duties to improve performance and de-velop desirable values, public ethics, attitude towards their duties as public officials performing public affairs. Education and training in government organizations can be classified into various types according to different standards, but they are typically classified according to the types of trainee and the method of training[8]. First of all, depending on the type of trainees there are many different types of training such as orientation training for new employees, training of specific roles, refresher and extension training, supervisory training, executive training and eth-ical training. In addition, there are different types of education & training depending on the method of education & training such as lectures, conferences, debates, case studies, role play-ing, simulation, sensitivity training, on-the-job-training, internship, observation, audio-visual aids, transfer, action learning, competency-based curriculum, e-learning, blended learning, brainstorming, in-basket exercise and boot-camp training. Among these various education and training methods, it is important to select and utilize the best education method by considering the core purpose of education and training, the characteristics and demands of the trainees and financial conditions.

The Operation Regulations of the Ministry of Public Administration and Security for the In-definite-term or Fixed-term Contract Workers'(Article 106 of the Ministry of Public Administra-tion and Security) requires local government organizations to provide appropriate job training to indefinite-term contract workers in order to cultivate the knowledge, skills and application skills related to their job and education to prevent sexual harassment in the workplace at least

once a year[7]. However, what has been pointed out as a problem is that each local government organization has its own instructions and guidelines for the education and training of indefinite-term contract workers, leading to varying degree of education and training of such workers in different organizations[2][3]. For instance, most local governments stipulate in their directives that when providing training for indefinite-term contract workers is deemed necessary by the head of the organization, education/training can be carried out by establishing internal educa-tion/training plan. This suggests that local governments are not obliged to provide education or training for indefinite-term contract workers, rather, education/training is given by the individ-ual choice of local governments. In other words, current local government education and train-ing for the indefinite-term contract workers is not conducted without strictly systematical and unvarying enforcement of the central government.

Both public and private organizations make efforts for human resource development, includ-ing continuous and systematic education, training and self-development. This is based on the premise that education and training have the positive impact of improving work performance and ability of employees which, in turn, enhances the performance, productivity and competi-tiveness of the organization. Education/training in public organizations has positive effects both at individual and organizational level[8]. First of all, in terms of individuals, if effective and sys-tematic education and training programs are continuously provided to public officials, their abil-ity to perform the job will be improved through which they will have a high level of organiza-tional commitment, self-efficacy and job satisfaction. This acts as an important driving force for public officials which enables themselves to design more suitable career path while further ad-vancing career. Likewise, the positive effects of education/training at organizational level is that improved capacity of public officials through education and training can help improve organiza-tional performance and productivity. In fact, appropriate and effective education and training has a positive effect on the organization's development of an excellent workforce, which will act as an important driving force to achieve the ultimate goal of administration- providing the public with high quality administrative services. In summary, human resource development, in-cluding education and training, enhances the ability of public officials to better perform their jobs and their job values, creating the desired outcomes that government organizations pursue. Subsequently, this will create a positive impact on improving the life quality of people and con-tributing to the development of public good[10].

However, what should not be overlooked is that the positive effects of education and training on organizational performance mentioned above is not always guaranteed. In other words, when education or training is merely given to employees without the results directly linked to the work performance of the employees, the positive effects of training is only theoretical. When a work environment in which improved competence, knowledge and skills obtained through education/training can be directly linked to and applicable to employees' work perfor-mance, the individual and organizational benefits of education and training described above can be expected[11]. What explains this concept is 'training transfer'. Training transfer refers to the measurement of the level of impact of the effort and expense invested in education and training on employees' job performance[10]. Training transfer can be defined by various perspectives, but in general, it refers to the "continuous and effective application of the knowledge, skills and attitudes acquired through education/training by the trainees to their work performance, based on the assumption that the performance of an individual is improved through a well-defined course of education or training"[12]. In summary, an effective education/training means a pro-gram that enables the participants to easily, directly and continuously utilize the improved skills they have gained through the training in their daily work; the higher the training transfer effects, the more effective education/training.

It is highly anticipated that when participants of education/training have a higher level of motivation and active attitude, the positive effects of the result from education/training on the

individual and organizational will be much greater. This means that efforts to improve the quality of education/training, such as developing high-quality education and training programs and appointing renowned instructors, cannot guarantee the positive effects of education/training. Unfortunately, the education and training in the public sectors of Korea has a variety of limitations and problems which have affected public officials to have relatively high level of resistance to education/training they participate and passive attitude toward the participation. A well-known problem of education and training for public officials in Korea is that the results of education and training are not properly reflected in the personnel management of participating public officials[8][13]. In such reality, most public officials participating in education and training recognize that there is no direct connection between the results of their training and personnel management, showing skeptical perspective on the effectiveness and necessity of education and training. For this reason, education/training has been provided to public officials as a formal one-off event; it has not been practically helpful in maximizing the training transfer effects described above. Considering every aspect, if institutional condition and organizational culture in which the results of education and training public officials obtain can be actively reflected in the personnel management are created, the positive effects of education and training on performance will be greatly increased.

3. Research Methodology and Results

3.1. Hypotheses and research model

Based on previous studies discussing the relationship among the variables of education & training, performance, and feedback of education & training in public organizations, this study attempts to verify the positive relationship between education & training and performance. In addition, this study also examines the moderating effect of feedback of education & training on the relationship between education & training and performance.

H1: Education and training of indefinite-term contract workers in local governments will have a significant positive impact on the performance of the workers.

H2: The feedback of education & training provided to the indefinite-term contract workers in local governments will have a moderating effect on the link between education & training and performance.

Figure 1. Research model.
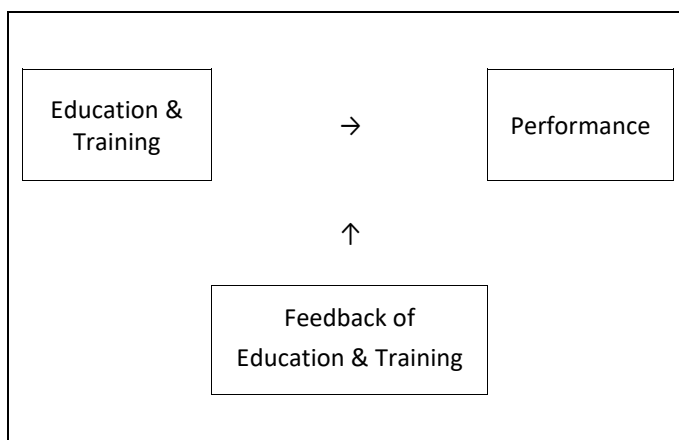
3.2. Sample

To verify the hypotheses, this study used the survey data collected from local government officials who are in charge of indefinite-term contract workers in 243 municipalities nation-wide.[1] Among the 17 metropolitan councils and 226 local governments officials, 12 metropolitan councils and 167 local governments officials who are in charge of human resources responded, showing a final response rate of 73.7%. This survey composed a standardized questionnaire and listed civil servants in charge of human resources in local governments nationwide in advance to carry out a complete enumeration survey through e-mail.

3.3. Measures of variables

The survey data mentioned above consist of level of management awareness, employment and quota management, duty assignment and retirement management, evaluation management, education and training, remuneration management, and management priorities and others related to indefinite-term contract workers[3]. In other words, this study examined the level of human resource management for indefinite-term contract workers recognized by civil servants who are in charge of the complete spectrum of tasks related to indefinite-term contract workers. Among the survey data, this study selected the questionnaire items and measurement results necessary for the verification of hypotheses to quantitatively analyze this study. First, the measurement result of the questionnaire item, "Indefinite-term contract workers at the local government have demonstrated a good performance" was applied to the performance variable, which is also a dependent variable of this study. Second, the education and training variable, which is an independent variable of this study, used the measurement result of the questionnaire item, 'Education and training of the indefinite-term contract workers in the local government have been carried out relatively well'. Third, the measurement result of the questionnaire "the result of education and training has been reflected in personnel management". the variable of feedback of education and training, which is the moderating variable of this study, was used.

All questions were measured based on a five-point Likert scale, ranging from 'not at all(1)' to 'very much(5).' Prior to presenting the results of hypothesis verification, it must be acknowledged that the variables composing the analytical models of this study are not measured by objective indicators, but by the level of subjective recognition of public officials. This is based on numerous empirical studies of social science research which emphasize the similarity between respondents' subjective perception of a particular variable and measurements of objective indexes of the same variable[14][15].

3.4. Hypotheses test

Prior to presenting the hypothesis test results, <Tbale2> shows the mean and standard values of variables(performance, education and training and feedback of education and training) included in the analysis models. As mentioned earlier in this paper, the total number of respondents in the survey is one hundred seventy-nine(179), and the level of awareness of the officials in charge of personnel management of the performance, education and training and feedback of education and training generally was found to be 'neutral(3)' Correlations among the main variables of this study are presented in Table 3 below. As shown in the table, the correlation between performance and education & training was .455, between performance and feedback of education & training was -.068 and between education & training and feedback of education and training was .023.

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[1] This study used the survey data collected directly from the research on Management Plan for the Indefinite-term Contract Workers in the Local Governments[3] prepared by the Korea Research institute for Local Administration in 2017 for analysis.

Table 2. Descriptive statistics.

Variable	N	M	SD
Performance	179	2.944	.904
Education & training	179	3.061	.773
Feedback of education & training	179	3.480	.844

Table 3. Correlations.

Variable	1	2	3
1.Performance			
2.Education & training	.455		
3.Feedback of education & training	-.068	.023	

Note: *p<.05, **p<.01,***p<.001

Regression analysis was conducted to statistically verify the first hypothesis of this study; education and training of indefinite-term contract workers in local governments will have a significant positive impact on the performance of the workers. As shown in below <Table 4>, education and training of indefinite-term contract workers were analyzed to have a positive effect(β = .532, p = .000) on the performance of the workers. This indicates that the Hypothesis 1 of this study can be adopted. Similar to the discussions in previous studies, it showed that the personnel officers in local governments(respondents in this survey) recognize that the level of effectiveness of education and training provided to indefinite-term contract workers is proportionally related to the performance of the workers.

Table 4. Results of regression on the effect of education & training on performance.

Performance (Dependent variable)	Coefficient	Standard errors	t-value	p
Education & training*	.532	.078	6.80	.000
Constant	1.314	.247	5.32	.000
R^2=.207, F=46.28, p=.000				

Note: *p<.05

<Table 5> below summarizes the results of analysis conducted to verify the Hypothesis 2 in this study. The second hypothesis of this study is to verify that feedback of education & training provided to the indefinite-term contract workers in local governments has a statistically significant moderating effect. In order to do so, the independent variable of education & training, moderating variable of feedback of education and training and interaction term between independent and moderating variables(education & training and feedback of education and training) were added to the analysis models in sequence and regression analysis was performed for each model. The following three conditions must be satisfied to verify that a moderating variable has a statistically significant moderating effect on the relationship between independent and dependent variables[16][17]. First, the variations of significance probability F among model 1(independent variable and dependent variable), model 2(independent variable, moderating variable and dependent variable) and model 3(independent variable, moderating variable, independent variable * moderating variable, dependent variable) should be statistically significant. Second, the magnitude of the explanatory power(R^2) in model 1, model 2 and model 3 should be gradually increased. Third, the regression coefficient of independent variable and interaction term of moderating variable(independent variable *moderating variable) should be statistically significant. As shown in <Table 5>, the changes in the significant probability F among Model 1,

Model 2 and Model 3 were all statistically significant(p = 0.000). In addition, although the increase in magnitude of the explanatory power(R^2) of each model was small, the magnitude was found to be sequentially increased(model 1 = .207, model 2 = .213, model 3 = .214). However, the regression coefficient of the interaction term(education & training * Feedback of education & training) in Model 3 was not statistically significant(β = .033, p = .684). Based on the results of the statistical analyses, it can be understood that feedback of education training has moderating effects on the relationship between the education and training of indefinite-contract workers and their performance work; however, it is not statistically significant.

Table 5. Results of regression on the moderating effect of feedback of education & training on performance.

	Performance (Dependent variable)	F	R^2	p
Model 1	Education & training	46.28	.207	.000
Model 2	Education & training feedback of education & training	23.88	.213	.000
Model 3	Education & training feedback of education & training education & training * feedback of education & training	15.90	.214	.000

4. Discussion

4.1. Summary of the research findings

The main purpose of this study is to statistically verify whether the education and training of indefinite-term contract workers in local governments have a positive effect on their performance. In addition, this study conducted an empirical analysis on the moderating effect of the variable of feedback of education and training on the relationship between education and training of indefinite-term contract workers and their performance. As a result of analyzing recognition survey data collected from personnel officers in local governments, the education and training provided to indefinite-term contract workers were verified to have a statistically significant positive effect on their performance. In fact, although it was not statistically significant, feedback of education and training - the level at which results of education and training of indefinite-term contract workers were reflected in the personnel management - showed a moderating effect on the positive relationship between education & training and performance.

4.2. Implications and contributions of the research

As discussed earlier, education/training of employees provided in public organization, including governmental organization, to improve job competency and attitudes towards their duty was verified to have a positive relationship with the level of employees' performance. In other words, the results of this study showing a significant and positive relationship between education/training of indefinite-term contract workers in local governments and their performance cab be considered to be in accordance with the analysis results of previous studies. Nevertheless, what is regretful is that personnel officers in local governments recognize that education and training of indefinite-term contract worker provided at the general level as illustrated in <Table 2>. It implies that the local and central government organizations need to actively develop education and training programs to improve the ability and job performance of indefinite-term contract workers in local governments along with the preparation of guidelines on effective management of education and training. Next, feedback of education and training, or the degree at which the result of education/training is reflected in the personnel management, was

observed to have a moderating effect of some degree on the positive relationship between education and training of indefinite-term contract workers and their performance. As discussed earlier, mere provision of education or training does not automatically guarantee a high level of performance of the trainees. Rather, if qualitative or quantitative evaluation of employees who participated in a training is not performed following the training or the evaluation results are not properly reflected in the personnel management, it will be difficult to expect to obtain the positive effects of education and training on the performance. Considering such findings, efforts should be made to develop guidelines for the development and operation of high-quality programs for indefinite-term contract workers in local governments as well as to establish an institutional system in which results of training are appropriately reflected in the personnel management for indefinite-term contract workers.

The analysis results of this study have the following importance and expected effects. First, theoretically expected effects of this study; majority of previous studies on the indefinite-term contract workers of local governments were exploratory studies discussing the concept, status, or related regulations of such workers. In contrast, this study contributes to the theoretical expansion of existing studies on the indefinite-term contract workers by providing empirical evidences through quantitative analysis on the relationship between education/training and performance, which is one of the main areas of personnel management. Second, practically expected effects of this study; the positive relationship between education/training and performance of indefinite-term contract workers and moderating effect of the feedback of education and training on the positive relationship make contribution to presenting concrete grounds for policy and institution-al preparation for the design and operation of education/training programs for indefinite-term contract workers in local governments and linkage between results of education/training and personnel management.

4.3. Limitations of the study and recommendations for future research

The main limitations of this study, which also make recommendation for future research on indefinite-term contract workers are as follows. The survey subject is the most crucial limitation among other limitations of this study. The questionnaire used in the analysis of this study is based on the survey on the awareness of personnel officers in charge of indefinite-term contract workers, rather indefinite-term contract workers, in local governments. In other words, the core limitation of this study is that the measured values of the dependent, independent and moderating variables included in the analytical models do not reflect the self-recognition level of indefinite-term contract workers. Therefore, a quantitative analysis based on survey of indefinite-term contract workers in government organizations is recommended for the future research on indefinite-term contract workers. Also, the fact that the analysis result and hypothesis verification of this study were conducted based on the survey data collected in a single year is a limitation of this study. Considering that quantitative research on indefinite-term contract workers by government organizations has been initiated, future research on indefinite-term contract workers should make efforts to verify the relationship between key variables by collecting and analyzing data over several years.

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6. Contribution

6.1. Authors contribution

	Initial name	Contribution
Author	SYJ	-Set of concepts ☑ -Design ☑ -Getting results ☑ -Analysis ☑ -Make a significant contribution to collection ☑ -Final approval of the paper ☑ -Corresponding ☑

-Play a decisive role in modification ☑

-Significant contributions to concepts, designs, practices, analysis and interpretation of data ☑

-Participants in Drafting and Revising Papers ☑

-Someone who can explain all aspects of the paper ☑

6.2. Author profile

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Research field
- Do Transformational-oriented Leadership and Transactional-oriented Leadership have an Impact on Whistle-blowing Attitudes? A Longitudinal Examination Conducted in U.S. Federal Agencies, Public Management Review, 19(4) (2017).
- The Impact of Public Service Motivation on the Job Satisfaction of the Local Public Enterprise: An Empirical Study on the Mediation Effect of Organizational Culture, Korea Public Administration Quarterly, 30(3) (2018).

Major career
- 2016~2018. Korea Research Institute for Local Administration, Associate Research Fellow
- 2018~present. Keimyung University, Assistant Professor

6.3. Funding agency

International Journal of Crisis & Safety

CRITICAL DISCOURSE Analysis of Public Speech: A Case Study of Obama's Speech

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Abstract

Critical Discourse Analysis(CDA) is a type of discourse analytical research that primarily studies the way social power abuse, dominance, and inequality are enacted, reproduced and resisted by text and talk in the social and political context. Halliday developed an internationally influential grammar model—the Systemic Functional Grammar. It is the main foundation of CDA is as well as other theories in pragmatics. The aim of this study is to explore the relationships among ideology, language and power and to find out how to use the power of speeches to persuade the audience to accept and support his policies. The researcher selected the full transcript from former president Barack Obama's acceptance speech on Wednesday morning, Nov. 7, 2012. Then the researcher applied Halliday's Systemic Functional Grammar, in terms of one of the meta-functions: interpersonal function, to find out the formal features of Obama's speeches. According to the Halliday's theory, the researcher summarizes the features of Obama's speeches as follow. First, through the analysis of modality, Obama made his audience more easily to understand and accept his political speeches by means of modal verbs, structure and word choice. Next, he used more simple words and short sentences instead of difficult ones. Thus, it shortened the distance between him and the audience easily. Also, by using first person pronouns, especially 'we', he successfully shortened the distance between him and the public. So it can help him persuade the audience to accept and support his policies. CDA explores the relationships among ideology, language and power. The results of this study provide a new idea and method to analyze public addresses. Also we looked at different strategies used by speakers on the panel to persuade the listeners about their opinions and judgments. So it is worth for English learners to pay more attention.

[Keywords] *Critical Discourse Analysis, Halliday, Systemic Functional Grammar, Public Speech, Interpersonal Function*

I. Introduction

In the past twenty years, Critical Discourse Analysis(CDA) developed quickly in overseas. A large number of researchers have made contribution in the fields of critical analysis of political discourse. At the end the 1970s, CDA has established as one of the research domain in discourse studies. It is known as an approach that is based on the union of social theory and language studies[1]. However, in the 21st century, the development of CDA has come to a new stage. We can see more articles about CDA appeared in academic journals.

CDA is "a type of discourse analytical research that primarily studies the way social power abuse, dominance, and inequality are enacted, reproduced, and resisted by text and talk in the

social and political context[2]." With such dissident research, critical discourse analysts take explicit position, and thus want to understand, expose, and ultimately resist social equality [3].

Michael Alexander Kirkwood Halliday(often M.A.K. Halliday), an Australian linguist, developed an internationally influential grammar model—the Systemic Functional Grammar[2]. It is the main foundation of CDA as well as other theories in pragmatics. The object of CDA can be a newspaper, an advertisement, a political speech, regulations and laws and so on. Its aim is to explore the relationships among ideology, language and power.

Among them, public speech is a one-way communication which does not need any response from the audience. However, in some occasions the speaker encourages the audience to respond some straight questions. According to 'The American Heritage Dictionary of the English Language,' public speaking is "the act, art, or process of making effective speeches before an audience"[4]. As it is generally understood, public speeches are delivered orally, commonly well-prepared and presented in formal situations. Based on the contents and functions, political speech is a kind of public speech given by authorities who have political purposes with aims to influence a certain group of people[4]. Thus, ideas, thoughts, programs, visions and missions can be effectively transferred to the audience by constructing beautiful speech.

Also, the arrangement of words enables the addresser to precisely realize the message he or she intends to convey[5]. In creating an effective speech, the speaker needs to pay attention to context of situation in which he or she will deliver the speech. Accordingly, the study of presidential addresses has not only attained the attention of linguists, but also attracted the interests of historians and political scientists.

In this study, the researcher chooses to analyze one of the President Obama's speeches based on three reasons. First, public speech is form of spoken linguistic product which contains meaning that becomes the main purpose of delivering it. Second, as an EFL learner, the researcher is curios on how the interpersonal meaning in this particular speech is realized through the construction of the words. How Obama arranges words into phrase, phrase into sentence, sentence into paragraph so that his interpersonal meaning is well-conveyed through his speech. Finally, there is no doubt that his speech have some valuable information which we can adapt and later on we can apply it to the pedagogical fields.

2. Theoretical Background

Halliday's systemic functional grammar is usually considered the main foundation of CDA as well as other theories in pragmatics. Halliday thought that the procedure of stylistic analysis can be divided into three logically ordered phrases: analysis, interpretation and evaluation. The limitless practical functions can be generalized into a set of highly coded and abstract functions—metafunctions, which are inherent in every language[6]. His idea of metafunction includes the ideational function, the interpersonal function and the textual function.

In this paper, the researcher focuses on the interpersonal function. In this function, language serves as interpersonal function. As Halliday observed, "the speaker is using language as the means of his own intrusion into the speech event: the expression of his comments, attitudes and evaluations, and also of the relationship that he sets up between himself and the listener—in particular, the communication role that he adopts of informing, questioning, greeting, persuading, and the like"[7].

Based on Hu Zhuanglin, "the interpersonal function embodies all uses of language to express social and personal relations. This includes the various ways the speaker enters a speech situation and performs a speech act"[8]. According to O' Halloran, ''The interpersonal metafunction relates to a text's aspects of tenor or interactivity''. ''Like field, tenor comprises
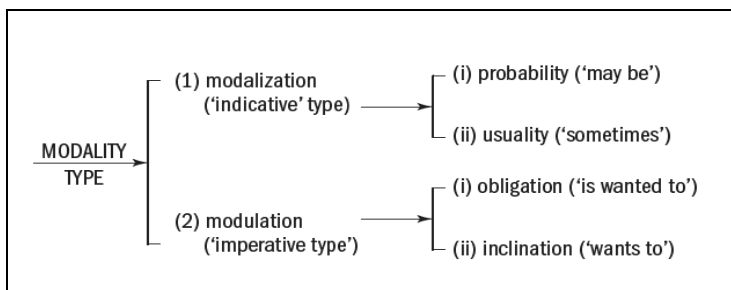
three component areas: the speaker/writer persona, social distance, and relative social status''. ''Social distance and relative social statues are applicable only to spoken texts, although a case has been made that these two factors can also apply to written text''[9].

Mood and modality are often used to express the interpersonal function. Mood shows what role the speaker selects in the speech situation and what role he/she assigns to the addressee. If the speaker selects the imperative mood, he/she assumes the role of one giving commands and puts the addressee in the role of one expected to obey orders. For example, *Pass me the book*[8].

Modality refers to the intermediate ground between positive and negative polarity[10]. What this implies more specifically will depend on the underlying speech function of the clause. On the one hand, it can objectively express the speaker's judgment toward the topic. On the other hand, it can show the scale of formality, social role relationship and power relationship[10]. In English, except adjectives, modal verbs and modal adverbs, there are also notional verbs, tense, personal pronouns, direct and indirect speeches to express the modalization.

As shown in <Figure 1>, according to Halliday's functional grammar, modality types were distinguished by 'modalization' and 'modulation'. "(1)If the clause is an 'information' clause(a proposition, congruently realized as indicative), this means either (i)'either yes or no', i.e. 'maybe'; or (ii)'both yes and no', i.e. 'sometimes'; in other words, some degree of probability or of usuality. (2)If the clause is a 'goods-&-services' clause(a proposal, which has no real congruent form in the grammar, but by default we can characterize it as imperative), it means either (i)'is wanted to', related to a command, or (ii)'wants to', related to an offer; in other words, some degree of obligation or of inclination. We refer to type (1)as modalization and to type (2)as modulation"[10].

Figure 1. Types of modality(Halliday, 2014).

Halliday further distinguished 'orientation', i.e. whether the speaker is explicitly involved in the activity(explicitness of speaker involvement) and "value/strength of modality". In the orientation, there is the distinction between subjective and objective modality, and between the explicit and implicit variants. The system can be seen in <Figure 2>.

Figure 2. System of types of orientations in modality (Halliday, 2014).

Value of modality refers to the strength or power. These values are summarized in <Table 1>. Halliday does not present it as a scale but as a system of possible choices available for the speaker.

Table 1. Three 'values' of modality(Halliday, 2014).

	Probability	Usuality	Obligatoin	Inclination
High	Certain	Always	Required	Determined
Median	Probable	Usually	Supposed	Keen
Low	Possible	Sometimes	Allowed	Willing

<Table 2> lists the Finite verbal operators, positive and negative. These operators obviously vary considerably in frequency. As modal operators, 'shall' and 'shan't' are very rare, although in regulatory texts operating in 'enabling' contexts, 'shall' is common[10].

Table 2. Finite verbal operators(Halliday, 2014).

Modal operators:			
	Low	Median	High
Positive	can, may, could, might, (dare)	will, would, should, is/was to	must, ought to, need, has/had to
Negative	needn't, doesn't/didn't + need to, have to	won't, wouldn't, shouldn't, (isn't/wasn'to)	mustn't, oughtn't to, can't,couldn't, (mayn't, mightn't, hasn't/hadn't to)

Note: Some of the negative forms, such as mayn't, are rather infrequent; if they occur in a negative clause, the negative is usually separated(may not, used not to).

3. Method

In this study, the researcher selected the full transcript from former president Barack Obama's acceptance speech on Wednesday morning, Nov. 7, 2012. Then the researcher applied Halliday's systemic functional grammar, in terms of one of the meta-functions: interpersonal function, to find out the formal features of Obama's speeches. Its aim is to find out how to use the power of the speech to persuade the public to accept and support his policies.

4. Results and Discussion

4.1. Modal item

The researcher concerned the use of modalization and modulation means, in particular various degrees of probability and obligation. Regarding the choice of orientation, Obama used implicit subjective and objective modalization and modulation('probability' and 'obligation' mainly). The most frequently used modal verb in the speech was 'will'. The next was 'can'. Obama had used 'will' in the speech more than other verbs to show what we will do in future. It demonstrated the president's capability in ruling his government with difficulties in future. The results are shown in the <Table 3> below.

Table 3. The results of modal item analysis.

Type	Polarity	Value	Orientation		Modal item	Frequency
Modalization: probability	Positive	High	Implicit	Subjective	Must	1
		Median			Will	13
		Low			May	1
	Negative	Median			Won't, wouldn't	2
Modulation: obligation	Positive	High	Implicit	Subjective	Must	1
				Objective	Need	2
		Low		Subjective	Can	11
Modulation: inclination	Positive	Low	Implicit	Objective	Willing	2

The researcher claimed that speakers have the choice of focus. Whereas modalization(epistemic modality) concerns mainly beliefs, knowledge and opinions more than facts and includes the speaker's point of view towards the proposition, it is modulation(deontic modality) which concerns necessity or possibility of acts which are performed out by responsible actors[11] that is used in language primarily to influence other people's behavior.

Consequently, from modality metafunction, it can be understood that president's use of modal verbs shows his firm plan to fulfill the tasks and make their language easy as much as possible. Then it shortens the distance between the president and the public. Another role of modal verbs, especially the frequent use of 'will' and 'can' in president's speeches, persuades the audience to have faith in the government's ability about the difficulties that their country may confront in the future.

4.2. Additional analysis(i.e. structure, word choice, etc.)

Obama started off by alluding to the independence gained by the former colonies, a step which included self-determination. He pointed out that the struggle for a perfect union was an ongoing process and emphasized the various contributions the listeners, whom he addressed directly, had made. He made use of anaphora when referring to the process, repeated "it moves forward", which spread optimism using a parallel structure, and described the impact of "the spirit" and the values on the outcome of the elections.

He emphasized that, regardless of individual dreams, a sense of togetherness was important for success. He compared the nation and the American people to a family, thereby using the personal pronoun 'we' repeatedly. He again used the personal pronoun 'we' to stress the team spirit and all the effort taken together in order to enumerate the "hopes for America's future" which most people shared, and he underlined the commonality by his continued usage of the pronouns 'we' , 'us' and 'our.'

Li stated that one of the roles of personal pronoun is that it has an interpersonal function in discourse and it makes a kind of link between the speaker and the listener in a speech[12]. The first person pronouns('we' and 'I') were used the most in Obama's speech. In his speech, 'we' turned up 62 times and 'I' turned up 37 times. The pronoun 'we' could imply two meanings. First, it could mean an idea of 'I and you' that shorten the distance between the president Obama and the public and created a feeling of common purpose. Second, it could mean 'I and

others', which refers to a sense of authority by the addresser and his team, who tries to establish the powerful government that the audience expects.

Secondly, he made use of enumeration in negative statements regarding debt, inequality and global warning. The word choices 'burdened', 'weakened' and 'threatened' stressed the negative impact they could have on the people. This way he made the audience pay attention to these unresolved problems.

Thirdly, he characterized America as a secure and globally respected country, using enumeration with positive adjectives. He contrasted the need for military strength with the prospect of peace and basic values for all.

Then, he had pointed out that they had to progress to make the union perfect, using parallel structures/anaphora to emphasize what he had said. He made his forth point characterizing America as 'generous', 'compassionate' and 'tolerant' enumerating positive adjectives(word choice), regarding patriotic second- generation immigrants.

All four points he made start with the same sentence structure, the same wording to help the audience remember the points and follow his line of argument more easily. He finished this part of his speech switching from "we … want/believe" to "I … believe we can", to stress his leaderships qualities. He repeated the need for jobs, opportunities and security for the middle class adding the word 'new' three times to emphasize the necessity of further advancement.

Finally, he alluded to the American Dream, focusing on the differences among Americans, using opposites to build contrasts to show how great the differences really are. He addressed the audience directly to get his message of hope across: that everybody can really make it in America "if they're willing to try."

5. Conclusion

Systemic functional linguistics describes language with a functional-semantic approach which explores both how people use language in different contexts, and how language is structured for use as a semiotic system[13]. It is a theory on language and at the same time a methodology to deploy language. Through the analysis of Obama's speech with the systemic functional approach, the features of Obama's speeches can be summarized as follow. First, modality refers to a addresser's attitudes towards or opinion about the truth of a proposition expressed by a sentence. Through the analysis of modality, Obama made the public more easily to understand and accept his political speeches by means of modal verbs, structure and word choice.

Next, he used more simple words and short sentences instead of difficult ones. His language is easy and colloquial. Thus, it can easily shorten the distance between him and the audience. By using first person pronouns, especially 'we', he successfully shortened the distance between him and the audience. So it can help him persuade the public to accept and support his policies.

CDA explores the relationships among ideology, language and power. The results of this study provide a new method and idea to analyze public addresses. Pedagogically, this study can make EFL learners understand the effectiveness of lexicogrammar analysis to enhance their critical thinking. Also, this study may be able to be a model for another researcher who interested in conducting such study. Therefore, it is worth for us to pay more attention.

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7. Contribution

7.1. Authors contribution

	Initial name	Contribution
Author	HDE	-Set of concepts ☑
		-Design ☑
		-Getting results ☑
		-Analysis ☑
		-Make a significant contribution to collection ☑
		-Final approval of the paper ☑
		-Corresponding ☑
		-Play a decisive role in modification ☑
		-Significant contributions to concepts, designs, practices, analysis and interpretation of data ☑
		-Participants in Drafting and Revising

| Papers ☑ |
| -Someone who can explain all aspects of the paper ☑ |

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International Journal of Crisis & Safety

A Study on the Actual Condition and Improvement Plan of Hierachical SAFETY Management in Natural Parks

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Abstract

The study reviewed and evaluated the management status and usefulness of more than 30 items through basic statistical annual reports of national parks, state parks, and military parks from 2009 to 2018. The results of this study are as follows. In terms of the conservation and sustainable use of natural resources, the evaluation of the effectiveness of management of animal and plant resources, endangered species resources, cultural resources, and landscape resources management shows that national parks with the largest scale, budget support and input in all areas utility was the lowest compared to provincial and county parks.

In terms of facility management, the utility of national parks was lowest than that of provincial and military parks. In the area of safety management and use management, it is generally well managed in terms of area and management cost, but more active and practical use management is needed to cope with the change in demand of users due to the change of accessibility and visit type. Judging.

In conclusion, this study surveyed the management status of 78 natural parks in 22 national parks, 29 provincial parks and 27 county parks in Korea. There were many places, and because the responsibility and management of administrative districts were not clear, integrated park management was difficult. Therefore, provincial and military parks, which are mandated as local governments, recognize the weakness of local financial conditions and expertise in park management, and in order to overcome their differences with the national park, We believe it is necessary to improve and supplement the management system such as government policy reflection and active financial support.

[Keywords] Hierarchical, Nature Park, National Park, Park Management, Policy Reflection

1. Introduction

Since the designation of Jirisan Mountain as the first national park on December 29, 1967, Korea's natural parks have been designated with the primary goal of protecting beautiful natural landscape and encouraging many people to visit[1]. The purpose of designating national parks, in the early stage, was to revitalize local economy through profits obtained from natural park users by establishing roads to secure accessibility, constructing recreation, entertainment and accommodation facilities in complexes within natural parks. At that time, the residents of natural parks and surrounding areas thought that designation of natural parks would result in improvement and development of various infrastructures such as road and roof. Considering the circumstances before and during the 1980s, it can be said that there was a high expectation for natural park designation. This is because the designation of natural parks, during that time, was recognized as an opportunity to develop the region by increasing the use by many people and developing and establishing various facilities for the use, making the region as one of the most representative tourist attractions or resort areas in Korea[2][3].

Natural park prescribed by the Natural Parks Act is the park designated for the purpose of preserving the natural ecosystem and landscape and promoting sustainable use of the park[4]. According to the Natural Parks Act set for the management of natural parks by a hierarchical order, it explicitly states that the state and local governments are obliged to preserve and manage natural parks and ensure sustainable use of the parks by designating natural parks with excellent natural ecosystems and landscapes[5]. However, regardless of the financial and manpower support provided to national parks by the government as the main agent, it is known that provincial and county parks are delegated to local governments which establish plans and conduct regulation-based management without providing sufficient administrative and financial support[6].

In the 1990s and early 2000s, based on the perceived imbalance between the use and conservation of natural parks, the purpose of natural park designation changed to conservation-oriented since the 2001 revision of the Natural Parks Act[7]. Stakeholders and landowners at the time of development and development aimed at rational use of national land resources are beginning to have strong demand for reclamation in the park area. Stakeholders and landowners, whose purpose of construction and development was to enable rational use land resources, strongly demanded to exclude parks from the scope of revision. As the number of stakeholders who complain about the transition from the purpose of development and construction to the purpose of conservation, efforts were made to resolve conflicts between residents and stakeholders by purchasing private lands and developing resident support programs since the mid-2000s, though not successful.

Previous studies domestically conducted on natural parks include the research on improving the system for the effective management of natural parks and advanced environmental management plans(Min Il-ki, 2009)[8], study on effective management of provincial and county parks(Kim Jong-hwan, 2013)[6], study on the natural landscape evaluation and management measures for Bukhansan National Park Dulle-gil(Lee, Min-young, 2013)[9], study on the nature conservation strategy of Jirisan National Park(Kim Aram, 2013)[10], evaluation of the naturalness of Gyeongju National Park trail(Moon Sung-ju, 2013)[11], estimation of visit demands and benefits of Jeollabuk-do Provincial Park using travel cost method(Kim Jin-ok, 2013)[12], study on the vegetation characteristics and management plan of urban natural parks(Shim Yong-man, 2016)[13], study on the policy improvement plan for town and county facility management and urban natural parks(areas)(Jung Hyuk, 2016)[14] and evaluation on park planning of provincial parks among Korea natural parks(Cho Woo, 2019)[15]. Most of the previous studies conducted in Korea are related to the management of national parks and evaluation of natural environment and landscapes of national park, focusing on the use of management space, landscape resource distribution characteristics and naturalness evaluation of national parks among other types of natural parks. On the other hand, research on conflict resolution with stakeholders, such as park area changes and utility of natural parks seems to be insufficient. This study seeks to make contribution to the establishment of fundamental data necessary for implementing policies for effective management of natural parks by analyzing and evaluating the effectiveness of each item through assessing the overall management status of natural parks.

2. Methods

2.1. Research subject

This regulation is aimed at the systemization of the system of research ethics by regulating the various matters in relation to the journal published from J-INSTITUTE Ethics of the researcher[1][2]. As shown in the following <Table 1> or < Figure 1>.

According to the Statistical Yearbook of National Parks in 2019[16][17], there are 88 designated or certified natural parks in Korea. Among them, 78 natural parks which are actually designated and operating were selected as the subjects of this study. Because geoparks are certified by the Korean Ministry of Environment or other international organization, rather than being designated, they were excluded from the study.

Table 1. Scope of research subject.

Division	Hierarchical order			
	National	Provincial	County	Geopark
Number of parks	22	29	27	10
Park nomination method	Designation	Designation	Designation	Certification
Total	78 (Study Subjects)		10	

2.2. Data analysis

This study first examined the development process of effective management of natural parks by contemplating previous studies, and analyzed the data from Statistical Yearbook on national, provincial and county parks for 10 years from 2009 to 2018 to understand the management status of natural parks by the level of hierarchy. In addition, this study considered, evaluated and quantified the management effectiveness of natural parks by hierarchy.

Table 2. Classification and analysis of items.

Classification		Analyzed items	
By Hierarchy	National	-Designation condition and scope analysis -Status of fauna & flora resources -Status of cultural resources	-Geographic location -Status of endangered species resources -Status of landscape resources
	Provincial	-Major facilities and capacity of the facilities -Land ownership status -Park management organization and quota analysis -Disaster forecast and warning facilities	-Status of trails and observation paths -Status of specific use districts -Status of safety accidents -Status of wildfires occurrence
	County	-Status of wildfire monitoring equipment -Status of enforcement and disposition of illegal activities -Status of waste management -Budget status	-Status of permit and consultation -Status of illegal facilities -Status of visitors -Utility analysis for each item

3. Results & Discussion

3.1. Natural park designation status in Korea

3.1.1. Status of designation and designation conditions

Since the designation of Jirisan Mountain as the first national park on December 29[18], 1967, Korea has designated a total of 78 parks, including 22 national parks, 29 provincial parks and 27 county parks and excluding 10 geoparks. The total park area designated by hierarchy is 6726.298 ㎢ in 22 national parks with an average of 305.741㎢. Similarly, it was found that the total area of the 29 provincial parks is 1023.576㎢ with an average of 35.296㎢ and that of the 27 county parks is 234.662㎢ with an average of 8.691㎢.

Table 3. Designation of natural park and designated area over time.

Division		1960s	1970s	1980s	1990s	2000s	2010s
National	# of parks	4	9	7	0	0	2
	Ratio(%)	18.18	40.91	31.82	0	0	9.09
Provincial	# of parks	0	11	5	5	6	2

		0~1	1~10	10~50	50~100	100~500	More than 500
County	Ratio(%)	0	37.93	17.24	17.24	20.29	6.90
	# of parks	0	0	21	4	1	1
	Ratio(%)	0	0	77.78	14.81	3.70	3.70
Total	# of parks	4	20	33	9	6	5
	Ratio(%)	5.13	25.64	42.31	11.54	7.69	6.41

Division(㎢)	Designated area	Average	# of parks	0~1	1~10	10~50	50~100	100~500	More than 500
National	6726.298	305.741	22	-	-	-	7	13	2
Provincial	1123.576	35.296	29	-	6	18	2	3	-
County	234.662	8.691	27	4	13	10	-	-	-
Total	7984.536	102.366	78	4	19	28	9	16	2

3.1.2. Designation status and area by administrative district

The results of analyzing the designation status of natural parks by administrative district are shown in <Table 4>.

Table 4. Designation status and area by administrative district.

Division	Hierarchy(# of parks)			Total	Hierarchy Area(㎢)			Total	
	National	Provincial	County		National	Provincial	County	# of parks	Area(㎢)
Gyeonggi	0	3	2	5	0	79.574	26.488	5	106.062
Gangwon	5	1	3	9	1040.357	1.689	7.324	9	1049.370
Chungnam	2	4	0	6	507.689	114.687	0	6	622.376
Jeonbuk	3	3	2	8	405.608	104.213	22.074	8	590.359
Jeonnam	3	6	0	9	2,397.865	272.437	0	9	2,670.302
Kyeongbuk	3	4	6	13	564.156	217.922	70.145	13	852.223
Kyeongnam	3	2	14	19	562.337	0	0	2	562.337
Chungbuk	2	0	0	2	1094.954	126.201	111.724	19	1,332.879
Jeju	1	6	0	7	153.332	208.153	0	7	361.485
National	22	29	27	78	6,726.298	1,124.876	237.755	78	8,084.536

Degree of freedom 9, F 1.6839, P-Value 0.16569

Degree of freedom 2, F 4.4031, P-Value 0.02776

3.1.3. Designation status and area by type

The results of analyzing the designation status by type are shown in <Table 5>.

Table 5. Designation status and area by type.

Division	Hierarchy(# of parks)			Total	Hierarchy area(㎢)			Total
	National	Provincial	County		National	Provincial	County	
Mountainous	17	17	18	52	3,256.898	669.781	184.198	4,110.88
Coastal	4	8	1	13	3,332.85	410.797	5.106	3,748.75
Historical	1	2	3	6	136.55	40.66	14.915	192.125
Water system	-	2	5	7	0	3.638	33.536	37.174

By type — Degree of freedom 3, F 1.6621, P-Value 0.27275

By hierarchy — Degree of freedom 2, F 3.1632, P-Value 0.11533

3.2. Resource management

3.2.1. Status of fauna and flora resources

The status of fauna and flora resources by hierarchy is as shown in <Table 6>.

Table 6. Fauna and flora resource status.

Division(# of parks)	Flora	Fauna						Total
		Mammal	Amphib-ian	Reptile	Bird	Fish	Insect	
National(22)	25,294	767	271	231	3,203	1,175	47,367	78,308
Provincial(29)	11,239	404	173	177	1,551	650	6,539	20,733
County(27)	8,850	341	188	185	1,221	202	4,868	15,855
Degree of freedom 2, F 2.1221, P-Value 0.1625								

3.2.2. Status of endangered species resources

The status of endangered species resources in natural parks by hierarchy is shown in <Table 7>.

Table 7. Status of endangered species resources.

Division(# of parks)	Flora	Mammal	Amphibian	Reptile	Bird	Fish	Insect	Total
National(22)	88	20	4	4	63	27	26	232
Provincial(29)	23	38	6	4	79	1	2	153
County(27)	12	27	1	5	25	2	8	80
Degree of freedom 2, F 2.3669, P- Value 0.1359								

3.2.3. Status of cultural resources

The status of cultural resources in natural parks by hierarchy is shown in <Table 8>.

Table 8. Status of cultural resources.

Division (# of parks)	National treasure	State-designated cultural property						Municipal and provincial designated cultural property						Registered
		Treasure	Historica	Scenic	Intangible cultural asset	Folklore cultural heritage	natural monumen	Tangible cultural asset	Intangible cultural asset	Monumen	Folklore cultural heritage	cultural property/heritage material	
National(22)	42	163	29	40	8	5	75	230	5	58	2	82	12
Provincial(29)	12	139	14	9	1	71	15	287	2	40	1	60	5
County(27)	0	28	5	1	0	0	8	36	0	5	5	35	0
Degree of freedom 2, F 5.5672, P-Value 0.0103												

3.2.4. Status of landscape resources

The status of landscape resources in natural parks by hierarchy is shown in <Table 9>.

Table 9. Status of landscape resources.

Division(# of parks)	Mountainous	Coastal	Religious and cultural heritage	Native place	Others	Total
National(22)	1,449	583	352	25	106	2,515
Provincial(29)	461	9	5	0	7	483
County(27)	228	1	1	0	1	231
Degree of freedom 2, F 4.7598, P-Value 0.0352						

3.2.5. Resource management utility

The results of analyzing the utility of resource management are shown in <Table 10>.

Table 10. Utility analysis.

Division	National		Provincial		County	
	Utility	Grade	Utility	Grade	Utility	Grade

Flora resources(species) / area(㎢)	82.7	Poor	318.4	Fair	1,018.3	Good
Fauna resources(species) / area(㎢)	173.4	Poor	269.0	Fair	806.0	Good
Flora resources(species)/management cost(10K won)	0.9	Poor	4.66	Fair	8.07	Good
Fauna resources(species)/management cost(10K won)	0.2	Poor	1.2	Fair	1.9	Good
Endangered species(flora)/ area(㎢)	0.3	Poor	0.7	Fair	1.4	Good
Endangered species(fauna)/ area(㎢)	0.5	Poor	3.7	Fair	7.8	Good
Endangered species(flora) /management cost(100K won)	0.03	Poor	0.10	Fair	0.11	Good
Endangered species(fauna) /management cost(100K won)	0.01	Fair	0.01	Fair	0.07	Good
Cultural resources(quantity)/ area(㎢)	2.5	Poor	18.6	Good	14.2	Fair
Cultural resources(quantity) /management cost(100K won)	0.3	Poor	2.7	Good	1.1	Fair
Landscape resources(quantity)/ area(㎢)	2.4	Poor	12.7	Fair	23.1	Good
Landscape resources(quantity)/management cost(100K won)	1.79	Poor	4.00	Fair	4.20	Good

3.3. Facility management status

3.3.1. Status and capacity of major facilities

The main facilities of natural parks are park offices, visitor support centers, visitor information centers, shelters, campsites, parking lots, restrooms, guide signs, trails and promenade and their status are shown in <Table 11>.

Table 11. Status of major facilities.

Division	Park office	Visitor support center	Visitor information center	Shelter	Campsite	Parking lot	Restroom
National	99	120	15	28	41	118	316
Provincial	0	14	24	25	17	107	262
County	0	3	13	15	11	46	113
Degree of freedom 2, F 6.1352, P-Value 0.0146							

3.3.2. Status of trails/observation paths

Below <Table 12> shows the results of analyzing the trails and nature observation paths in natural parks by hierarchy.

Table 12. Status of trails and observation paths.

Division	Trails				Observation paths			
	Section(Qty)	Avg.(Qty)	Extension(㎞)	Avg.(㎞)	Section(Qty)	Avg.(Qty)	Extension(㎞)	Avg.(㎞)
National	616	28.0	2,040.7	3.31	80	3.64	121.7	1.52
Provincial	229	7.9	757.34	3.31	15	0.52	34.52	2.30
County	102	3.8	359.9	3.53	2	0.07	1.3	0.65

3.3.3. Land ownership status

The status of land ownership in natural parks by hierarchy is shown in <Table 13>.

Table 13. Land ownership Status.

Division		State-owned	Public land	Private land	Buddhist temple
National	Area(㎢)	4,929.481	511.089	1,006.119	279.609
	Ratio(%)	73.3	7.6	14.9	4.2
Provincial	Area(㎢)	81.291	89.716	426.711	71.156
	Ratio(%)	12.15	13.4	63.8	10.6
County	Area(㎢)	33.6	56.262	103.663	34.184
	Ratio(%)	14.76	24.71	45.52	15.01
Total(㎢)		5,044.372	657.067	1,536.493	384.949
Ratio(%)		66.17	8.62	20.16	5.05
Degree of freedom 2, F 2.0154, P-Value 0.2140					

3.3.4. Status of specific use districts

The status of specific use districts in natural parks by hierarchy is shown in <Table 14>.

Table 14. Status of specific use districts.

Division	Park resource reserve district (㎢)	Ratio (%)	Park resource environment district(㎢)	Ratio (%)	Park culture Heritage district(㎢)	Ratio (%)	Park town district(㎢)	Ratio (%)
National	1,523.260	22.6	5,173.994	76.9	18.702	0.3	10.342	0.2
Provincial	171.77	28.1	907.76	75.6	6.948	1.2	12.645	1.9
County	102.766	41.0	123.523	57.8	1.672	2.1	6.311	4.9

3.3.5. Facility management utility

The results of analyzing the utility of facility management are shown in <Table 15>.

Table 15. Utility analysis.

Division	National		Provincial		County	
	Utility	Grade	Utility	Grade	Utility	Grade
Facility(Qty)/ area(㎢)	2.46	Poor	18.59	Good	14.15	Fair
Facility(Qty)/ management cost(100K won)	0.27	Poor	2.72	Good	1.12	Fair
Trail(Qty)/ area(㎢)	2.0	Poor	6.5	Fair	11.7	Good
Trail(㎞)/ area(㎢)	6.7	Poor	21.5	Fair	41.4	Good
Trail(Qty)/ management cost(100K won)	0.2	Poor	1.0	Good	0.9	Fair
Trail(㎞)/ management cost(100K won)	0.7	Poor	3.1	Fair	3.3	Good
Observation path(Qty)/ area(㎢)	0.3	Fair	0.4	Good	0.2	Poor
Observation path(㎞)/ area(㎢)	0.4	Fair	1.0	Good	0.0	Poor
Observation path(Qty)/ management cost(100K won)	0.0	Fair	0.1	Good	0.0	Fair
Observation path(㎞)/ management cost(100K won)	0.0	Fair	0.1	Good	0.0	Fair
Private land area(㎢)/ area(㎢)	3.3	Good	12.1	Poor	11.9	Fair
Private land area(㎢)/ management cost(100K won)	0.4	Good	1.8	Poor	0.9	Fair
Specific use district area(㎢)/ area(㎢)	0.1	Poor	0.6	Fair	0.9	Good
Specific use district area(㎢)/ management cost(100K won)	0.0	Fair	0.1	Good	0.1	Good

3.4. Status of safety management

3.4.1. Status of park management organization and quota

The management of national parks has been carried out by the establishment of korea national park service in 1987.

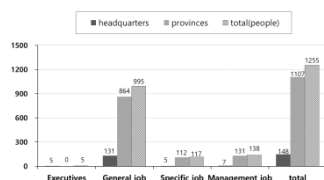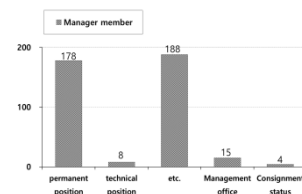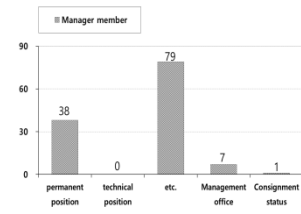**Figure 1.** National park management staff comparison. **Figure 2.** Provincial park management staff comparison. **Figure 3.** County park management staff comparison.

3.4.2. Status of safety accident occurrence

The status of safety accident occurrences in natural parks by hierarchy is shown in <Table 16>.

Table 16. Safety accident occurrence status.

Division		Death						Injury	
		Fall	Frozen	Drown	Sudden cardiac death	Natural disaster	Others	Bone fracture/ wound	Dehydra- tion/ spasm
National	2013	4	0	4	12	0	1	180	68
	2014	10	2	3	19	0	2	154	47
	2015	6	0	1	11	2	2	174	6
	2016	4	1	0	9	0	0	176	3
	2017	3	0	1	11	0	3	158	3
Provincial	2013	1	0	1	0	0	0	56	2
	2014	1	0	3	0	0	0	37	4
	2015	3	0	2	0	0	1	58	10
	2016	1	0	0	0	0	0	12	28
	2017	1	0	0	0	0	2	33	1
County	2013	0	0	1	0	0	0	47	1
	2014	0	0	0	0	0	0	42	12
	2015	0	0	0	0	0	0	25	7
	2016	0	0	0	0	0	0	17	15
	2017	0	0	4	0	0	0	23	15

3.4.3. Disaster forecast and warning facilities

The status of disaster forecast and warning facilities in natural parks by hierarchy is shown in <Table 17>.

Table 17. Status of disaster forecast and warning facilities.

Division	Surveillance facility	Control facility	Precipitation observation facility	Warning facility	Relay facility	Water lever observation facility	AWS	Signage
National	19	35	108	175	15	5	65	223
Provincial	0	1	10	10	0	0	0	4
County	2	3	6	14	0	1	1	3

3.4.4. Wildfire occurrence

The status of wildfire occurrences in natural parks by hierarchy is shown in <Table 18>. 19.44ha was burned in 41 fires occurred in 22 national parks over the last five years. Similarly, 8 fires in 29 provincial parks burned 15.72ha in the past five years while no wildfire was reported in the 27 county parks over the last five years.

Table 18. Wildfire occurrence.

Division	2013		2014		2015		2016		2017	
	# of wildfire	Area (ha)	# of wildfire	Area (ha)	# of wildfire	Area (ha)	# of wildfire	Area (ha)	# of wildfire	Area (ha)
National	8	4.82	9	2.94	9	1.74	7	8.98	8	0.96
Provincial	-	-	1	0.02	3	0.098	1	0.5	3	15.1
County	-	-	-	-	-	-	-	-	-	-

3.4.5. Wildfire monitoring equipment status

The status of wildfire monitoring equipment in natural parks by hierarchy is shown in <Table 19>. 22 national parks have 113 monitoring cameras whereas provincial and county parks collectively have 19 and 12 cameras, respectively.

Table 19. Wildfire monitoring equipment status.

Division	Wildfire mnitoring camera	Remark
National	113	
Provincial	19	
County	12	

3.4.6. Utility of safety management

The results of safety management utility analysis are as shown in <Table 20>.

Table 20. Utility management.

Division	National		Provincial		County	
	Utility	Grade	Utility	Grade	Utility	Grade
Management manpower(# of personnel)/ area(㎢)	4.1	Good	10.5	Fair	13.5	Poor
Management manpower(# of personnel))/ Management cost(100K won)	0.4	Good	1.5	Fair	1.1	Poor
Safety accident(# of cases)/ area(㎢)	3.2	Good	6.8	Fair	23.5	Poor
Management manpower(# of personnel))/ Management cost(100K won)	0.3	Good	1.0	Fair	1.9	Poor
Disaster facility(Qty)/ area(㎢)	2.1	Fair	0.7	Good	3.5	Poor
Disaster facility(Qty)/ Management cost(100K won)	0.2	Fair	0.1	Good	0.3	Poor
Wildfire occurrence(# of cases)/ area(㎢)	0.1	Fair	0.2	Poor	0.0	Good
Wildfire occurrence(# of cases)/ Management cost(100K won)	0.015	Fair	0.033	Poor	0.0	Good
Wildfire monitoring equipment(Qty)/ area(㎢)	0.4	Good	0.5	Fair	1.4	Poor
Wildfire monitoring equipment(Qty)/ Management cost(100K won)	0.040	Good	0.079	Fair	0.109	Poor

3.5. Use management

3.5.1. Status of permit and consultation

The status of permits and consultations for activities in natural parks by hierarchy is shown in <Table 21>.

Table 21. Status of permits and consultation for activities by year.

Year Hierarchy	2013			2014			2015			2016			2017		
	Per-mit	Con-sul-ta-tion	Al-low-ance	Per-mit	Con-sul-ta-tion	Al-low-ance	Per-mit	Con-sul-ta-tion	Al-low-ance	Per-mit	Con-sul-ta-tion	Al-low-ance	Per-mit	Con-sul-ta-tion	Al-low-ance
National	123	1048	91	156	1094	73	151	1092	52	175	1118	48	181	1157	52
Provincial	102	95	13	126	116	4	144	118	8	169	176	12	60	164	8
County	6	18	9	19	19	15	22	28	15	15	47	17	33	46	9

3.5.2. Status of enforcement and disposition of illegal activities

The status of enforcement and disposition of illegal activities in natural parks by hierarchy is shown in <Table 22>.

Table 22. Status of enforcement and disposition of illegal activities.

Year	Disposition	Crackdown	Prosecution	Fine	Penalty	Others
National	2013	2,918	-	-	-	-
	2014	2,667	-	-	-	-
	2015	2,611	-	-	-	-

Division	Year				
	2016	2,906	75	2,831	0	0
	2017	2,776	85	2,691	0	0
Provincial	2013	264	-	-	-	-
	2014	348	-	-	-	-
	2015	320	-	-	-	-
	2016	315	37	195	0	333
	2017	674	29	72	0	569
County	2013	21	-	-	-	-
	2014	34	-	-	-	-
	2015	12	-	-	-	-
	2016	21	10	9		4
	2017	50	4	2	0	38

3.5.3. Status of illegal facility management

The status of illegal facility management in natural parks by hierarchy is shown in <Table 23>.

Table 23. Status of illegal facility management(number of cases).

Division	Building			Temporary structure			Structure		
	Detection	settled	Unsettled	Detection	settled	Unsettled	Detection	settled	Unsettled
National	21	11	10	5	3	2	8	3	5
Provincial	12	6	6	4	4	0	17	17	0
County	0	0	0	7	7	0	0	0	0

3.5.4. Waste management status

The status of waste management in natural parks by hierarchy is shown in <Table 24>.

Table 24. Waste management status by year(ton).

Hierarchy	Year 2013	2014	2015	2016	2017
National	1,494	1,375	1,298	1,208	1,187
Provincial	9,726	4,496	6,407	5,170	5,204
County	2,176	1,736	1,461	909	1,097

3.5.5. Status of user and management cost

The results of analyzing visitor status by hierarch in natural parks are shown in <Table 25>.

Table 25. User status by year.

Visitors(# of Visitors)				Management cost(won)			
Division	National	Provincial	County	Division	National	Provincial	County
2009	38,219,355	49,808,,000	5,954,000	2014	240,372,000	25,951,994	4,089,435
2010	42,658,154	53,077,000	6,073,000				
2011	40,803,507	46,619,000	3,767,000	2015	281,199,000	28,789,185	5,473,764
2012	40,958,773	59,975,000	6,544,000				
2013	46,931,809	58,288,000	6,982,910	2016	290,943,000	41,696,289	10,572,022
2014	46,406,887	57,186,000	6,438,000				
2015	45,332,135	59,119,000	5,860,300	2017	312,655,000	68.735,065	23,709,772
2016	44,357,705	66,279,700	5,335,200				
2017	47,277,955	40,149,500	7,237,200	Yearly Avg.	281,292,250	24,109,367	10,961,248
Yearly Avg.	43,660,698	48,965,911	6,021,290				

3.5.6. Utility of use management

The results of analyzing the utility of use management are as shown in <Table 26>.

Table 26. Utility analysis.

Division	National		Provincial		County	
	Utility	Grade	Utility	Grade	Utility	Grade
Activity permit(Qty)/ area(㎢)	2.0	Good	12.2	Poor	9.2	Fair
Activity permit(Qty) / management cost(100K won)	0.217	Good	1.793	Poor	0.727	Fair
Activity consultation(Qty)/ area(㎢)	18.0	Good	19.0	Poor	18.2	Fair
Activity consultation(Qty) /management cost(100K won)	1.958	Fair	2.776	Poor	1.436	Good
Activity Allowance(Qty)/ area(㎢)	1.0	Good	1.3	Fair	7.5	Poor
Activity Allowance(Qty) / management cost(100K won)	0.112	Good	0.187	Fair	0.591	Poor
Illegal activities(Qty)/ area(㎢)	45.4	Poor	54.4	Fair	15.9	Good
Illegal activities(Qty) / management cost(100K won)	4.934	Poor	7.971	Fair	1.255	Good
Illegal facilities(Qty)/ area(㎢)	0.1	Good	0.9	Poor	0.8	Fair
Illegal facilities(Qty) / management cost(100K won)	0.012	Good	0.137	Poor	0.064	Fair
Waste management(ton)/ area(㎢)	21.5	Good	878.4	Poor	849.0	Fair
Waste management(ton) / management cost(100K won)	2.3	Good	128.6	Poor	57.1	Fair
Visitor(thous.)/ area(㎢)	142.8	Poor	1387.3	Good	692.8	Fair
Visitor(thous)/ management cost(100K won)	15.521	Poor	203.174	Good	54.736	Fair
Management cost(100K won)/ area(㎢)	9.2	Fair	6.8	Good	12.7	Poor

4. Conclusion

The natural parks in Korea are designated and managed by hierarchy. The author of this study investigated, analyzed and evaluated about 30 items of which statistics collected for the past 10 years on the premise that the hypothesis of 'operation efficiency will be higher in the following order of national, provincial, and county parks' will hold true when comparing and analyzing the utility of provincial and county parks, which are relatively smaller in size with lower budget, compared to national parks with large areas in where the central government lavishes financial support. As a result, several important items, with significant level of utility, were found to be different from the hypothesis.

First, in terms of conservation and sustainable use of natural resources, which are important reasons and criteria for natural park designation, the results of the evaluation of the effectiveness of management of animal and plant resources, endangered species resources, cultural resources and landscape resources are found to be lowest in national parks, which have the largest size and available budget in all areas, compared to provincial and county parks. Nevertheless, investigation and planning of natural resources are concentrated in national parks when even statutory investigation or planning is not properly performed in provincial and county parks due to lack of budget and expertise. In addition, considering the lack of integrated and organic management of natural landscapes, historical and cultural resources caused by designation-oriented management of natural ecosystem, the central government should introduce new systems, such as financial support and transfer of professional technology, to supplement the responsible management of designated individual for proper management of natural resources in provincial and county parks as stipulated in the governing laws and regulations.

Second, in regard to the facility management, it is necessary to establish, subdivide and differentiate specific use districts that can preserve and reasonably use the natural ecosystems and landscapes for each hierarchy. Also, continuous efforts should be made to reduce the conflicts with local residents due to complaints related to restriction of conduct and

infringement of private property right by enabling referential use of local residents through securing and procuring lands and expanding supports for the residents.

Third, the results of the analysis of the effectiveness of the safety management in natural parks by hierarchy show that safety management has been well performed in proportion to the area and management cost.

Fourth, investigating the utilization management status by hierarchy in natural parks and evaluating their utility deduced results different from the hypothesis. Considering the results from reinforcement and disposition of illegal activities and the trends of visitors, more active and practical use management is deemed to be necessary to cope with the changing demands of users in terms of accessibility and type of visits.

This study investigated the management status of 78 natural parks in Korea, including 22 national parks, 29 provincial parks and 27 county parks in Korea and found that most of the natural parks have been 20~30 years since their designation as a natural park. Insufficient expertise in park management and financial conditions for provincial and county parks, of which management is delegated to local governments, must be recognized and the central government should substantially implement policy and provide financial support, considering the characteristics of natural park management, in order to reduce the gap between provincial/county parks and national parks.

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6. Contribution

6.1. Authors contribution

	Initial name	Contribution
Lead Author	KGS	-Set of concepts ☑ -Design ☑ -Getting results ☑ -Analysis ☑ -Make a significant contribution to collection ☑ -Final approval of the paper ☑
Corresponding Author*	LWH	-Corresponding ☑ -Play a decisive role in modification ☑
Co-Author	CWK	-Significant contributions to concepts, designs, practices, analysis and interpretation of data ☑ -Participants in Drafting and Revising Papers ☑ -Someone who can explain all aspects of the paper ☑

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Research field
- A Study on Activation of Using Urban Park Utilizing Cultural Program -Focused on Youth Culture Zone of Hwangsung Park in Gyeongju, Daegu Haany University, Master's Thesis (2014).

- A Study on Management Status and Improvement Plan of Natural Park Hierarchy, Daegu Haany University, Doctoral Thesis (2020).

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- A Study on Gait Characteristics of Visitors Working through Forest Trails, Korean Institute of Forest Recreation and Welfare, 21(2) (2017).
- A Study on Use Behaviors of Hamjisan Forest Walkway, Korean Institute of Forest Recreation and Welfare, 23(1) (2019).

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International Journal of Crisis & Safety

Terrorism CRISIS on Northeast Asia

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Abstract

Today, due to the rapid development of science and technology, the war on more than 1000 large and small terrorist groups around the world has already begun due to fundamental changes in the types and patterns of terrorism.

In particular, Northeast Asia is a buffer state of the neighboring powers, and national security crises such as war, terrorism and factor assassination have been continuously occurring. Extensive academic research is required.

This study analyzes why terrorism by North Korea occurs and identifies the types of terrorist attacks by Aircraft and Airport terror, Cyber terrorism, Nuclear terrorism was used to analyze the causes of terrorism in North Korea.

In addition, the direction of the information agency through anti-terrorism activities was divided into HR management system, Establishment of legal basis, and Establishment of Intelligence Agency Cooperation System.

[Keywords] Terrorism Crisis, Terrorist Attacks, Aircraft and Airport Terror, Cyber Terrorism, Nuclear Terrorism

1. Terrorism by North Korea

The world is now in constant crisis with terrorism. In 2000, about 2,000 terrorism cases occurred in about 60 countries around the world, killing 10,000 people and estimated economic losses of USD 90 billion.

The number of victims of at least one person killed by terrorism was 65 in 2015 and 80 countries in 2019, and the number of deaths by at least one person since 2000 has been gradually expanding to 120 countries in 2019.

This paradigm of terrorism is also changing. Since the September 11 terrorist attacks in the United States in 2002, the target of terrorism has shifted from major facilities to multi-use facilities, and the fear of citizens is maximizing.

If we analyze the causes of terrorism in Northeast Asia, North Korea's terrorism is of greatest concern. After the Korean War broke out on June 25, 1950, 5,500 secret agents were published in South Korea from 1953 to 1980, and 2,973 North Korean spies and armed soldiers were caught or killed by South Korean military and police.

North Korea's terrorism is more related to the political situation inside North Korea than to South Korea's policies. North Korea has been criticized by the international community because it has inherited political power from its third generation as a dictatorship. The regime incites its citizens that nuclear weapons are needed to defend against US invasion.

35

However, if North Korea gives up its nuclear weapons, the anger of the people of North Korea, which had to make many sacrifices in the meantime, will not be able to maintain the regime. As such, nuclear weapons and ballistic missiles in North Korea have great meaning as a tool for maintaining political power within North Korea.

However, due to the high-intensity economic system of the United Nations, which affects the lives of not only North Koreans but also the key executives of power, internal dissatisfaction is accumulating. Therefore, it is analyzed that the North Korean regime can fully execute terrorism against South Korea in order to silence internal political problems.

2. Types of Terrorist Attacks

2.1. Aircraft and airport terror

Aircraft transportation is at the heart of modern transportation systems and has contributed to the expansion and exchange of international trade, but the aircraft itself has become a target of terrorists as it is targeted by terrorists.

Air terrorism is used in various forms in densely populated areas such as airport terminals as well as hijackings and air detonations. Aviation terrorism is one of the most dramatic elements of terrorism, which not only attracts the attention of the international community through the media, but also creates a high wave because many countries automatically intervene as the passengers of the aircraft are multinational. Have the requirements to maximize effectiveness for terrorists.

Korea, the key point of the aviation distribution in Northeast Asia, air terrorism began mainly through the isolation of North Korea and conflict in the international society and these cases are: the kidnapping of Chang-rang aircraft of South Korean National Airlines(1958), the kidnapping of YS-11 of KAL(1969), kidnapping of F-27 of KAL(1971), emergency landing of B747 of KAL of Murmansk attack(1978), attack of MIG-23 on KAL007(1983), attempted case of the kidnapping of B727 of KAL(1985), destruction of KE858 of KAL(1987), attempted case of the kidnapping of B747(1988), attempted case of the kidnapping of KAL388(1993), and the current isolation of North Korea is threatening Northeast Asia and is intensifying tension. Furthermore, overseas tourists are rapidly increasing in Northeast Asia including Korea and the use of aircraft is expanding, so the safety of Northeast Asia is severely threatened through terror and crimes in the airplanes and airports.

However, these kinds of air terrorisms and crime can kill many lives at once and while these outbreaks can lead Northeast Asia into war, North Korea has committed many air terrorisms and crimes in the past. Therefore, the isolation of the international society which began from the nuclear development of North Korea, must make an effort not to threaten Northeast Asia into air terrorisms and crimes but for the peace of Northeast Asia[1].

Korea has been developing aviation industry steadily since the establishment of Korean Air in 1962. Due to China's recent economic growth, the development of aviation industry in Northeast Asian countries has led to expansion of routes and airport expansion. <Figure 1> is the expansion of Korean airlines.

Figure 1. Korean national airlines.

However, in Korea, terrorist incidents on aviation security and safety have also occurred steadily, and the examples are shown in <Table 1>.

Table 1. Aircraft terrorist incidents.

No	Year	Case name
1	1958	Chang-rang Aircraft
2	1969	YS-11 of KAL
3	1971	F-27 of KAL
4	1985	B747 of KAL
5	1987	KE858 of KAL
6	1988	B747 of KAL
7	1993	KAL388

In the past, the hijacking and terrorism of the Korean Peninsula is characterized by the occurrence of political issues of international relations. It was reduced with the end of the Micro Cold War, but the Korean Peninsula was (1)geopolitically recognized as the buffer state of the neighboring superpowers, and (2)the expansion of air traffic in Northeast Asia with China's economic growth. Has become an important part of interest.

However, there is no sign of resolving the existing North Korean problem, and it is true that nothing has changed compared to the past. Therefore, the recent complaints about the North Korean regime caused a terrorist attack on South Korea, which could bring attention and turn to a difficult situation.

2.2. Cyber terrorism

The information society over the Internet is affecting all aspects of life, including politics, economy, society, and culture, and life has become convenient, but the management of information used here has a direct impact on national security.

Cyber terrorism continues to increase the frequency of high-tech crimes using cyber space without time and space limitations, and its effects go beyond offline terrorism. Professional hacker attacks on the national network of major facilities are a persistent crisis.

Korea's security environment has begun to change as Korea enjoys the richness of its life through rapid economic growth and receives reckless information through the development of the Internet. The emergence of the Internet and Social Network Service in the knowledge and information society has left national security affected by (1)cyber attacks and (2)psychological attacks on unspecified numbers.

There is a shift towards national security criminals. This is a tactic to increase anti-state groups by itself through the internet and social media activities of the host country, and eventually to create a social atmosphere that is beneficial to the country[2].

Korea is an IT powerhouse where smartphone use is universal and Koreans can enjoy fast internet anywhere in Korea. Such entrenchment of the smart phone in daily life has aided the country's democratic development such as advancing freedom of speech and human rights but the high dependence on information technology has also introduced new threats. One of these threats is none other than North Korea's cyber terrorism. So far, the most notable North Korean cyber terror attacks are 7.7 Distributed Denial of Service(DDoS) Attack(2009), Nonghyup Bank Network Hack(2011), and JoongAng Daily Website Cyber Attack(2012). North Korea has conducted countless cyber terror attacks against Korea and the attacks were estimated to have caused over 1 trillion won of damage. Currently, North Korea is offering curriculum on cyber terrorism in academic institutions such as Kim Il Political Military University, Kim Chaek University of Technology, Pyongyang Computer Technology University and it has been estimated that it employs around 6,800 specialists to bring chaos to the international community through utilization of cyber space. Furthermore, North Korea is considered the world's fourth most powerful nation in cyber warfare only behind the United States, China, and Russia, thus emerging yet as a new threat to the world. Experts identify North Korea's unchecked expansion of cyber terror force as a serious threat that can bring crisis to Northeast Asia. Therefore, the international community must pay attention to not only North Korea's nuclear test and missile development but also its rapidly growing cyber terror force[3].

There is also concern about the leakage of industrial technology by Korean companies. Representative organizations evaluating national competitiveness globally include the Swiss International Management Development Institute(IMD) and the World Economic Forum(WEF). Among them, according to the 2018 National Competitiveness Report, the World Economic Forum reported that Korea's national competitiveness among 140 countries Is in 15th place. Korea's territorial area is ranked 109th in the world, population 27th, and Korea, which lacks resources, is incredible.

In particular, it is believed to be because it possesses world-class technologies in areas such as mobile, semiconductor, LCD, shipbuilding, oil refining, and smartphones. The following <Figure 2> shows the status of companies with core industrial technologies in Korea.

Figure 2. Korea's global companies with core industrial technologies.

In contrast, however, a lot of regret is left to build infrastructure for industrial technology protection, which is a shield of national competitiveness. In Korea, it is said that the loss of trillion won in economic value is usually caused by the leakage of industrial technology during the year.

2.3. Nuclear terrorism

Since the 1st nuclear test of North Korea in October 2006, the UN Security Council has made economic sanctions against North Korea for the past 20 years beginning with the resolution number 1718, but North Korea has continued to test nuclear weapons and ballistic missiles and has retained inter continental ballistic missiles ICBM and submarine launched ballistic missiles SLBM. Amidst such international crisis, on June 12, 2018, the US President Donald Trump and Kim Jong Un of North Korea agreed on the complete denuclearization of North Korea through a summit held in Singapore, but ever since, North Korea has not followed up on this agreement. However, the United States began a trade war with China, an economic

sponsor of North Korea, thereby causing serious damages against companies, and the US is deliberating on the use of military options in North Korea[4].

3. North Korea's Terrorist Factors

Since the end of the Cold War since 1990, as the international order centered on the United States has become visible, the threat of World War has diminished, but the threat of terrorism is more than war.

Especially in Northeast Asia, tensions caused by the US-Soviet confrontation continually broke out during the Cold War. Especially, with the support of the Soviet Union and China, North Korea continued to provoke the United States. President George Bush pointed to North Korea as the "axis of evil," and declared war on terror. The United States also considered war after the Iraq war for the purpose of regime change.

North Korea, on the other hand, is a ally of the United States, proclaiming terrorism against US-related facilities in South Korea, and recently accumulating technology related to cyber terrorism, biochemical terrorism and nuclear terrorism.

As such, North Korea develops terrorism, which is caused by confusion and conflict in South Korean society through the guerrilla invasion through the military demarcation line or the mass killing through sabotage, from the boundary between the ROK and US forces. It aims to economically isolate terrorism by promptly imposing Korea as a dangerous country in the world and preventing the inflow of foreign capital.

4. North Korea's Military Power and Support for Terrorism

During the second half of 2000, North Korea exported its remarkable ballistic-related equipment, parts and component expertise to terrorist support countries designated by the US State Department, including Egypt, Pakistan, Iran, and Syria. And from 1987 to 1996, North Korea exported nearly 370 missiles to the Middle East, pursuing nearly $ 1 billion in profits. North Korea also has the capacity to produce large quantities of chemical and biochemical weapons, and chemical munitions resources are estimated to be around 1,000 to 5,000 tons.

Therefore, in 1994, the United States presented a plan to pursue precision bombing of North South Korea's Yongbyon nuclear facility, but failed to complete the denuclearization as the US President Jimmy Carter entered into the Geneva agreement under the condition of nuclear freeze.

However, North South Korea withdrew from the Nuclear Non-Proliferation Treaty(NPT) in 2003 and declared its nuclear possession in 2005, and on April 23, 2016, successfully launched a test of the SLBM, or Polar Star 1, from its submarine.

If North South Korea succeeds in miniaturizing nuclear warheads and the SLBM becomes strategized, the international community will no longer be able to control North South Korea, which may bring about the World War III[4].

And in accordance with North Korea's biology program, they produced various types of biochemical weapons, anthrax, and infectious diseases for use as biochemical weapons. It is estimated that there are more than 10 organizations that can make such biochemical weapons in North Korea, some of which are disguised as electrical engineering companies.

5. North Korea's Counter Terrorism

Since 1991, the beginning of the Cold War has changed the concept of security as a world order based on a great power has been achieved. In the Cold War era, the threat of military confrontation became a key task of national security, while in the post-Cold War era, it began to move away from such military security and into comprehensive security.

After the end of the Cold War, conflicts caused by ideological confrontations between nations had diminished, but other forms of conflict led to strange conflicts on race, ethnicity, religion, and border issues. This has been increased since the end of the Cold War than when the Cold War ended in extreme conditions, and the security realities resulting from these changes in international relations are increasing the threat of terrorism, and security is becoming more important.

Key to national security is intelligence, which is even more important in divided countries like Korea. This is because failure of espionage is directly related to the existence of the state and cannot be recovered again[5][6]. Since the Korean War(6.25), North Korea has been engaged in espionage activities, including about 3,000 terrorist attacks.

About 15 years ago, North Korean defectors began to surge due to North Korea's human rights abuses and economic policy failures[6].

The mission of terrorism prevention by state agencies is of utmost importance. It is important for national agencies to effectively collect terror information and cooperate with terrorist response agencies.

In order to prevent such terrorism, the police and intelligence agency's information activities should be strengthened, and the ability to collect terror information should be expanded. This will be useful for collecting terror information as well as crime.

According to J0(2019), the problems caused by the increase of foreigners' entry in Korea are as follows[2].

According to the Ministry of Unification, the number of North Korean defectors officially reached 33,022 from 1998 to the end of 2019, and is now about 33,000. North Korean defectors who have entered the country often accumulate funds and use their brokers to bring out the families still in North Korea.

The problem is that North Korean defectors still have a connection to North Korea after their departure, and in this process, the list is leaked by a fixed spy infiltrated by the North Korean National Security Agency.

Based on this information, North Korea is using it as a double spy on North Korean defectors, subject to the safety of their families. There are a number of cases of North Korean defectors who have been subsumed and inevitably become double espionage while collecting information from South Korea.

6. Directional Model of National Institutions

6.1. HR management system

The human resources management system of intelligence agencies should be freed from political influence. Changes in authority, reduction of organization, and personnel affairs based on the political orientation of the head of the intelligence agency will not be able to proceed with normal counterterrorism policy.

Therefore, even if the president has an HR management system in order to promote the policy consistently, the head of the intelligence agency should be an internally promoted person for continuity of work and the retiree should be excluded for political neutrality.

6.2. Establishment of legal basis

Intelligence agencies are the biggest dilemma faced by human rights abuses in the field of information gathering for national security. Because investigating spy of enemy country can collect information about citizens who are not involved in terrorism. Otherwise, comprehensive terrorist information may be missed.

Therefore, a clear legal basis for this area should be prepared and attention should be paid to the following points. First, are there enough clues for investigating and collecting information? Second, is the sufficient purpose for investigating and collecting information consistent with current law? Third, if the information obtained through investigation and information collection has not been identified as a direct causal relationship to terrorism, is there a period in which the investigation and information collection should be terminated? A law based on this is needed.

In regard to the illegality of investigation and information gathering intention that can be raised in the future, I think it is right to make a judgment based on the results of investigation and information gathering.

6.3. Establishment of intelligence agency cooperation system

Information gathering activities require a network coordination system that produces information by integrating all relevant agencies, and in order to access many terrorist information, it is very important not only to expand the information manpower but also to increase the cooperation of intelligence agencies.

Some argue for the expansion of the police. However, it is questioned how the police exposed within the legal framework can identify and arrest invisible enemy spies.

Investigating spies in particular begins based on information obtained from foreign countries. It is questionable how a police officer without a foreign intelligence network can catch the infiltrate enemy spy.

7. Another Terrorism Threat

Northeast Asia can anticipate terrorism from the IS(Islamic State) in addition to North Korea. Islamic Sunni extremist ideology in North Africa and the Middle East, separated from Al-Qaeda, recruits members over the Internet and spreads worldwide to incite spontaneous terrorism. In a situation like the Syrian Civil War, about 18,000 foreign fighters from IS countries, including Tunisia, Jordan, Saudi Arabia, Morocco, Russia, the United Kingdom, France, Belgium, Germany, the United States, China and Japan, were involved. As such, terrorism by IS has become a threat to the international community everywhere in the world.

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9. Contribution

9.1. Authors contribution

	Initial name	Contribution
Author	JSG	-Set of concepts ☑ -Design ☑ -Getting results ☑ -Analysis ☑ -Make a significant contribution to collection ☑ -Final approval of the paper ☑ -Corresponding ☑ -Play a decisive role in modification ☑ -Significant contributions to concepts, designs, practices, analysis and interpretation of data ☑ -Participants in Drafting and Revising Papers ☑ -Someone who can explain all aspects of the paper ☑

9.2. Authors profile

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Research field
- North Korea's Cyber Attack Terror Cases and Cyber Capabilities and Current State of Affairs of North Korea's Cyber Terror Force, International Journal of Military Affairs, 1(2) (2016).
- Establishment of Private Investigation Service Supervising Authority: National Police Agency, Ministry of Justice, and National Intelligence Service, Journal of Korean Public Police and Security Studies, 14(1) (2017).

Major career
- 2006~2009. Republic of Korea National Assembly, Secretary
- 2012~present. Kyungwoon University, Professor

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Effects of Family CRISIS on Offline School Bullying in Elementary School Students in Korea: Mediating Effects of ADHD Symptoms, Cyber Bullying Victimization, and Anger

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Abstract

Purpose; The purpose of this study was to investigate the influence of family crisis such as parental neglect on elementary school students' offline school bullying and to analyze the mediating effects of ADHD symptoms, cyber bullying victimization, and anger on that influence. A total of 634 students in fourth, fifth, and sixth grade at four elementary schools in the capital area participated in this study. Their parental neglect, cyber bullying victimization, offline school bullying, ADHD symptoms and anger levels were examined by a survey. The collected data were analyzed using structural equation modeling and the mediating effects were verified by bootstrapping. The major findings were as follows. To begin with, the result showed that parental neglect could increase offline school bullying directly. Next, parental neglect could increase offline school bullying indirectly by mediating cyber bullying victimization, ADHD symptoms, and anger. In details, four paths were statistically significant at 95% confidence level. First, parental neglect increased cyber bullying victimization, and increased cyber bullying victimization augmented offline school bullying. Second, parental increased anger level, this increased anger augmented offline school bullying. Third, parental neglect increased cyber bullying victimization, and increased cyber bullying victimization raised anger level, this raised anger augmented offline school bullying. Fourth, parental neglect increased ADHD symptoms, and increased ADHD symptoms raised anger level, this raised anger finally augmented offline school bullying. The results of this study suggest that child maltreatment such as parental neglect and emotional problems such as ADHD symptoms and anger should be considered in developing school bullying prevention and intervention programs.

[Keywords] **Crisis, Parental Neglect, School Bullying, Cyber Bullying, ADHD**

1. Introduction

School bullying is a very serious and chronic problem in Korea. The incidents of brutal school bullying of Busan middle school female students in 2017, which shocked the entire country, show how solid and serious the school bullying is[1]. More seriously, many of these perpetrated students have already been punished for their bullying behaviors, but they did not feel guilty and repeatedly committed bullying. In response to this, there is a growing voice for the reform of the Youth Protection Act to reinforce the punishment for school bullying[2]. School bullying in Korea is spreading beyond the boundaries of schools to social problems.

In fact, the management of school bullying has been an important task for the Ministry of Education and the authorities of local educational districts in Korea for a long time. They have made various efforts in order to reduce school bullying. Most of all, the Act on the Prevention of and Countermeasures against Violence in Schools was enacted in 2004[3]. Based on the Act,

the Ministry of Education establishes and operates a basic plan to prevent and intervene school bullying every five years. Currently, the 3rd plan has been in operation since 2015[4]. It includes building a safety infrastructure around schools such as expanding CCTV, installing violence prevention environment, and expanding student protection personnel. Also, it empathizes on education programs protecting victimized students and counselling perpetrated students.

However, recent statistics on school bullying indicate that those efforts seem to be ineffective. According to the results of the national survey on school bullying administered in 2019 by the Ministry of Education, the rate of students who were victimized by school bullying was 1.6%, an increase of 0.3% from 1.3% in 2018[5]. The details of the results would be more concerned. At the school level, the rate of school bullying victimization among elementary school students was 3.6%, an increase of 0.8% from 2.6% of previous year. In particular, the rate of perpetration of bullying in elementary school was 1.6%, up nearly 60% from that in 2018.

Along with the statistical increase in school bullying, it should be noted that the format of school bullying is changing. While off-line school bullying directly causing on-site damage such as physical violence is stagnant, cyber bullying causing emotional and social harm through the Internet and/or smartphones has been increasing. According to the 2018 Cyber Bulling Survey by the Korea Communications Commission and the Korea Internet & Security Agency, 20.8% of Korean adolescence conducted cyber bullying perpetration or experienced bullying victimization[6]. These rates are 4.3% and 3.4% higher than those of last year, respectively. Unlike offline school bullying, the impact of cyber bullying can be very large and broad in that it is not subject to time and space constraints. Considering these results, the Korean government's multifaceted efforts for decreasing school bullying are now in doubt.

The consequences of school bullying victimization are very serious. Not only do victims experience emotional problems such as depression and anxiety[7], they also cause various learning problems such as deterioration of learning ability and poor academic achievement[8]. And, many victims suffer from social problems like poor friendships and maladjustment in school life[9]. If repeated, there is possibility that victims make extreme choices, such as suicide[10]. Given this, school bullying need more systematic prevention and guidance than any other problems. In order to effectively prevent school bullying, it is most important to understand what are the causes of school bullying and the substantial paths through which those causes influence school bullying. In that sense, current research studies need to be focused indicating that child maltreatment including parental neglect and emotional problems such as ADHD symptoms or anger could give a negative impacts to school bullying directly and indirectly.

Previous studies have shown that child maltreatment including parental neglect could cause offline school bullying as well as cyber bullying victimization and perpetration[11][12][13], and can lead to emotional problems such as ADHD and anger[14][15][16][17]. Furthermore, some researchers have found that emotional problems such as ADHD symptoms and anger could increase offline school bullying and cyber bullying victimization and perpetration[18][19][20][21]. Considering these studies, there is sufficient possibility that a structural relationship among child maltreatment including neglect, offline school bullying, cyber bullying, ADHD symptoms and anger exist. And, this structural relationship can provide important information and insights regarding how to prevent and intervene school bullying

However, although these research studies have shown the relationships between parental neglect, school bullying, cyber bullying, ADHD symptoms and anger, most of them has focused only on simple relationship or mediation between those variables. It is difficult to find the research that analyzes the systematic structure among parental neglect, school bullying, cyber bullying, ADHD symptoms and anger. In particular, there are few studies that analyze specific paths through which parental neglect influence offline school bullying by mediating of cyber

bullying and emotional variables such as ADHD symptoms and anger. Therefore, this study investigates the structural relationships among parental neglect, school bullying, cyber bulling, ADHD symptoms and anger, and examines the specific paths through which parental neglect influences school bullying in this structural relationship.

2. Theoretical Background

2.1. Parental neglect, offline school bullying, cyber bullying

Parent neglect is the behaviors of a parent not to provide the basic protection or support that a child should receive in order to achieve normal physical, emotional and social development, but to abandon his/her responsibility[22]. The Child Welfare Act classifies parental neglect as a type of child maltreatment, along with physical, mental, and sexual harassment of children[23]. Recently, child abuse including neglect from parents has been steadily increasing in Korea[24]. One of the main reasons for this increase is the collapse of family. According to the Statistics Korea, the divorce rate of Korean households has been rapidly increasing[25]. The breakdown of the family may lead to neglect of the children.

The negative impact of child maltreatment including parental neglect on children may vary, but recent studies have consistently demonstrated that child maltreatment is closely related to school bullying. School bullying is the aggressive behaviors that one or more school aged children intentionally and repeatedly cause physical, emotional, and social damage to a target[26]. Bullying can be characterized by perpetrator's intentions, the persistence and repeat of violence, and imbalance of power between the bully and victim.

School bullying usually occurs in two forms, offline school bullying or cyber bullying[27]. Offline school bullying is a traditional form of bullying in which the perpetrator inflicts physical and verbal harm on the victim face to face. On the other hand, cyber bullying refers to psychological and emotional harassment of a target(individual or group) in cyber space by using social network services(SNS) such as messenger, Facebook, Twitter and etc. In Korea, cyber bullying is growing more rapidly than offline school bullying.

Research analyzing family factors on school bullying found that child maltreatment was the main factor that could increase the school bullying[11]. First, child maltreatment including parental neglect was significantly related to rejection and bullying victimization[12]. Researcher found that children who have been maltreated by their parents tended to become an easy target of rejection and bullied by their peer. And, they were less likely to protect themselves when being rejected or bullied[13]. In particular, physical or emotional neglect in childhood was significant impacts not only on offline school bullying, but also on cyber bullying victimization[28].

Second, evidences from research indicated that child maltreatment including parental neglect can cause bullying or violent behaviors. According to the study of Chapple, Tyler, and Bersani[29], children neglected by their parents and rejected by their peer tended to commit school bullying more during their late adolescence. In addition, adolescent who was neglected physically or emotionally in childhood was more likely to be perpetrators of cyber bullying as well as offline school bullying behaviors[28].

Third, research studies analyzing the relationship between offline school bullying and cyber bullying generally agree that the victimization of bullying can lead to bullying perpetration. In details, the victimization of offline school bullying can cause offline school bullying or cyber bullying perpetration[30][31]. Also, the victimization of cyber bullying can cause offline school bullying or cyber bullying perpetration[31][32][33]. Taken these previous research studies together, it can be assumed that parental neglect can cause cyber bullying victimization, and then the cyber bullying victimization caused by parental neglect can produce offline school bullying.

2.2. Parental neglect, ADHD symptoms, anger and school bullying

ADHD is an emotional behavior disorder with attention deficit, hyperactivity and impulsiveness as the main symptoms[34]. ADHD is diagnosed when it is determined that those main symptoms are shown in two or more places for more than six months and have serious negative effects on school or family life[35]. According the research analyzing the relationship between child maltreatment like parental neglect and ADHD symptoms, child maltreatment may increase ADHD symptoms[14][15]. In particular, inattention, which is main symptom of ADHD, was highly correlated with parental neglect[16]. Regarding ADHD symptom and school bullying or cyber bullying, to begin with, evidences from previous research have shown that ADHD symptom were significantly related to offline school bullying. Adolescent with ADHD symptoms were more likely not only to conduct bullying other but also to be victims of bullying[18][36][37]. In particular, children diagnosed with ADHD experience more physical, verbal, and social bullying victimization than those without ADHD[38]. Although relatively small number of research studies have been conducted in terms of the relationship between ADHD symptoms and cyber bullying, the studies discovered that ADHD symptoms also had significant negative effects on cyber bullying victimization and perpetration. Adolescent with ADHD symptoms were more likely not only to be victim but also to be perpetrator of cyber bullying[19][39][40][41].
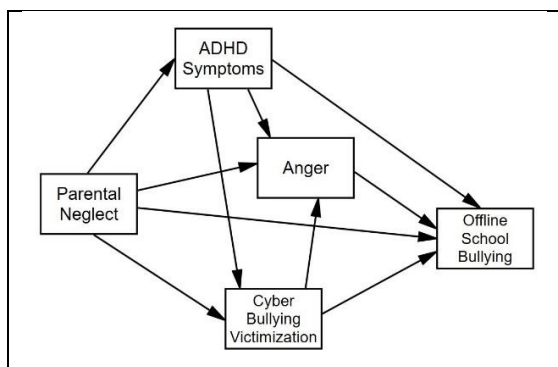
Child maltreatment also has negative impacts on emotional problems such as anger. When children were maltreated or neglected by their parents, children experienced problems on anger level, understanding anger, or anger expression[17][42][43]. According to the result of previous research analyzing the relationship between anger and school bullying, anger was a very major predictor of not only school bullying, but also cyber bullying[20][21]. Especially, results from previous research showed that anger could mediate the negative effects of child maltreatment on problem behaviors like bullying[44]. Considering these previous research studies together, it can be assumed that parental neglect can increase ADHD symptoms and anger and then those increased ADHD symptoms and anger can cause offline school bullying as well as cyber bullying.

3. Methods

3.1. Hypothetical model

Based on the analysis of previous research, this study established a hypothetical model of the structural relationships among parental neglect, ADHD symptom, anger, cyber bullying victimization, and offline school bullying as shown in <Figure 1>.

Figure 1. Hypothetical model.

3.2. Participants

The participants of this study were 634 students in fourth, fifth, and sixth grade at four elementary schools located in the capital area in Korea. Because the survey employed in this study was responded through self-report, the participants were limited to 4th-6th grade with a minimum level of literacy to read and respond accurately to the survey. The demographic information(gender and grade) of the participants are shown in <Table 1>.

Table 1. Demographics of participant.

Characteristics	Category	N	Ratio(%)
Gender	male	316	49.8
	Female	316	49.8
	Non response	2	.3
grade	4th	188	29.7
	5th	213	33.6
	6th	233	36.8

3.3. Measurement

3.3.1. Parental neglect

Parental neglect was assessed using the 4 items of neglect, which were employed in the National Survey of Children and Youth implemented by The Ministry for Health, Welfare and Family Affairs[45]. For each item, the participants were asked to respond on a 4-Likert scale. The higher average of responses indicated higher level of parental neglect. The internal reliability of this measurement analyzed using Chronbach's α was .602.

3.3.2. Cyber bullying victimization

In order to assess the level of cyber bullying victimization, the part of cyber bullying victimization in the cyber bullying & victimization questionnaire(CBVQ) of Campfield was employed[46]. The survey items were translated to suit Korean elementary school students and the validity of translation was checked by an professor who majored in English. Then two elementary school teachers checked whether or not the level of vocabulary and sentence complexity was appropriate for the elementary school students to respond. The scale was composed of 9 items for self-evaluation using the 5-Likert scale. The higher score of responses meant higher level of cyber bullying victimization. The internal reliability of the cyber bullying victimization scale in this study analyzed using Chronbach's α was .716.

3.3.3. Offline school bullying

Offline school bullying was assessed using the 6 items of bullying perpetration, which were employed in the National Survey of School Bullying implemented by the Ministry of Education, Science and Technology[47]. Each item was presented in a short sentence form for elementary school students to respond easily. The participants were asked to respond to each item on a 5-Likert scale. The higher score of responses represented higher levels of offline bullying perpetration. The internal reliability of the off-line school bullying scale analyzed using Chronbach's α was .532.

3.3.4. ADHD symptoms

ADHD symptoms were assessed using Choi's ADHD symptoms scale[48]. The scale consisted of 18 questions of attention deficit and hyperactivity/ impulsiveness, and was designed to be evaluated using the 4-Likert scale. The higher score of responses indicated higher level of ADHD

symptoms. The internal reliability of the ADHD symptoms scale analyzed using Chronbach's α was .898.

3.3.5. Anger

In order to measure the anger level of the participants, the part of anger expression scale for children(AESC) developed by Steele, Legerski, Nelson, and Phipps was employed[49]. The preparation process for the survey items was the same as that for the items used in cyber bullying victimization. The scale was composed of 10 items for self-evaluation using the 4-Likert scale. The internal reliability of the scale analyzed using Chronbach's α was .906.

3.4. Data collection

The data were collected through the following process. First, four elementary schools which agreed to participate in the study were selected by the convenience sampling. Second, surveys were mailed to a head teacher or vice-principal at each schools by the researcher of this study. Third, at each school level, the head teachers or vice-principals distributed surveys to teachers who were in charge of each class. Fourth, the teacher in charge of each class distributed and collected surveys to his/her students. Fifth, the head teachers or vice-principals of the schools collected all the surveys from teachers and mailed them to the researcher of this study. Of the total 639 surveys returned to the researcher, 5 surveys were excluded due to incorrect or incomplete responses(e.g., all responses to the same number, non-responded more than two scales, etc.).

3.5. Data analysis

The collected data were analyzed using the structural equation model. The analysis procedure was as follows. First, correlation and descriptive analyzes were conducted to determine if there was a problem of multicollinearity of the measured variables. Second, the hypothetical model was modified based on the effect analysis and a fitness analysis was conducted to verify whether or not the modified model was acceptable. Third, direct effects between variables in the modified model were analyzed. Lastly, mediating effects of ADHD symptoms, cyber bullying victimization, and anger on the influence of parental neglect on offline school bullying were examined. To analyze multiple mediating effects, bootstrapping was performed after each path from parental neglect to offline school bullying was constructed with phantom variables.

4. Results

4.1. Descriptive statistics and correlation of variables

Correlation between the measured variables showed that all the variables had a significant positive correlation. In details, parental neglect was found to have a positive relationship with ADHD symptoms($r = .209$ $p < .01$), anger($r = .260$ $p < .01$), cyberbullying($r = .127$ $p < .01$), and school violence($r = .174$ $p < .01$). ADHD symptoms were also positively correlated with anger($r = .677$ $p < .01$), cyberbullying($r = .157$ $p < .01$), and school violence($r = .179$ $p < .01$). Anger was also positively correlated with cyberbullying($r = .217$ $p < .01$) and school violence($r = .233$ $p < .01$), and cyberbullying was positively correlated with school violence ($r = .222$ $p < .01$). As a result of examining the correlation coefficient, VIF and Tolerance, the correlation coefficients were less than .70, the VIF values were less than 2 and the tolerance limits were larger than .5. It showed that the problem of multicollinearity did not occur.

Table 2. Descriptive statistics and correlation of variables.

Variable	Parental neglect	ADHD symptoms	Anger	Cyber bullying victimization	Offline school bullying
ADHD symptoms	.209**				
Anger	.260**	.677**			
Cyber bullying victimization	.127**	.157**	.217**		
Offline school bullying	.174**	.179**	.233**	.222**	
M	1.044	1.818	1.783	1.110	1.099
SD	.179	.496	.619	.214	.213

Note: **p<.01

4.2. Fitness of modified model

According to the result of effect analysis between the variables of the hypothetical model established through theoretical background, all direct effects except ADHD tendency → offline school bullying were found to be significant. Thus, ADHD tendency → offline school bullying was removed from the hypothetical model. As a result of fitness analysis of the modified model, $\chi^2(1) = .357$, p> .05 was found to be acceptable as shown in <Table 3>. The other fit indices(GFI, AGFI, RFI, RMSEA) were also appropriate levels. Thus, the modified model was accepted as the final research model.

Table 3. Fit index of modified model.

Model	χ^2	df	p	GFI	AGFI	RFI	RMSEA
Modified Model	.357	1	.550	1.000	.997	.993	.000

4.3. Effect analysis between variables

According to the results of effect analysis between the variables, as shown in <Table 4>, all direct effects of the variables in modified model were significant as the followings: parental neglect → ADHD symptoms(β = .209, t = 5.367), parental neglect → cyber bullying victimization(β = .099, t = 2.470), parental neglect → anger(β = .114, t = 3.884), parental neglect → offline school bullying(β = .109, t = 2.770), ADHD symptoms → cyber bullying victimization(β = .136, t = 3.405), ADHD symptoms → anger(β = .637, t = 21.610), cyber bullying victimization → anger(β = .103, t = 3.539), cyber bullying victimization → offline school bullying(β = .172, t = 4.421), anger → offline school bullying(β = .167, t = 4.191). The results indicated that parental neglect of elementary school students could influence ADHD symptoms, cyber bullying victimization, anger, and offline school bullying, Similarly, ADHD symptoms increased cyber bullying victimization, anger, and offline school bullying, and cyber bullying victimization increased anger and offline school bullying. The standardized regression weight between the variables in the modified model are shown in <Figure 2>.
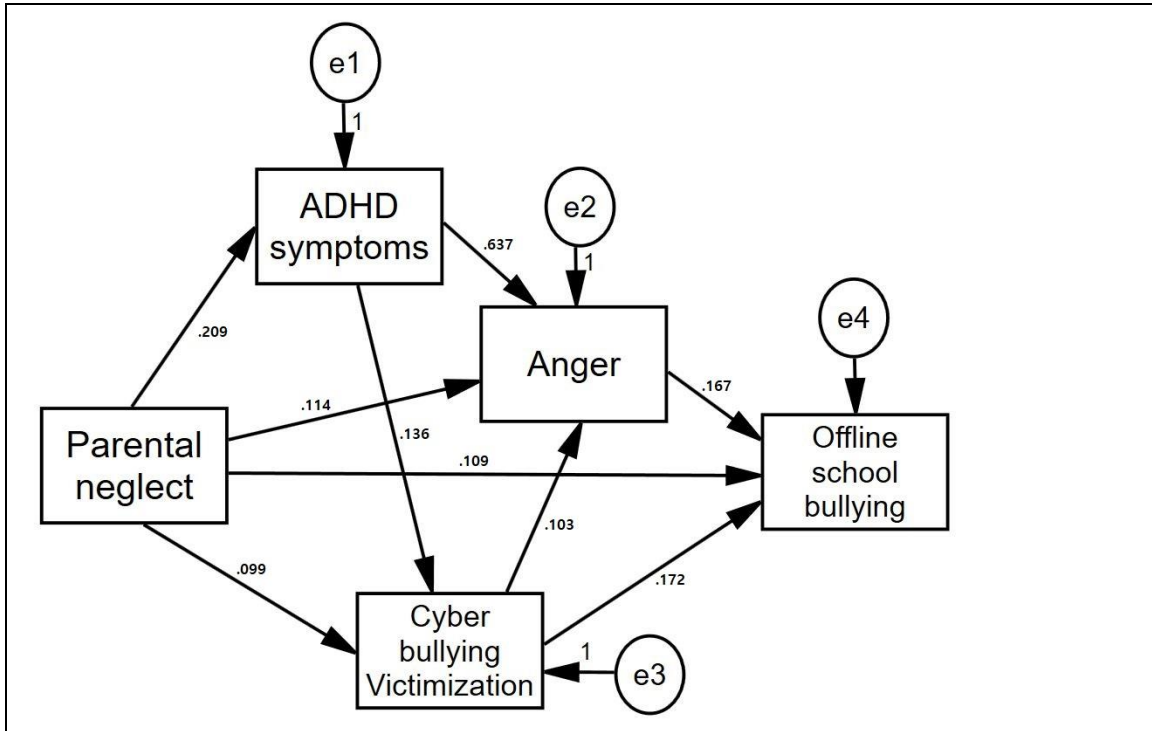
Table 4. Direct effect between variables.

Variables	Estimate	Standardized regression weight (β)	SD	t
Parental neglect → ADHD symptoms	.581	.209	.108	5.367***
Parental neglect → Cyber bullying victimization	.119	.099	.048	2.470*
Parental neglect → Anger	.396	.114	.102	3.884***

Parental neglect → Offline bullying	.130	.109	.047	2.770**
ADHD symptoms → Cyber bullying victimization	.059	.136	.017	3.405***
ADHD symptoms → Anger	.795	.637	.037	21.610***
Cyber bullying victimization → Anger	.297	.103	.084	3.539***
Cyber bullying victimization → Offline bullying	.179	.172	.030	4.421***
Anger → Offline bullying	.057	.167	.014	4.191***

Note: *p<.05, **p<.01,***p<.001

Figure 2. Standardized regression weight between the variables.

4.4. Examination of mediating effects

The mediating effects of ADHD symptoms, cyber bullying victimization, and anger on the influence of parental neglect on offline school bullying were examined. To analyze the effects of multiple mediation, bootstrapping was performed after each path from parental neglect to offline bullying was set using phantom variables. As a result of analysis, the four paths were statistically significant at 95% confidence level. In details, parental neglect → cyber bullying victimization → offline school bullying(b = .020, p =. 045), parental neglect → anger → offline school bullying(b = .023, p =. 004), parental neglect → cyber bullying victimization → anger → offline school bullying(b = .002, p =. 019), and parental neglect → ADHD symp-toms → anger → offline school bullying(b = .027, p =. 002) were significant as shown in <Table 5>.

Table 5. Indirect effect of parental neglect on offline school bullying.

Path	Estimate	P	95% Bia corrected CI	
			Lower	Upper
Parental neglect → Cyber bullying victimization → Offline bullying	.020	.045	.003	.062
Parental neglect → Anger → Offline bullying	.023	.004	.012	.045

Parental neglect → Cyber bullying victimization → Anger → Offline bullying	.002	.019	.001	.011
Parental neglect → ADHD symptoms → Anger → Offline bullying	.027	.002	.015	.052

5. Discussion

The results of this study showed that parental neglect could increases offline school bullying directly and indirectly. Particularly, four indirect paths from parental neglect to offline school bullying by mediating ADHD symptoms, cyber bullying, and anger were identified. Discussion regarding the results of the study is as follows.

5.1. Direct effects of parental neglect on offline school bullying

According to the results, parental neglect increased offline bullying directly. This finding is consistent with previous studies showing the child maltreatment including parental neglect could give negative impacts on offline school bullying[11][12][13][28]. The following explanation can be made about how parental neglect leads to offline school bullying. First, it may be caused by the absence of discipline from parents on moral and social norms preventing problem behaviors such as school bullying. In fact, parents' discipline at home is essential for the acquisition of the social norms and moral rules for elementary school students[50]. However, students who are neglected by their parents may not have the sufficient opportunity to acquire those social norms and moral rules. As a result, they may not recognize well that they should not engage in harming others such as offline school bullying. Second, it is possible that offline school bullying repeatedly occur by parental neglect. In the case of school bullying, how parents respond to the initial outbreak will further determine whether an additional bullying occurs or not. In this regard, similar offline school bullying may occur repeatedly in neglected children due to the lack of proper parental involvement in initial stage. The previous research studies showing that parental involvement is one of the most effective variables in preventing school bullying support this explanation[51][52].

5.2. Indirect effects of parental neglect on offline bullying perpetration

Results indicated that parental neglect increased offline bullying indirectly. In details, four indirect paths from parental neglect to offline school bullying were identified. First, parental neglect increased offline school bullying through cyber bullying victimization. Parental neglect increased the cyber bullying victimization and the increased victimization augmented offline school bullying. This finding is in line with previous studies showing that parental neglect could increase cyber bullying victimization and offline school bullying[28][29], and at the same time, it provides a more systematic view of the structural relationships among these variables. The following explanation may be possible regarding this path.

First of all, due to parental neglect, elementary school students are more likely to be exposed to cyber environments such as smartphones or Internet games and this exposure could cause cyber bullying victimization. Currently as smartphones spread rapidly, youth smartphone or internet addiction is becoming a social problem in Korea[53]. In particular, elementary school students who have not fully developed their self-regulation ability are more likely to be addicted to smartphones or Internet games unless they are properly guided by their parents. In this regard, elementary school students who are neglected by their parents may be more likely to experience cyber bullying victimization by being exposed to the cyber environment through smartphones or Internet games. The findings from previous studies showing that smartphone or Internet use time are associated with cyber bullying victimization support this explanation[54][55][56].

Once cyber bullying victimization occurs by parental neglect, it can be explained by Akers' social learning theory regarding how cyber bullying victimization can lead to offline school bullying[57]. According to the theory of social learning, violent behavior like offline school bullying can be learned through the experience of another violent behavior. It means that the more neglected students are exposed to violent behaviors like school bullying, the more easily they learn regarding school bullying. From the perspective of social learning theory, the results of this study can be interpreted that elementary school students learn about bullying through cyber bullying victimization and they engage in similar bullying easily when encountering subjects with lower power hierarchies than themselves.

Second, the result indicates that parental neglect increased offline bullying through anger. Parental neglect raises anger and that the raised anger augments offline school bullying. This finding is consistent with previous studies showing that parental neglect can increase anger and offline school bullying[20][21], and also provides a more systematic view of the structural relationships among these variables. The path leading parental neglect to offline school bullying through anger can be explained by Agnew's general strain theory[58]. General strain theory argues that juvenile delinquency is a way to relieve the tension experienced by negative stimuli from the outside. From the perspective of general strain theory, the results of this study can be interpreted that if elementary school students experience negative stimuli like neglect, they may experience tension and anger, and commit offline school bullying in order to release them.

Third, the result showed that parental neglect increased offline school bullying by multi-mediating cyber bulling victimization and anger. After parental neglect increased cyber bullying victimization, increased cyber bullying victimization raised anger level. And, this raised anger finally augmented offline school bullying. This finding shows a more systematic representation of the structural relationship among those four variables. The structural relationship can be explained by Agnew′s general strain theory also[58]. It is possible that cyber bullying victimization caused by parental neglect could occur tension and anger from elementary school students and in order to release those tension and anger, they may commit a problem behavior such as offline school bullying.

Fourth, the result indicated that parental neglect increased offline bullying by multi-mediating ADHD symptoms and anger. After parental neglect increased ADHD symptoms, increased ADHD symptoms boosted anger. And, this boosted anger finally triggered offline school bullying. This result is consistent with previous studies showing that parental neglect can increase ADHD symptoms and anger[38][39][40]. At the same time, it provides a more systematic structural relationship among these four variables. Previous research studies investigating how parental neglect affects the brain function of children can provide reasonable explanation about how parental neglect produces ADHD symptoms and anger. According to the study of Teicher, Tomoda and Andersen[59], stress from family such as parental neglect can have a wide range of negative impacts on neurological development of children. In particular, the corpus callosum of brain which plays a key role in self-control by coordinating the left and right hemisphere negatively impacted by the stress. The corpus callosum is closely related to ADHD symptoms and anger control[60][61]. Thus, it is possible that constant and high level stress such as parental neglect can produce ADHD symptoms and anger from elementary school students by giving harmful impacts to their brain. And those ADHD symptoms and anger could finally occur offline bullying by reducing the ability of self-control.

5.3. Limitation

The limitations of this study are as follows. First, there may be a sampling bias. In this study, the participants were selected from four elementary schools in the capital area by convenience sampling rather than random sampling. Therefore, the results of this study may reflect

regional characteristics rather than all elementary school students in Korea. Particularly, cyber bullying or offline school bullying is more likely to be influenced by economic and regional differences such as a city or rural area. Thus, the generalization of the results to other elementary school students in Korea need to be careful. Second, research objectivity may be limited by subjective perceptions of the participants. The data of this study regarding parental neglect, cyber bullying victimization, ADHD symptoms, anger, and offline school bullying were collected based on the subjective perceptions of the participants. Therefore, the level of those variables could be overestimated or underestimated depending on the participants' perception. Third, there may be limitations on the types of mediating variables. In this study, cyber bullying victimization, ADHD symptoms, and anger were selected as variables mediating parental neglect and offline school bullying. However, parental neglect can cause other types of emotional problems such as depression and anxiety. It is possible that the effects of these mediators are relatively more significant than those of ADHD symptoms and anger. In this case, the paths between parental neglect and offline school bullying violence verified in this study could be changed.

5.4. Conclusion

In this study, one direct and four indirect paths through which parental neglect of elementary school students influenced their offline school bullying were identified. These findings propose that conducting school bullying programs targeting only school bullying itself could be less effective unless considering more fundamental reasons that elementary school students commit school bullying. Furthermore, this study also verified the critical roles of emotional problems such as ADHD symptoms and anger on offline school bullying. It suggests that emotional problems like ADHD symptoms and anger should be considered in developing school bullying intervention programs. Future research will need to identify more regulatory variables that could mitigate the structural relationship between parental neglect and school bullying in order to design more effective school bullying intervention programs.

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7. Contribution

7.1. Authors contribution

	Initial name	Contribution
Author	CJO	-Set of concepts ☑ -Design ☑ -Getting results ☑ -Analysis ☑ -Make a significant contribution to collection ☑ -Final approval of the paper ☑ -Corresponding ☑ -Play a decisive role in modification ☑ -Significant contributions to concepts, designs, practices, analysis and interpretation of data ☑ -Participants in Drafting and Revising Papers ☑ -Someone who can explain all aspects of the paper ☑

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- Mediating Effects of Smartphone Overdependence in Structural Relationships among School & Cyber Bullying and Bullying Victimization of Elementary School Students, The Journal of Elementary Education, 32(4) (2019).

Major career
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