

**Improving the Work Evaluation and Personnel Management System of
Firefighters : A case study of Korean firefighting organization**

By

LEE, Hyunseok

CAPSTONE PROJECT

Submitted to

KDI School of Public Policy and Management

In Partial Fulfillment of the Requirements

For the Degree of

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ABSTRACT

The Korean firefighting organization, which started in 1426 during the Joseon Dynasty, has made many quantitative advances over the past decade based on its high public confidence and reputation. However, it faces numerous challenges internally and complaints about the chronic personnel management and promotion system are one of the representative conflict factors.

This research conducted a review of the work evaluation system and promotion system currently implemented by the firefighting organization. It focused on comparing systems operated by similar institutions such as general public officers, police, and overseas firefighting organizations, identifying complementary points, and presenting meaningful proposals. For a more objective approach, public documents and literature currently in use were analyzed and 4,529 articles posted on online forums mainly used by firefighters were statistically classified, and in-depth interviews were conducted with 21 incumbent employees to listen to opinions within the organization.

The policy proposal presented in this paper aims to revitalize the organization through positive motivation. By expanding objective performance indicators and ensuring evaluators' authority, a more advanced work evaluation system is established, and additional points are proposed to foster talent suitable for the future value of the organization. The final stage of the proposal is to develop into a healthy organization with appropriately distributed powers.

Keywords: Firefighter, Firefighting Organization, Work Evaluation, Personnel Management

TABLE OF CONTENTS

LIST OF TABLES AND FIGURES	4
1. Introduction & Research Objectives	8
2. Literature Review.....	12
2.1 Emergency Services and Fire Organization	12
2.2 Performance Management	14
3. Methodology.....	17
3.1 Work Evaluation System	17
3.2 Personnel Management System	21
4. Korean Firefighting Organizaion Review	25
4.1 Characteristics of Organization	25
4.2 Historical Development	27
4.3 Current Status	29

5. Findings of the Work Evaluation System.....	33
5.1 Current System	33
5.2 Case Study	35
5.3 Policy Proposal	38
6. Findings of the Personnel Management System.....	40
6.1 Current System	40
6.2 Case Study	43
6.3 Policy Proposal	47
7. Conclusion and Future Research	49
REFERENCES	50
APPENDICES	54
Appendix A. Survey Results	54
Appendix B. Interview questionnaire	55

LIST OF TABLES

Table 1.1 Staffing by department: Korean firefighting organization	9
Table 2.1 Smart Indicators Checklist, with Case Study	16
Table 3.1 Multiple Evaluators System for Firefighters	17
Table 3.2 Work Performance Evaluation Table for Firefighters	18
Table 3.3 Evaluation Tables of Similar Organizations	19
Table 3.4 Incumbent Interview Results	23
Table 3.5 Methodologies by Research Question	24
Table 4.1 History of Korean Firefighting Organization	27
Table 4.2 Current status of Korean firefighters of 2022	30
Table 5.1 Performace Grade Rating Scale and Evaluation Method	34
Table 5.2 Evaluation Factors and Criteria	35

Table 5.3 Description of Evaluation Criteria (General Public Officials).....	37
Table 6.1 Evaluation Table of Career, Educational Training, and Additional points	44
Table 6.2 Basic and Extra Career Evaluation Points Table	45
Table 6.3 Additional Points for Certificates and Language Skills	46
Table 6.4 Additional points for computer utilization ability	47

LIST OF FIGURES

Figure 1.1 Number of cases handled annually by firefighting Organization	8
Figure 1.2 Firefighting Unions	10
Figure 1.3 Firemen on the Scene Are Angry at the Promotion Conditions	11
Figure 2.1 Structure of Seoul Metropolitan Fire & Disaster Headquarters	13
Figure 3.1 Employee Performance Evaluation Form 2.3.8	20
Figure 3.2 Online forum comment analysis	21
Figure 4.1 Main Fields of Korean Firefighting Organization	25
Figure 4.2 The Ranks of Firefighters	26
Figure 4.3 Increasing Number of Firefighters in the Past Decade	29
Figure 4.4 Korean firefighting Organizations	30
Figure 4.5 Trend of Increase in EMS (overseas)	31
Figure 4.6 Expansion of EMS-centered task area (overseas)	32

Figure 5.1 Example of Comments Requirements by Evaluation Item36

Figure 6.1 Promotion on Continuous Service Basis42

Improving the Work Evaluation and Personnel Management System of Firefighters

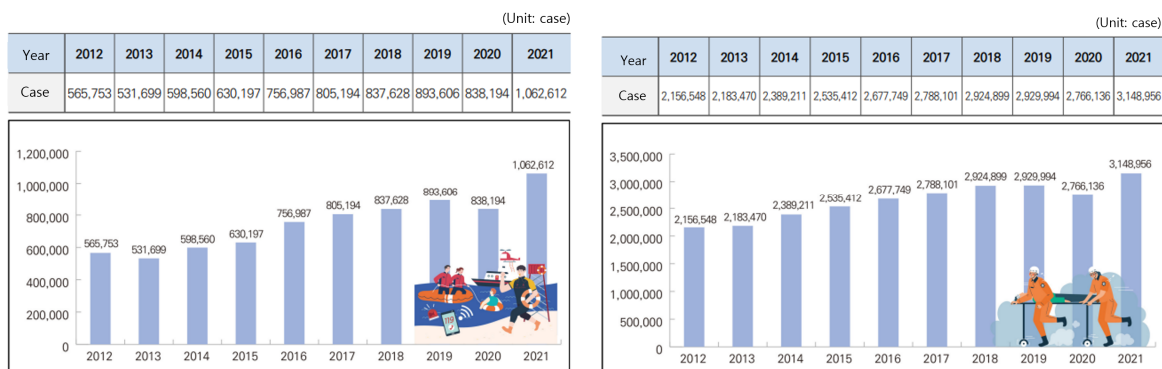
: A case study of Korean firefighting organization

1. Introduction & Research Objectives

Most countries in the world have uniform organizations to protect their people's lives and property. Although there are a few differences due to their historical background and cultural differences, these uniform organizations are making efforts to fulfill their calling in an emergency situation where the conditions of limited time and resources are given (Joe, S. W., 2018). The Korean Firefighting Organization is one of the major uniform organizations formed nationwide, led by the National Fire Agency (NFA). As of 2023, it carries out 36,000 fire suppression, more than 1 million rescue cases, and more than 3.14 million emergency medical service (EMS) cases per year. The most widely known emergency number in Korea, 119, represents the Korean Firefighting Service.

Figure 1.1

Number of cases handled annually by firefighting Organization (NFA, 2023)



Based on its high public confidence and popularity, the Korean firefighting organization, which has solved the lack of manpower, which has been a long-cherished problem for the last 10 years, continues to expand quantitatively, putting most of its increased 64,054 manpower on the field. In the following table, field staff under the fire station correspond to field shift workers.

Table 1.1

Staffing by department: Korean firefighting organization (NFA, 2023)

(Unit: person)

Total	Head- quarters	Academy	Fire Station			Field Staff under Fire Station					
			Admini- stration	Prevention	Response	Field Operations	119 Fire Center			Rescue	Fireboats
							Fire	EMS	Branch		
64,054	4,616	341	2,711	4,416	1,992	3,472	25,878	11,532	3,773	5,166	157

However, in addition to this quantitative development, the Korean firefighting organization faces many challenges in the qualitative development that must be accompanied. The representative problems that have been latent so far and have begun to surface with the launch of the firefighting association in July 2021 are as follows (Choi, N., & Park, J., 2021).

The first is the lack of chronic communication according to the unique military-style culture. This mainly makes it difficult for lower-rank firefighters working in the field to communicate with higher-rank departments, and the combination of transparent work evaluations and personnel systems creates distrust in managers (Park, C., 2014). In this study, online forums and in-depth interviews were used to collect opinions from the field, but there were few cases of expressing positive opinions on the current work evaluation system.

Figure 1.2

Firefighting Unions (Internet source, 2021)



The second is the conflict between internal members. There are many problems such as conflicts between origin, rank, and gender, but the representative is the separation of field and office workers. Statistically, 80% of firefighters work in the field and the remaining 20% work in the office. Field workers work 24 hours a day out of three days, with higher wages and more free time than office workers. Therefore, many firefighters are extremely reluctant to engage in office work, even though it is essential. As a reward, office workers are given more opportunities for promotion, but field workers are unhappy that a small number of office workers take all the opportunities (Yang, H., 2022).

Therefore, the purpose of this Capstone project is to help these chronic problems, and it is to be solved by improving the work evaluation and personnel system related to the majority of conflict factors. Therefore, the first research question is to identify the complementary points and suggest alternatives to the work evaluation system, and the second is to check vulnerabilities of the personnel system and propose an improvement policy.

Figure 1.3

Firemen on the Scene Are Angry at the Promotion Conditions (Yang, H., 2022)



In the next chapter 2, a literature review of existing emergency services and firefighting organizations and a review of performance management will be conducted together to improve the work evaluation that is the basis of the personnel system. Chapter 3 explains the methodology for conducting the study. We will collect secondary data such as documents and literature, analyze them through case studies, and conduct quantitative analysis and content analysis based on primary data such as surveys and interviews. Chapter 4 is a review of the target Korean firefighting organization. It will briefly summarize the nature, development history, and current status of the organization. Chapter 5 looks at work evaluation. Identify the complementary points of the existing system and present policy proposals through case studies of general public officers and police organizations with similar characteristics. Chapter 6 is about the personnel system. It will analyze especially the promotion system, and propose improvement through case studies of fire organizations in the United States, Japan, and Hong Kong. Finally, Chapter 7 will cover the conclusions of this Capstone project and future research. The possibilities and limitations of this study will be briefly discussed.

2. Literature Review

2.1 Emergency Services and Fire Organization

Before reviewing related literature, we need to define some important terms. A considerable amount of literature has been published on emergency service and firefighting organizations. As these studies have defined Emergency Services and Fire Organizations with different meanings depending on their purpose (e.g., Burgess, J. L. et al., 2021; see also Kc, K., 2018; Dai Han, S. et al., 2012). Therefore, terms such as Fire Organization, Fire Service Organization or Management Agency, and Firefighting Organization will be used in the same sense in this document. Firefighters and Fire Officials also use the same meaning.

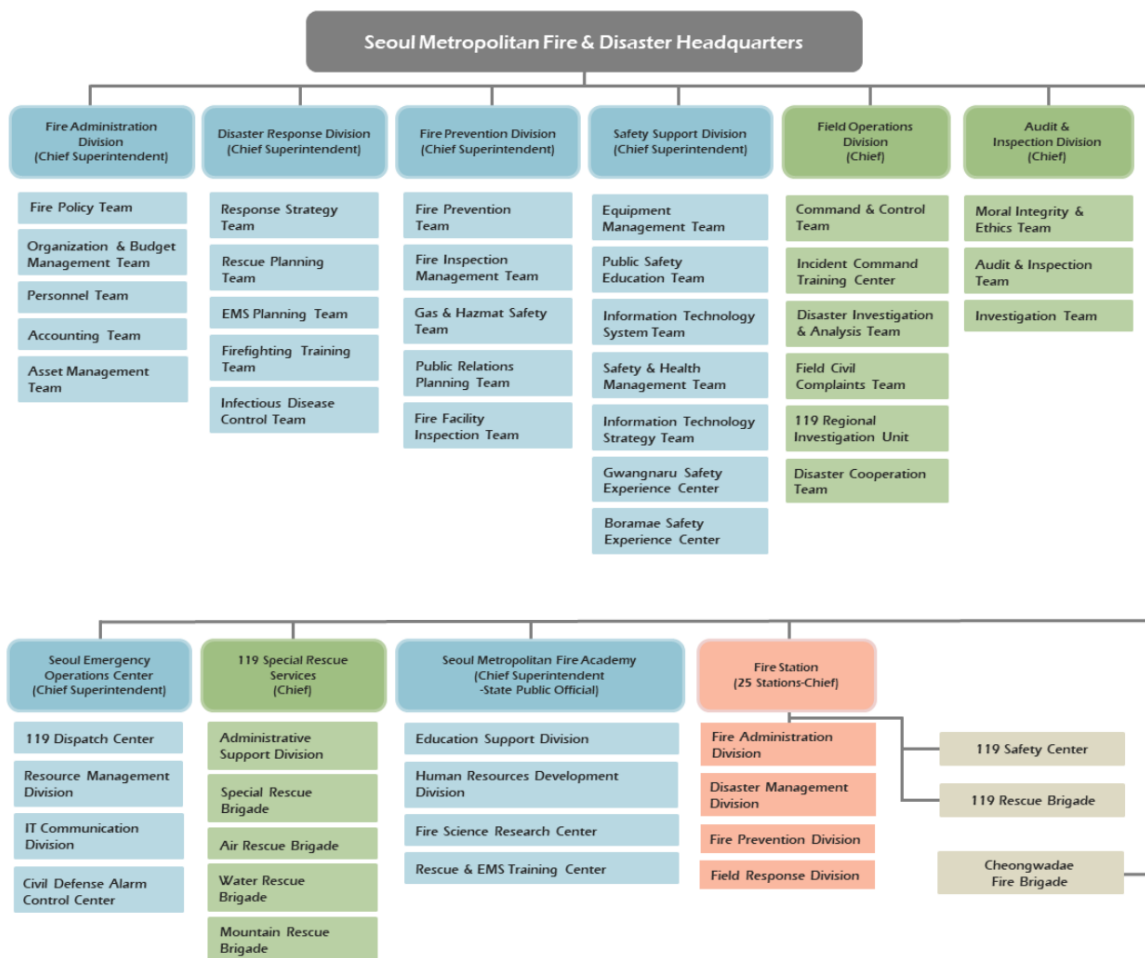
The other official terms used in the administration will be described based on the Korean Law Information Center of The Ministry of Government Legislation (MOLEG). For example, ‘Life Safety Activities’ means the work performed by fire departments to prevent people’s lives in danger. This definition is in accordance with Article 163 of the Framework Act on Firefighting in Korea.

The emergency services and fire organization was originally a major area of interest within the public field (Heo, B. et al., 2018; Joe, S. W., 2018). With the emergence of the modern concept that the government should ensure the safety of its people, this issue shifted from the local level to the nationwide level (Burgess, J. L. et al., 2019; Kc, K. et al., 2018; for a discussion on resources optimization, see Lee, J., & Masatsugu, N., 2015). In Korea, substantial government investment in public safety has only recently been made. Since the Moon Jae-in administration took office in 2018, the recruitment of about 20,000 firefighters has progressed very quickly in a

short period of time. In addition to the size of the firefighter recruitment, deployment and operation are issues that draw attention. Much of the current literature on this topic focuses on the improvement of government organizations (e.g., Park, C. S., 2020; Jin, C., & Lim, J. S., 2018; see also Mun, G. S., 2017). Since the nationalization of fire officials in 2020, discussions on organizational restructuring have been more active (Yoon, J. H., & Lee, K. J., 2021). What can be seen in the figure below is the typical structure of the fire headquarters.

Figure 2.1

Structure of Seoul Metropolitan Fire & Disaster Headquarters (Internet Source, 2022)



The previous study by Park, C. S., and Kim, S. J. (2020) offer some important insights into the organizational culture of firefighters. Based on the existing literature and statistics, this paper will provide an opportunity to advance the understanding of the characteristics of firefighters' tasks. Park, C. (2014) mentioned the organizational culture according to the work characteristics of firefighters is also worth noting.

Having discussed previous research and current issues, cases overseas were analyzed. White Paper from Fire and Disaster Management Agency of the Ministry of Internal Affairs and Communications, Japan (FDMA, 2022) and Statistic Report of Fire Services Department, The Government of the Hong Kong Special Administrative Region (FSD, 2022) were reviewed. In these documents, quantitative figures were mainly checked, and the high rate of increase in EMS cases was commonly confirmed.

The work evaluation system of the U.S. firefighting organization, which has a completely different recruitment system from the East, was also referred to. In the County of Orange Department of Fire & EMS Employee Performance Evaluation Company Officer, Form 2.3.8, it can be seen that there is a descriptive work evaluation system to describe qualitative parts. It was confirmed that there are many differences from the Korean system in which all figures are converted into scores (Orange County, VA., n.d.).

2.2 Performance Management

The dictionary definition of performance refers to the result of what happened. However, in performance management, the concept of performance is difficult to be limited to this

dictionary definition has developed to have a more complex meaning (Ko. Y. et al., 2014). The definition of the existing literature on performance is summarized as follows. Rogers (1990) argues that performance is "the degree to which the goal set by the government has been achieved to some extent through the activities of the government." Meanwhile, Lee, K. (2019) viewed performance as a concept of efficiency or productivity, including budget reduction and service development cost reduction.

The concept of performance management in the public sector is also published in various ways. Some literature related to government reviews (Jang, J. et al., 2008; also see Lee, K., 2019) expresses this process using other terms, but the overall structure of assessment-analysis-feedback is the same as that of the private sector. In addition, Rogers (1990) views performance management as a retrospective assessment that accurately evaluates the process and output of government intervention and the advantages, usefulness, and value of the results and reflects them in future practical measures. Poister (2008) defines performance management regarding more monitoring as improving efficiency by periodically reporting assessment and project performance results to managers in achieving long-term and short-term goals.

Among the documents related to performance management in the public domain, the key part to be cited in this study is the concept of key performance used in work evaluation and promotion scores. Harvey, H. B., Hassanzadeh, E., Aran, S., Rosenthal, D. I., Thrall, J. H., and Abujudeh, H. H. (2016) left a meaningful study on key performance measurements using quantifiable indicators, represented by the phrase "you can't manage what you can't measure." (see also Lugoboni, L. F. et al, 2021; Jang, J. et al., 2008). They made us realize the importance of the so-called SMART principle's specific and measurable indicators.

Table 2.1*Smart Indicators Checklist, with Case Study (META, 2023)*

S	Specific	Does the indicator measure only one variable or aspect of a program, project, objective, outcome or output?
		Does the indicator clearly specify what variable is being measured, for/among whom?
M	Measurable	Are there practical ways of measuring the indicator?
		Have the data elements used to calculate the indicator been clearly defined?
A	Attainable	Is the target attached to the indicator achievable?
	Appropriate	Does the indicator measure the objective, outcome, or output meant to measure? Does measuring this tell us whether we have achieved what we wanted to achieve?
	Attributable	
R	Relevant	Is it possible to measure this indicator (within the available timeframe, with the available resources)?
	Realistic	
	Reliable	Is it clear how the indicator will be calculated so that the same results would be seen if the indicator were calculated repeatedly to measure the same condition or event?
T	Timebound	Does the indicator state within what timeframe the indicator will be measured?

This study will check the extent to which this SMART principle described in the table above is observed in the current firefighter work evaluation system and examine the possibility of improvement. Similar studies were conducted at the request of the Korean administration (Lee, H. et al., 2020) but since the main focus was on the general administrative field, the current criteria for firefighters will be reviewed separately.

3. Methodology

3.1 Work Evaluation System

Secondary data collections such as document and literature were mainly used as a method for discussing the work evaluation system. Most of the official documents on the work evaluation of Korean firefighting organizations are stipulated in the Enforcement Rule Of The Fire Official Promotion and Appointment Regulations (MOLEG, 2022). Among them, the form of the Multiple Evaluators System using the first and second evaluators was reviewed. Details of this can be found in the Attached Form 1 in the regulations. Looking at the table below, it can be seen that in general, the primary evaluator is the manager of the department and the secondary evaluator is the deputy director. If it operates normally, it would be a reasonable system, but as will be described later, the dissatisfaction with this system is quite high.

Table 3.1

Multiple Evaluators System for Firefighters (MOLEG, 2022)

■ Enforcement Rule Of The Fire Official Promotion and Appointment Regulations [attached form 1]
 <Amended on Nov. 18, 2021>

Evaluator of work performance (related to Article 6)

Division	Rank	1 st evaluator	2 nd evaluator	
National Fire Agency	Fire Chief	Director General	Vice Commissioner	
National Fire Service Academy		Principal	Vice Commissioner	
National 119 rescue Headquarters		Chief of Headquarters	Vice Commissioner	
National Fire Research Institute of Korea		Research Director	Vice Commissioner	
Local Fire Headquarters		Chief of Headquarters	Deputy Mayor Lieutenant Governor Vice Commissioner (Local Fire Service Academy)	Chief of Headquarters
Local Fire Station				
Local Fire Service Academy				
Seoul Emergency Operations Center				
119 Special Response Team				
Firefighting Experience Center				
National Fire Agency	Deputy Fire Chief			
National Fire Service Academy	Fire Chief	Principal	Vice Commissioner	
National 119 rescue Headquarters	Fire Captain	Chief of Headquarters	Vice Commissioner	

National Fire Research Institute of Korea	Deputy Fire Chief	Research Director	Vice Commissioner
	Fire Captain	head of a department	Research Director
Local Fire Headquarters	Deputy Fire Chief Fire Captain	head of a department	Chief of Headquarters
Fire Station		chief of a fire station	
Local Fire Service Academy		Principal	
Seoul Emergency Operations Center		Center Director	
119 Special Response Team		Team Director	
Firefighting Experience Center		Center Director	
National Fire Agency		under Fire Lieutenant	
National Fire Service Academy	Principal		
National 119 rescue Headquarters	Chief of Headquarters		
National Fire Research Institute of Korea	Research Director		

It seems to be an absolute evaluation that quantifies the score, but it is actually close to a relative evaluation with a fixed ratio for each grade (A, B, C, D). Therefore, the form of firefighters of the same class with similar work experience in the same department is being avoided, because it affects their promotion.

For more case studies, The Local Official Evaluation Regulations of general public officials with similar organizational structure and the Police's Work Performance Evaluation Table were also analyzed. General public officials are similar in the large framework of administrative officials, and police have the same characteristics as a uniform organization.

Table 3.3

Evaluation Tables of Similar Organizations (MOLEG, 2022)

■ The Local Official Evaluation Regulations [Form 2] <Amended on Sep. 10, 2020>

**Public Officials
Work Performance Evaluation Table**

□ Evaluation Period: from until

Name	Division	Position	Rank	Promoted date	Appointment date

1. Assigned job

2. Job performance evaluation (50 points)

no.	performance objectives	proportion (%) ④	results	evaluation factors			sum	sub-total
				difficulty (10) ④	perfection (20) ④	timeliness (20) ④		
1				●●●●●	●●●●●	●●●●●		
2				●●●●●	●●●●●	●●●●●		
3				●●●●●	●●●●●	●●●●●		
4				●●●●●	●●●●●	●●●●●		
extra				●●●●●	●●●●●	●●●●●		
extra				●●●●●	●●●●●	●●●●●		
total score								

Notes for reference
 1) 'extra' refers to tasks added after establishing a performance plan at the beginning of the year.
 2) Each evaluation factor shall be evaluated in five stages: defect (○) - insufficient (⊙) - ordinary (⊕) - good (⊗) - excellent (⊗) if it achieves a performance exceeding the original plan, excellent (⊗) if it achieves a breakthrough result.
 3) 'sum' = ④+④+④, 'sub-total' = ④×(④+④+④). The 'total score' is the sum of each subtotal.

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[Form 2] <Amended on Jul. 19, 2018>

Work Performance Evaluation Table (Superintendent or under)

○ Date : _____
 ○ Rank : _____

○ Info
 Division : _____
 Name : _____

description	1 st evaluation factors					2 nd evaluation factors				Evaluator by stage
	Contribution points	Reward	Education & training	Attitude	Total	Performance	Abilities	Job performance attitude	Total	
evaluate work plan, crime arrest, etc	6	9	10	2	30	6	8	6	20	Rank Name (sign)
offset bonus points and penalty points										
evaluate physical fitness, regular study, etc										
evaluate the general attitude of work										
workload										Rank Name (sign)
accuracy										
speed										
knowledge and skill										Rank Name (sign)
understanding										
creativity										
diligence										Rank Name (sign)
cooperation										
responsibility										
note										

○ 2nd evaluation Rating Scale
 A (19 points or more) 20%
 B (16 - under 19 points) 40%
 C (10 - under 16 points) 30%
 D (under 10 points) 10%


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In the case of general public officials, it is required to describe the assigned job of the evaluated person as a top priority. Set goals for the task and evaluate its achievement. The police's evaluation table is similar to that of firefighters, but it has the first, second, and third evaluators. It is noteworthy that Reward items are included separately.

In addition, it looked at the case of the United States, where firefighters are not public officials. This research used the County of Orange Department of Fire & EMS Employee Performance Evaluation below. Unlike in the case of Korea, which is a principle of non-disclosure, it is characterized by describing the comment of the evaluator for each item.

Figure 3.1

Employee Performance Evaluation Form 2.3.8 (Orange County, VA., n.d.)



County of Orange Department of Fire & EMS
Employee Performance Evaluation
Company Officer

Initials

Name: _____ Employee #: _____

Hire Date: _____ Period Covered: From: _____ To: _____

Evaluation and Criteria

Using the following numerical scale, assign the appropriate value to the tasks listed below. Select the numbers which best reflects your appraisal of the individual's performance and place it on the line. A rating of 1 or 5 must be justified in writing. Comments are encouraged for each section.

5-Exceptional
4-Above Satisfactory
3-Satisfactory
2-Below Satisfactory
1-Unsatisfactory
N/A-Not Applicable

LEADERSHIP ABILITY

___ Staff sees the individual as a role model, and are able to get the correct answers to their questions in a timely manner.
___ The individual's knowledge is current with respect to both departmental and county policies and procedures.
___ Assures that all staff reports are turned in complete, accurate and on time.
___ Is able to provide guidance for corrective action to assure proper report submission in accordance with OEMS regulations and the department's quality assurance plan.
___ Quality assurance reviews are performed on all Patient Care Reports in compliance with department policy.
___ Creates a proactive environment among team.
___ Effectively manages subordinates and delegates tasks where appropriate.
___ Acknowledges areas of weakness in the division and provides constructive suggestions for corrective measures.
___ Is able to make company level decisions without supervisory input.
___ Can effectively manage the operational aspects of the department in the absence of direct supervision.

Comments:

REPORT PREPARATION, SUBMISSION AND PRESENTATION

___ Reports are submitted on time.
___ Field notes are used and maintained to document performance and guide future employee evaluations.
___ Fire, EMS, and department reports are legible, concise, and grammatically correct containing all required information.
___ Reports and information are rarely returned for correction.
___ Reports contain all applicable paperwork, and attachments as necessary.

Comments:

USE, CARE AND MAINTENANCE OF EQUIPMENT

Assures:
___ Vehicles are not abused through poor driving habits.
___ Equipment is not lost or damaged due to carelessness.
___ Specified operating and safety procedures are followed in the use and maintenance of specialized equipment.
___ Department vehicles are kept clean and serviced.
___ Equipment is kept clean, well taken care of, and always in working condition.
___ Work area is kept clean and organized.

Comments:

COMPLIANCE TO POLICIES, PROCEDURES AND REGULATIONS

___ All county and department policies, general orders, procedures, etc., are followed as directed or exceptions are approved by supervisor.
___ Sick leave is not abused.
___ Leave time is used only as authorized or specified.
___ Does not report late for assigned work.

Comments:

Orange County Policy 2.3 [pg. 48] Form 2.3.8 Orange County Policy 2.3 [pg. 51] Form 2.3.8

Furthermore, the statistics of the Fire and Disaster Management Agency of the Ministry of Internal Affairs and Communications, Japan and the Fire Services Department, The Government of the Hong Special Administrative Region, and published official documents are referred to next parts.

3.2 Personnel Management System

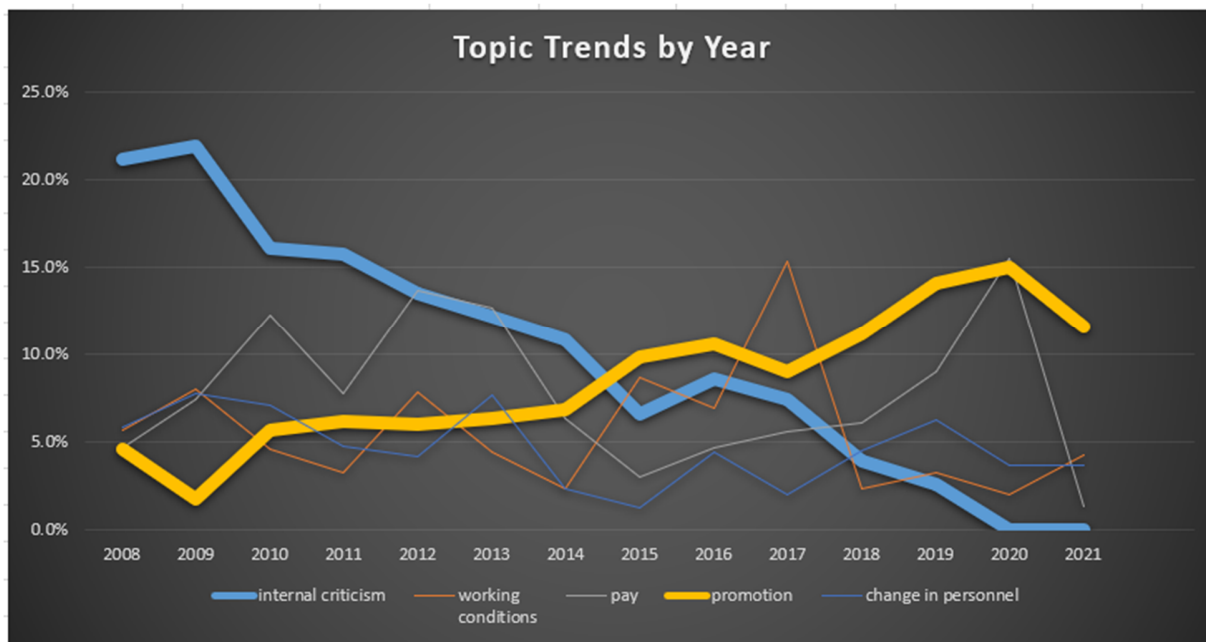
As a methodology for improving the personnel management system, the second research question, the primary data collection using surveys and interviews was used. A survey conducted quantitative (statistical) analysis, and interviews conducted the content analysis.

For the survey, 4,529 comments were analyzed from 2008 to 2021, posted on the bulletin board for the incumbent of an Internet online forum 'the Fire Service Love Party' with 182,884 members related to firefighting. Users' comments were largely divided into organizational criticism, working conditions, salaries, promotions, and personnel management (changes).

Figure 3.2

Online forum comment analysis (2022)

year	total post	total hits	internal criticism	hits	propotion	working conditions	hits	propotion	pay	hits	propotion	promotion	hits	propotion	change in personnel	hits	propotion
2008	320	130,768	56	27,692	21.2%	14	7,443	5.7%	7	6,077	4.6%	14	5,957	4.6%	15	7,572	5.8%
2009	298	162,354	28	35,543	21.9%	19	12,998	8.0%	14	12,079	7.4%	6	2,889	1.8%	22	12,568	7.7%
2010	270	164,067	22	26,415	16.1%	9	7,536	4.6%	22	20,129	12.3%	14	9,241	5.6%	19	11,622	7.1%
2011	292	161,799	24	25,496	15.8%	6	5,203	3.2%	15	12,533	7.7%	17	10,021	6.2%	12	7,710	4.8%
2012	221	140,284	12	18,915	13.5%	12	10,955	7.8%	21	19,112	13.6%	15	8,424	6.0%	11	5,847	4.2%
2013	201	133,284	12	16,238	12.2%	6	5,908	4.4%	19	16,897	12.7%	16	8,446	6.3%	16	10,185	7.6%
2014	221	148,291	15	16,111	10.9%	4	3,391	2.3%	10	9,389	6.3%	14	10,128	6.8%	7	3,804	2.4%
2015	265	153,385	8	10,109	6.6%	14	13,320	8.7%	5	4,587	3.0%	21	15,086	9.8%	3	1,907	1.2%
2016	349	208,302	10	17,838	8.6%	14	14,462	6.9%	12	9,720	4.7%	31	21,982	10.6%	14	9,263	4.4%
2017	534	541,358	18	39,928	7.4%	50	82,904	15.3%	24	30,219	5.6%	52	48,583	9.0%	16	10,788	2.0%
2018	473	351,700	9	13,762	3.9%	9	8,265	2.4%	25	21,487	6.1%	49	39,149	11.1%	24	15,666	4.5%
2019	335	251,897	3	6,554	2.6%	8	8,212	3.3%	23	22,723	9.0%	54	35,439	14.1%	19	15,780	6.3%
2020	298	199,789	0	0	0.0%	5	3,999	2.0%	15	30,961	15.5%	43	29,978	15.0%	14	7,318	3.7%
2021	276	145,333	0	0	0.0%	9	6,168	4.2%	4	1,889	1.3%	35	16,783	11.5%	12	5,290	3.6%
sub-total	4,353	2,892,611	217	254,601	8.8%	179	190,764	6.6%	216	217,802	7.5%	381	262,106	9.1%	204	125,020	4.3%



At the beginning of the analysis, the number of comments on criticism of the organization was expected to increase due to the increase in the number of younger generations over the years, but the actual analysis results were reversed. Internal criticisms have decreased noticeably over the years, and interest in promotions has been increasing as time goes by. This is analyzed for two reasons. The first is that the tool to express complaints about the organization has been diversified into individual social network services. The second is that the biggest concern as a civil servant is promotion, regardless of age, task, gender. In the case of payment and working conditions, they did not show any significant trends because they were given according to the information and regulations disclosed.

For in-depth analysis, interviews were conducted during the period from October 15 to November 8, 2022. Face-to-face and written interviews were conducted at the same time, and 21 incumbent employees working at the National Fire Agency and the Sejong Fire Headquarters

were targeted. To check whether there are differences by rank and gender in the answers, the ranks consisted of Deputy Fire Chief 1, Fire Captain 3, Fire Lieutenant 5, Fire Sergeant 6, Senior Fire Fighter 3, and Firefighter 3, and the gender consisted of Male 13 and Female 8.

The following five questions were asked. (i) Which do you prefer, office work or fieldwork and shift work? (ii) What kind of work do colleagues around you prefer? (iii) Are you willing to accept if you are given a good promotion chance instead of your preferred place of work and working conditions even lower pay or more work hours? (iv) What is the main reason for wanting to be promoted? ex) expansion of the organization, more authority, more pay, pride, etc. (vi) Are you satisfied with the current work evaluation system that affects your promotion status? In addition, opinions other than answers could be freely described or stated.

Table 3.4

Incumbent Interview Results (2022)

1. Which do you prefer, office work or fieldwork (shift work)?
2. What kind of work do colleagues around you prefer?
3. Are you willing to accept if you are given a good promotion chance instead of your preferred place of work and working conditions (lower pay/more work hours)?
4. What is the main reason for wanting to be promoted? ex) expansion of organization, more authority, more pay, pride, etc.
5. Are you satisfied with the current work evaluation system that affects your promotion status?

no.	rank	age	gender	current position	Q1	Q2	Q3	Q4	Q5
1	DFC	55	M	office	office (physical burden)	office	O	pride	X
2	FC	51	M	office	office	office	O	more authority	X
3	FC	45	M	office	office (shift work X)	office	O	more authority	X
4	FC	44	F	office	office (physical burden)	office	O	pride	X
5	FL	42	M	field (Fire)	field	field	X (stressful)	more authority	X
6	FL	40	M	office	field	office (promotion)	O	more authority	O
7	FL	36	F	office	office	field	O	more authority	X
8	FL	35	M	office	office (promotion)	field	O	pride	X

no.	rank	age	gender	position	Q1	Q2	Q3	Q4	Q5
9	FL	34	M	office	office (promotion)	field	O	pride	X
10	FS	38	M	field (Fire)	field (spare time)	field	O	more authority	X
11	FS	35	M	field (Rescue)	field	field	X	more pay	O
12	FS	31	F	field (EMS)	office	office	O	more authority	X
13	FS	31	F	field (EMS)	office (injury)	office (physical burden)	O	more authority	X
14	FS	30	M	field (Fire)	field	field	X	more authority	O
15	FS	28	F	field (EMS)	office (injury)	field	O	more pay	X
16	SF	29	M	field (EMS)	field	field	X	more pay	X
17	SF	27	M	field (EMS)	field	field	O	more pay	X
18	SF	24	F	field (Fire)	field (spare time)	field	X	more pay	X
19	F	24	F	field (EMS)	field	field	X	more pay	X
20	F	23	F	field (EMS)	field	field	X	more pay	X
21	F	21	M	field (Fire)	field (need to train)	field	X	pride	O

Briefly summarizing the above, the methodology mainly used in this study is shown in the table below. The analysis results of the survey and interviews were cited in the entire content.

Table 3.5

Methodologies by Research Question (2022)

Research Question	Methods		
	Data type	Data collection	Data analysis
[1] Challenges and alternatives of the performance evaluation system	Secondary data (document, literature)	- Fire Official Promotion and Appointment Regulations - Local Official Evaluation Regulations - Regulations for Promotion and Appointment of Police Officers - Orange County Policy 2.3	Case Study
[2] Challenges and alternatives of the personnel management system	Primary data (survey, interview)	- Online Forum 'Fire Service Love Party' (2008-2021)	Quantitative analysis
		- 21 Incumbents Interview (Oct. 15 ~ Nov. 8, 2022)	Content analysis

4. Korean Firefighting Organization Review

4.1 Characteristics of Organization

Modern times, each country generally has a government organization that conducts fire prevention, rapid fire extinguishment, and public life protection through emergency rescue and first aid activities. There are differences in the name and organization composition according to its history and needs, but there is no significant difference in its function (Son, K. H., & Shin, W. R., 2020). The government of the Republic of Korea performs this function by forming a firefighting organization in accordance with the Framework Act on firefighting Services. The purpose of this Act is to prevent, take precautions against, or suppress, fires and to safeguard the lives, physical health, and property of citizens by providing rescue and first-aid services, etc. in times of fires, calamities, disasters, and other emergency situations, thereby contributing to maintaining public peace and order and promoting public welfare (MOLEG, 2022). Therefore, the Korean firefighting organization's main fields are fire suppression, rescue and emergency medical service (EMS) and other personnel are allocated to fire prevention and life safety activities. Among them, EMS accounts for the largest workload, accounting for 70-80% of the total number of dispatches since the 2010s (Jin, C., & Lim, J. S., 2018).

Figure 4.1

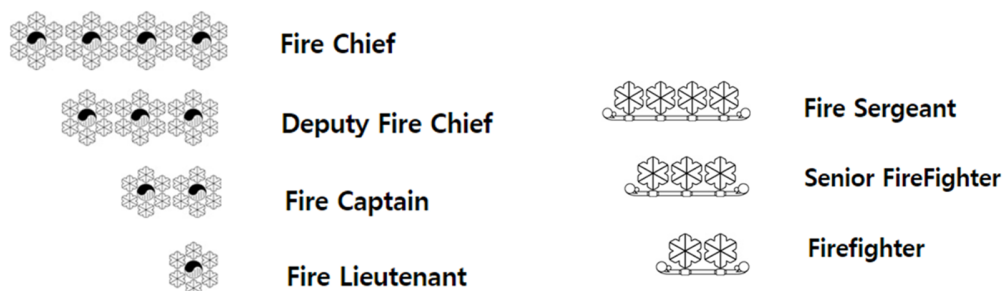
Main Fields of Korean Firefighting Organization (Internet source, 2022)



Since it is an organization that has to make quick decisions within a limited time and resources in an emergency situation, firefighting organizations have a strict rank system as their characteristics (Heo, B., Park, J., & Heo, W., 2018). The workforce of the Korean firefighting organization is divided into 12 ranks. The fire commissioner is in charge of the National Fire Agency and all Korean firefighting organizations. The fire station which public people generally have access has jurisdiction over one area and the person in charge is the fifth rank, the fire chief. The rank below the fire chief is as described in the following figure.

Figure 4.2

The Ranks of Firefighters (NFA, 2023)



The promotion of firefighters is largely divided into three categories. The examination promotion applies to all ranks and is the most common form. The test promotion takes place once a year, and the highest rank that can be raised is Fire Lieutenant. Because it takes a lot of time to prepare for the test, firefighters who work in positions suffering from hard work prefer to be promoted by examination form. Special promotion is applied to a small number of people who saved the lives of their colleagues or made special achievements in the field. The highest rank is also limited to Fire Lieutenant (MOLEG, 2022).

4.2 Historical Development

The history of Korean firefighting organizations began in 1426 with the Joseon Dynasty's Geumhwadogam. In 1948, a modern firefighting organization was established but it was only one department under the Ministry of Interior until 1992. In 2004, the National Emergency Management Agency became independent but it was still divided into fire and local organizations. In the wake of the Ferry Sewol incident, it has undergone many changes, including being incorporated under the Ministry of Public Safety and Security, but now it has become independent as a single ministry, and all firefighters have the status of national officers (NFA, 2023).

Table 4.1

History of Korean Firefighting Organization (NFA, 2023)

<p>The Era of National Firefighters Union of National Fire Agency and Local Level Organizations Apr 1, 2020 The Transition of Fire Officials to National positions</p>	<p>Nov 19, 2019 Passed amendments to the Fire officers Act Organization Bureau(3), Division(15), Affiliated Organizations(3) and Provincial Fire Headquarters(18) Identity Elevating Fire fighters status to National Officer</p>
<p>National Fire Agency July 26, 2017 National Fire Agency Established</p>	<p>June 27, 2017 Amendment to the Government Organization Act (information on the foundation of the NFA added) passed Body fire service headquarters in 18 cities and provinces Status National : Central Fire Service Local : city or provincial fire stations (210), rescue squads (297), emergency medical squads (1,354), Safety Centers (1,002), firefighting ship squads (8)</p>
<p>Ministry of Public Safety and Security Since November 19, 2014 Central Fire Service under the Ministry of Public Safety and Security</p>	<p>November 7th, 2014 Revision of the National Government Organization Act passed Body fire service headquarters in 18 cities or provinces Status National : Central Fire Service Local : cities or provinces</p>

Prime Time Since 2004 National Emergency Management Agency	System National Emergency Management Agency Body fire service headquarters in 18 cities or provinces Status National : Central Fire Service Local : cities or provinces
Developmental Phase Since 1992 Autonomous Firefighting System by City or Province (wide area)	System integrated at city or province level Body provincial fire service headquarters established in April 1992 Status shifted to local (city or province) level (January 1995)
Growth Phase 1975 ~ 1992 National + Local Firefighting System	System Autonomous in Seoul and Busan Cities Body August 1975, Department of Firefighting established under the Ministry of Interior Status March 1978, the Fire Officers Act enacted ※National Fire Service Academy opened in July 1978
Start Phase After Government formation (1948 ~ 1975) National Firefighting System	Status National : Firefighting Division at the Department of Public Order under the Ministry of Interior Local: Firefighting Division at the Policy Department or fire stations Body Fire Services Act enacted in March 1958 System Police Officials Act applied
US Military Government (1946 - 1948) Autonomous Firefighting System	National Firefighting Committee (National Fire Agency) Local Provincial Firefighting Committee (Local Fire Agency) City/eup/myeon: Fire Service Team
Joseon Dynasty to the End of Dynasty [Ministry of Interior/Ministry of Commerce]	1426 Geumhwadogam, Suseong Geumhwadogam 1481 Suseong Geumhwasa 1925 Gyeongseong Fire Station (Current: Jongno Fire Station)

Through this period of change, the Korean firefighting organization has made a lot of progress. The biggest change is about the increase in manpower (Park, C. S., 2020). A large number of new recruits have been made to address the chronic shortage of manpower, and about 65,000 people are currently working for the fire service. This is an increase of more than 40% compared to 10 years ago, and the number of people in charge per firefighter has also decreased from 1,328 to 807 (NFA, 2023). The difference can be seen by looking at the figure 1.2 below, and there was little change in the number of beneficiaries of fire service during the period when

the number of firefighters was increased. Although it cannot be said in a nutshell because each country has its own characteristics, this number of people in charge per fire fighter is evaluated to be close to the level of developed countries (Yoon, J. H., & Lee, K. J., 2021).

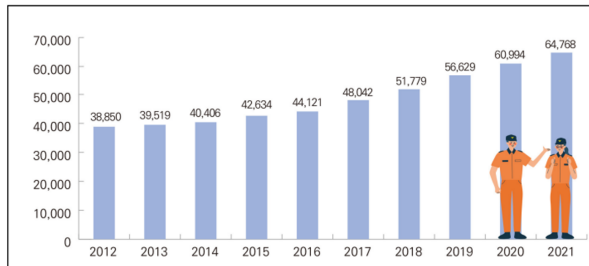
Figure 4.3

Increasing Number of Firefighters in the Past Decade (NFA, 2023)

Number of Firefighters for the Last 10 Years (2012~2021)

(Unit: person)

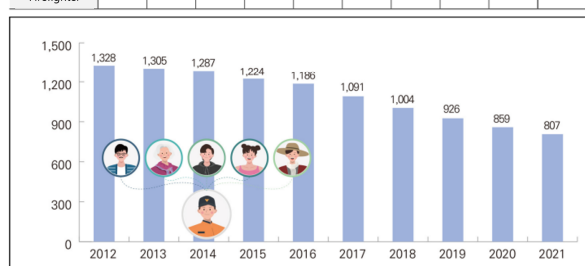
Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Firefighters	38,850	39,519	40,406	42,634	44,121	48,042	51,779	56,629	60,994	64,768



Population in Charge per Firefighter (2012~2021)

(Unit: person)

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Population per Firefighter	1,328	1,305	1,287	1,224	1,186	1,091	1,004	926	859	807



4.3 Current Status

As of 2023, the Korean firefighting organization consists of the National Fire Agency as a central government department, and fire headquarters established in 19 metropolitan cities and provinces nationwide. As can be seen in the figure below, there are 119 rescue headquarters and the National Fire School under the Fire Agency, but the center of firepower that the general public can feel is 230 fire stations and over a thousand of 119 safety centers located under each city headquarters. Most of the field workers in major positions represented by fire suppression, rescue, and first aid are assigned to these fire stations and 119 safety centers (Lee, W., 2019).

Figure 4.4

Korean firefighting Organizations (NFA, 2023)















Korean firefighting organizations have a typical pyramid structure. The number of low ranks is large, and the number of high ranks is small. It is a stable hierarchical structure that can be seen in countries that have formed fire organizations as civil servants. With rapid recruitment over the past decade, this low-rank-oriented fieldwork structure has a more robust form. On the other hand, as the service years of these low ranks rise, the heavy labor costs to bear and internal conflicts to seize the opportunity for promotion are the burdens of the organization.

Table 4.2

Current status of Korean firefighters of 2022 (NFA, 2023)

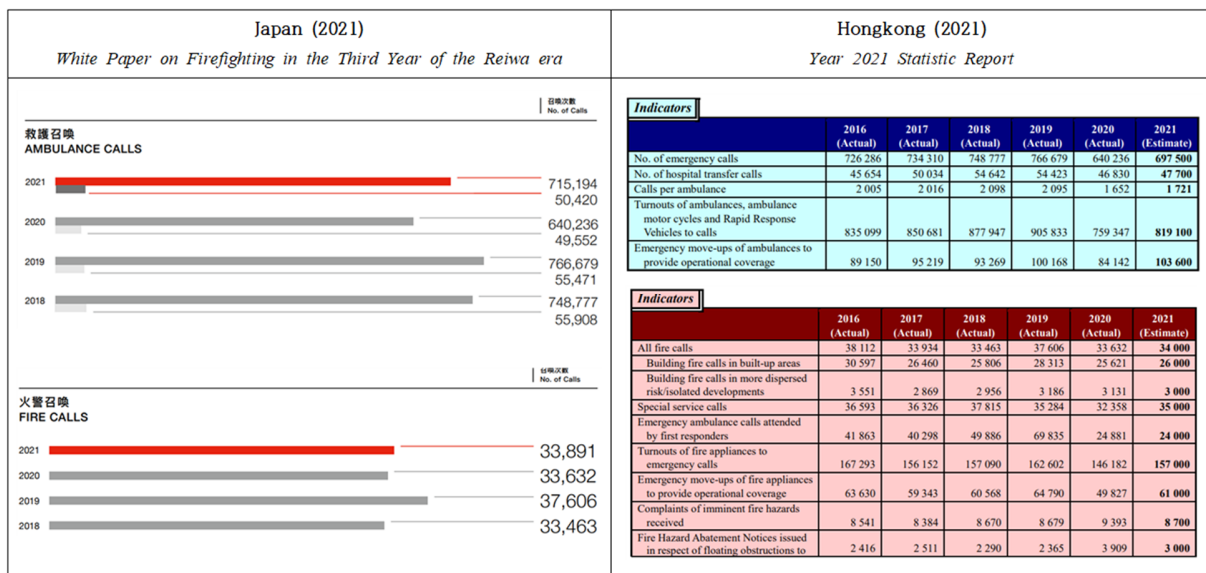
(Unit person)

Rank	-												
Total	64,768	1	4	12	36	366	1,610	4,503	5,585	9,385	16,165	27,101	
Central Gov.	690	1	1	6	7	29	89	109	149	111	103	84	
National Fire Agency	233	1	1	4	7	18	60	56	64	16	6	-	
Fire Service Academy	55	-	-	1	-	3	4	9	16	14	5	3	
119 rescue Headquarters	383	-	-	1	-	7	24	40	63	76	91	81	
Fire Research Institute	18	-	-	-	-	1	1	4	6	5	1	-	
Local Gov.	64,079	0	3	6	29	337	1,521	4,394	5,436	9,274	16,062	27,017	

The increase in the EMS case identified in Figure 1.1 above is a common phenomenon that can be seen overseas. In Korea, 66% of the dispatches were EMS-related as of 2019, and in Hong Kong and Japan, the number of calls related to EMS increased significantly compared to the traditional task of firefighting.

Figure 4.5

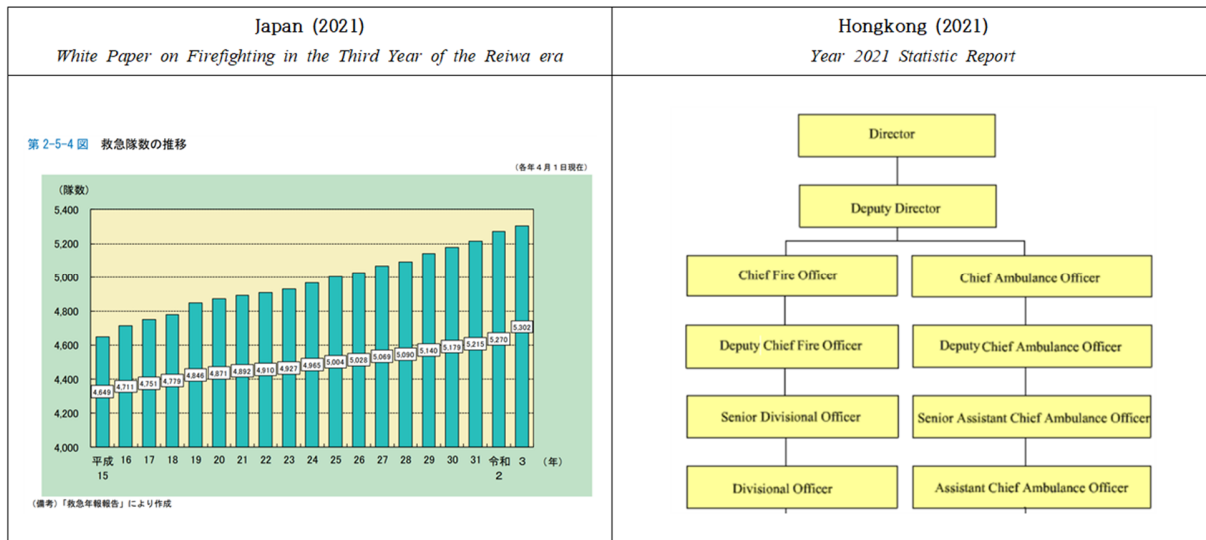
Trend of Increase in EMS (overseas) (FDMA, 2022; FSD, 2022)



As the burden of work increases, it is inevitable to increase the manpower and expand the organization deployed, but the Korean firefighting organization is still insufficient. Japan has been steadily increasing the number of paramedic teams for over 20 years, and the Hong Kong firefighting organization consists of two systems: fire suppression and EMS. The number of paramedic teams affects the number of paramedics, and the organization's expansion means an increased opportunity for firefighters to be promoted in their field.

Figure 4.6

Expansion of EMS-centered task area (overseas) (FDMA, 2022; FSD, 2022)



In Korea, it is analyzed that it still has an organizational composition centered on fire suppression, which is a traditional task of firefighters. According to Figure 2.1 above, out of the total six divisions, only one of the five teams under the Disaster Response Division is in charge of EMS tasks. (EMS Planning Team) This means that even if an EMS expert who has been recognized for his/her ability at the fire department level is promoted and moves to the fire department headquarters, he or she has no position to show his or her capabilities, so he or she has to take charge of other tasks. It is a part that must be improved for the future of the firefighting organization. The field manpower related to EMS under the fire station identified in Table 1.1 already accounts for 28% of the total.

5. Findings of the Work Evaluation System

5.1 Current System

According to the second data collection conducted for the study, it is thought that the multi-evaluator system is generally applied to a pyramid-type and top-down command system such as a firefighting organization. In order to evaluate a large number of people with a small number of people, the fire department shall be the first evaluator as the head of the working department, and the second evaluator shall be the head of the deputy director or the head of the agency as shown in Table 3.1 above. The designation of the deputy director as the second evaluator here is interpreted as an attempt to check the excessive exercise of authority by the head of the agency.

As can be seen in the comments and interviews of the survey and other opinions before (Table 3.4), the multi-evaluator system of fire organizations is recognized by internal members as not operating properly, and the reasons are considered to be as follows.

First, the score calculation of the current Work Performance Evaluation Table in Table 3.2 is actually in the form of ranking employee performance. If firefighters of the same rank work in the same department, one gets good grades and the other gets bad grades, even if they all do good work performance. According to Article 7, Paragraph 3 of The Fire Official Promotion and Appointment Regulations, work performance is to be evaluated according to the distribution ratio of A grade 20%, B grade 40%, C grade 30%, and D grade 10% by rank. In addition, evaluators are not allowed to give the same score in accordance with Article 8, Paragraph 3 of the Enforcement Regulations (MOLEG, 2022). When the evaluator gives the maximum score

working period. Naturally, conflicts with employees who want to be recognized for their value through work will inevitably arise.

Another problem is that there are few quantitative evaluation items. Criteria are also ambiguous. It will be discussed more through the next case studies of other organizations.

Table 5.2

Evaluation Factors and Criteria (MOLEG, 2022)

Evaluation Factors	Work performance (10 points)			Performance ability (10 points)				Attitude (10 points)		
	① Workload (3)	② Accuracy (4)	③ Speed (3)	④ Knowledge & Skill (3)	⑤ Understanding & Decision (2)	⑥ Planning & creativity (2)	⑦ Management & leadership (3)	⑧ Diligence & observance of discipline (3)	⑨ Kindness & cooperation (3)	⑩ positiveness & responsibility (4)
Evaluation Criteria	How much work does dealing with?	How accurately does it handle duty?	How quickly does it handle duty without delay?	Has the knowledge and skills necessary for performing duties, and does he/she utilize them?	Does he/she understand their duties well and make accurate decisions?	Does he/she research new methods and try to improve performance?	Does he/she have harmony with their subordinates and lead them in a democratic way?	Does he/she faithfully perform duties, obey orders from their superiors, and follow discipline?	Does he/she try to cooperate in the relationship between colleagues and the public?	Does he/she practice their duties responsibly and with enthusiasm when performing them?

5.2 Case Study

Looking at the evaluation tables of general administrative officials and police, it can be seen that both adopt a multi-evaluator system. In the case of general public officials, evaluators and confirmers are required to give approval for work evaluation. The first evaluator gives scores and the confirmer only approves them and an evaluation committee is formed to prevent arbitrary judgment by one person. However, there is no guarantee that such a system is operating according to its original purpose. This is because evaluation committee members do not know more about the subject than evaluators, so most of the evaluators' opinions are approved in the form of respect for them.

In the case of the police, as previously discussed in Table 3.3, the first, second, and third evaluators conduct work evaluation. A characteristic factor is that a significant amount of descriptive evaluation is conducted at the same time for the high rank polices. This developed form of narrative evaluation is stronger in the United States, not in civil service organizations.

Figure 5.1

Example of Comments Requirements by Evaluation Item (Orange County, VA., n.d.)



County of Orange Department of Fire & EMS
Employee Performance Evaluation
Company Officer

Comments:

- INITIATIVE, ATTITUDE, DEPENDABILITY**
- Takes initiative to solve day-to-day issues.
 - Meets deadlines and schedules.
 - Has a positive attitude and demeanor.
 - Does not complain about work or work assignments.
 - Requires minimal supervision to function at the company officer level.
 - Follows instructions.
 - Performs tasks as directed.

Comments:

Initials _____

- PERFORMANCE UNDER STRESSFUL, UNUSUAL OR EMERGENCY CONDITIONS**
- When under unusual circumstances, no serious deviations from expected performance are demonstrated. Encourages self-reporting as appropriate.
 - Composure is maintained under stress.
 - Handles difficult situations in a very confident and professional manner.
 - Uses good judgment by evaluating all reasonable options available.

Comments:

The above figure is a work evaluation form used by the Orange County Fire Department in the United States, consisting of eight pages. Since it is premised on the disclosure of the evaluation, a reasonable explanation must be attached to the comments when each score is given (Orange County, VA., n.d.). It can be a reference element in complementing the multi-evaluator system.

Let's look at another issue, the evaluation criteria. When looking at the evaluation items on the fire organization's work evaluation table, Work Performance, Performance Ability, and Attitude each have a 1/3 share. Considering the general principles of evaluation indicators we

discussed earlier (Table 2.1), Work Performance is a quantitative indicator and Attitude is a qualitative indicator. Work Performance consists of three types: (i) workload (ii) accuracy (iii) speed. The evaluation Criteria of the workload is 'How much work does dealing with?' as Table 5.2, and this is something that can be replaced with completely digitized data, at least for firefighters working in the field. Because 119 operation centers already have data on all dispatches. (For reference, in the case of general public officials without such digitized data, the frequency is evaluated by dividing it into five stages. See Table 5.3)

Table 5.3

Description of Evaluation Criteria (General Public Officials) (MOLEG,2022)

3. Performance ability (50 points)

no.	factors	points	descriptions	ratings	scored
1	plan	9	<ul style="list-style-type: none"> Predict problems with a creative perspective and make a viable plan. Make a clear plan so that effective explanation is possible. 		
2	communication	6	<ul style="list-style-type: none"> Make a document so that the expression is concise and the issue is not omitted. Explain in logical and persuasive words. 		
3	negotiation	6	<ul style="list-style-type: none"> Understand the other person's intention appropriately and persuade his or her position. Effectively adjust conflicting interests. 		
4	drive	5	<ul style="list-style-type: none"> Complete the purpose with responsibility for the task you are in charge Overcome environmental disadvantages with passion. 		
5	speed	5	<ul style="list-style-type: none"> Handle work according to the planned schedule without any delay. With concentration on a given task, work is done faster than expected. 		

Notes for reference : For each evaluation factor, it is evaluated in five stages: 'Not at all (①) - Hardly (②) - Sometimes (③) - Often (④) - Always (⑤).

However, evaluators are not given statistical data related to this. The evaluation target writes a report on his or her own achievements, and the evaluator refers to this and enters a score for Work Performance. In the end, although specific and measurable data can be obtained in a

timely manner in the SMART principles discussed above, there is a lack of consideration for this in the firefighting organization. (ii) accuracy and (iii) speed also depend on the evaluator's sense for the same reason. It is also questionable whether it is possible to measure accuracy and speed in the field.

The problem goes back to the beginning. Since scores should be given in order of rank anyway, the total score should be determined first, and the scores are given by dividing them appropriately into items. Here, the evaluation items or evaluation criteria are meaningless. It can be seen that the problem of the people who operate and the organizational culture is greater than the system.

5.3 Policy Proposal

Based on the above research, the following policy proposals can be presented.

First, quantitative and objective performance indicators should be actively introduced into the work evaluation table. The current indicator, which lacks objectivity, degrades confidence in the evaluation. And objectivity comes from Specific, Measurable, Attainable, Reliable, and Trackable Indicators (Poister, T. H., 2008). It would be a good alternative to periodically provide objective statistical indicators for evaluation targets without the need to modify the evaluation table currently in use. (This has another advantage of digitizing dispatch information for the next proposal.)

It is also important to balance quantitative and qualitative evaluations. The current system

is not properly qualitatively evaluated due to operational deficiencies. As for qualitative indicators, I think it is necessary to have a function to comment as in the US example. This will convince the secondary evaluator and serve as the basic data for the next evaluator.

The second is to establish workload-based evaluation criteria. Hours and the number of tasks based on the dispatch command system are reflected in the evaluation for field worker. Even if firefighters work at the same 119 safety center, the number of dispatches or the actual time spent may vary depending on the shift schedule and their tasks such as fire suppression or EMS. Access to the previously proposed digitized dispatch information should be improved.

Criteria for people who work more and perform more difficult tasks to be highly evaluated are also required. This is more important for office workers than field workers, and in Table 3.3, it can be seen that in the case of general public officials, the description of the work that the evaluation target is taking precedence.

The third is to strengthen the authority of the first evaluators. Since it is difficult to change the organizational culture at once, establishing a committee that enables multi-faceted evaluation can be a good alternative. For example, a committee for firefighter of rescue part would consist of Rescue captain, Director of Rescue Division, HR team leader, Field Commander. After a number of managers' opinions are reflected in the first evaluation, it is difficult for the fire chief of the fire station to arbitrarily change them in the second evaluation. Above all, this method can gain the trust of the evaluation target, even if the evaluation results remain private

6. Findings of the Personnel Management System

6.1 Current System

The legal definition of personnel management means new employment, promotion, position transfer, dispatch, relegation, temporary retirement from office, cancellation of official position, suspension of official duties, demotion, reinstatement, dismissal, discharge, and removal following Article 2 of the Firefighting Officials Act. According to the analysis of the survey (Figure 3.2) and interviews (Table 3.4) discussed above, the promotion will be the priority part of this study among the broad range of personnel systems. The contents of interviews with incumbent employees are analyzed as follows.

First, the higher the age (67% over 40 years old), the higher the rank (78% above the fire brigade) tends to prefer office work to field work. Women (62%) prefer internal work to men (38%). They feel a lot of physical burdens. The difference in annual remuneration between fieldwork and office work among the rank firefighter ~ senior firefighter is known to be around 10 million won.

Second, at the time of the interview, many interviewees mentioned positions of office work position that have the approval right, such as team leaders and center leaders - eventually thought to be factors linked to promotion.

Third, in the rank above the fire sergeant, more than 80% of the respondents said they could endure relatively poor working conditions (low pay, high stress, and fatigue) if they could get a promotion opportunity. On the contrary, 83% of the lower rank chose better working conditions. It is thought to have been influenced by the pyramid-shaped organization, which has

fewer opportunities for promotion as it goes up.

Fourth, there is a high distrust of the current work evaluation system as checked above. They expressed opinions that "Nepotism is prioritized over work capability in the promotion." however, it seems understood that completely objective work evaluation is technically difficult. What can be seen in the survey and interviews above is that both men and women of all ages are very interested in promotion, and for this, it is becoming the biggest motivation factor in their work life, such as showing strong workloads and willingness to take low salaries. Therefore, the contents of the personnel system to be carried out in the future will focus on promotion. Since the results of the work evaluation are also reflected in the promotion, it is closely related to this.

In conclusion, promotion is a key factor in the personnel management of public officials, including firefighters, and is the strongest motivation regardless of gender or age. According to the comment analysis of the firefighters' online forum, interest in promotions is on the rise every year, and even in incumbent interviews, promotions are a strong incentive enough to ignore other negative work conditions. However, young firefighters that have lower ranks do not tend to accept negative working conditions such as office work for promotion than expected and the reasons are as follows.

According to Article 14, Paragraph 2 of the Firefighting Officials Act, promotion in lower ranks is based on the promotion evaluation and the promotion test (MOLEG, 2022). There is a system established because not all personnel can be promoted through these systems, which is a so-called Promotion on Continuous Service Basis system that allows promotions if they meet the specific number of years of service at each rank.

Figure 6.1

Promotion on Continuous Service Basis (MOLEG, 2022)

Article 15 (Promotion on Continuous Service Basis)

(1) Notwithstanding the provisions of Article 14 (2), an incumbent holding the relevant rank for a period of service specified in the following may be promoted on a continuous service basis to and appointed to the rank of senior fire fighter, fire sergeant, fire lieutenant, or fire captain:

1. Where a firefighter is to be promoted on a continuous service basis to and appointed to the rank of senior fire fighter: He or she must hold the relevant rank for at least four years of continuous service;
2. Where a senior fire fighter is to be promoted on a continuous service basis to and appointed to the rank of fire sergeant: He or she must hold the relevant rank for at least five years of continuous service;
3. Where a fire sergeant is to be promoted on a continuous service basis to and appointed to the rank of fire lieutenant: He or she must hold the relevant rank for at least six years and six months of continuous service;
4. Where a fire lieutenant is to be promoted on a continuous service basis to and appointed to the rank of fire captain: He or she must hold the relevant rank for at least 10 years of continuous service.

(2) During the period when firefighting officials promoted on a continuous service basis in accordance with paragraph (1) are serving in office, the capacity of those holding the relevant positions shall be deemed to exist separately, but the capacity of the former positions to be reduced.

(3) Matters necessary for the standards, procedures, etc. for promotion on a continuous service basis and appointment as prescribed in paragraph (1) shall be prescribed by Presidential Decree.

The problem is that there is not that much difference between a firefighter who gives up competition and is promoted to Promotion on Continuous Service Basis and a firefighter who wins the competition and is promoted earlier. Fire Sergeant is required six years to be promoted to Fire Lieutenant, a key position in the field by Promotion on Continuous Service Basis. Even by the promotion evaluation, a certain career score is essential, it takes at least three to four years, so it is difficult for the parties to feel a big difference. This situation has intensified over the past decade as 40% of the total workforce has been newly hired. It is because the number of personnel has become too large, so promotion has become possible quickly without much effort.

Therefore, efforts to find improvements in the current personnel system, especially the promotion system, should focus on revitalizing the increasingly lost motivation of employees and leading their passion in a direction that fits the organization's values.

6.2 Case Study

In accordance with Article 11, Paragraph 1 Of The Fire Official Promotion and Appointment Regulations, fire officials of the Deputy Fire Chief or lower rank should be listed for promotion by rank according to a ratio of 60% Work Performance Evaluation, 25% Work Experience and 15% Education and Training Performance. In such cases, in any of the following cases, additional points shall be added as prescribed by Ordinance of the Ministry of Public Administration and Security (i) If he/she has a certificate (ii) Where he/she obtains a bachelor's degree, master's degree, doctorate degree, or has excellent language skills (iii) Where he/she has worked in the hard work or evacuation department (iv) In case of excellent work performance (v) Where there is a history of personnel exchange conducted by the head of the National Fire Agency for the balanced development of fire administration.

Education and Training Performance, which accounts for 15% here, has no practical difference because anyone who has been to education on time can get a perfect score. In other words, the score for promotion depends on the Work Evaluation, Work Experience, and Additional Points. As we looked at the work evaluation with the largest proportion, we will see how career and additional points operate. As shown in Figure 5.3, the following items are added up except for work performance evaluation.

Table 6.1

Evaluation Table of Career, Educational Training, and Additional points (MOLEG, 2022)

[Form 3] <Amended on Nov. 18, 2021>

Evaluation table of career, educational training, and additional points

Date :

I N F O	division	rank	name (birth date)	confirmor	rank	name	(sign)
				evaluator	rank	name	(sign)

C A R E E R	promoted date	period of inclusion or exclusion	basic career	extra career	evaluation point (sum)
			month points	month points	points

E D U C A T I O N A L T R A I N I N G	command capability	period : ~			points
	professional education	course name	period	score	points
			~		
			~		
			~		
	workplace training	tactical training ()	workplace education ()		points
	physical fitness test	test date:			points
	professional ability	certificaiton	date	score	points
educational training total					points

A D D I T I O N A L P O I N T S	certificate	description		date	score	points
	degree & language	description		date	score	points
	hard-working department	department	period	monthly points	score	points
	excellent performance	performance description: (score:)				points
	personnel exchange	department	period	monthly points	score	points
	additional points total					

* Attachment of workplace education evaluation record sheet and physical training measurement evaluation card

If you look at the actual score that each item can receive, you can recognize that the actual reflection rate of the additional points that can be obtained depending on your ability is very low. As Table below, the career score is 0.5 points per month.

Table 6.2

Basic and Extra Career Evaluation Points Table (MOLEG,2022)

■ Enforcement Rule Of The Fire Official Promotion and Appointment Regulations [Attached Form 3]
 <Amended on Nov. 18, 2021>

Basic and Extra Career Evaluation Points Table – related to Article 13 (2)

Type	Rank	Period	Monthly Points	Points by period					
				period	1y	2y	3y	4y	
Basic Career	Fire Chief	4 years	0.541	points	6.49	12.98	19.48	26.00	
	Deputy Fire Chief Fire Captain	4y	0.458	points	5.50	10.99	16.49	22.00	
	Fire Lieutenant Fire Sergeant	4y	0.611	points	7.33	14.66	22.00		
	Senior Firefighter	2y	0.917	points	11.00	22.00			
	Firefighter	1y 6months	1.222	points	14.66	22.00			
	Extra Career	Fire Chief	3y	0.111	points	1.33	2.66	4.00	
Deputy Fire Chief		5y	0.050	points	0.60	1.20	1.80	2.40	3.00
Fire Captain Fire Lieutenant		4y	0.062	points	0.74	1.49	2.23	3.00	
Fire Sergeant		1y 6m	0.166	points	1.99	3.00			
Senior Firefighter		1y	0.250	points	3.00				
Firefighter		6m	0.50	points	3.00				
note: Monthly points multiplied by the number of months worked, rounded to the third decimal place									

On the other hand, even if a national technical certificate with the highest difficulty is obtained, firefighters can earn up to 0.5 points only. (The highest difficulty certificate requires an average exam period of 5 to 6 years) Another additional point, foreign language ability, is also the maximum score of 0.5. This part has another problem there is no discrimination in the level of demand for each language. As shown in the table below, the standard of English is too easy, and other languages are too difficult.

Table 6.3

Additional Points for Certificates and Language Skills (MOLEG, 2022)

[Attached form 2]

Additional points for certificates	
Certificate Type	points
<ul style="list-style-type: none"> ○ Among the following technical qualifications in the field of duties of national technical qualifications and the stocks of national technical qualifications in attached Table 2 of the Enforcement Rules of the National Technical Qualifications Act, Master Craftsman and Professional Engineer - Construction, construction machinery operation, mechanical equipment installation, railway, shipbuilding, aviation, automobile, chemical engineering, dangerous goods, electricity, electronics, information technology, broadcasting and wireless, communication, safety management, non-destructive inspection, energy ○ class 1 to 4 navigators, engineers, and navigators ○ pilot for transportation of airplane or rotorcraft, pilot for business, air mechanic, and air factory mechanic ○ emergency medical technician level 1, nurse, fire scene investigator, fire facility manager, fire safety educator, professional life-saving-recovery, architect, Driving License 1st class: Large 	0.5
<ul style="list-style-type: none"> ○ Of the same Act, Engineer - (Same as above) ○ class 5 to 6 navigators, engineers ○ emergency medical technician level 2, fire response capability evaluation level 1, class 1 life-saving-recovery, ladder fire truck operator ○ Korea Transportation Safety Authority (TS) ultra-light flying device flight Instructor 	0.3
<ul style="list-style-type: none"> ○ Of the same Act, Craftsman and Industrial Engineer - (Same as above) ○ small ship pilot, industrial engineer diver, craftsman diver ○ fire response capability evaluation level 2, class 2 life-saving-recovery ○ Korea Transportation Safety Authority (TS) ultra-light flying device flight Pilot class 1 ~ 2 	0.2

note: Additional points of driving license 1st class: large, small ship pilot, industrial engineer, diver, craftsman diver are only vailed for Fire sergeant or under rank

[Attached Form 3]

Criteria for Evaluating Language Proficiency Points

		Types	0.5 points	0.3 points	0.2 points
C R I T E R I A	Korean	Practical Writing Test	750 ~	630 ~ 750	550 ~ 630
		KBS Korean Language Proficiency Test	770 ~	670 ~ 770	570 ~ 670
	English	TOEIC	900 ~	800 ~ 900	600 ~ 800
		TOEFL IBT	102 ~	88 ~ 102	57 ~ 88
		TOEFL PBT	608 ~	570 ~ 608	489 ~ 570
		TEPS	850 ~	720 ~ 850	500 ~ 720
		New TEPS	488 ~	399 ~ 488	268 ~ 399
		TCSEL(advanced)	880 ~	780 ~ 880	580 ~ 780
		FLEX	790 ~	714 ~ 790	480 ~ 714
		PELT(main)	466 ~	304 ~ 466	242 ~ 304
	G-TELP Level 2	89 ~	75 ~ 89	48 ~ 75	
	Japanese	JLPT	N1	N2	N3, N4
		JPT	850	650	550
	Chinese	HSK	level 9 ~	level 8	level 7
新 HSK		level 6	level 5 210 ~	level 4 195 ~ 210	
second foreign language (including Japanese-Chinese)	Tests of Seoul National University and Hankuk University of Foreign Studies	80 ~	70 ~ 80	60 ~ 70	

Additional points for computer utilization ability needs to be completely revised. Word Processor capabilities and Spreadsheet & Database would have been a special area in the past, but it is close to basic knowledge for civil servants at this time. Furthermore, these additional points are only vailed for Fire Captain or under rank. Ironically, the higher rank someone has, the less motivation to develop computer skills.

Table 6.4

Additional points for computer utilization ability (MOLEG,2022)

Type of certificate	Points	
Word Processor Specialist	0.3	
Computer Specialist in Spreadsheet & Database	level 1	level 2
	0.5	0.3

* These additional points are only vailed for Fire captain or under rank

The above additional points apply only to the promotion of the relevant class acquired by the regulations. In other words, there is no motivation to get a score in these additional areas for self-development at a young age when promotion competition is low. For your information, the additional point for a Master's D. is 0.3 points and Ph. D. is also 0.5 points. It is more advantageous to work for a month than to study in the current system.

6.3 Policy Proposal

Based on the above research, this paper presents the following policy proposals.

First, Above all, it is necessary to restore confidence in the work evaluation, which accounts for the largest proportion. In addition to what was proposed in the previous chapter, it is time for active participation of outside members and serious discussions on the allocation of promotion by field, gender, and task are needed. If male recruitment and female recruitment are separated, It can have room to distinguish between male promotion and female promotion, at least in the rank under the department manager. If necessary, it is also a good idea to guarantee a promotion quota of more than a certain share to EMS part workers who are required to work relatively high intensity and many dispatches. The promotion additional point system for the hard work department is also in effect now.

Second, The proportion of career scores that account for an absolute proportion should be reduced, and the remaining points should be distributed as additional points. Under the current system, it is difficult for employees who do not have the experience to get a high ranking on the list of promotions no matter how hard they try. During the screening process, excellent employees are promoted in the name of selection, but on the contrary, this is only an opaque personnel appointment.

Third, it is necessary to actively reorganize the additional point system. Additional points for each field limited to a maximum of 0.5 points should be raised, the types of qualifications for additional points should be expanded, and allocation points should be reviewed. Above all, the priority should be the revision of Article 2, Paragraph 1 of the Regulation on the Provisional Points Evaluation of Fire Officials, which is the established rule of the National Fire Agency. The relevant article limits receiving additional points to only once. If only this rule is revised, we will see low-ranking firefighters playing for certificates even during breaks for self-improvement.

7. Conclusion and Future Research

Any organization needs balanced development in both quantitative and qualitative aspects. The Korean firefighting organization has solved the problem of manpower recruitment, which was a long-cherished project, but more efforts should be made to resolve internal conflicts. This study suggested several methods for qualitative development, especially motivating manpower.

The beginning step will be the improvement of the work evaluation. The challenge will be to restore the reliability of the work evaluation system by ensuring the authority of evaluators and providing objective indicators. The next step is to introduce an advanced promotion system. Through transparent examination and expansion of additional points, young talent should be motivated to achieve development in a direction that meets the future value of the organization. The last step is organizational revitalization. It seeks qualitative development into a healthy organization where employees who do important work are given preferential treatment, and departments that do much work are given a lot of authority.

There are several challenges that require further research. Since a limited range of investigations and interviews is cited, a wider range of investigations is needed, and specific alternatives such as revision of the law are also needed. It goes without saying that there should be the evolution of a rigid internal culture for organizational development. While conducting this study, I realized that the scope of the literature related to firefighting organizations is not yet wide. I hope this paper will help people who study the same topic in the future.

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APPENDICES

Appendix A. Survey Results

year	total post	total hits	internal criticism	hits	working conditions	hits	pay	hits	promotion	hits	change in personnel	hits
2008	320	130,768	56	27,692	14	7,443	7	6,077	14	5,957	15	7,572
2009	298	162,354	28	35,543	19	12,998	14	12,079	6	2,889	22	12,568
2010	270	164,067	22	26,415	9	7,536	22	20,129	14	9,241	19	11,622
2011	292	161,799	24	25,496	6	5,203	15	12,533	17	10,021	12	7,710
2012	221	140,284	12	18,915	12	10,955	21	19,112	15	8,424	11	5,847
2013	201	133,284	12	16,238	6	5,908	19	16,897	16	8,446	16	10,185
2014	221	148,291	15	16,111	4	3,391	10	9,389	14	10,128	7	3,504
2015	265	153,385	8	10,109	14	13,320	5	4,587	21	15,086	3	1,907
2016	349	208,302	10	17,838	14	14,462	12	9,720	31	21,982	14	9,263
2017	534	541,358	18	39,928	50	82,904	24	30,219	52	48,583	16	10,788
2018	473	351,700	9	13,762	9	8,265	25	21,487	49	39,149	24	15,666
2019	335	251,897	3	6,554	8	8,212	23	22,723	54	35,439	19	15,780
2020	298	199,789	0	0	5	3,999	15	30,961	43	29,978	14	7,318
2021	276	145,333	0	0	9	6,168	4	1,889	35	16,783	12	5,290
sub-total	4,353	2,892,611	217	254,601	179	190,764	216	217,802	381	262,106	204	125,020

year	internal criticism	working conditions	pay	promotion
2008	21.2%	5.7%	4.6%	4.6%
2009	21.9%	8.0%	7.4%	1.8%
2010	16.1%	4.6%	12.3%	5.6%
2011	15.8%	3.2%	7.7%	6.2%
2012	13.5%	7.8%	13.6%	6.0%
2013	12.2%	4.4%	12.7%	6.3%
2014	10.9%	2.3%	6.3%	6.8%
2015	6.6%	8.7%	3.0%	9.8%
2016	8.6%	6.9%	4.7%	10.6%
2017	7.4%	15.3%	5.6%	9.0%
2018	3.9%	2.4%	6.1%	11.1%
2019	2.6%	3.3%	9.0%	14.1%
2020	0.0%	2.0%	15.5%	15.0%
2021	0.0%	4.2%	1.3%	11.5%

Appendix B. Interview questionnaire

1. Which do you prefer, office work or fieldwork (shift work)?
2. What kind of work do colleagues around you prefer?
3. Are you willing to accept if you are given a good promotion chance instead of your preferred place of work and working conditions (lower pay/more work hours)?
4. What is the main reason for wanting to be promoted? ex) expansion of organization, more authority, more pay, pride, etc.
5. Are you satisfied with the current work evaluation system that affects your promotion status?