The Impact of the Skill Grading System and Fair Wage System on Employment Stability and Safety in the Construction Industry

Choonhwan Cho[1]
[1](*Professor, Department of Civil Systems Engineering, Seoul Digital University, Seoul, Republic of Korea)*

ABSTRACT: *[Purpose] This study aims to analyze the necessity of introducing a skill grading system and an adequate wage system to improve the labor environment and enhance competitiveness in the construction industry. The skill grading system focuses on establishing a fair wage structure by reflecting workers' skill levels and proficiency, while the adequate wage system aims to ensure workers' livelihood security and improve the quality of labor. [Methodology] The study examined similar cases and prior research from domestic and international contexts. A wage status survey and interviews with construction workers and managers were conducted to analyze the feasibility of implementing these systems. Furthermore, the study assessed economic effects and productivity changes by analyzing government policy models and predicting the impact of policy implementation through various scenarios. [Findings] The introduction of the skill grading system and the adequate wage system was found to enhance job satisfaction and attract skilled workers, contributing to improvements in productivity and safety. Notably, these systems help prevent the outflow of skilled labor and improve technical expertise, thereby strengthening long-term corporate safety and quality competitiveness. Additionally, the adequate wage system positively impacted the establishment of fair labor environments and the reduction of inequality within the industry. [Conclusion] The study suggests that the skill grading system and the adequate wage system are essential policies for ensuring the sustainability of the construction industry and improving working conditions. It emphasizes the importance of legal and administrative support for their implementation. By establishing a fair wage system, fostering a technology-oriented labor structure, and addressing illegal subcontracting practices, these policies are expected to enhance the overall competitiveness of the construction industry.*

KEYWORDS *-Skill Grading System, Adequate Wage System, Construction Industry Competitiveness, Fair Wage Structure, Labor Environment Improvement, Productivity and Safety Enhancement*

I. INTRODUCTION

1.1 Research Objectives

South Korea ranks among the lowest in industrial accident rates among OECD member countries, with construction sites experiencing significantly higher accident and fatality rates compared to other industries. These sites are not merely locations of physical risk but are plagued by a host of structural problems, including poor working conditions, complex subcontracting structures, and illegal wage systems.

For years, domestic construction sites have carried the stigma of being "disaster zones," a reputation stemming not only from inadequate safety management but also from structural issues related to worker treatment. Key causes include illegal subcontracting practices, insufficient recognition of skilled workers, and opaque wage systems. Construction workers often perform dangerous tasks without proper compensation or a stable working environment. This reality contributes to rising social costs from industrial accidents and deters younger generations from entering the industry.

To address these issues, it is essential to expand the skill grading system, which offers fair

treatment based on workers' skill levels and experience. This system systematically manages workers' career history, qualifications, education, and training records, creating an environment where skilled workers can receive appropriate compensation. Furthermore, it provides a foundation for improving the workforce structure in the construction industry by encouraging the participation of younger workers.

Additionally, the proper wage system, which mandates that workers receive a certain minimum wage set by the project owner, plays a crucial role in attracting skilled workers to construction sites and improving employment stability. This system goes beyond merely increasing wages, as it also curtails illegal subcontracting practices and establishes a fair and transparent wage payment system, contributing to workers' livelihood stability. The adoption of this system is expected to have positive effects on industrial accident prevention and productivity improvement.

The U.S. Prevailing Wage system, which has been implemented in public construction projects for over 100 years, is a representative case where maintaining wages above a certain level has enhanced overall industry safety. Such precedents suggest the potential benefits of introducing proper wage and skill grading systems in domestic construction sites.

This study aims to diagnose the major problems in South Korea's construction industry, examine the necessity of skill grading and proper wage systems, and discuss their impact on improving safety and labor conditions. Through this, it seeks to propose legal and institutional directions for the sustainable development of the domestic construction industry.

1.2 Research Background

The domestic construction industry in South Korea has long faced criticism due to poor working conditions and inefficient labor management. Issues such as safety complacency on construction sites and the deterioration of workers' treatment are not isolated problems but rather the result of a combination of factors, including the lack of transparency in subcontracting practices, a shortage of skilled workers, and recurring wage arrears.

The skill grading system was introduced to address these issues by comprehensively managing workers' career records, qualifications, education, and training, with the goal of structuring tiered treatment based on these factors. However, this system is still in its early stages, and its effectiveness on actual construction sites remains limited. Statistics from the past year indicate that only 2–3% of workers have obtained skill certification documents, demonstrating the lack of practical implementation in the field. This can be attributed to the absence of a structured system that links the grading system to improved treatment, resulting in low motivation among skilled workers and limited adoption on construction sites.

On the other hand, the Fair Wage System has emerged as a key policy to complement the effectiveness of the skill grading system. By ensuring workers receive wages above a certain threshold, it aims to enhance job stability and improve labor conditions. Results from recent pilot projects reveal that construction sites implementing the Fair Wage System experienced an increase in the employment of domestic workers and skilled laborers, along with a general rise in overall wage levels. Notably, the wage increase for domestic workers was greater than for foreign workers, signaling a positive impact on attracting skilled domestic labor.

In response to these challenges, the government and political circles are actively discussing reforms to improve related laws and systems. The National Assembly's Land, Infrastructure, and Transport Committee is pursuing amendments to the Construction Industry Act, including the expansion of the Fair Wage System and the skill grading system, as well as regulatory measures to block illegal subcontracting practices. However, resistance from construction companies concerned about rising construction costs and certain government agencies poses significant obstacles in the legislative process.

Based on this context, this study explores the increasingly severe labor shortages in the construction industry, where the necessary workforce is increasingly being filled by foreign workers (including undocumented workers). Table 1 illustrates the steady rise in the number of foreign workers in the industry. Therefore, this paper aims to comprehensively analyze the impact of the skill

grading system and the Fair Wage System on employment stability and the prevention of industrial accidents in the domestic construction sector. Additionally, it seeks to propose a framework for the successful institutionalization of these systems from a legal and regulatory perspective.

Table 1. Status of demand manpower in the construction industry

division	2018	2019	2020	2021
Manpowerrequi	1391	1519	1431	1714
Supply manpov	1310	1389	1310	1521
shortage of manpower	81	130	121	193
Foreign workfo status (Illegal alien)	212 (101)	228 (133)	203 (117)	316 (214)
Foreigner rati	15.2%	15.0%	14.1%	18.4%

II. SCOPE OF THE STUDY

This study explores the introduction of systems designed to ensure that construction workers' wages are determined rationally and fairly. The primary goal of these systems is to promote employment stability, improve worker treatment, and secure their livelihood. By ensuring fair wage distribution, the aim is to prevent illegal wage arrears and foster the sustainable development of the construction industry.

To address the issues prevalent at construction sites, this study examines the necessity of expanding the skill grading system and introducing the proper wage system. It discusses the impact of these systems on improving safety and working conditions in the construction industry and proposes solutions to enhance employment stability and address industrial accident issues. The scope of the investigation includes the following:

2.1. The Need for Expanding the Proper Wage System:This includes analyzing wage fairness, preventing wage arrears, ensuring worker livelihood stability, preventing wage reductions, curbing illegal multi-tier subcontracting structures, preventing the influx of unauthorized foreign workers, and encouraging the participation of younger workers.

2.2. The Need for Implementing the Skill Grading System:This involves evaluating workers based on their experience, skill level, and qualifications to assign appropriate grades. The study highlights the need for a structure that sets wages in accordance with workers' abilities and encourages the improvement of their skills and career development.

2.3. The Need for Introducing the Electronic Card System:This system is examined for its potential to transparently manage workers' career records and wages, prevent wage arrears, and improve the status of social insurance enrollment.

III. RESEARCH METHODS

This study employs the following research methods to ensure construction workers' wages are determined fairly and rationally while analyzing the relationship between on-site safety investments and accident prevention.

3.1 Literature Review

A review of domestic and international academic papers, policy reports, and statistical data related to construction safety was conducted. The theoretical background and prior research findings on the relationship between safety investments and accident prevention were analyzed, with a particular focus on data published by the OECD and South Korea's Ministry of Employment and Labor.

3.2 Case Analysis

The study examined actual wage payment practices and safety investment cases at major construction sites. It analyzed the effects of wage payment and skill grading on accident prevention. The cases were selected from large-scale construction projects undertaken in South Korea over the past five years, comparing investment categories, costs, and accident reduction rates.

3.3 Policy Analysis

Domestic and international policies and regulations related to employment stability and safety investments were analyzed to identify measures for improving safety management levels at construction sites. Special attention was given to comparing safety management regulations in South Korea with best practices in advanced countries.

Through literature and case analyses, this study aims to comprehensively examine the effectiveness of safety investments at construction sites and provide policy implications based on these findings.

IV. RESEARCH FINDINGS

4.1 Necessity of Expanding the Proper Wage System

4.1.1 Literature and Case Analysis Results of the Proper Wage System

The purpose of establishing a proper wage system is to ensure wage fairness and provide workers with reasonable compensation based on their skill levels and experience. This system prevents wage arrears, secures transparency in wage payments, and contributes to workers' livelihood stability by preventing unfair wage reductions due to market conditions. It enhances workers' quality of life and welfare, safeguards workers from excessively low wages, and promotes the sustainable development of the construction industry. Moreover, improving working conditions secures skilled labor, strengthening the long-term competitiveness of the construction sector.

4.1.2 Policy Analysis Results of the Proper Wage System

The analysis highlights the following key points:Setting Proper Wage Standards: Establish rational wage levels based on job roles and experience, applying these standards across various sites with the support of national or local governments.Strengthening Wage Transparency: Implement electronic systems for wage payment management to ensure accurate delivery of wages, preventing illegal deductions or arrears.Ensuring Fairness in Subcontracting: Maintain equitable contracts between general contractors and subcontractors to guarantee fair wages for subcontracted workers.Supervision and Enforcement: Regularly monitor compliance with the wage system and impose stricter penalties for violations, such as illegal wage arrears.

4.1.3 Expected Benefits of the Proper Wage System

Reduction in Wage Arrears: The system ensures fair payment of proper wages, significantly reducing issues related to unpaid wages.Economic Stability for Workers: Providing fair wages enhances workers' livelihood stability, leading to higher job satisfaction and improved retention of skilled labor.Enhanced Industry Competitiveness: A clear wage structure fosters stable employment environments, boosting productivity and competitiveness in the construction industry.Improved Labor-Management Relations: Transparency in wage payments and prevention of wage arrears build trust between labor and management, reducing conflicts and fostering a cooperative environment.

4.1.4 Current Status and Future Challenges of the Proper Wage System

Efforts are underway to establish the legal and institutional foundations for implementing the proper wage system, with pilot projects validating its effectiveness. However, the following challenges must be addressed for successful adoption:

Detailed Wage Structures: Develop wage systems that account for the diverse job roles and experiences on construction sites.

Enhanced On-Site Management: Strengthen monitoring systems to ensure proper wage payments and impose stricter penalties for violations.

Improved Subcontracting Structures: Ensure fair distribution of wages between general contractors and subcontractors to protect subcontracted workers' rights.

Education for Workers and Employers: Increase awareness and understanding of the proper wage system among workers and employers through education.

4.2 Necessity of Implementing the Skill Grading System and Electronic Card System

4.2.1 Overview of the Skill Grading System

The skill grading system evaluates construction workers based on their experience, skill levels, and qualifications, assigning appropriate grades. This system ensures fair wage distribution according to workers' abilities and encourages career and skill development.

4.2.2 Key Functions of the Skill Grading System

Fair Compensation: Eliminates wage

discrimination by establishing a fair wage structure based on workers' skills and experience.Increased Efficiency: Assigns tasks suited to workers' abilities, improving productivity and work efficiency.Systematic Career Management: Supports skill development and competency improvement by systematically managing workers' experience and technical skills.Enhanced Industry Competitiveness: Develops and retains skilled workers, ensuring the long-term growth of the construction industry.

4.2.3 Policy Analysis for Applying the Skill Grading System

The skill grading system applies to various job categories, with grades typically ranging from Level 1 to Level 5, each requiring different qualifications, experience, and training:

Level 1: Highly skilled senior technicians.

Level 2: Intermediate technicians.

Level 3: Workers with basic skills.

Level 4: Workers performing simple tasks.

Level 5: Workers requiring special support.

Fig 1. Direction of application of the functional rating system

4.2.4 Synergy Between the Skill Grading and Electronic Card Systems

The electronic card system digitally tracks workers' attendance and working hours on construction sites. It enhances transparency in managing workers' careers and wages, preventing wage arrears and improving social insurance enrollment. Key implementation steps include:

Card Issuance: Workers use electronic cards to record entry and exit times, which automatically log career details, working hours, and tasks performed.

Issuance Procedure: Cards are issued by designated institutions after verifying workers' identification and required documents.

Target Audience: All construction workers, including regular and temporary staff, must use the electronic cards.

4.2.5 Effects of Using the Electronic Card System

Streamlined Attendance Records: Records workers' entry and exit times in real-time for accurate monitoring.Career Management: Tracks workers' career data, including workdays, tasks, and skill acquisition, which aligns with the skill grading system.Wage and Welfare Management: Ensures transparent wage calculation based on logged working hours, preventing wage arrears and verifying social insurance enrollment.Government Oversight: Provides data to prevent illegal employment, wage arrears, and safety incidents, enabling systematic monitoring of labor conditions.

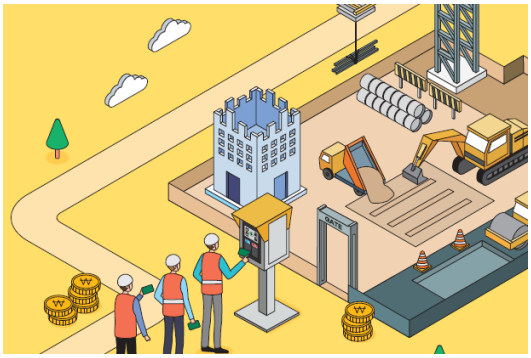

Fig 2. Image of issuing electronic card

4.2.6 Worker Benefits from the Electronic Card System

For Workers: Facilitates systematic career management and fair wages based on their work records while protecting against wage arrears.For Employers: Simplifies workforce management and prevents illegal employment practices.For Governments: Enhances transparency and safety in the construction industry by effectively managing illegal activities and employment conditions.

Fig 3. Electronic card system introduction system

V. DISCUSSION

The proper wage system, skill grading system, and electronic card system are mutually complementary. The career and work information collected through the electronic card serves as a crucial basis for skill grading evaluation, enabling workers to be assigned a grade that corresponds to their experience and skill level. Based on this, the appropriate wage standards for the worker can be established, and it can be verified whether this process has been carried out transparently.

5.1 Advantages of Linking the Skill Grading System and the Electronic Card System

The key advantage of integrating the skill grading system with the electronic card system is transparent career management. Since workers' attendance records and work details are managed electronically, career management becomes systematic and transparent. This leads to fair wage setting. Based on the work hours and career data recorded on the electronic card, skill grades are assigned, allowing for fair wage determination. Systematic skill enhancement is supported as records of the tasks performed by the workers are kept, enabling tailored training and skill development. Additionally, illegal employment and wage arrears can be prevented, as the attendance records and career data are transparently managed, preventing illegal employment practices and wage arrears.

5.2 Complementary Roles of the Proper Wage System and the Skill Grading System

Construction workers can be assigned a grade that corresponds to their experience and skill level. Through this, the appropriate wage standards for workers are set, and it can be confirmed whether the process has been carried out transparently, as follows:

Career Management: The skill grading system increases the credibility of career management and promotes workers' skill improvement and career development.

Fair Wage System: Through the electronic card data, workers' working hours and career levels are accurately recorded, enabling fair wage distribution according to their grade. This helps prevent wage arrears and ensures fair treatment.

Prevention of Illegal Employment and Subcontracting: The electronic card system allows for verification of workers' identities and career data, effectively preventing illegal foreign labor and subcontracting issues.

Increased Management Efficiency for Government and Employers: The electronic card and skill grading system provide data for systematically managing construction site labor, wages, and careers, assisting both government and employers in efficiently implementing policies and managing construction sites.

Prevention of Industrial Accidents and Enhanced Safety: Appropriate task assignments and fair treatment based on workers' skill levels and experience can increase worker motivation, contributing to a reduction in safety accidents.

VI. CONCLUSION

6.1 Research Findings

This study examined the necessity of the proper wage system, skill grading system, and electronic card system to ensure employment stability and prevent industrial accidents in the construction industry. The proper wage system guarantees fair wage payments, enhancing workers' livelihood stability and the sustainability of the construction industry. The skill grading system enables rational treatment based on workers' proficiency and skill levels. The electronic card system strengthens transparency in career and wage management, effectively addressing issues of illegal employment and wage arrears. Furthermore, these systems collectively work to eliminate illegal subcontracting and unauthorized foreign labor within the construction workforce structure, improving labor conditions in the construction market. This will create an environment conducive to attracting young workers and significantly impact safety, quality, and competitive dynamics in securing construction contracts.

6.2 Policy Recommendations

6.2.1. Legalization of the Proper Wage System: Clear legal grounds must be established to consistently implement the proper wage system across all construction sites.

6.2.2. Mandatory Participation in the Skill Grading System: The system for evaluating workers' experience and proficiency should be enhanced, and treatment based on grading should be strengthened. Making worker participation mandatory will increase the system's effectiveness.

6.2.3. Nationwide Implementation of the Electronic Card System: The electronic card system should be expanded nationwide to systematically manage workers' career and wage records. Simplifying issuance procedures and management systems is also essential.

6.2.4. Increased Government Support: To ensure the initial success of these systems, the government should provide financial and technical support alongside educational initiatives for both workers and employers.

6.2.5. Continuous Research and Monitoring: Ongoing research and monitoring are required to evaluate the effectiveness of these systems, and the findings should be used to improve and refine the policies.

Implementing these recommendations is expected to achieve employment stability and industrial accident prevention for construction workers while strengthening the overall competitiveness of the construction industry.

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