

The 27th

ASIA CONSTRUCT CONFERENCE

Theme Paper

: Securing and Developing Human Resources in the Construction Industry

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Table of Contents

1. Introduction	
2. Current Situation and Challenges Related to Construction Workers ...	
<i>The Trend and Prospect of the Construction Economy</i>	
<i>Human Resources in the Construction Industry.....</i>	
<i>Challenge 1: Shortage in Domestic Labor</i>	
<i>Challenge 2: Decrease in Labor Productivity.....</i>	
3. Diagnosis on the Challenges	
<i>Unfavorable Working Conditions</i>	
<i>Lack of Education and Training Program.....</i>	
4. Strategies for Securing and Developing Human Resources	
5. Conclusion.....	
References	

Securing and Developing Human Resources in the Construction Industry

The 27th Asia Construct Conference

Korea Research Institute for Human Settlements (Republic of Korea)

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Abstract

This paper examined the current situation and challenges related to construction workers in Korea, providing possible explanations for these challenges and introducing policy measures implemented by the Korean government. There are two main challenges in the Korean labor market within the construction industry: (1) a shortage of domestic labor; (2) a decrease in labor productivity among construction workers. Possible explanations for these challenges include unfavorable working conditions and a lack of education and training programs. The Korean government's policies to address these challenges include improving wage levels, preventing delayed wage payments, formalizing labor contracts, expanding welfare benefits, enhancing working conditions, managing workforce supply and providing education and training.

1. Introduction

As the construction industry is one of major labor-intensive sectors, it is crucial to maintain an adequate level of labor force and enhance their skills. However, the construction industry in Republic of Korea (hereafter, Korea) is experiencing shortage in domestic workers due to aging demographics, low birth rates and a lack of incentives to engage in the industry. Moreover, labor productivity in the construction sector has been decreasing since 2017, contrasting with the general trend of increasing labor productivity in other sectors.

This paper examines the current situation and challenges related to construction workers in Korea, providing possible explanations. Additionally, we introduce the approaches and measures undertaken by the Korean government to address these challenges.

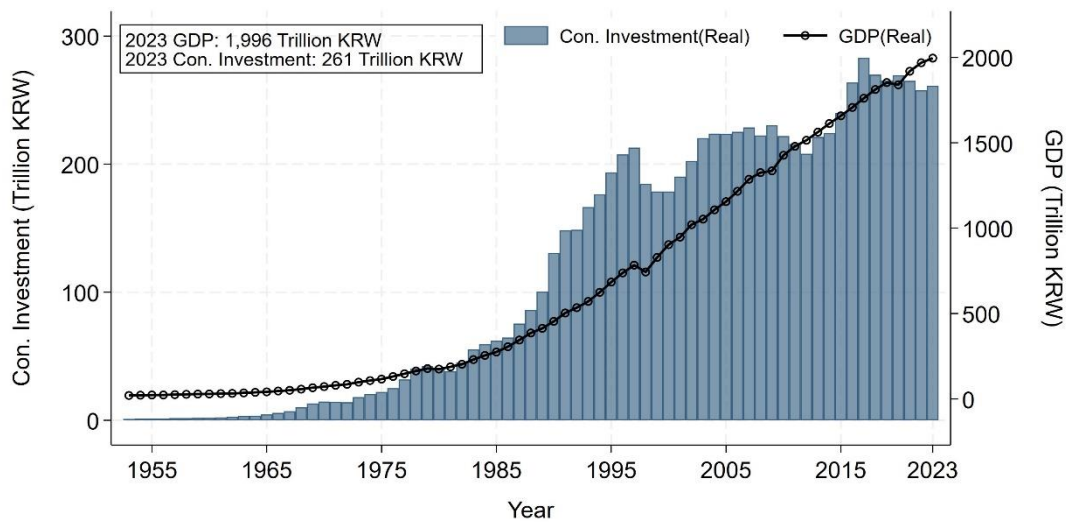
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2. Current Situation and Challenges Related to Construction Workers

The Trend and Prospect of the Construction Economy

The construction investment in Korea has increased in line with GDP growth in general, reaching 261 trillion KRW (approximately 2,000 billion USD) in 2023.² In the 1980s and 1990s, the construction investment exhibited a rapid expansion by 8% per year on average. In recent years, the upward trend has reversed and started to decline in 2018.

Figure 1 | Trends in GDP and Construction Investment

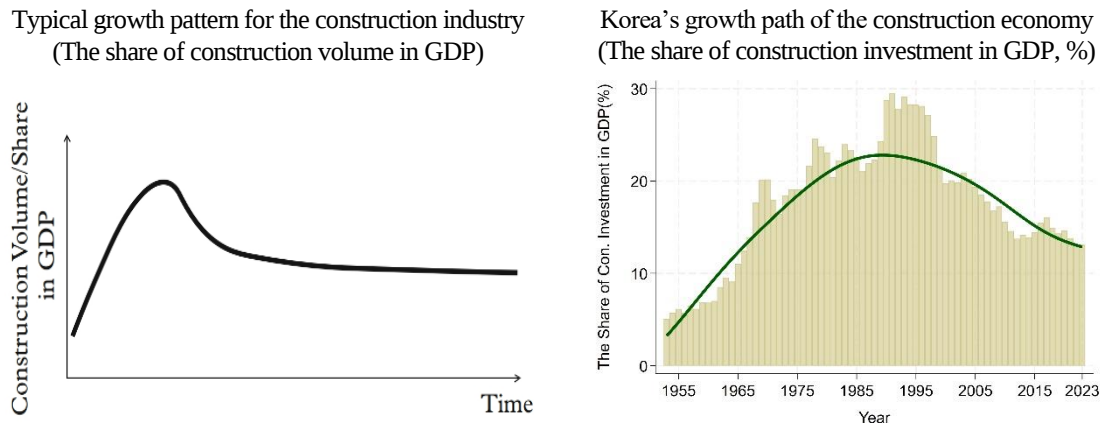


Sources: Bank of Korea, 「National Account」

During the 1990s, the share of construction investment in GDP peaked at nearly 30%, but has gradually declined thereafter, reaching 13.1% in 2023. Considering the typical growth pattern of the construction industry (inverted U-shape), Korea's construction industry seems to have reached a mature stage, implying that substantial growth is difficult to anticipate (CERIK, 2020). Between 2025 and 2030, the projected growth rate of construction investment is expected to range from 0.6 to 1.5%, a range that falls below GDP growth rate (1.5~2.4%) during the same period (KDI, 2022). Accordingly, the share of construction investment in GDP is forecasted to continue its downward trajectory.

² An exchange rate of 1 USD = 1,300 KRW is applied.

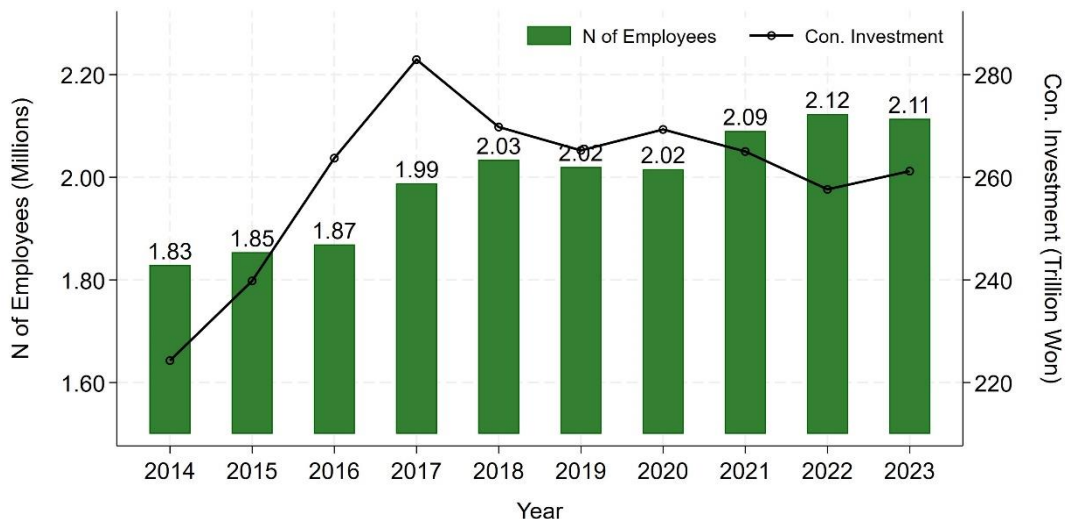
Figure 2 | Typical growth pattern for the construction industry and Korea's growth path of the construction economy



Human Resources in the Construction Industry

Over the past decade, the number of employees in the construction industry has shown an upward trend, reaching 2.11 million in 2023. The number of employees appears to fluctuate in response to changes in the construction investment, with a one-year lag.

Figure 3 | Trends in Employees in the Construction Industry



Sources: Statistics Korea, 「Economically Active Population Survey」, Bank of Korea 「National Account」

Construction workers constitute approximately 7.5% of the total employees across all industries. This proportion is roughly half of that observed in the manufacturing sector, which is around 16.0%.

Table 1 | Number and Proportion of Employees by Industry

Sector	Category (Unit)	Year				
		2019	2020	2021	2022	2023
All Industries	N (millions)	27.12	26.90	27.27	28.09	28.42
	Proportion (%)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
Construction	N (millions)	2.02	2.02	2.09	2.12	2.11
	Proportion (%)	(7.5)	(7.5)	(7.7)	(7.6)	(7.4)
Manufacturing	N (millions)	4.43	4.38	4.37	4.50	4.46
	Proportion (%)	(16.3)	(16.3)	(16.0)	(16.0)	(15.7)

Source: Statistics Korea, 「Economically Active Population Survey」

Employees aged 50-59 constitute the largest portion (about 35%) of the construction workers, with those aged 40-49 comprising the next largest group. The proportion of workers over 60 is rapidly increasing, reaching approximately 22% of the total construction workers. Conversely, workers under 40 only occupy about 20% of total and show a downward trend. While males remain the dominant gender in the industry, the proportion of females is increasing.

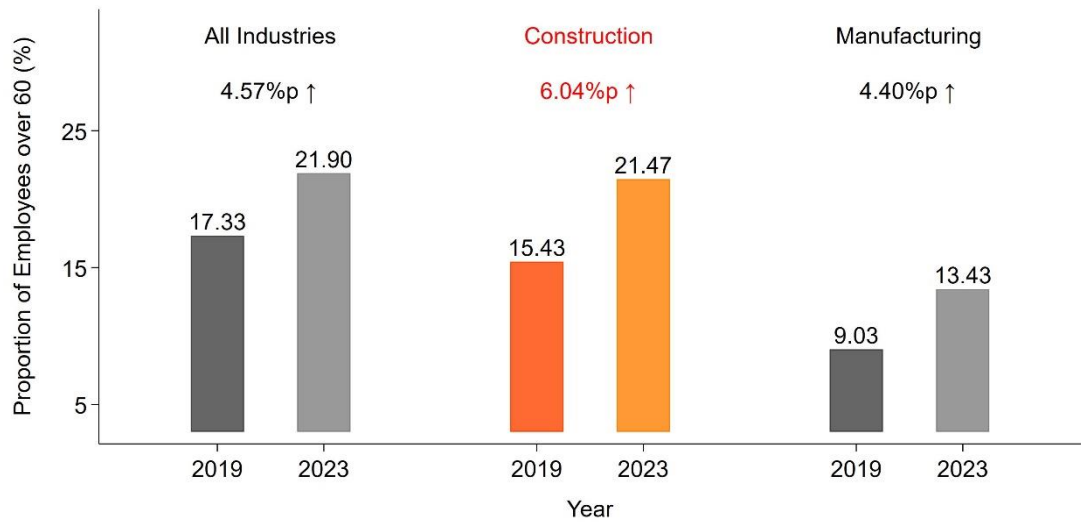
Table 2 | Composition of Employees by Age Group and Gender

Construction Industry	Year				
	2019	2020	2021	2022	2023
By Age Group (Unit: %)					
15-19	0.18	0.15	0.06	0.14	0.06
20-29	7.34	7.6	7.21	7.4	7.75
30-39	14.51	15.11	14.31	13.83	13.49
40-49	28.42	26.37	25.41	24.55	23.13
50-59	34.12	33.82	33.39	33.34	34.12
> 60	15.43	16.96	19.62	20.74	21.47
Total	100.00	100.00	100.00	100.00	100.00
By Gender (Unit: %)					
Female	10.02	10.31	10.3	11.14	12.17
Male	89.98	89.69	89.7	88.86	87.83
Total	100.00	100.00	100.00	100.00	100.00

Source: Statistics Korea, 「Economically Active Population Survey」

The aging trend within the construction industry is progressing at a faster rate compared to other industries. Over the past five years, the proportion of construction workers aged 60 and above has increased by 6.04 percentage points. In contrast, the proportion of workers over 60 in all industries and the manufacturing sector has risen by 4.57 and 4.40 percentage points, respectively.

Figure 4 | Comparison of Aging Trends by Industry



Source: Statistics Korea, 「Economically Active Population Survey」

Challenge 1: Shortage in Domestic Labor

A study on the labor market for temporary and daily construction workers has projected a shortage of 0.27 million domestic construction workers in 2024. The research estimates the demand for temporary and daily workers at approximately 1.89 million, while the supply of domestic workers is around 1.56 million, indicating excess demand in the domestic labor market. Without a supply of foreign workers, the labor market cannot meet the market demand.

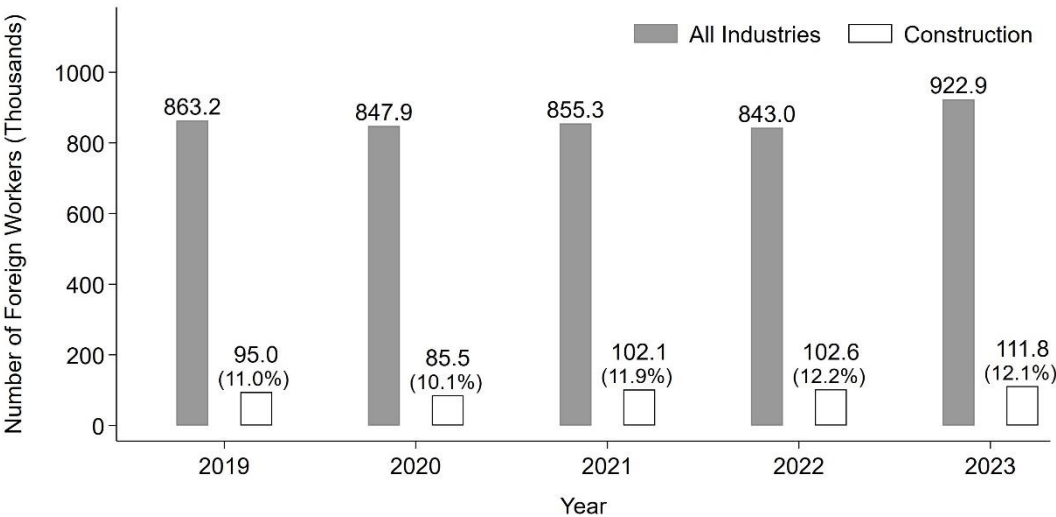
Table 3 | Forecast of Supply and Demand for Construction Workers in 2024 (Temporary and Daily Workers)

Demand (A)	Supply			Difference	
	Total (B=B1+B2)	Domestic (B1)	Foreign (B2)	Domestic (B1-A)	Total (B-A)
1,836,455	1,892,591	1,565,357	327,234	-271,098	56,136

Source: Construction Workers Mutual Aid Association, 「2024 Forecast of Supply and Demand for Construction Workers」

According to a survey about the foreign workforce, the number of foreign workers in the construction industry generally increased, from 85.5 thousand in 2020 to 111.8 thousand in 2023. The proportion of foreign workers in the construction industry relative to the total foreign workforce varied, with a low of 10.1% in 2020 and a high of 12.2% in 2022, slightly decreasing to 12.1% in 2023.

Figure 5 | Trends in Foreign Workers



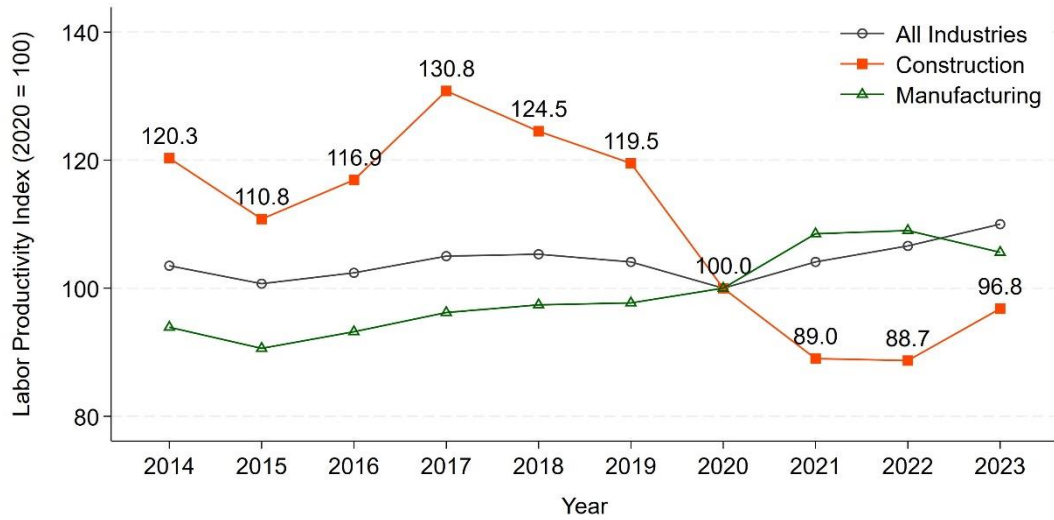
Note: Numbers in the parentheses are the proportions of foreign workers in the construction industry relative to the total.
Source: Statistics Korea, 「Survey on Immigrants' Living Conditions and Labor Force」

Challenge 2: Decrease in Labor Productivity

The labor productivity index for all industries demonstrates a general upward trajectory in the past 10 years. In contrast, the construction sector exhibits significant fluctuations in labor productivity over the same period. The productivity peaked at 130.8 in 2017 and followed by a gradual decline to 119.5 by 2019. A sharp drop occurred in 2020, with the index falling to the base level of 100, coinciding with the onset of the pandemic. The downward trend continues through 2021 and 2022, reaching a low of 88.7.

Overall, while all industries show resilient and steady growth in labor productivity, the construction sector's significant volatility contrasts with the more stable, gradually improving productivity in the manufacturing sector. These patterns underscore the differing impacts of economic conditions and sector-specific challenges on productivity levels.

Figure 6 | Trends in Labor Productivity



Source: Korea Productivity Center, 「Labor Productivity Index」

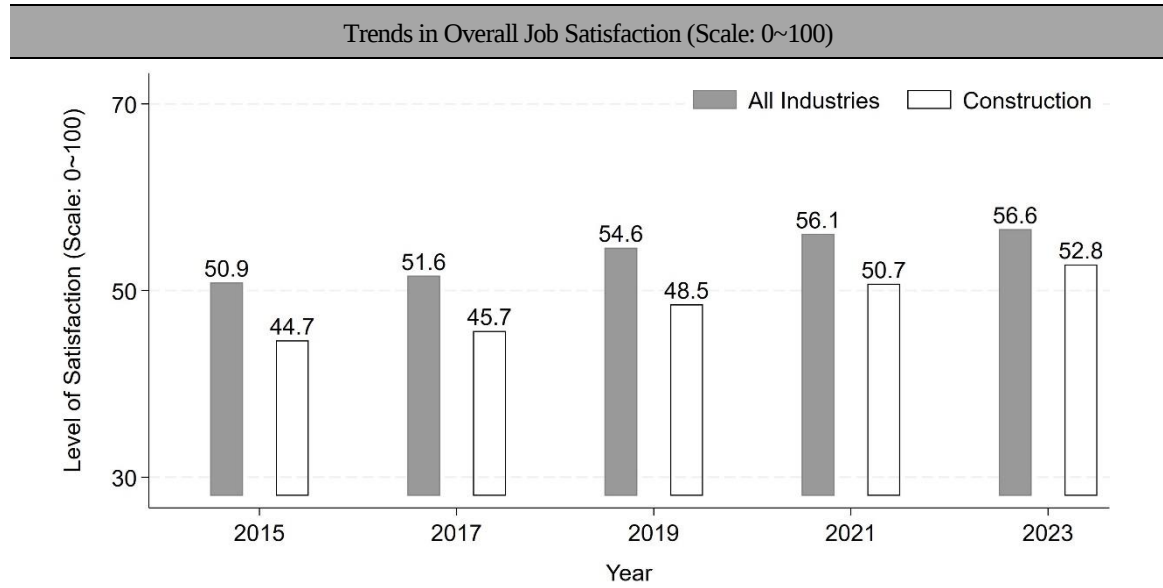
3. Diagnosis on the Challenges

In this chapter, we provide some possible explanations for the two challenges related to construction workers. Together with demographic changes, the shortage in domestic labor supply may be driven by workers' avoidance of the construction field. Also, the decrease in the labor productivity of the construction workers may imply a lack of investment in human resources.

Unfavorable Working Conditions

A survey results on job satisfaction reveal that unfavorable working conditions may be one of the main factors contributing to workers' reluctance to enter the construction industry. Between 2015 and 2023, the overall job satisfaction of construction workers has been approximately 10% lower than the average satisfaction reported by workers across all industries. The survey results, categorized by various aspects, reveal that construction workers consistently rated every aspect of their job lower than their counterparts in other industries. In particular, the 2023 survey highlighted that the evaluation of the working environment by construction workers showed the most significant deviation from the average rating across all sectors. Additionally, assessments of welfare and working hours by construction workers were also notably lower compared to those in other industries.

Figure 7 | Survey Results on Job Satisfaction



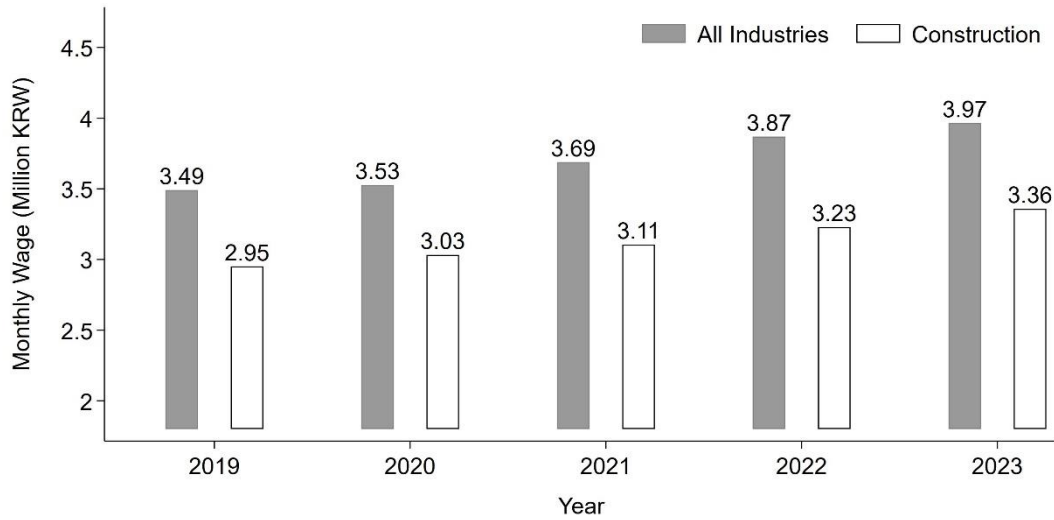
Job Satisfaction by Category in 2023 (Scale: 0~100)			
Category	All Industries (A)	Construction (B)	Difference (B-A)
Tasks	58.4	53.6	-4.8
Human resource management	49.1	47.9	-1.2
Wage	49.3	48.6	-0.8
Welfare benefit	49.5	43.1	-6.5
Career prospects	50.0	47.2	-2.8
Working environment	56.0	46.4	-9.6
Interpersonal relationships	59.6	56.9	-2.7
Working hours	57.1	52.0	-5.1
Work-life balance workplace culture	57.8	52.9	-4.9
Efforts to prevent workplace violence	65.3	61.1	-4.2
Workplace education and training opportunities	57.7	53.7	-4.0

Note: The scale has been modified from 1~5 to 0~100 to facilitate easier interpretation of the figures.

Source: Statistics Korea, 「Social Survey」

Figure 8 illustrates the average monthly wages in the construction industry compared to the overall industry from 2019 to 2023. In 2019, the average monthly wage across all industries was 3.49 million KRW, while the construction industry's wage was substantially lower at 2.95 million KRW. This trend of lower wages in the construction sector persisted over the subsequent years. This ongoing trend highlights a persistent wage disparity.

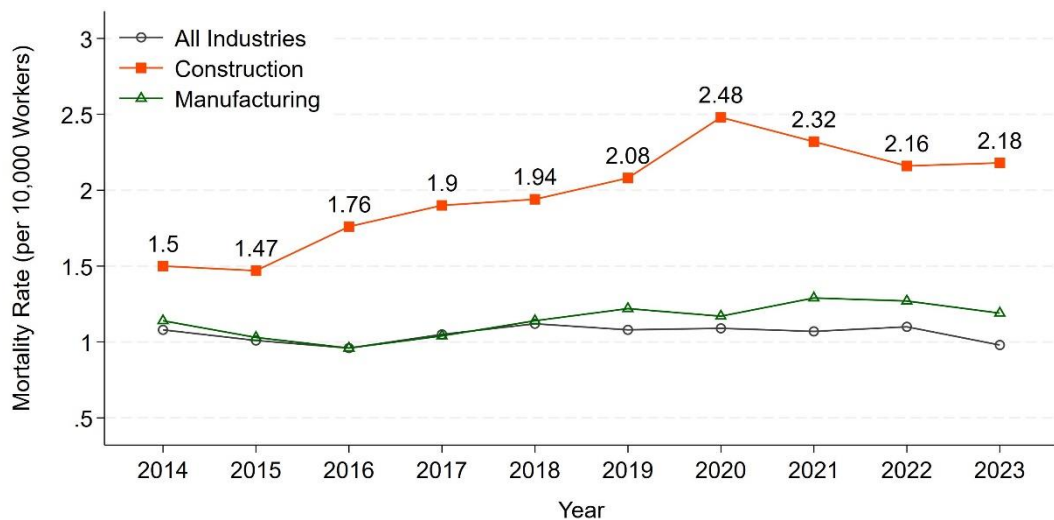
Figure 8 | Trends in Average Monthly Wage



Source: Ministry of Employment and Labor, 「Labor Force Survey at Establishments」

The hazardous working conditions may contribute to workers' reluctance to enter the construction industry. Figure 9 illustrates the mortality rates per 10,000 workers in all industries, construction, and manufacturing sectors from 2014 to 2023. Throughout this period, the construction industry consistently recorded higher mortality rates compared to both the overall industry and the manufacturing. Furthermore, the gap in mortality rates between the construction industry and the other sectors has widened over time.

Figure 9 | Trends in Mortality Rate (per 10,000 workers)



Source: Ministry of Employment and Labor, 「Industrial Accident Statistics」

Unstable working conditions may contribute to workers' reluctance to pursue careers in the construction industry. Table 4 provides a breakdown of worker status by industry for the year 2023. In this table, regular employees are defined as those with contracts exceeding one year, temporary employees have contracts of less than one year, and daily workers are employed on a short-term basis. The category "Others" includes self-employed individuals and unpaid family workers. Across all industries, regular employees constitute the majority, representing 56.9% of the workforce. In the manufacturing sector, regular employees account for more than 80% of the workforce. In contrast, the construction industry shows a different composition: less than half of the workforce are regular employees, and daily workers occupy over 20%. This distribution reflects the unique characteristics of the construction sector and highlights the inherent instability and risks associated with employment in this field.

Table 4 | Comparison of Status of Worker by Industry

Status of Worker	(Year: 2023, Unit: %)		
	All Industries	Construction	Manufacturing
Regular Employees	56.9	44.9	81.5
Temporary Employees	16.2	12.0	7.5
Daily Workers	3.7	23.8	1.4
Others	23.2	19.3	9.6
Total	100.0	100.0	100.0

Notes: A regular employee is a worker with a contract lasting more than one year; a temporary employee has a contract for less than one year; daily workers are those who contract for very short periods. Others include self-employed workers and unpaid family workers.

Source: Statistics Korea, 「Economically Active Population Survey」

Lack of Education and Training Program

A decrease in labor productivity in the construction industry has been observed since 2017. This may imply a lack of investment in human resources. Table 5 shows the technical and vocational education and training status by industry for 2022. The figures reveal the lack of investment in human resources in the construction industry. Compared to all industries the construction sector shows almost a half percent of participation rate in education and training programs. This lower participation rate may be attributed to supply and demand

factors related to the programs. There may be insufficient programs available for construction workers, or the workers may lack adequate incentives to participate.

Table 5 | Technical and Vocational Education and Training by Industry in 2022

(Unit: Thousands)

Year: 2022	N of Employed	Technical and Vocational Education and Training	
		N of Participants	Participation Rate
All Industries	28,089	2,985	10.6 %
Construction	2,123	119	5.6 %
Manufacturing	4,503	691	15.3%

Source: Ministry of Employment and Labor, 「Yearly Statistics of Human Resource Development」

4. Strategies for Securing and Developing Human Resources

In this chapter, we outline the policy measures implemented by the Korean government to address the two primary challenges facing the construction industry: the shortage of domestic workers and the decline in labor productivity. The Ministry of Land, Infrastructure and Transport (MOLIT) and the Ministry of Employment of Labor (MOEL) established Master Plans and have been executing market interventions to tackle these issues. Table 6 provides basic information on the Master Plans related to the construction workers. Those plans are established every 5 years and enforced by the relevant acts.

Table 6 | Master Plans related to the Construction Workers

Name	Related Act	Responsible Department	Application Period
The 6th Master Plans for Construction Industry Promotion	「FRAMEWORK ACT ON THE CONSTRUCTION INDUSTRY」	MOLIT	2023 - 2027
The 7th Master Plans for Advancement of Construction Technology	「CONSTRUCTION TECHNOLOGY PROMOTION ACT」	MOLIT	2023 - 2027
The 4th Master Plans for Improvement in Employment of Construction Workers	「ACT ON THE EMPLOYMENT IMPROVEMENT, ETC. OF CONSTRUCTION WORKERS」	MOEL	2020 - 2024

Source: Ministry of Government Legislation, Korean Law Information Center (www.law.go.kr)

Table 7 provides a summary of policy measures that have been conducted by the Korean government. Policies in Korea can be classified such as wages, employment stability, welfare benefits, working conditions, supply management, and education.

Table 7 | Policy Measures for Securing and Developing Human Resources

Category	Policy Measures	Description
Securing Human Resources		
Wage	• Adjusting the level of wage	Institutionalize the payment of fair wages above the market wage rates
	• Preventing delayed wage payments	Expand application of direct wage payment system to private sector
Employment Stability	• Formalizing labor contract	Formalize labor contracts between subcontractors and individual workers
Welfare Benefit	• Expanding welfare benefit	Expand the number of beneficiaries for marriage and childbirth support, health screenings, and scholarship funding.
		Expand the scope of eligibility for retirement benefits.
Working Environment	• Improvement in sanitary and convenience facilities	Ensure the provision of sanitary and convenience facilities at construction sites
	• Expansion of public holiday closure	Expand public holiday closure to private construction site
	• Settling 52-hour workweek	Implement a 52-hour cap on maximum weekly working hours
	• Strengthening monitoring system	Enhance the comprehensive living condition survey for construction workers
Managing Supply (Domestic)	• Training domestic youth for construction workers	Expand specialized high schools for training construction workforce
	• Operation of a construction job information service	Operate an online platform providing information on market demand for construction workers
Managing Supply (Foreigner)	• Preventing illegal foreign labor supply	Enhance the effectiveness of enforcement against illegal foreign labor
	• Adjusting proportion of domestic and foreign workers	Determine reasonable proportion between foreign and domestic workers through an official employment committee
Developing Human Resources		
Workplace Education and Training	• Improvement of educational quality	Conduct evaluations of educational institutions, granting incentives to high-performing institutions and imposing penalties on underperforming ones
	• Enlarging skill training program participants	Expand the number of participants in skill enhancement training programs and establishing new public training centers
	• Providing advanced training courses	Establish advanced vocational training programs to develop skilled technicians

Sources: MOLIT, The 6th Master Plans for Construction Industry Promotion
MOLIT, The 7th Master Plans for Advancement of Construction Technology
MOEL, The 4th Master Plans for Improvement in Employment of Construction Workers

(Wage) Regarding the relatively low wage level in the construction industry, institutionalizing the payment of fair wages above market wage rates is under consideration. To prevent delayed wage payments, the application of direct wage payment systems which restrict construction companies from withdrawing amounts other than their own share and only permit transfers to workers' accounts or designated accounts is planned to be expanded to private construction projects.

(Employment stability) Reviewing and formalizing labor contracts of construction workers are under consideration. Formalizing labor contracts between subcontractors and individual workers is expected to make their employment more stable and predictable.

(Welfare benefit) Expanding the number of beneficiaries for marriage and childbirth support, health screenings, and scholarship funding are under consideration. Also, the scope of the eligibility for retirement benefits is also one of the Korean government's plans.

(Working environment) In the short term, efforts will focus on ensuring the provision of sanitation and convenience facilities. Regarding working time, expansion of public holiday closure and settling 52-hour workweek systems have been implementing. Enhancing the comprehensive living condition survey for construction workers is also under consideration.

(Managing supply) For the shortage of domestic construction workers, expanding specialized high schools for training the construction workforce is under consideration. To support job-matching, a public online platform providing information on market demand for construction workers is currently operating.

To manage an appropriate level of foreign workers, enhancing the effectiveness of enforcement against illegal foreign labor is under consideration. Developing a comprehensive strategy for the utilization of foreign labor in construction by analyzing the current status of foreign workers, gathering industry feedback, and assessing by occupation, function, and skill level is under consideration. A reasonable proportion between foreign and domestic workers will be discussed through an official employment committee.

(Workplace education and training) Conducting evaluations of educational institutions, granting incentives to high-performing institutions and imposing penalties on underperforming ones are considering. Also, enlarging the skill training program participants and providing advanced training courses are under consideration.

Introduction to a detailed content:
The public online platform to support job-matching
(“Construction Job Dream Net”, <https://cid.or.kr>)

Construction Job Dream Net is a specialized employment and training information network for construction workers operated by Construction Workers Mutual Aid Association (a public institution). Launched in 2016, It provides reliable job and recruitment information and comprehensive training information. In addition, it offers Open API services and an integrated job search platform where construction job information can be easily and quickly accessed from a single source. The site also provides mobile services, allowing users to access Construction Job Dream Net anytime and anywhere using smartphones and other mobile devices, in addition to PCs.

On the job information search page, users can search for and access job listings that match their criteria. By clicking on each posting, they can obtain more detailed information.

Figure 10 | Job Listings for Construction Workers

총 10,402건		채용정보 비교하기	최근등록일순	10개씩	조회
회사명 Company Name	모집내용 Job Details	자격조건 Qualifications	등록일 Posting Date	마감일 Deadline	
☐ (주)아이비에스인더스트리	울산 롯데호텔 전기기사(전기안전관리자 무제한선임가... 월급 360만원 ~ 360만원 / 울산 > 남구		2024-07-29	2024-09-25	
☐ 주식회사두연	동광(부영)주택 건설현장 현장정리원(화성 향남) 월급 232만원 ~ 232만원 / 경기 > 화성시	학력무관	2024-07-29	2024-08-13	
☐ (주)맥서브(Maxerve Co.,Ltd.)	[맥서브] 진천 삼덕리물류센터 시설기사 3교대(당... 연봉 3200만원 ~ 3240만원 / 충북 > 진천군	학력무관	2024-07-29	2024-08-23	
☐ 동부건설(주)	동부건설(주) 팔당대교-외부 도로건설공사 공사직원... 연봉 3600만원 ~ 6000만원 / 경기 > 남양주시	학력무관	2024-07-29	2024-09-28	
☐ (주)한화	(주)한화 글로벌부문 화학류저장소 관리직 모집 (... 월급 400만원 ~ 410만원 / 경기 > 광명시	학력무관	2024-07-29	2024-08-11	
☐ 베올리아산업개발코리아주식회사	여의도 성모병원 영선기사 모집 연봉 2880만원 ~ 3000만원 / 서울 > 영등포구		2024-07-29	2024-08-12	
☐ (주)씨앤에스자산관리	판교 SGT타워 격일제 시설관리원 모집 월급 256만원 ~ 256만원 / 경기 > 분당구	학력무관	2024-07-29	2024-09-23	

Source: Construction Workers Mutual Aid Association, Construction Job Dream Net (<https://cid.or.kr>)

5. Conclusion

This paper examined the current situation and challenges related to construction workers in Korea. We also provided possible explanations for the challenges and introduced the policy information to address these challenges by the Korean government.

The proportion of construction investment in GDP is decreasing and projected to continue this downward trend in the future. Over the past decade, the number of employees in the construction industry has shown an upward trend, reaching 2.11 million in 2023. Construction workers make up approximately 7.5% of the total workforce across industries. The largest age group of construction workers in 2023 is those aged 50-59, followed by those aged 40-49 as the next largest group. Males remain the dominant gender in the industry, but the proportion of female workers is increasing. The aging trend in the construction industry is advancing more rapidly compared to other industries. The labor productivity index for all industries has demonstrated a consistent upward trajectory over the past 10 years. In contrast, productivity in the construction industry peaked at 130.8 in 2017 and then gradually declined to 88.7 by 2022.

There are two main challenges in the Korean labor market within the construction industry. The first is a shortage of domestic labor, and the second is a decrease in labor productivity among construction workers. Possible explanations for these challenges include unfavorable working conditions and a lack of education and training programs.

The Ministry of Land, Infrastructure and Transport (MOLIT) and the Ministry of Employment of Labor (MOEL) established Master Plans and have been executing market interventions to tackle these issues. Policies in Korea include improving the level of wages, preventing delayed wage payments, formalizing labor contracts, enlarging welfare benefits, improving working conditions, managing the supply of workforce and education.

Although this paper aimed to provide as much information as possible about construction workers, we were only able to outline some of the government measures and offer brief descriptions. Future research should focus on the concrete estimation of the effects of each measure and the thorough consideration to induce comprehensive implications.

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