Active Labor Market Policies in an Industrial Crisis: Case of Korean Shipbuilding Industry and Public Employment Services

Young-Min Lee
Sookmyung Women's University, Republic of Korea

Review of Integrative Business & Economics Research

ABSTRACT

After the 2008 global financial crisis and COVID-19, Korea's shipbuilding industry struggled with a prolonged downturn. Given the negative effects of unemployment on market and economic activities, Hope Centers were installed in cities with shipyards to provide reemployment assistance to laid-off workers. The employment outcomes of Shipbuilding Industry Hope Center participants were analyzed using propensity score matching, OLS, logistic regression analysis, and survival analysis. There is evidence that participation at Shipbuilding Industry Hope Centers does not positively affect reemployment in the shipbuilding industry. The analysis derives implications for active labor market policies and public employment services for industrial crises. By considering the intricacies of each sector, policymakers can design targeted strategies that effectively address industry crises and minimize the adverse effects of layoffs and downsizing.

Keywords: Active labor market policies, Public employment services, Employment crisis region, Shipbuilding industry.

Received 6 February 2023 | Revised 3 June 2023 | Accepted 5 August 2023.

1. INTRODUCTION

Before the 2008 global financial crisis and COVID-19, Korea's shipbuilding industry was a leading exporter with a global competitive advantage, and received the largest share of new orders worldwide. However, in the wake of the global financial crisis, Korea's shipbuilding industry suffered a downturn due to various internal and external factors. The external factors that had the largest impact were the cooling global economy triggered by the financial crisis and the decrease in maritime traffic, which led to a decreased demand for ships, a withdrawal of orders, and frequent delays in delivery (Kang 2016; Bothe & Decker-Lange, 2022; Taylan, 2022). The demand for new ships has constantly declined since then. The remaining orders postponed the employment crisis until after 2014; however, with no new orders to maintain the level of backlog, corporate management started to make losses.

In the face of management pressure, shipbuilders sought two routes depending on corporate size. Small- and medium-sized shipyards opted for restructuring, voluntary agreements, court receivership, and closure to overcome the immediate crisis (Kang, 2021). Conversely, the Big Three shipbuilders doubled their efforts to win tenders for offshore plants, taking advantage of the booming demand for offshore plants for deep-sea oil field development spurred by high oil prices. They expanded their workforce and facilities to respond to the increasing demand. However, their strategy to overcome the crisis backfired

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

when the sharp drop in oil prices led to a sudden fall in demand for offshore plants, deepening the impact of the crisis (Bae, 2016).

The full weight of the crisis ascribable to the strategic failure of the Big Three came to bear in 2015, when large-scale layoffs became inevitable. In particular, contract workers were hit hardest by the wave of layoffs because of their vulnerable employment status. Given the nature of employment in the shipbuilding industry, a contract worker works in shipyards under a fixed-period contract with a contractor, and is not directly employed by a shipbuilder. To minimize employment shocks and efficiently tackle the problem of shipyard layoffs, the Korean government designated the shipbuilding industry for special employment support in June 2016. In this context, Shipbuilding Industry Hope Centers (hereinafter, Hope Center) were installed for laid-off shipyard workers in Ulsan, Geoje, Mokpo, and Changwon, which are cities densely populated with shipyards, to provide livelihood security and employment support.

The main goal of a Hope Center for the shipbuilding industry is to provide systematic vocational education and training programs to support job changes and re-employment of laid-off shipyard workers. The special employment support industry designation was aimed at alleviating the adverse impact of the industrial downturn on the regional economy(Singh, 2023). In the event that recovery from an industrial downturn cannot be achieved by the industry alone, the central and local governments take measures to mitigate its impact. Given the impact of regional unemployment on the regional market and the subsequent economic slump, preventing an employment crisis was given priority among the strategies for countering the overall economic recession triggered by the shipbuilding crisis (Lee et al., 2016).

Globally, several central and regional governments enacted measures to counter the employment crisis in the face of a regional economic breakdown due to the shipbuilding crisis, and even involved a full transformation of the regional industry concerned. As typical examples, it is worth mentioning Malmö in Sweden, a case similar to the Korean shipbuilding industry, Sheffield in the U.K., which overcame the collapse of both steel and coal mining, and Adelaide in Australia, which experienced a manufacturing crisis.

In regions where a crisis in the core industry led to an employment crisis, priority was given to solving the employment problem for laid-off workers and the vulnerable population in the region affected, with the aid of the central government. In such cases, active labor market policies (a.k.a. ALMPs), public employment services and job training, and a range of welfare programs are implemented (OECD, 2021). A recent trend is to enhance administrative efficiency by unifying employment and welfare support channels. Nevertheless, the essence of the measures taken to combat the employment crisis is ALMPs based on public employment services.

This study introduces example cases of employment services provided through ALMPs that were implemented under the aegis of the Korean government to overcome the shipbuilding crisis and related employment shock. This process will offer insight into the effects of a government-led offensive strategy on an employment crisis in the wake of an industry-specific crisis. More specifically, the main focus of this study is to verify the effects and success of the Hope Centers established in 2016.

This study significantly enhances our understanding of the strategies involved in preparing retirees for reemployment and job-seeking amidst industry sector crises. As an integral part of active labor market policy, we propose an exemplary employment service model and comprehensively evaluate its outcomes. The robustness and efficacy of this model position it as a benchmark solution for countries grappling with industry downsizing

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

and layoffs. Consequently, this study is poised to be extensively employed and researched as a valuable resource to tackle unanticipated sector-specific employment crises. It is noteworthy that the implications of this case extend beyond sector-specific scenarios, permeating the broader employment policies of numerous countries. Thus, it is imperative to prioritize the design of employment services that can adeptly respond to industrial crises while ensuring their regular updates to maintain their relevance and effectiveness.

2. THEORETICAL BACKGROUND

2.1 ALMP theories and practice

The term "ALMP" was first used by the OECD, and the corresponding policy support has a long history dating back to the 1950s in Sweden (Bonoli, 2010; OECD, 1964). The term "active" is used in contrast to the "passive" labor market policies that are characterized by unemployment benefits, unemployment assistance, and public assistance to ensure the livelihood security of the unemployed and their dependents. It shifts the focus to welfare-related strong subsidies and intensive, time-limited assistance associated with the Anglo-American welfare state approach (King, 1995).

The functions of ALMP can be divided into two main categories (Calmfors & Skedinger, 1995). The first function is preventing the unemployment of current employees. This function is fulfilled by offering firms wage subsidies and job training support to help maintain employment in the event of a recession. The second function is inducing rapid reemployment of the unemployed. This function is fulfilled by providing vocational training to meet the demand for a skilled workforce in the labor market, supporting job creation through job search services, and employment assistance to solve frictional and structural unemployment.

The concrete activities of ALMP can be broadly divided into three categories (Katz, 1994). First, it provides education and vocational training for skills upgrading in specific occupational groups that require support on the labor supply side. Second, on the labor demand side, it directly offers employment in the public sector or provides employment subsidies to create more jobs in the private sector. Third, employment services, such as providing assistance with labor market information provision and job search, are provided. This increases job seekers' search efficiency. In Europe, Sweden, which opted for the social democratic route, began to draw attention to its low unemployment rate during its ALMPs while other European countries observed high unemployment rates (Calmfors, 1993). The Sweden-style ALMP approach consists of four categories: employment services, labor supply programs, labor demand programs, unemployment insurance, or cash aid (Johannesson, 1998).

Previous studies on ALMP present conflicting opinions on its efficacy; some researchers have doubts about its effects (Calmfors, 1993; Fossati, Liechti, & Wilson, , 2021; Skedinger, 1994; Regnér, 1997). There are also cases in which the effect can be doubled depending on the level of state intervention, or performance can only be achieved if appropriate monitoring and support are supported (Chan & Zhai, 2013; Lue, 2013). Studies in support of ALMP argue that it is effective for unemployment management, albeit with differences in the combinations of policy details (Escudero, 2018; Estevão, 2007; Jackman et al., 1990; Layard, 1997; Layard et al., 1991; Nickell, 1997; Rodrigeuz-Planas, 2010). These studies report contradictory effects of ALMP depending on the policy enforcement conditions and recipients of policy measures. Fertig et al. (2006) and Kamimura and Soma(2013) report that more direct monetary incentives are effective and needed in

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

reducing unemployment compared with employment services. In some studies, the effects of ALMP were found to be greater in the case of women, unskilled or semiskilled workers, and the long-term unemployed (Card et al., 2018; Escudero, 2018). It was also reported that, even if no significant short-term effects of ALMP were observed, positive effects on employment were observed in 2–3 years, more markedly so in a recession (Card et al., 2018).

Some of the ALMP programs worth noting are employment services and related integrated services. Employment services are the most cost-effective of all the measures because job mismatches can be reduced by directly connecting job seekers and businesses in the labor market (Ashenfelter et al., 2005; Brown & Koettl, 2015). In addition, employment services can be used as a separate measure or in synergy with other ALMPs; it is highly effective in providing public employment services in conjunction with other policy measures, such as unemployment benefits (Dar & Tzannatos, 1999; Martin & Grubb, 2001; O'Leary & Wander, 2005). Combining public employment services with other policy measures is similar to encouraging participation in the labor market of income support applicants in exchange for income support during the implementation of the welfare state reforms in the 1990s and 2000s(Chan & Chan, 2013)

The essence of these two policy reforms is the "activation" of a welfare state, and does not merely mean the expansion of state support, and the "welfare-to-work" policy intended to free workers from the status of welfare recipients by providing them conditions to gain employment. To this end, various incentive systems were designed to induce welfare recipients to take jobs at the earliest possible date and provide welfare services and tax benefits under the premise of "Making Work Pay," as an underlying principle of the related policies.

The employment service delivery system was modified to implement the welfare-to-work policy. Interagency collaboration and service consolidation are taking place in many countries to carry out employment and labor, and welfare policy delivery systems. This policy is provided through two methods: a strong approach that involves consolidating employment service delivery systems and income protection (e.g., the U.K. Jobcenter Plus, the Norwegian Labor and Welfare Organisation, the Australian Centerlink, and the French Employment Counters); and a relatively mild, one-stop shop approach that unifies all service accesses (e.g., the Arbeitsgemeinschaften in Germany, and the Dutch Centers for Work and Incomes) (Lee, 2013).

The major effects of employment services are resolving frictional unemployment and promoting the use of human resources (Betcherman et al., 2004; Calmfors, 1994). Employment services contribute to reducing structural problems caused by information asymmetry in the labor market by providing useful information, and is reflected in the employment outcome (Cahuc & Zylberberg, 2004). In a nutshell, appropriate job matching of employment services has the effect of reducing the risk of unemployment, shortening its length, and raising post-employment wages (Gaure et al., 2008; Thomsen, 2009).

According to a Swedish empirical study, recipients of public employment services outperformed non-recipients in reemployment by 13% (Björklund & Regné, 1996). Thomsen(2009) compiled the results of an evaluation of employment services in nine European countries, reporting that participation in employment services was associated with higher employment rates and a shorter period of unemployment. An especially favorable effect was shown in the employment services that combined several programs, such as job placement, counselling, and application writing training. However, given that the effectiveness of employment services can vary depending on recipients' characteristics,

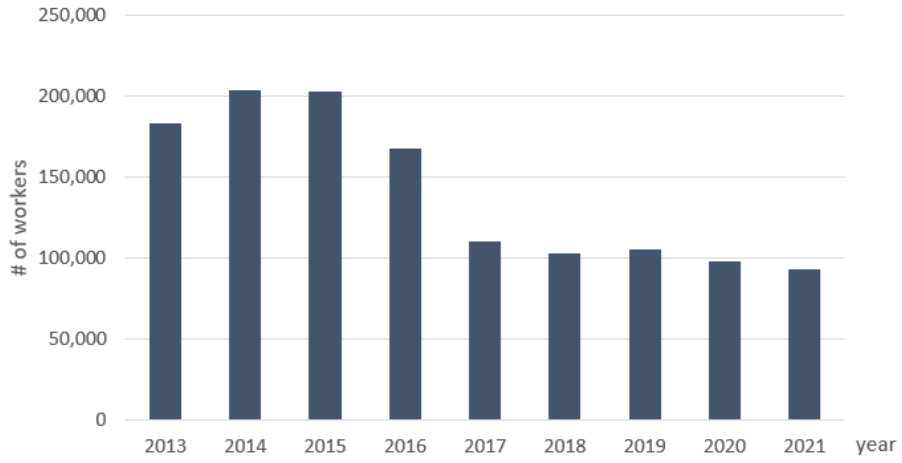
ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

profile-based employment service support can improve effectiveness (Black et al., 2002). This study focuses on the government-level response to an industry-specific crisis and the ensuing employment crisis, with a particular focus on the employment services and related integrated services that are the most important of all ALMP programs for the efficient utilization of the workforce.

2.2 Korea's shipbuilding crisis and cases designated as a special employment crisis

Korean shipbuilders are industry leaders with a global market share of more than 50%. The shipbuilding industry is one of the core industries for the national economy, and its per-item contributions to export are ranked between 2 and 4 every year. The size of the shipbuilding industry tops the ranking for both business figures and job offerings. Since 2014, however, the size of employment has been falling every year due to diminishing industrial demand (Korea Offshore & Shipbuilding Association, 2018). The shipbuilding business, which is decided by the number of orders received, is highly labor-intensive. Diminishing orders in recent years has led to rapid restructuring to reduce labor costs and ensure flexibility. The employment structure of the shipbuilding industry is largely divided into prime contractors and subcontractors (partner companies), and the large majority of laid-off workers are skilled employees of subcontractors. That is, skilled workers of partner companies are hit first by job cuts from restructuring.

Figure 1. Employment status in the shipbuilding industry by year (unit: n)



Source: Korea Offshore and Shipbuilding Association (2022)

The shipbuilding industry is concentrated in specific regions because of its inherent need to be close to the sea. Regions with a high concentration of the shipbuilding industry in Korea are Ulsan, Changwon (Jinhae), Geoje, and Mokpo. The economic situation in these regions is heavily affected by the shipbuilding industry's slump, which has a ripple effect not only on local manufacturing, but also across the local economy, such as the food and lodging sectors. In other words, a downturn in the shipbuilding industry can bring difficulties to the economy of the entire region.

As the shipbuilding industry crisis continues, the government designated it for special employment support in July 2016. Accordingly, companies have been given employment maintenance subsidies, management support to increase employment maintenance

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

capacity, deferral of social insurance premiums for job sharing, reduction of working hours, and utilization of a part-time system. The unemployed were provided with livelihood security support and reemployment support through customized employment services. The government installed Hope Centers, one-stop service centers for supporting applicants and recipients, in Geoje, Mokpo, Changwon, and Ulsan, where shipyards are concentrated, to provide all available employment services, such as reemployment, welfare, and corporate management support services. Hope Centers were set up to provide one-stop services, from livelihood security to reemployment, to retirees, prospective retirees, retirees of the companies eligible for services, the family members of the workers, and employers in the shipbuilding industry who are affected by its recession.

A Hope Center has four divisions according to their roles: job team, welfare team, corporate support team, and administrative team. Of them, the job team is responsible for paying unemployment benefits, job brokering, job training counselling (issuing training accounts), providing job support services, providing employment success packages, group counseling, start-up support, and job searches. Employment support services are provided in the order of initial consultation → collection of job search information → recognition of unemployment status, job brokerage, or referral to other services → employment service for reemployment or welfare service.

The employment service in the final stage is provided in various forms according to the characteristics and needs of the service recipient, such as vocational training consultation, job change support services, group counselling, employment success packages (employment support comprehensive package project), and start-up support. It also includes individual psychological counselling, small-loan financial counselling short-term job brokerage, emergency livelihood support to applicants in need of livelihood, and psychological security.

3. RESEARCH METHOD

3.1 Research Subjects

In order to evaluate the government measures to cope with the collapse of the regional industry, analysis was performed on example cases of public employment services in major regions, designated as employment crisis regions, in the wake of the crisis in the shipbuilding industry. Four cities (Geoje, Mokpo, Changwon, and Ulsan) designated as employment crisis regions in 2016 were ananalyzedand the people who lost their jobs between January 2016 and June 2018 (gathered from the employment insurance database) were the subjects. For the analysis of participation in public employment services and the employment outcomes of the analysis, we included the following items: reemployment status after participation in public employment services, industrial and regional mobility, wages, company size, employment status, and time to re-employment.

Prior to the analysis, we performed propensity score matching (PSM) to construct a matched dataset (homogeneous treatment and control groups) with the same propensity scores based on certain characteristics (gender, age, employment type, region) of the participants and non-participants in public employment services in order to exclude personal characteristics and clarify the effects of participation. The total number of subjects after PSM was 49,922. Table 1 presents the subjects' basic characteristics, depending on participation or nonparticipation in the reemployment assistance services provided by the Hope Centers. Multiple linear regression, logistic regression, and survival analysis were used for outcome analysis.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

Table 1. The subjects' basic statistics after propensity score matching (PSM).

Category		Participation		Non-participation	
		N (Mean)	% (SD)	N (Mean)	% (SD)
Reemployment	Yes	13,751	55.1	22,936	91.9
	No	11,210	44.9	2,025	8.1
Gender	Male	20,900	83.7	20,728	83.0
	Female	4,061	16.3	4,233	17.0
Age (Mean/SD)		(45.50)	(11.489)	(45.39)	(11.426)
Region	Geoje	14,777	59.2	14,672	58.8
	Mokpo	99	.4	98	.4
	Changwon	1,253	5.0	1,312	5.3
	Ulsan	8,832	35.4	8,879	35.6
Time to reemployment (Mean/SD)		(180.58)	(172.828)	(171.53)	(215.619)
Reemployment in the same region	Yes	11,627	84.6	22,120	96.4
	No	2,124	15.4	816	3.6
Previous wage (Mean/SD)		(2,058,850)	(6.2596)	(2,169,471)	(6.2978)
Reemployment wage (Mean/SD)		(2,399,507)	(6.3445)	(2,484,376)	(6.3555)
Contract worker status at the previous workplace	Yes	1,470	5.9	1,459	5.8
	No	23,491	94.1	23,502	94.2
Reemployment contract worker status	Yes	2,000	14.5	2,396	10.4
	No	11,751	85.5	20,540	89.6
Reemployment company size		(418.07)	(2505.796)	(252.15)	(1734.287)
Total		24,961	100.0	24,961	100.0

3.2 Analysis data

For the analysis data, we used the national employment insurance database because employment insurance is mandatory for all employers hiring one or more workers, and Korea's employment insurance program provides information on the reemployment status of all laid-off workers. For the dependent variables, we used reemployment status, same-industry employment status, same-region employment status, wages, company size, work contract status, and time to reemployment, to investigate the reemployment effect of the Hope Center program. The independent variable is participation/nonparticipation (as a yes/no dummy variable) in the Hope Center program. The variables related to personal characteristics and former workplace were used as control variables. Table 2 gives an overview of all the variables used for analysis by category along with their brief definitions.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

Table 2. Definitions of the analysis variables.

Category		Variable	Description
Dependent variable		Reemployment status	1=Yes, 0=No
		Same-industry job	1=Shipbuilding, 0=Non-shipbuilding
		Same region reemployment	1=Same region, 0=Different region
		Wage	log(reemployment wage)
		Company size	Total wage earner of the reemployment company (Unit: n)
		Contract worker status	1=Contract, 0=Regular
		Time to reemployment	Time from dismissal to reemployment (Unit: day)
Independent variable		Participation in Hope Center program	1=Yes, 0=No
Control variable	Individual charac–teristics	Gender	1=Male, 0=Female
		Age	As of 2018
		Age squared	$(Age)^2$
	Previous workplace	Region	4 regions (Ulsan, Geoje, Mokpo, Changwon), dummy 1=Geoje, 0=Ulsan, Mokpo, Changwon 1=Mokpo, 0=Ulsan, Geoje, Changwon 1=Changwon, 0=Ulsan, Geoje, Mokpo
		Contract worker status	1=Yes, 0=No
		Wage	log(previous job wage)

3.3 Data Analysis

The employment outcomes of Hope Center participants were analysed using PSM, ordinary least squares, logistic regression analysis, and survival analysis. Each method is briefly explained below. First, PSM was used to overcome any selection bias, given that participation in the Hope Center was not randomized (Rosensbaum & Rubin, 1983). For matching, we used the nearest-neighbour (NN) matching method and ran a logit model, taking into account the number of variables and matching pairs among the various matching methods. NN matching is a matching estimator in which an individual in the treatment group is paired with the observation in the closest comparison group in terms of propensity score (Smith & Todd, 2005). NN matching was performed prior to a regression analysis to minimize selection bias for subjects. The comparison group comprised individuals with basic characteristics similar to those in the treatment group (participants in the Hope Center program in terms of gender, age, contract status, and region).

Second, survival analysis was used to calculate the survival time (i.e., time to reemployment). Survival analysis is a statistical method for analyzing the survival and mortality rates as well as the variables affecting survival until the event of interest occurs, particularly in cases in which the survival time is known. In social sciences, “death” can be used in the sense of resignation, taking office, and the like. In this study, “death” corresponds to the event of taking the first job after being laid off. We used the Kaplan-Meier method to calculate the survival and mortality probability, and each point of an individual event regardless of the interval. Since the Kaplan-Meier method calculates the survival rate at each occurrence of an event, it has the advantage of tracking censorship more accurately than the life table method does; it gives the censored cases occurring in the same period as the event a survival status, and includes them in the analysis (Bland &

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

Altman, 1998; Song & Ahn, 1999).

Third, multiple regression analysis was used to examine wages, time to reemployment, and company size, and logistic regression analysis was used to examine reemployment status, same-industry and same-region employment status, and employment type.

4. RESULTS

Prior to the regression analysis, inter-variable correlations were analyzed to assess multicollinearity between the independent variables. The results are outlined in Table 3. The correlation between independent variables was mostly less than or equal to 0.3 with one exception: the correlation between age and age squared, but it was viewed as an inevitable problem because of the nature of the variable itself. On this note, it was found necessary to include the age-squared term to determine if a nonlinear change according to the subjects' age exists. Therefore, regression analysis was performed by inputting the variables used for correlation analysis.

Table 3. Correlation coefficients between variables.

	1	2	3	4	5	6	7	8	9
1	1								
2	.009*	1							
3	.003	.114**	1						
4	.003	.109**	.992**	1					
5	.004	-.064**	-.244**	-.258**	1				
6	.000	.001	.002	.001	-.075**	1			
7	-.005	-.017**	.023**	.018**	-.279**	-.015**	1		
8	.001	-.079**	-.051**	-.050**	.004	-.009*	-.029**	1	
9	-.066**	.018**	-.238**	-.257**	.121**	.000	.005	.088**	1

1: participation/nonparticipation in the Hope Center program; 2: Gender, 3: Age, 4: Age squared, 5: Region (Geoje), 6: Region (Mokpo), 7: Region (Changwon), 8: Contract worker status in the previous workplace, 9: Previous wage
* p<.05, ** p<.01

.

To evaluate the effect of participation in the Hope Center program on reemployment outcomes of shipyard workers in the employment crisis regions, we generally analysed the reemployment status (Model I), reemployment status for the same industry (the shipbuilding industry) (Model II), and contract worker status at the time of reemployment (Model III) using logistic regression. In this analysis, the other independent variables (gender, age, age squared, region, contract worker status at the previous workplace, and wage at the previous workplace) were controlled. Model I revealed that participation in the Hope Center program did not have a positive effect on the reemployment of laid-off shipyard workers (Wald = 6718.926, p <.001).

Model II represents the analysis results of whether the reemployed shipyard workers entered the same industry. As in Model I, participation in the Hope Center program did not have a positive effect on reemployment in the shipbuilding industry for laid-off shipyard workers (Wald = 460.638, p <.001). This reflects the program's effort to provide job training to make the laid-off shipyard workers eligible for employment in other industries. On this note, the analysis of reemployment statistics for participants in the Hope Center program by the industrial sector revealed that 46.5% of participants and 60.3% of

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

nonparticipants were reemployed in the shipbuilding industry.

Model III shows the analysis results regarding the effect of participation in the Hope Center program on the reemployment contract worker status, which is its dependent variable. Model III revealed that participation in the Hope Center program had a positive effect on the reemployment contract worker status (Wald=110.448, p<.001).

Table 4. Analysis results of the effect of participation in the Hope Center program on employment performance (1)

Variable	Model I			Model II			Model III		
	B	S.E.	OR	B	S.E.	OR	B	S.E.	OR
Participation in HCP	-2.301***	.028	.100	-.503***	.023	.605	.355***	.034	1.427
Gender	.272***	.032	1.313	.379***	.031	1.461	-.203***	.043	.816
Age	.136***	.008	1.146	.323***	.008	1.382	-.175***	.011	.839
Age squared	-.002***	.000	.998	-.004***	.000	.996	.002***	.000	1.002
R_Geoje (Dummy=Ulsan)	-.273***	.026	.761	.353***	.025	1.424	.141***	.037	1.151
R_Mokpo (Dummy=Ulsan)	.498*	.215	1.645	.668***	.177	1.950	-.776*	.367	.460
R_Changwon (Dummy=Ulsan)	.539	.063	1.715	-.182***	.051	.833	-.117	.082	.890
Previous contract worker status	.026	.050	1.026	-.317***	.046	.728	1.144***	.052	3.140
Previous wage	.157***	.040	1.170	1.055***	.048	2.873	-.280***	.060	.756
Constant term	-.329	.295	.720	-13.616***	.339	.000	2.920***	.418	18.543
Obs	49,922			36,687			36,687		
-2 log rank	43537.406			44176.337			24658.168		
Nagelkerke R^2	.305			.134			.052		

(HCP: Hope Center program; R: Region)
* p<.05 , ** p<.01, *** p<.001

To evaluate the effect of participation in the Hope Center program on reemployment outcomes, we analysed the reemployment wage (Model IV), total wage earners of the reemployment company size (Model V), and time to reemployment (Model VI) using Multiple linear regression. As in the earlier analyses for Models I–III, the other independent variable (gender, age, age squared, region, contract worker status at the previous workplace, and wage at the previous workplace) were controlled. Model IV revealed that participation in the program did not have a positive effect on reemployment wage (t=-4.369, p<.001). Model V revealed that participation in the program had a positive effect on reemployment company size (t=6.873, p<.001). That is, a large proportion of the shipyard workers were reemployed in companies larger than their previous company. Model VI revealed that participation in the Hope Center program had no statistically significant effect on the time to reemployment (t=1.477, p>.05). This aspect will be examined in greater detail in Table 5.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

Table 5. Analysis results of the effect of participation in the Hope Center program on employment performance (2)

	Model IV			Model V			Model VI		
	B	S.E.	β	B	S.E.	β	B	S.E.	β
Participation in HCP	-.009	.002	-.023***	157.302	22.887	.038***	3.266	2.211	.008
Gender	.100	.003	.193***	16.578	30.246	.003	7.977	2.924	.015**
Age	.018	.001	1.052***	-73.579	7.786	-.412***	-13.426	.752	-.749***
Age squared	.000	.000	-1.018***	.685	.089	.339***	.133	.009	.655***
R_Geoje (Dummy=Ulsan)	-.047	.002	-.121***	-294.329	24.378	-.073***	-9.471	2.366	-.023***
R_Mokpo (Dummy=Ulsan)	-.088	.015	-.031***	-427.501	175.795	-.013*	20.267	16.041	.007
R_Changwon (Dummy=Ulsan)	-.057	.004	-.068***	-141.636	50.248	-.016**	38.431	4.854	.044***
Previous contract worker status	-.006	.004	-.007	209.373	45.616	.025***	-6.054	4.418	-.007
Previous wage	.024	.004	.034***	-106.941	43.847	-.014*	-28.219	4.223	-.037***
(Constant term)	5.763	.027		2894.552	303.638		666.434	29.265	
Obs	36,687			36,687					
R^2	.078			.013			.020		

(HCP: Hope Center program; R: Region)
* p<.05 , ** p<.01, *** p<.001

For further analysis of the time to reemployment, we chose the Kaplan-Meier method of survival analysis. The analysis showed that the average time to reemployment for program participants was 180 days and 171 days for nonparticipants. However, considering that the nine-day difference is not significant (less than 5%), and that the participation in the Hope Center program had no statistically significant effect on the time to reemployment in the regression analysis, it can be assumed that the time to reemployment is not significantly influenced by participation in the program.

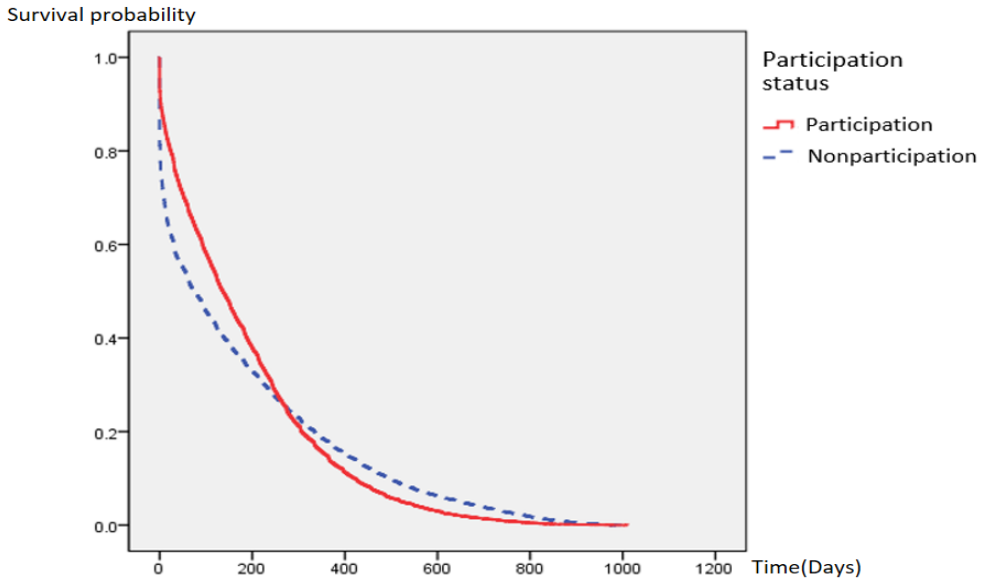
Furthermore, the median, which measures the time required for 50% of all job seekers to get employed, is 137 days for participants and 75 days for nonparticipants. In other words, nonparticipants get reemployed considerably faster than participants in the early phase of unemployment. However, as can be seen in the survival function in Figure 2, the time to reemployment trend tends to reverse when approximately 250 days from retirement, depending on the participation in the Hope Center program. This suggests that, from the time the unemployment period enters the ninth month, participants begin to outpace nonparticipants in finding reemployment.

Table 6. Mean and median of the estimated time to reemployment (in number of days) depending on participation/nonparticipation in the Hope Center program

Participation in the Hope Center program	n	Mean				Median			
		Estimate	S.E.	95% CI		Estimate	S.E.	95% CI	
				Lower	Upper			Lower	Upper
Yes	13,751	180.579	1.474	177.690	183.468	137.000	2.018	133.046	140.954
No	22,936	171.530	1.424	168.740	174.321	75.000	1.834	71.405	78.595
Total	36,687	174.922	1.048	172.868	176.976	102.000	1.391	99.273	104.727

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

Figure 2. Survival function of the time to reemployment depending on participation/nonparticipation in the Hope Center program



5. CONCLUSIONS AND SUGGESTIONS

5.1 Summary of the study results

The purpose of this study is to analyse an example of Korea's ALMP that was implemented in the context of coping with an employment shock in the wake of an industry-specific crisis. To that end, we introduced the case of the Hope Center program that was established by the government to combat the crisis in the shipbuilding industry and the ensuing employment shock, and compared the reemployment outcomes of participants and nonparticipants. The results of the analysis can be summarized as follows.

First, employment services and ALMPs in a region affected by an employment crisis have different effects depending on the reemployment dimension of the laid-off workers due to an industry-specific crisis. The dimensions for which participation in the Hope Center program had a positive effect was the reemployment company size, which serves as a proxy for job quality. On the other hand, no claim can be made that participation in the program always has a positive effect on the reemployment of retirees or laid-off workers in the shipbuilding industry(Yamamoto, 2021). The fact that nonparticipants outperformed participants in terms of reemployment status, contract worker status, and wage after reemployment leads to this interpretation. In addition, given that the Hope Center provides not only employment assistance services, but also services such as unemployment allowance and livelihood support, genuine willingness to participate in the job market may be lower than the statistically-indicated level. This may in part explain the lower reemployment outcomes among participants compared with nonparticipants (Yang & Koh, 2016).

Second, the significance of the Hope Center also lies in the fact that it provides various opportunities for participants to get re-employed. The results of the analysis show that participation in the Hope Center program had a negative effect on reemployment in the same industry, and resulted in a longer mean time to reemployment compared with

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

nonparticipants. This may be interpreted as a poorer reemployment outcome for participants, but there is also room for interpretation. For example, participation in the Hope Center program induced them to actively explore opportunities to develop their career in a different sector and a different region through various employment assistance services, such as vocational training and job matching. This aspect suggests that the process of vocational training and job matching extends the time to re-employment.

This is in line with the result of a previous study showing that improving human capital itself, through training and other interventions, leads to more opportunities for participants (Card et al., 2018). These results are also consistent with the results of the study conducted by Yoon et al. (2018), which found that it is necessary to provide services tailored to the participants, given the different levels of flexibility by age, region, and inter-industry experience, when delivering employment services in a region affected by an employment crisis.

5.2 Research Implications

This study is significant in that it presented an example of an ALMP program in a region affected by an employment crisis in the wake of the crisis in Korea's shipbuilding industry, and performed evidence-based analyses of its achievements, thus providing a precedent to countries in similar situations. Based on the above analysis results, the following may be proposed as implications of an ALMP centering on public employment services implemented in employment crisis regions. First, in the face of deteriorating employment due to a decline in a regional industry, a comprehensive service system is necessary to combat the employment crisis. This is associated with expanding a one-stop shop approach that greatly improves the efficiency of public service delivery, usually including welfare services. In fact, the Korean government designated a cluster of cities with a concentrated distribution of shipyards as high-risk employment crisis regions.

A Hope Center was established in each of these regions to provide comprehensive public services at the personal level, including: employment services, education and training, livelihood support, welfare allowance, and legal support; and community-level services, such as emergency funding. This comprehensive one-stop shop service is effective for achieving the goals of facilitating individual recovery and activating the regional economy through intensive, short-term support, given that the services involve workers in a specific industry, along with their dependents, suffering from a sudden loss of work, and the companies hit by the industrial downturn. This is a typical case of a large-scale problem that individuals incur because of external factors, and is difficult to solve through the affected individuals' efforts of social solidarity (Schmid, 2008).

Secondly, it is crucial to offer employment assistance services that align with the unique characteristics of participants. Despite the relative similarities in gender, age, employment status, and region among participants and nonparticipants in the analyzed Hope Center program, notable disparities were observed in their reemployment outcomes. This discrepancy may be attributed to the higher vulnerability level of participants receiving public assistance services compared to nonparticipants, rather than any shortcomings in the service quality provided by the center itself. Participants joined the Active Labor Market Policy (ALMP) program with expectations of government-provided benefits, demonstrating their proactive commitment to active program participation.

In this process, the service-providing authorities conclude a sort of social contract with them to deliver training and employment services for reemployment (Konle-Seidl, 2009). Furthermore, Korea's insufficient welfare system was compensated for by combining the

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

welfare aspect with employment service delivery (Lee, 2013), which is more acute in employment crisis regions. This is not limited to the Korean situation, but it is inevitable that such a welfare aspect is partially interconnected with an ALMP program during an employment crisis. This highlights the need to provide support tailored to the characteristics and situations of the recipients.

Third, it is crucial to consistently strive for the enhancement of service quality in order to improve employment outcomes at one-stop service centers located in regions impacted by employment crises. Previous research has highlighted that Active Labor Market Policies do not consistently yield positive effects in such regions. In line with these findings, the results of this study did not reveal significantly higher reemployment outcomes among participants in the Hope Center program when compared to nonparticipants. This lack of significant difference could potentially be attributed to factors such as unaccounted participant characteristics or the provision of moderately satisfactory job opportunities facilitated by public employment services.

Given that it is impossible to adjust participants' characteristics, it is necessary to improve the quality of employment services to ultimately enhance the employment outcome. As measures to achieve this goal, typical tasks for policy makers would be active mining of HR supply and demand resources and the improvement of the working staff's service quality. Additionally, the professionalism of public service providers needs improving (Asmuß, 2007).

REFERENCES

[1] Ashenfelter, O., Ashmore, D. and Deschênes, O. (2005), "Do unemployment insurance recipients actively seek work? Evidence from randomized trials in four US states." *Journal of Econometrics* 125, 1-2, 53-75.

[2] Asmuß, B. (2007), "What do people expect from public services? Requests in public service encounters." *HERMES-Journal of Language and Communication in Business*, 38, 65-83.

[3] Bae, K. S. (2016), "Structural crisis of the shipbuilding industry: how to face it." *Monthly Labor Review*, 10, 9–21.

[4] Betcherman, G., Dar, A. and Olivas, K. (2004), "Impacts of active labor market programs: New evidence from evaluations with particular attention to developing and transition countries", *World Bank Soc Prot Discuss Paper*, 402, 1–94.

[5] Björklund, A. and Regnér, H. (1996), "Experimental evaluation of European labor market policy", *In International handbook of Labor Market and Evaluation*, edited by Schmid, G., O'Reilly, J. and Schömann, K.. Adelshot.: Edward Elgar.

[6] Black, D. Smith, J., Berger, M. and Noel, B. (2002), *"Is the threat of reemployment services more effective than the service themselves? Experimental evidence from the UI system"*, NBER Working Paper No. 8825.

[7] Bland, J. M. and Altman, D. G. (1998), "Survival probabilities (the Kaplan-Meier method)", *BMJ* 317, 7172, 1572–1580.

[8] Bonoli, G. (2010), "The political economy of active labor-market policy", *Politics & Society*, 38, 4, 435-457.

[9] Bothe, K., & Decker-Lange, C. (2022), "Globalization from Below: Labor Inequality in the German Shipbuilding Industry, 1960–2000", *Enterprise & Society*, 1-26.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

[10] Brown, A. J. and Koettl, J. (2015), "Active labor market programs-employment gain or fiscal drain*?"*, *IZA Journal of Labor Economics*, 4, 1, 12.
[11] Cahuc, P., and Zylberberg, A. (2004), *Le chômage, fatalité ou nécessité*. Paris: Flammarion.
[12] Calmfors, L. (1993), "Lessons from the macroeconomic experience of Sweden", *European journal of political economy*, 9, 1, 25-72.
[13] Calmfors, L. (1994), *Active labor market policy and unemployment: A framework for the analysis of crucial design features.* http://www.oecd.org/social/labor/33936463.pdf (accessed June 1, 2022).
[14] Calmfors, L. and Skedinger, P. (1995), "Does active labor-market policy increase employment? Theoretical considerations and some empirical evidence from Sweden", *Oxford Review of Economic Policy*, 11, 1, 91-109.
[15] Card, D., Kluve, J. and Weber, A. (2018), "What works? A meta analysis of recent active labor market program evaluations*"*, *Journal of the European Economic Association*, 16, 3, 894-931.
[16] Chan, C. and Zhai, Y. (2013), "Active labor market policies in China – towards improved labor protection?", *Journal of Asian Public Policy*, 6, 1, 10-25.
[17] Chan, R. and Chan, C. (2013), "The shifting boundary between work and welfare – a review of active labor market policies in Hong Kong", *Journal of Asian Public Policy*, 6, 1, 26-41.
[18] Dar, A., and Tzannatos, Z. (1999), *Active labor market programs: A review of the evidence from evaluations.* Washington, DC: World Bank.
[19] Escudero, V. (2018), "Are active labor market policies effective in activating and integrating low-skilled individuals? An international comparison", *IZA Journal of Labor Policy*, 7, 1, 4.
[20] Estevão, M. (2007), "Labor policies to raise employment." *IMF Staff Papers* 54, 1,113-138.
[21] Fertig, M., Schmidt, C. M. and Schneider, H. (2006), "Active labor market policy in Germany—Is there a successful policy strategy?", *Regional Science and Urban Economics* 36, 3, 399-430.
[22] Fossati, F., Liechti, F., & Wilson, A. (2021). "Participation in labour market programmes: A positive or negative signal of employability?", *Acta Sociologica*, 64, 1, 70–85.
[23] Gaure, S.; Röd, K. and Westlie, L. (2008), *The impacts of labor market policies on job search behavior and post-unemployment job quality.* Bonn: IZA Institute of Labor Economics.
[24] Jackman, R., Pissarides, C. and Savouri, S. (1990), "Labor market policies and unemployment in the OECD", *Economic policy* 5, 11, 449-490.
[25] Johannesson, J. (1988), *Labuor market policy and labour market dynamics: The Swedish case.* Delegation for Labor Market Policy Research [Delegationen för arbetsmarknadspolitisk forskning](EFA)
[26] Kamimura, Y. and Soma, N. (2013), "Active labor market policies in Japan: a shift away from the company-centerd model?" *Journal of Asian Public Policy*, 6, 1, 42-59.
[27] Kang, H. S. (2016), "*Crisis of the shipbuilding industry: where did it all start?"* http://www.minplusnews.com/news/articleView.html?idxno=415 (accessed June 1, 2022).

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

[28] Kang, M. (2021), "The transformation of labor force dualism in South Korea's Shipyards, 1974 to the present", *Labor History*, 62, 3, 276-296.
[29] Katz, L. (1994), "Active labor market policies to expand employment and opportunity." *Reducing unemployment: Current issues and policy options*, 239-290.
[30] King, D. (1995), *Actively seeking work?: the politics of unemployment and welfare policy in the United States and Great Britain*. Chicago: University of Chicago Press.
[31] Konle-Seidl, R. (2009), *Activation Policies in Germany. International Seminar Proceedings, Achievements of Activation Policies and Employment Services.* Seoul: Korea Labor Institute.
[32] Korea Offshore & Shipbuilding Association (2018), *Shipbuilding year book.* Seoul: KOSHIPA.
[33] Layard, R. (1997), "Sweden's road back to full employment", *Economic and industrial democracy* 18, 1, 99-118.
[34] Layard, R.; Stephen, N. and Richard, J. (1991), *Unemployment: Macroeconomic Performance and Labor Market.* UK: Oxford University Press.
[35] Lee, D. J. (2013), "Overseas trends and implications of the innovation in the employment service delivery system", *Employment Issue*, 10, 6–25.
[36] Lee, K. Y., Koh, Y. J., Lee, B. H., Jeon, B. Y., and Jung, S. K. (2016), *Foreign cases of regional employment strategies in an employment crisis.* Sejong: Korea Labor Institute.
[37] Lue, J. (2013), "Promoting work – a review of active labor market policies in Taiwan", *Journal of Asian Public Policy*, 6, 1, 81-98.
[38] Martin, J. P. and Grubb, D. (2001), "What works and for whom : A review of OECD countries' experiences with active labor market policies", *Swedish Economic Policy Review*, 8, 2, 9–60.
[39] Nickell, S. (1997), "Unemployment and labor market rigidities: Europe versus North America", *Journal of Economic perspectives*, 11, 3, 55-74.
[40] OECD (1964), "*Recommendation on Active Manpower Policy"*, Paris: OECD.
[41] OECD (2021), "*Designing active labour market policies for the recovery*", Paris: OECD.
[42] O'Leary, C. J. and Wandner, S. A. (2005), "*Do job search rules and reemployment services reduce insured unemployment?*." Upjohn Institute Working Paper, 05-112.
[43] Regnér, H. (1997), "*Training at the job and training for a new job: two Swedish studies"*, Ph.D. thesis, Styockholm University.
[44] Rodríguez-Planas, N., and Jacob, B. (2010), "Evaluating active labor market programs in Romania", *Empirical Economics*, 38, 1, 65-84.
[45] Rosenbaum, P. R. and Rubin, D. B. (1983), "The central role of the propensity score in observational studies for causal effects", *Biometrika*, 70, 1, 41–55.
[46] Schmid, G. (2008), *Full Employment in Europe: Managing Labor Market Transitions and Risks*. UK: Edward Elgar Publishing.
[47] Singh, S. (2023). Role of Relationship in the Mediation of Satisfaction and Loyalty in Logistics Services Context. *Review of Integrative Business and Economics Research*, *12*(3), 85-102.
[48] Skedinger, P. (1994), "Sweden's Labor Market Policy: A Remedy for Unemployment?", *Vocational Training European Journal*, 2, 25-29.
[49] Smith, J. A. and Todd, P. E. (2005), "Does matching overcome LaLonde's critique of nonexperimental estimators?", *Journal of econometrics*, 125, 1-2, 305–353.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

[50] Song, K. I. and Ahn, J. U. (1999), *Survival Analysis using SPSS for windows*. Seoul: SPSS Academy.
[51] Taylan, M. (2022). "Impact of Covid-19 on Shipbuilding and Shipping Industry", *19th International Congress of the International Maritime Association of the Mediterranean, İstanbul/TÜRKİYE*, 1, 285-292.
[52] Thomsen, S. L. (2009), "*Job search assistance programs in Europe :Evaluation methods and recent empirical findings"*, FEMM Working Paper, 18.
[53] Yamamoto, K. N. (2021). Exploring Retirement Planning in Japan. *Review of Integrative Business and Economics Research*, 10(s2), 123-140.
[54] Yang, J. Y. and Koh, H. W. (2016). "The Determinants of Middle-aged and Elderly Job Seeker`s Employment: in the target age group (50–85 years) of public employment services", *Korean Corporation Management Review,* 69, 69–90.
[55] Yoon, Y. K.; Kang, D. W. and Yoo, D. H. (2018), *Basic research on job-to-job movement mapping of the industries in the employment crisis region*. Sejong: Korea Labor Institute.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)