
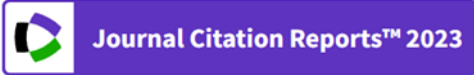



Breaking the Glass Ceiling: Empowering Women in the Korean Labor Market after COVID-19

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Breaking the Glass Ceiling: Empowering Women in the Korean Labor Market after COVID-19

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ABSTRACT

The COVID-19 pandemic has caused significant damage to women's labor. This study analyzes the situation of the Korean labor market from various angles using available national statistical data. While the employment rate fell and the unemployment rate rose due to COVID-19, the unemployment rate among young people in their 20s and the elderly in their 50s and older rose. Gender segregation in occupations and industries, a chronic problem in the Korean labor market, has intensified and also increased the gender wage gap. It was found that the gender wage gap was large in jobs where many women were engaged. Overall, the number of non-regular workers increased in jobs where women were concentrated, and the number of employed people among vulnerable groups decreased. Online classes and telecommuting due to social distancing have increased women's housework and childcare burden. As a result, the employment rate of working women with young children fell. In this situation, the mismatch between job seekers and job openings also intensified, showing that the social employment system was not working properly. COVID-19 has adversely affected women in the labor market in Korea, especially elderly women with low education levels and non-regular female workers. The damage caused by the 1997 and 2008 economic crises was also concentrated on women's labor, yet Korean society did not learn from those experiences. Although many efforts have been made over the past 10 years to resolve discrimination in the labor market and prevailing gender norms in Korean society, their effect has been insignificant. This study emphasizes the need for a more detailed and active women's labor policy. It also presents the need for a social system that properly responds to pandemic situations like COVID-19.

Keywords: women's labor, the vulnerability of women's work, economic crisis, the effect of COVID-19.

INTRODUCTION

The global economy has entered a recession rapidly due to the impact of the coronavirus disease (COVID-19) pandemic in 2020. In the evaluation of "the worst crisis since World War II" (World Bank, 2020), these economic difficulties are expected to continue. The vulnerability and hardship of women's labor have been exacerbated by COVID-19 (EIGE, 2021; ILO, 2021).

In the case of Korea, the crisis of women's labor during the 1997 foreign exchange crisis and the 2008 financial crisis have also been confirmed. After the IMF financial crisis in 1997, Korea saw the number of both employed and unemployed females decrease compared to men, and their participation rate in economic activity rate itself plunged. The financial crisis is characterized by a

sharp drop in both women's participation rate and absolute number compared to men (males decreased by 0.4% points; the absolute number increased by 130,000; women decreased by 2.5% points, and the absolute number decreased by 330,000). In general, if the labor market infrastructure, such as unemployment insurance, is well-equipped, employees will remain in the labor market even if they lose their jobs, increasing the unemployment rate. However, the decrease in both employed and unemployed is due to the fact that women give up employment and exit the labor market. In the face of an economic crisis, Korean female workers are showing a path to the economically inactive population because they believe that new employment opportunities will be rare (Kim, 2007).

In another aspect, it is also worth noting that the decrease in the number of employed people was higher for women than for men. This suggests that the industrial sector, which has a high proportion of female workers, was hit harder during the economic crisis in the process of employment adjustment along with many small and medium-sized enterprises (SEMs) going bankrupt during that period. This may be the industry's impact, but it also implies the possibility that female workers were prioritized as personnel reduction targets when restructuring in individual companies. In fact, the rate of loss of employment insurance eligibility for women and men can be seen in 1997-1998: financial insurance (20.9% for women, 13.5% for men), real estate and rental services (20.4% for women, 15.9% for men), education services (26.2% for women, 15.3% for men). Therefore, it indirectly shows that female priority dismissal existed in restructuring in these areas (Cho, 1999).

As such, it was found that the economic crisis in Korean society had a greater negative effect on women's labor than on men through the previous two economic crises. Many scholars pay attention to the separation of gender roles in the labor market due to social gender role identity for the reasons (Giavazzi et al., 2013, Fernandez, 2007). This means that the social attitude toward women's labor is significantly related to labor market performance. With the modernization of society and the development of the economy, the modern concept of gender equality introduced in Korea with the Basic Act on Gender Equality being implemented in July 2015. However, female scholars point out that the fixed traditional gender roles for women still heavily dominate Korean society (Park et al., 2021). Even after 10 years have passed since the 2008 financial crisis, the economic crisis caused by COVID-19 had a greater impact on women (UN Women, 2020), and socio-economic development has not overcome traditional cultural values like gender norms.

With the basis of strong cultural gender norms, the introduction of 'neoliberal' economic system and service industrialization have deepened the vulnerability and hardship of women's work in Korea. Labor market flexibility based on neoliberalism has led to an increase in female irregular workers and an increase in employment instability. Service industrialization accelerated the polarization of the labor market by creating low-quality sub-service jobs and mass-producing a number of non-regular workers. These situations have worked integrally with gender norms in Korea, and intensified problems in gender segregation in jobs and industries, the polarization of women's labor, and career interruption. Such changes in socioeconomic have created environmental conditions in which the Korean women's labor market is bound to be more vulnerable to crisis.

Therefore, this study aims to reveal the changes caused by COVID-19 in depth. In particular, we

would like to analyze how vulnerable Korean women's labor is as revealed by the social structural causes and social dominant gender norms. Through this, we would like to explore what supportive policies are necessary for women's labor, which is more sensitive to the economic crisis. In order to achieve the research goal, this study aims to systematically analyze the impact of COVID-19 on the Korean labor market based on the gender perspective using data available at the current level. Two major national data collections were used for multifaceted analysis. First, the National Statistical Office's 'Local Area Labor Force Survey', the most representative data that can analyze changes in the local labor market before and after COVID-19, is used as key analysis data. In addition, the 'Employment Administration Statistics' of the Korea Employment Information Service (KEIS) were analyzed to understand the gender difference in the status of employment maintenance support payments and the status of unemployment benefit recipients.

Using this, it was intended to understand the impact of COVID-19 on the Korean women's labor market in multiple ways. First, it was intended to confirm whether COVID-19 had a relatively more negative effect on women's labor than man's labor. Second, factors that lead to vulnerability in women's labor through previous studies, such as differences between occupations and types of employment, were also considered and analyzed. In addition, in the analysis process, this study attempts to compare the effects of dividing regions into metropolitan areas and non-metropolitan areas. Considering the relatively excellent human resources and the situation in Korea where companies are concentrated in the metropolitan area, it was intended to check how the impact on women's labor in the metropolitan area and non-metropolitan areas will be, and to obtain important implications for policy directions on women's labor support.

ANALYSIS

1. The Impact of Economic Crisis on Women's Labor Market – Analyzing the Local Area Labor Force Survey

1) Changes in Employment and Unemployment: Labor crisis due to Covid-19 concentrated on women

The employment rate of women was 51.4% in 2019 and decreased by 49.8% in 2020, which decreased by 1.6%p in a year. Looking at the difference by region, it was found that the wide area decreased by 1.4% points from 50.5% to 49.1% and the non-wide area decreased by 1.8% points from 52.2% to 50.4% in the non-metropolitan area. The employment rate of women recovered to 51.2% in 2021, but it can be seen that it was due to an increase in the employment rate of those in their 60s or older. Considering that most of those employed in their 60s or older consist of daily or non-regular workers, the female employment rate seems to have risen numerically. However, the unemployment rate of the core working age has not been overcome and the overall quality of employment has declined. By region, the economic activity rate and employment rate in the non-metropolitan area are higher and the unemployment rate in the non-metropolitan area is lower than that of metropolitan areas. There is more employment in the metropolitan area than in the non-metropolitan area, and there are numerous prospects for employment, nonetheless, the quantitative aspect of employment in the metropolitan area has decreased dramatically as a result of COVID-19.

Table 4: Economic index by gender and region (2019-2021)

		Economic activity rate		Employment rate		Unemployment rate	
		Female	Male	Female	Male	Female	male
Metropolitan	2019	52.9	72.1	50.5	68.3	4.7	5.2
	2020	51.7	70.3	49.1	66.9	5.1	4.9
	2021	53.0	71.0	50.5	67.9	4.8	4.4
Non-metropolitan	2019	54.2	75.4	52.2	72.3	3.7	4.2
	2020	52.3	73.8	50.4	71.0	3.5	3.8
	2021	53.6	74.3	51.8	71.5	3.5	3.8

Source: Local Area Labor Force Survey by the National Statistical Office

Looking at the unemployment rate of women by age group, the unemployment rate of women under their 30s, which was high even before COVID-19, continued to be high, and the economically inactive population who wanted to work also increased significantly (2.3% in their early 20s and 3.0% in their late 20s). These results show that the difficulty of employment for young people, especially young women, has been aggravated by COVID-19. Interestingly, in the 25-39-year-old group, the unemployment rate fell in reverse after social distancing caused by COVID-19. However, the unemployment rate increased in the group between the ages of 40 and 59. What does not return to the 2019 level in 2021 is the 35-49-year-old group, which suggests that the cause and policy support are needed.

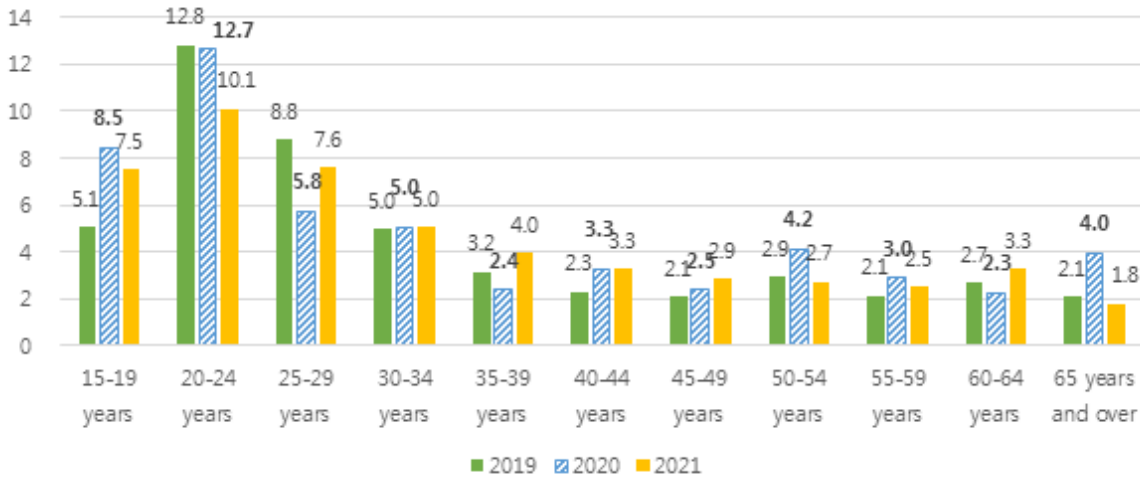


Figure 1: Unemployment rate of women by age group (2019-2021)

Source: Local Area Labor Force Survey by the National Statistical Office

2) Occupational and industrial distribution: Occupations and industrial gender segregation in non-metropolitan areas are more serious than in metropolitan areas, and those in metropolitan areas are intensified due to COVID-19

Looking at the change in gender composition ratio before and after COVID-19, the proportion of

women in female-dominated occupations and industries increased, while the proportion of women in occupations and industries that had relatively few women, decreased. This suggests that economic crises caused by COVID-19 have served to strengthen gender segregation in the labor market. It also implies that there was a cautious approach to hiring women or getting a job in male-dominated occupations and industries.

In order to clarify this more, the Index of Dissimilarity (ID) as a measure of occupational gender segregation was analyzed. The ID value for occupation in the metropolitan area increased from 0.259 in 2019 to 0.262 in 2021, and the ID value for the industry increased from 0.308 in 2019 to 0.311 in 2021 since the COVID-19 pandemic. In non-metropolitan areas, the ID value for occupation slightly decreased from 0.287 in 2019 to 0.284 in 2021, and the ID value for the industry also fell from 0.319 in 2019 to 0.318 in 2021. However, the absolute values for the non-metropolitan area are higher than in metropolitan areas regardless of the measurement period.

In the process of recovering from the COVID-19 crisis, occupational and industrial gender segregation was intensified in non-metropolitan areas. Looking at the gender employment rate and economic activity participation rate by region, it was analyzed that the situation in non-metropolitan areas was better than in metropolitan areas at the same time, but occupational and industrial gender segregation intensified during the same period. Therefore, it suggests that consideration is needed to resolve gender segregation in policy support after COVID-19 in non-metropolitan areas.

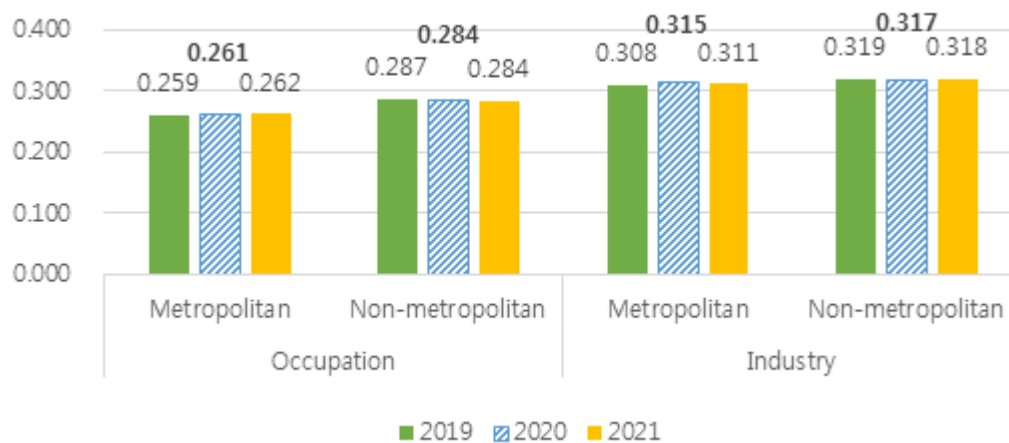


Figure 2: Occupational and Industrial Gender Segregation (Index of Dissimilarity) by region (2019-2021)

Source: Local Area Labor Force Survey by the National Statistical Office

3) Ratio of wages and female workers by occupation and industry: The average wage of women in women-dominated occupations and industries is low and the gender wage gap is large.

In order to confirm the above, wage differences between women and male workers in non-metropolitan areas and the proportion of workers were analyzed. The gender wage gap can be seen as a symbol of the reality faced by women in the workplace. It is determined by personal factors such as a worker's educational background, career, and years of service and structural

factors such as industry, employment type, company size, and other unexplained factors. It is assumed that the unexplained part includes discrimination. Korea is the country with the highest gender wage gap of 32.5%, which is very high compared to the OECD average of 13% (2020). As a result of checking the wage gap by region, the wage gap is higher in non-metropolitan areas than in metropolitan areas.

The wage difference in the metropolitan area decreased by 1.5% points from 35.7% in 2019 to 34.2% in 2021 but is still high. The wage difference in non-metropolitan areas decreased by 1.3% points from 38.5% in 2019 to 37.2% in 2021, but the absolute figure is higher than in the metropolitan area. The average wage or gender wage gap for women varies by occupation and industry. Particularly in female-dominated occupations and industries, the average wages for women are lower, and the gender wage gaps are larger. It is very ironic that it is more difficult for women to achieve economic independence and social stability in occupations and industries where women are concentrated.

As a result of examining the analysis results of economic activity participation rate, employment rate, unemployment rate, and gender segregation by industry and occupation, the economic impact caused by COVID-19 was significant for women. In addition, as all aspects representing the vulnerability of women's labor appear more seriously in non-metropolitan areas, it shows the need to check the women's labor support system in those areas.

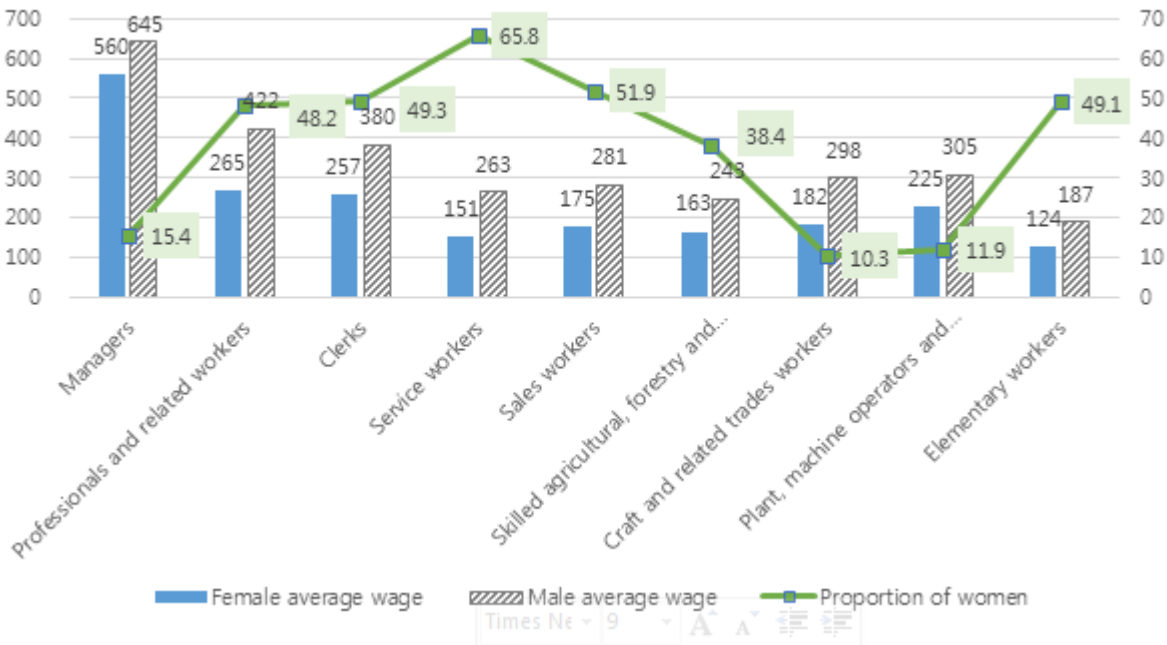


Figure 3: Proportion of women employed in occupations and average monthly wage by gender in non-metropolitan area (2021)

Source: Local Area Labor Force Survey by the National Statistical Office

4) Employment status: An increase in the number of non-regular contractors in women-

dominated occupations.

In Korea, the proportion of female non-regular (fixed-term employment) workers among wage workers was already higher than that of men. However, there is a noticeable change that the proportion of non-regular workers has increased more due to COVID-19. In particular, the proportion of female non-regular workers in non-metropolitan areas is higher than in metropolitan areas, and the increase ratio is higher in metropolitan areas than in non-metropolitan areas.

Women's non-regular workers in the metropolitan area increased by 4.4% points in a year from 20.8% in 2019 to 25.2% in 2021. In the case of non-metropolitan areas, there was an increase from 24.7% in 2019 to 27.2% in 2021, an increase of 2.5% points over a year. This increase in the proportion of non-regular workers was particularly high in the group of office workers, service workers, and sales workers where women were concentrated. On the other hand, in the group of managers, craft and related trades workers, and plant, machine operators, and assemblers, the proportion of stable employment increased slightly. In other words, this means that employment instability in occupations where relatively many women are employed has increased. In addition, as analyzed above, it is worth noting that gender occupational and industrial segregation in non-metropolitan areas has intensified since COVID-19, and likewise, the ratio of female non-regular workers has risen in non-metropolitan areas. It shows the vulnerability of women's labor due to gender job segregation has been confirmed again.

5) Occupational status: Decreased female Employment concentrated on vulnerable groups

In addition, it was analyzed how these effects appeared according to the characteristics of individual women. Due to the spread of COVID-19, the proportion of regular workers among female employees increased (51.2% in 2019 → 55.7% in 2021), and the proportion of temporary and daily workers decreased (26% → 16.9%). In other words, the decrease in female employees due to COVID-19 was concentrated on temporary and daily workers. In particular, the number of temporary and daily workers decreased significantly in the categories (high age, household head, bereavement, divorce, and low education) that were disadvantageous to the labor market before COVID-19. This means that the most vulnerable group in the labor market was most negatively affected by employment in the situation caused by the economic crisis.

Table 5: Women's distribution of employment status by female individual characteristics in metropolitan area (2019-2021)

	2019			2020			2021		
	Regular workers	Temporal workers	Non-wage workers	Regular workers	Temporal workers	Non-wage workers	Regular workers	Temporal workers	Non-wage workers
Total	53.6	27.6	18.8	56.9	24.4	18.7	58.0	24.0	18.0
25~39 yrs.	70.6	19.0	10.5	73.0	16.8	10.3	73.6	16.1	10.4
40~54 yrs.	52.5	26.8	20.7	56.9	22.3	20.9	57.9	21.9	20.2
55~69 yrs.	30.6	41.6	27.9	34.9	38.1	27.0	37.0	37.8	25.2
Householder	44.8	37.8	17.4	48.9	33.1	17.9	50.5	33.1	16.4

spouse	50.4	27.5	22.1	53.4	24.6	22.0	53.8	24.5	21.7
Other family member	61.7	30.7	7.6	63.1	28.7	8.2	62.5	29.4	8.1
single	64.3	27.9	7.9	65.8	25.6	8.6	65.5	25.9	8.6
married	49.6	28.3	22.1	52.7	25.1	22.2	53.5	24.9	21.6
bereavement	21.0	60.3	18.7	25.7	54.9	19.4	25.2	59.0	15.9
divorced	38.0	42.7	19.3	42.1	38.9	19.0	42.4	38.8	18.8
Under middle school graduated	20.5	56.9	22.6	22.8	54.2	23.1	23.5	56.3	20.2
High school graduated	40.5	39.6	19.9	43.4	36.0	20.6	43.6	36.4	20.0
College graduated	65.3	21.0	13.8	68.2	18.2	13.6	67.7	18.6	13.7
University graduated or higher	67.6	17.8	14.6	70.1	15.3	14.6	70.5	15.5	14.0
<i>Source:</i> Local Area Labor Force Survey by the National Statistical Office									

6) Women's Career interruption: Employment Rate Drops due to Increased Home Care Time and Child Care Burden

Online classes and telecommuting due to social distancing have increased the time of home care and the burden of child care for working women. Looking at the employment rate by age of children, the increase in online classes due to social distancing is affecting the female employment rate. The employment rate of women with children under elementary school age fell significantly from 2019, especially for women with preschool children under the age of 6 decreased by 1.6%, and for women with children under elementary school age decreased by 2.7%. During the implementation of social distancing due to COVID-19, the government implemented an emergency childcare policy. As a result, the care issue for infants and toddlers attending daycare centers received some help, but it is believed that the reduction rate was greater because they were not subject to such policy support for elementary school children.

It is confirmed that the employment rate of women with children in elementary school has not recovered to the pre-COVID-19 level even in 2021. On the other hand, in the case of women with children over the age of 13, the employment rate fell by about 0.6% in 2020 but recovered to the level of 2019 in 2021. This means that the vulnerability of Korean women's labor is greatly related to care issues, and suggests that a stronger social protection system should be operated in the event of an economic crisis.

Table 6: Employment rate of women with children by age (2019-2021)

Children's age	2019	2020	2021
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	Number of employed women (thousand)	Employment rate (%)	Number of employed women (thousand)	Employment rate (%)	Number of employed women (thousand)	Employment rate (%)
total	2,827	57.0	2,672	55.5	2,606	56.2
Under 6	1,081	49.1	966	47.5	892	47.5
7~12 yrs.	947	61.2	928	58.5	939	59.0
13~17 yrs.	800	66.1	778	65.3	775	66.1

Local Area Labor Force Survey by the National Statistical Office

In addition, according to the study on COVID-19 and changes in child care (2020) in Korea, there was a big difference in the average daily childcare time between men and women. In the case of double-income women, before COVID-19, women responded that they spent 1.5 times more time caring for their children than men (spouses). On the other hand, after COVID-19, women responded that they spent about twice as much time on childcare as men. However, in the case of men, it increased by 48 minutes compared to before and after. It reveals that the time spent caring for the children of men (spouses) has hardly increased in the face of increased telecommuting and short-term work.

Table 7: Time difference on child care before/after COVID-19 by gender (2020)

	Before COVID-19	After COVID-19
Double income women	5:03	6:47
Housewife	9:06	12:38
Double income men	3:08	3:54
Single income men	3:01	3:30

Source: Eun(2020). COVID-19 pandemic and changes in childcare, labor review

2. COVID-19 and Changes in Employment Administration Statistics

1) Changes in job search, employment, and employment rates: a decrease in the number of the job opening and a significant increase in the number of job seekers

While the number of women employed and job openings using the Worknet¹ continues to decrease, the number of women job seekers continues to increase. Looking at the data, despite the significant increase in the number of job seekers, there is a mismatch between job openings and job seekers.

In terms of the number of female job seekers, the numbers in both metropolitan and non-metropolitan areas have increased significantly in 2021. The number of female job seekers in the metropolitan area increased by 21.1% in two years from 88,031 (April 2019) to 106,626 (April 2021). Those in non-metropolitan areas were 06,640 (2019.4.4) to 132,629 (2021.4.4), an increase of 24.4% in two years, showing a 3.3% points larger increase than in the metropolitan area.

¹ Employment information system by Korean Ministry of labor and employment(www.work.go.kr)

Table 8: Number of female job seekers, employment and rate by region (2019-2021)

	Metropolitan area			Non-metropolitan area		
	Number of job seekers	Number of employment	Employment rate	Number of job seekers	Number of employment	Employment rate
2019.4.	88,031	37,175	42.2	106,640	57,979	54.4
2020.4.	88,550	26,483	29.9	111,525	42,489	38.1
2021.4.	106,626	39,836	37.4	132,629	61,309	46.2

Source: employment administration statistic by Korea employment information service, every month

It shows the female employment rate (number of employment/job seekers), which fell significantly in 2020 compared to 2019, increased in 2021. However, since the number of job seekers increased significantly in 2021 compared to 2019, it can be analyzed that the employment rate has not recovered to the level in 2019. In particular, the employment rate decreased by 4.8% points in two years in metropolitan areas, while it decreased by 8.2% points in non-metropolitan areas, confirming that there is a greater decline. It indicates that while the mismatch between job search and employment is maintained, the problem of mismatch in the labor market is more serious in non-metropolitan areas than in metropolitan areas.

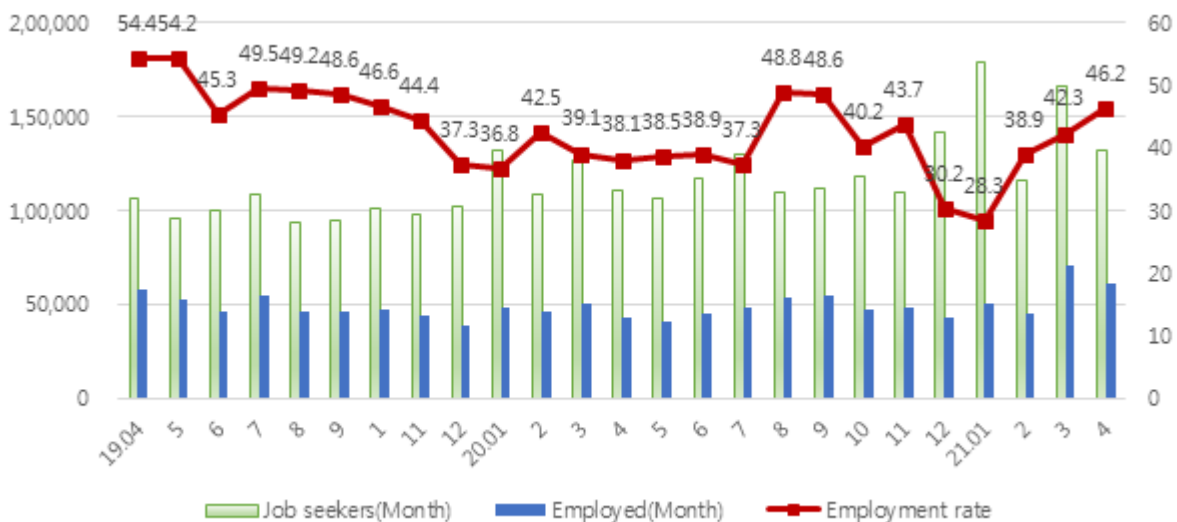


Figure 4: Number of female job seekers, employment and employment rate of non-metropolitan area (2019-2021)

Source: employment administration statistic by Korea employment information service, every month

2) Employment Insurance Holder Status: Increasing Concentration of Women in Small and Medium Businesses

Next, the number of employment insurance subscribers before and after COVID-19 was analyzed. Compared to 2019, the number of employment insurance subscribers continued to increase in 2021, and the proportion of women among all insured people also increased. However, the increase in the proportion of women at workplaces with 30-299 workers is noticeable. In other words, the concentration of women in small and medium-sized businesses, which had many women even before COVID-19, has intensified. The increase in the female employment rate in small and medium-sized workplaces with lower wages compared to larger workplaces suggests that the employment size has increased, but not in terms of quality.

3) Employment maintenance support fund: a large increase throughout the country Concentrated in metropolitan areas by region

The Korean government paid employment maintenance subsidies to overcome the employment crisis caused by COVID-19. As of April 2021, the number of payments for employment maintenance support increased by 64.7% (metropolitan area) and 49.7% (non-metropolitan) compared to the same month in 2019, and the number of payments increased by 164.1% (non-metropolitan) and 89.6% (metropolitan). The increase in metropolitan areas was higher than that of non-metropolitan areas. According to the "Local Area Labor Force Survey," the proportion of employees receiving employment support was high in industries (wholesale and retail, educational service, lodging and restaurant, and manufacturing) where the proportion of workers decreased significantly. In addition, 46 per cent of the support for the "business facility management, business support, and rental service industry," which includes the travel industry, was the largest.

Unfortunately, since this data is an area where gender-separated data are not provided, it is difficult to confirm the gender implications of employment support funds. However, it can be assumed that the increase in employment support funds in industries with high concentrations of women is because the industry has been hit significantly by COVID-19, and the support funds to overcome it were large. Gender segregation at work, which is intensifying in Korea, can be hit harder than other jobs in an economic crisis such as COVID-19, and consequently increases the vulnerability of women's work.

4) Current status of unemployment benefits and participation in training for the unemployed: a significant increase in women

In relation to employment insurance, it was intended to confirm the vulnerability of women's labor in other aspects through the supply and demand of unemployment benefits. Looking at unemployment benefit recipients from 2019 to 2021, the growth rate of women was higher than that of men. In addition to this ratio, the total number of unemployed people receiving unemployment benefits is higher than that of men. At a time when the participation rate in economic activities has a difference of about 20% points, this figure indicates that the unemployment problem for women is more serious. In addition, when looking at the reasons for the recipient's resignation, women mainly apply for involuntary resignation, and men apply for unemployment benefits due to reasons such as retirement age or voluntary resignation. In other words, it can be confirmed that in a situation where companies are experiencing a crisis,

companies view women's labor as incidental and recommend retirement.

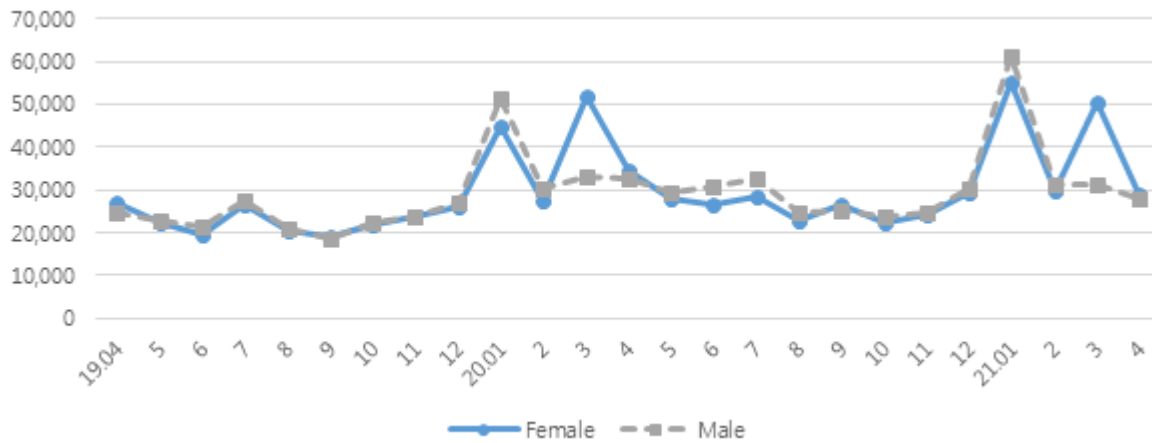


Figure 5: Number of unemployment benefit recipients by gender in the non-metropolitan area (2019-2021)

Source: employment administration statistic by Korea employment information service, every month

CONCLUSION AND DISCUSSION

This study attempted to analyze how the pandemic of COVID-19 affected women's labor. The flexibility of the Korean labor market, which began in the 1990s due to neoliberalism and the progress of service industrialization, deepened gender inequality. On top of that, the traditional gender role identity, which has been fixed in Korean society, all worked together to complicate problems such as gender segregation, labor instability, and career interruption.

In this study, various national statistical data were used to analyze how the underlying problems regarding Korean women's labor intensified due to COVID-19. As a result of the study, it was confirmed that the labor crisis caused by COVID-19 was concentrated on women. This labor crisis was more pronounced in the elderly non-regular workers with low educational backgrounds as pointed in other studies (Kim & Lee, 2022). The employment rate and economic activity participation rate of women fell, the unemployment rate rose, and employment stability fell, especially among the vulnerable. In addition, gender segregation, and the wage gap widened nationwide, and this problem was more pronounced in non-metropolitan areas than in metropolitan areas. In addition, online classes and telecommuting due to social distancing increased the burden of women's care, resulting in an increase in absolute time spent on housework, and women with children under the age of 13 were forced to choose career breaks.

This phenomenon is very similar to the adverse effects on women's labor, which occurred in the two economic crises of 1997 and 2008. During the economic crisis, many women lost their jobs and left the labor market, or the number of female non-regular workers increased, strengthening the fragility of the labor market, and the slow recovery of many indicators of women's labor after the economic crisis is very similar. In addition, as the economic crisis is one caused by infectious diseases, this trend is expected to continue for some time as it continues to hinder the recovery

of the large-scale women's service industry before COVID-19. In conclusion, lessons from the last two economic crises have not been learned in Korean society, and the vulnerability and hardship of the Korean women's labor market have once again been revealed due to COVID-19.

Based on these analysis results, this study intends to make the following policy suggestions. First, a more diverse social safety system is called for since it has been established that women are disproportionately affected by the loss of jobs and income caused by COVID-19. As the shock is more concentrated on young women, drastic measures against the labor crisis on young women are required (Lee & Lee, 2021). The Korean government's response to the crisis included strengthening the employment of full-time employees. However, as the proportion of women working temporarily, daily, or part-time is high, more detailed and active measures are needed for the vulnerable in the labor market.

Second, the government's support policy needs to be centered on industries and targets that continue to suffer from sluggish employment and income decline due to COVID-19. It was analyzed that the damage caused by COVID-19 was greater in female-dominated jobs, such as social service jobs and educational jobs, and the impact has not yet recovered. In addition, it revealed that the impact was large in small businesses where women's employment was concentrated. Therefore, the government needs differential support depending on the industry and size of the company. Overall, it is necessary to implement policies for groups in relatively poor employment environments in economic crises such as COVID-19.

Third, the career interruption problem, which the Korean government has been making efforts to solve, has once again been revealed to be serious due to COVID-19. Due to the gap in caring for young children, the number of women who chose career breaks increased, and telecommuting added to the burden of housework for women. A 30-45-year-old woman's leave from the labor market, where care is concentrated, leads to a career interruption, resulting in a loss of national human capital in the long run. Therefore, in order to prevent women's career interruption in an economic crisis caused by pandemics such as COVID-19, active policy efforts for women's employment maintenance and career development are needed. Along with strengthening public childcare services to address the urgent demand for child care, a comprehensive support service system should be established to prevent career interruption.

Fourth, this study once again confirmed the high gender occupational and industrial gender segregation in Korea and the resulting gender wage gap. It was also revealed how vulnerable the global economic crisis such as COVID-19 is to women's labor in the labor market where such issues exist. Post-COVID policy tasks should be carried out in the direction of solving these structural problems. Two policy approaches are required to lower the gender wage gap by increasing the average wage level of women. First, a legitimate evaluation and institutional reorganization of the labor value of most female-dominated occupations should be carried out. Second, it is necessary to promote ways to expand the number of women into relatively high-wage and underrepresented occupations or industries. In addition, it was found that gender segregation at work was more serious in non-metropolitan areas than in metropolitan areas. Considering that local governments have relatively large policy efforts for women's labor in large metropolitan areas, efforts to find the cause and solution need to be added to women's labor problem in non-metropolitan areas.

This study confirmed that the impact of job and income reduction due to COVID-19 was concentrated on women. In particular, the high unemployment rate is different from the impact of the two previous crises. Moreover, the need for the government to actively respond to the economic crisis caused by COVID-19 by confirming the influence of the structural gender segregation of jobs and industries. It was found that the decrease in the number of employed people due to COVID-19 mainly appears in unstable jobs, but it is regrettable that details cannot be confirmed due to the limitations of the data used in this study. If changes in freelancers or special-employment workers influenced by COVID-19 would be included in this analysis, the employment shock on precarious jobs would be even greater. Therefore, a new approach is needed to encompass new forms of labor in national statistics. In addition, with the enforcement of the Framework Act on Gender Equality in 2015, national statistics are being investigated separately by gender, but there are still limits to in-depth analysis of the cause and consensus of vulnerability in women's work. Therefore, it is necessary to redesign the national statistical survey so that it can be investigated from a gender-cognitive perspective in more detail. A practical post-corona women's policy based on data should be prepared by regularly observing and tracking women's vulnerabilities in the labor market. Experts point out that pandemics similar to COVID-19 can occur repeatedly. Therefore, it is necessary to establish a solid response system to properly respond to this crisis in Korean society.

Declaration of Conflicts of Interests

The authors declare that they have no conflict of interest.

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