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Research Title

A Study on the Relationship between Regional Gender Characteristics and Population Decline

Principal Investigator

Ki-taek Jeon, Senior Research Fellow



Gender Characteristics and Policy Challenges in Depopulating Regions

Abstract

- ▶ This study reviews international cases to develop policy measures aimed at promoting the in-migration of young women to depopulating regions and increasing the number of births. Drawing on a range of statistical data, it examines gender-specific demographic characteristics in depopulating and non-depopulating regions, as well as gender differences in employment, the status of women, and conditions related to childbirth, childcare, and education. In addition, focus group interviews were conducted with young women living in major depopulating regions to identify perceived gender disparities and related policy needs.
- ▶ Based on these findings, the study proposes several policy directions: improving the indicators used in the depopulation index; strengthening job creation measures for young women under the Master Plans for Responding to Depopulation Regions; expanding the number of family-friendly certified companies to foster a culture of work-life balance in depopulating regions; addressing gaps in access to healthcare services; strengthening support for asset building among young women; reducing regional disparities in childcare infrastructure; and publicizing successful settlement experiences of women in depopulating regions.

Youth Gender Pay Gap by Municipality (city/county/district) (2023)



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1 Background and Key Issues

- ▶ The government has been actively addressing the crisis of regional depopulation driven by low fertility and population aging by introducing various special provisions and fiscal support measures for depopulating regions. To this end, such regions are designated on a five-year cycle, and the First Master Plan for Responding to Depopulation Regions has been established and implemented as part of a comprehensive policy response.
- ▶ Given that the outmigration of young women is a major contributing factor to regional population decline, it is essential to develop gender-responsive policy measures that enhance demographic vitality in depopulating regions. Such measures are expected to contribute to expanding the female population and increasing fertility rates in these areas.
- ▶ The purpose of this study is to analyze the relationship between gender gaps, the female population, and fertility rates, with a focus on depopulating regions. Based on this analysis, the study proposes policy measures to expand the female population and raise fertility levels in these regions.

2 Findings and Analysis: International Case

- **International Case: Tochigi Prefecture, Japan - ‘Business strategies for creating Jobs and industries attractive to women’ (March 2024)**
 - ▶ In Tochigi Prefecture, both young men and women in their late teens to early thirties have continued to migrate to major metropolitan areas such as Tokyo for education and employment. In particular, the outmigration of women has been significantly higher than that of men. As a result, depopulation, the contraction of regional economic activity, and labor shortages have emerged as critical policy challenges.
 - ▶ Tochigi Prefecture identified one of the key drivers of female outmigration as the mismatch between local employment conditions and the types of work and lifestyles preferred by women. In response, it formulated a comprehensive strategy aimed at creating employment opportunities and industrial structures that are more appealing to women.
 - ▶ The ‘Program Strategy for Creating Employment and Industries Appealing to Women’ is structured around two main pillars: (1) three core policy directions for aligning jobs with women’s preferences, and (2) two complementary policy areas to attract and support working women.
 - ▶ First, the three core policy directions for creating jobs that align with women’s preferences are as follows: (1) Promoting employment and industries appealing to women; (2) Enabling preferred work arrangements for women; (3) Supporting women’s career development.
 - ▶ More specifically, under ‘promoting employment and industries appealing to women,’ the prefecture supports the development of emerging sectors preferred by women, such as information and communications technology (ICT), while expanding women’s participation in industries including manufacturing, healthcare, and social welfare.

- ▶ Under ‘enabling preferred work arrangements,’ key measures include promoting women’s advancement and work-style reform within companies, expanding flexible work arrangements, and promoting dual-earner households and shared caregiving responsibilities to support work-family balance.
- ▶ Under ‘supporting women’s career development,’ policies focus on cultivating female leadership in regional industries, strengthening career advancement support systems, and assisting women in securing employment aligned with their career aspirations.
- ▶ Second, the two complementary policy areas to attract and support working women include: (1) Support for in-migrating women: the prefecture has established a stage-based support system tailored to different phases of relocation and provides local orientation programs to facilitate social and cultural integration, particularly for younger women. (2) Support for marriage and childcare: policy measures include assistance for individuals seeking marriage, as well as the provision of seamless support from pregnancy through childrearing, designed to ensure seamless access to care services.

● Gendered Characteristics of Regions Experiencing Depopulation

- ▶ This study compares the characteristics of depopulating and non-depopulating regions using key indicators, as summarized in <Table 1>. With the exception of the total fertility rate, most fertility-related indicators are lower in depopulating regions than in their non-depopulating counterparts.
- ▶ Indicators related to population composition — such as the net migration rate of young women and the proportion of young women — are also lower in depopulating regions. In contrast, both the overall sex ratio and the youth sex ratio are higher in these areas, while the crude birth rate and the absolute number of births are higher in non-depopulating regions.
- ▶ In terms of employment, the employment rates of men, women, and young men are higher in depopulating regions; however, the employment rate of young women is higher in non-depopulating regions. Moreover, the gender wage gap among young workers is more pronounced in depopulating regions, whereas the ratio of local women’s wages to the national average wage of men is higher in non-depopulating regions.
- ▶ Municipal-level (city/county/district) analysis further indicates that a larger gender wage gap among young workers is associated with lower net in-migration of young women and a reduced number of births. Conversely, a higher ratio of women’s wages relative to the national average male wage is positively associated with both outcomes.
- ▶ These findings suggest that increasing the inflow of young women and enhancing fertility in regional areas requires improving women’s wages to levels comparable to men’s wages at the national level.

<Table 1> Comparative Characteristics of Depopulating and Non-Depopulating Regions (2023)

		Depopulating Regions	Non- Depopulating Regions
Gendered Population Characteristics	Total fertility rate	●	
	Crude birth rate		●
	Number of births		●
	Net migration rate of young women		●
	Proportion of young women		●
	Overall sex ratio	●	
	Youth sex ratio	●	
Gendered Employment Characteristics	Male employment rate	●	
	Female employment rate	●	
	Gender gap in employment rates	●	
	Youth male employment rate	●	
	Youth female employment rate		●
	Gender gap in youth employment rates		●
	Share of women among manufacturing employees	●	
	Share of women among service sector employees	●	
	Gender wage gap (all employees)		●
	Gender wage gap (young employees)	●	
	Ratio of local women's wages to the national average male wage (overall)		●
	Ratio of local young women's wages to the national average male wage (youth)		●
Status of Women	Proportion of women elected to local councils		●
	Proportion of women among managerial-level public officials		●
	Share of gender-responsive budgeting		●
	Proportion of female business owners	●	
	Proportion of men aged 25-64 with at least a college education		●
	Proportion of women aged 25-64 with at least a college education		●
	Gender gap in the proportion of the population with at least a college education		●
Conditions for Childbirth, Childcare, and Education	Number of users of pre- and post-natal leave		●
	Number of recipients of childcare leave or reduced working hours per 1,000 children aged 8 or under		●
	Number of childcare facilities per 1,000 infants and young children (aged 0-6)	●	
	Number of public childcare facilities per 1,000 infants and young children (aged 0-6)	●	
	Number of obstetrics and gynecology clinics per 1,000 women		●
	Number of pediatric clinics per 1,000 children and adolescents		●

Note: ● indicates that the average value is higher in the corresponding region. The proportions of women elected to local councils and female business owners are based on data from 2022.

◉ Findings from Regional Case Analysis

- ▶ The analysis of three regional cases reveals several key inter-regional disparities.
- ▶ First, disparities are evident in housing and living conditions. Nam-gu (Daegu Metropolitan City) and Dong-gu (Busan Metropolitan City) offer advantages for initial settlement, including more affordable housing and convenient living environments. In contrast, Jeungpyeong (North Chungcheong Province) is characterized by a nature-oriented and family-friendly lifestyle.
- ▶ While these features contribute positively to the inflow of young people and newly married couples, all three regions face common challenges — such as aging housing stock, vacant properties, and inadequate road safety infrastructure — which undermine overall residential satisfaction. These findings point to the need for systematic housing management and the modernization of residential environments.
- ▶ Second, significant disparities exist in the availability of high-quality jobs for women. Nam-gu (Daegu Metropolitan City) and Dong-gu (Busan Metropolitan City) face structural constraints due to the relative absence of large and medium-sized enterprises, limiting the provision of stable and high-quality employment opportunities. Meanwhile, Jeungpyeong (North Chungcheong Province), with its industrial complex-centered economic structure, exhibits a shortage of women-friendly jobs.
- ▶ Addressing these challenges requires diversification of the industrial base, the expansion of locally based employment opportunities for women, and improved access to workplaces through enhanced public transportation.
- ▶ Third, disparities are also apparent in childcare and education infrastructure. Both younger and middle-aged groups identify inadequate childcare and education systems as major concerns. In Dong-gu (Busan Metropolitan City) and Jeungpyeong (North Chungcheong Province), dissatisfaction with educational conditions may contribute to the outmigration of households with children. Similarly, in Nam-gu (Daegu Metropolitan City), concerns persist regarding insufficient infrastructure to support childrearing.
- ▶ Addressing these issues requires comprehensive policy interventions, including improving the quality of public education, expanding childcare facilities, and diversifying private education options.
- ▶ Fourth, regional differences are observed in the implementation of family-friendly workplace cultures and institutional frameworks. In Jeungpyeong (North Chungcheong Province), limited male participation in childcare constrains women's economic activities. In both Nam-gu (Daegu Metropolitan City) and Dong-gu (Busan Metropolitan City), institutional support for women's work-life balance remains underdeveloped.
- ▶ Accordingly, it is necessary to promote family-friendly workplace practices and establish institutional mechanisms that encourage men's participation in caregiving. Such measures are expected to enhance women's employment stability and labor force participation.

3 Policy Recommendations

Improving the Depopulation Index Indicators

- ▶ The findings of this study indicate that indicators such as the net migration rate of young women, the proportion of young women, and the youth sex ratio differ systematically between depopulating and non-depopulating regions. These findings underscore the critical role of the size and mobility of the young female population in shaping regional demographic trends. Accordingly, it is necessary to revise the depopulation index, which serves as a key criterion for designating depopulating regions, so that it better reflects the status of the young female population.
- ▶ To this end, the current youth net migration rate, which is not disaggregated by gender, should be refined to distinguish between male and female youth net migration rates. Furthermore, assigning a relatively greater weight to the net migration rate of young women would enable more precise identification of regions experiencing substantial outmigration — or limited inflow — of young women. This approach would strengthen the policy basis for designating depopulating regions and support more targeted interventions aimed at mitigating female outmigration and promoting in-migration. Further research is required to determine an empirically grounded weighting scheme for the net migration rate of young women (see <Table 2>).

<Table 2> Proposed Revision of Youth Net Migration Indicators in the Depopulation Index

Current Indicator	Proposed Indicators
Youth net migration rate (not disaggregated by gender)	Male and female youth net migration rates (disaggregated by gender) $(\text{Male youth net migration rate} \times 0.4) + (\text{Female youth net migration rate} \times 0.6)$ ※ The gender weights are presented for illustrative purposes only.

Strengthening Job Creation Measures for Young Women in the Master Plans for Responding to Depopulation Regions

- ▶ The empirical analysis in this study reveals that a higher share of women among manufacturing employees is positively associated with increased net in-migration of young women. This finding highlights the importance of not only expanding youth employment in regional areas — including those experiencing depopulation — but also increasing employment opportunities for young women in innovative manufacturing sectors at the municipal (city/county/district) level.
- ▶ Accordingly, the Master Plans for Responding to Depopulation Regions should strengthen job creation measures specifically targeting young women. This requires promoting youth employment initiatives in depopulating regions while expanding young women's participation in regionally embedded, innovation-driven manufacturing industries. To this end, employment creation for women — including young women — should be established as a distinct policy agenda within the Master Plans for Responding to Depopulation Regions. Key measures should include the creation of women-friendly jobs, the reduction of the gender wage gap, and the promotion of female leadership in private-sector firms.

- ▶ In addition, to further support job creation for young women in depopulating regions, it is necessary to introduce a new evaluation criterion — the employment level of young women — in the selection of participating firms for region-led youth employment programs administered by the Ministry of the Interior and Safety (see <Table 3>).
- ▶ Moreover, Women's Saeil Centers (Women's Reemployment Centers) in depopulating regions should collaborate with firms participating in region-led youth employment programs to develop and implement region-specific vocational training programs.
- ▶ Finally, there is a need to provide tailored vocational training programs for young women based on the labor demand of specialized firms within regional innovation clusters in depopulating regions. Linking these programs with the Saeil Women Internship Program would further facilitate the expansion of employment opportunities for young women in these regions.

<Table 3> Proposed Revision of Bonus Point Criteria for Selecting Firms in Region-Led Youth Employment Programs

Current Criteria			
Total Bonus Points: 50 points (Flexibly allocated based on local government conditions)			
Wage Level	Consideration of wage levels for participating youth* * (e.g., employer contributions exceeding the required threshold (20%), annual salary of at least KRW 30 million)	10-20 points or priority selection	* Bonus points or priority selection applied by wage brackets at the discretion of local governments
Regular Employment Status	Availability of a plan to hire participants as regular (full-time) employees, as specified in the employment contract	10-20 points or priority selection	* Hiring as a regular employee from the outset, or conditional conversion to regular status after 3 or 6 months
Employee Welfare Level	Provision of high-quality working conditions, including work environment and employee benefits	0-5 points	* Bonuses, meal allowances, severance pay, etc.
Certified Firms	Regionally recognized firms such as regional innovation companies, excellent SMEs, or youth-friendly high-performing SMEs	0-5 points	* Additional points granted at the discretion of local government heads
Proposed Addition			
Total Bonus Points: 50 points (Flexibly allocated based on local government conditions)			
Wage Level	Consideration of wage levels for participating youth* * (e.g., employer contributions exceeding the required threshold (20%), annual salary of at least KRW 30 million)	10-20 points or priority selection	* Bonus points or priority selection applied by wage brackets at the discretion of local governments
Regular Employment Status	Availability of a plan to hire participants as regular (full-time) employees, as specified in the employment contract	10-20 points or priority selection	* Hiring as a regular employee from the outset, or conditional conversion to regular status after 3 or 6 months
Employee Welfare Level	Provision of high-quality working conditions, including work environment and employee benefits	0-5 points	* Bonuses, meal allowances, severance pay, etc.
Level of Employment of Young Women	Proportion of young women among total regular employees	0-5 points	* Bonus points assigned based on ranges of young women's employment levels
Certified Firms	Regionally recognized firms such as regional innovation companies, excellent SMEs, or youth-friendly high-performing SMEs	0-5 points	* Additional points granted at the discretion of local government heads

Expanding the Number of Family-Friendly Certified Companies to Promote a Culture of Work-Life Balance in Depopulating Regions

- ▶ The regional case analysis indicates that employees face practical barriers to using work-life balance policies. This underscores the need to expand the number of family-friendly certified companies at the municipal (city/county/district) level in order to foster a broader culture of work-life balance in regions experiencing depopulation.
- ▶ To this end, priority should be given to providing family-friendly certification consulting services to small and medium-sized enterprises (SMEs) located in depopulating regions. In addition, the introduction of a preliminary or entry-level certification scheme for SMEs would help lower barriers to participation and facilitate their integration into the formal certification system.
- ▶ Furthermore, the Ministry of Gender Equality and Family, together with metropolitan and municipal governments in depopulating regions, should provide a diverse range of incentives to both family-friendly certified companies and their employees in order to encourage new certifications and support the long-term maintenance of certification.
- ▶ Specific policy measures may include granting additional points to family-friendly certified companies in the selection process for region-led youth employment programs administered by the Ministry of the Interior and Safety; offering preferential interest rates through regional financial institutions to family-friendly certified SMEs in depopulating regions; and providing preferential access to policy financing from metropolitan governments for such enterprises.
- ▶ Finally, sharing best practices of family-friendly certified companies, together with recruitment information from those companies, within local communities would help foster a culture of work-life balance at the community level.

Addressing Gaps in Healthcare Services in Regions Experiencing Depopulation

- ▶ The analysis of the availability of obstetrics and gynecology (OB-GYN) and pediatric services indicates that healthcare resources are substantially more limited in depopulating regions than in other areas.
- ▶ Specifically, of the 59 municipalities (city/county/district) without a single OB-GYN clinic in 2023, 56 were located in depopulating regions.
- ▶ Similarly, all 58 municipalities lacking pediatric clinics were identified as depopulating regions.
- ▶ These findings highlight the need to continuously address gaps in healthcare services in order to ensure women's right to health and establish a supportive environment for childrearing in regions lacking obstetrics and gynecology and pediatric services.
- ▶ Policy responses should be tailored to reflect the level of medical demand in each municipality.
- ▶ In regions where demand has reached a certain threshold, a feasible approach would be to establish systems in which specialists in obstetrics and gynecology and pediatrics are stationed at local public health centers, alongside providing financial and operational support to encourage the establishment and sustainability of clinics in these specialties.

- ▶ In regions where demand remains insufficient, more flexible service delivery strategies are required. These may include ensuring access to 24-hour inpatient facilities in nearby regional hubs and implementing real-time information-sharing systems to support emergency care.

◉ Strengthening Asset-Building Support for Young Women in Regions Experiencing Depopulation

- ▶ The analysis in this study on the effects of the gender wage gap on young women's net migration and the number of births illustrates that, as the ratio of young women's wages in a given municipality to the national average wage of young men increases, the likelihood of net in-migration of young women and an increase in the number of births also rises.
- ▶ This finding suggests that regional gender income disparities play a significant role in shaping migration patterns and fertility outcomes among young women. Accordingly, reducing inter-regional income gaps for young women is critical to promoting both in-migration and higher fertility in depopulating regions.
- ▶ To this end, asset-building support for young women in these regions should be strengthened.
- ▶ For example, the government could provide full support for programs such as the Youth Tomorrow Savings Account for young people residing in depopulating regions, while differentiating government matching contributions based on their duration of residence to incentivize long-term settlement.
- ▶ In addition, income tax reductions for young men and women employed in SMEs located in depopulating regions could be structured by linking the level of tax benefits to the length of residence in the region. Such measures would contribute to reducing regional income disparities for young women while simultaneously promoting employment in SMEs and long-term residence in depopulating regions.

◉ Addressing Imbalances in Childcare Provision in Regions Experiencing Depopulation

- ▶ The analysis of childcare infrastructure — including public childcare centers — across depopulating and non-depopulating regions reveals significant disparities in the number of childcare facilities per 1,000 infants and young children within each type of region.
- ▶ These findings indicate that imbalances in childcare provision exist not only between depopulating and non-depopulating regions but also across municipalities (city/county/district) within each category. Addressing these intra- and inter-regional disparities is therefore a key policy priority.
- ▶ To this end, municipalities ranking among the bottom ten in terms of the number of childcare facilities and public childcare centers per 1,000 infants and young children should be designated as priority areas for the establishment of public childcare facilities. Concentrated investment in the expansion of public and other childcare facilities in these municipalities should be considered.
- ▶ In addition, in formulating the Fifth Basic Plan for Low Birth Rates in Aging Society, it is necessary to assess the rate of public childcare utilization in each municipality and give priority to municipalities that fail to meet the target rate.

◉ Strengthening the Promotion of Women's Settlement Cases in Regions Experiencing Depopulation

- ▶ The regional case analysis in this study indicates that many municipalities possess various advantages that support the settlement of both young and middle-aged women. Therefore, it is important to actively publicize diverse examples of women who have successfully settled in depopulating regions in order to encourage in-migration and long-term residence among young women.
- ▶ To support this, local governments with high levels of young women's in-migration and long-term settlement should be identified and recognized through awards. In addition, networks of young women who have settled in depopulating regions should be established. Furthermore, successful settlement cases and best practices for improving gender equality awareness should be widely shared across municipalities. These efforts can serve as a foundation for developing more effective policies to attract and retain young women in depopulating regions.

References	Korean Statistical Information Service (KOSIS), Ministry of Data and Statistics
Supervising ministry	Balanced Development System Division, Ministry of the Interior and Safety; Local Governments
Related ministries	Women's Workforce Development Division, Ministry of Gender Equality and Family; Early Childhood Policy Division, Ministry of Education