

COMPARATIVE STUDY OF EFFECTIVENESS PRONATALIST POLICIES IN SOUTH KOREA, JAPAN, TAIWAN, AND SINGAPORE 2015-2023

Mahira Sandria Rahmatiana¹,

¹*Department of International Relation, Universitas Brawijaya (mhrsandria@gmail.com)*

Adhi Cahya Fahadayna²

²*Department of International Relations, Universitas Brawijaya (fahadayna@gmail.com)*



©2025 by the authors. Submitted for open access publication under the terms and conditions of the Creative Commons Attribution-ShareAlike 4.0 International License (CC-BY-SA)

license (<https://creativecommons.org/licenses/by-sa/4.0/>)

DOI : <http://dx.doi.org/10.30983/humanisme.v4i2.9235>

<i>Submission: February 24, 2025</i>	<i>Revised: April 20, 2025</i>	<i>Accepted : Mei 02, 2025</i>	<i>Published: Mei 19, 2025</i>
--------------------------------------	--------------------------------	--------------------------------	--------------------------------

Abstract

This study analyzed the impact of pronatalist policies on fertility rates in four Asian countries, consist of Singapore, Taiwan, South Korea, and Japan during the period 2015-2023. Following a trend previously observed in Europe, these countries experienced a significant decline in fertility along with increasing economic activity in recent years. The selected timeframe reflects a period of active implementation of pronatalist policies since 2015. This research employs a comparative quantitative approach using multiple linear regression analysis to assess the relationship between policy variables and fertility rates. Secondary data are used, based on indicators derived from Sleebos' (2003) framework, which includes financial incentives, child care, parental leave, family-friendly workplaces, welfare state, and tax systems. The findings, linear with previous study, indicate a positive and significant relationship between several pronatalist policies and fertility rates. This study focuses on mapping the current effectiveness of these policies in countries with similiar socio-economic contexts and highlights the complex interplay between policy design and each country's unique social, cultural, and economic conditions.

Keywords: Asia-Pacific, Comparative Study, Declining, Fertility, Pronatalist Policy

Abstrak

Penelitian ini menganalisis pengaruh kebijakan pronatalis terhadap tingkat kesuburan di empat negara di Asia, yaitu Singapura, Taiwan, Korea Selatan, dan Jepang dalam periode waktu 2015-2023. Mengikuti fenomena yang telah terjadi di Eropa sebelumnya, keempat negara tersebut menunjukkan penurunan tingkat kesuburan yang signifikan seiring dengan meningkatnya kegiatan ekonomi dalam beberapa tahun terakhir sehingga rentang waktu tersebut dipilih karena mencerminkan periode implementasi aktif kebijakan pronatalis sejak 2015. Studi ini menggunakan pendekatan kuantitatif komparatif dengan analisis regresi linear berganda untuk menilai hubungan antara variabel kebijakan dan tingkat fertilitas. Data sekunder yang digunakan mengacu pada indikator oleh teori Sleebos (2003) yang mencakup financial incentives, child care, child leave, family friendly workplace, welfare state, dan tax systems. Hasil penelitian ini sejalan dengan penelitian Sleebos yang menunjukkan adanya hubungan positif dan signifikan antara beberapa kebijakan pronatalis dengan tingkat fertilitas, penelitian ini akan berfokus untuk menunjukkan status quo efektivitas kebijakan di negara-negara dengan konteks sosio-ekonomi yang serupa dan menyoroti kompleksitas antara kebijakan dengan kondisi sosial, budaya, serta ekonomi masing-masing negara.

Kata Kunci: Asia-Pacific, Comparative Study, Declining, Fertility, Pronatalist Policy

Background

Global fertility rates have been steadily declining since the early 1960s, dropping from approximately 5.0 births per woman to around 3.0 births per woman during 1990–1995.¹ By 2015–2020, the global total fertility rate had fallen below the replacement threshold of 2.1 births per woman. In 2019, nearly half of all countries, representing 46% of the global population, recorded fertility rates below replacement level. Projections indicate this percentage will rise to 97% by 2100, suggesting that population declines will occur in nearly all countries by the end of the century.²

Interestingly, the decline in fertility rates is more pronounced in high-income developed countries, while low-income nations, particularly in Sub-Saharan Africa, tend to maintain stable or even high birth rates.³ In response to low fertility, the family planning agenda in developed countries has shifted from limiting births to encouraging increased fertility. Governments in these regions have adopted pronatalist policies specifically aimed at boosting fertility rates.⁴ The factors contributing to declining fertility rates are multifaceted, encompassing both economic and social dimensions. Public policy plays a significant role in shaping the environment in which individual reproductive choices are made, through mechanisms such as regulating work requirements, setting eligibility criteria for social benefits, defining the quality and accessibility of education and healthcare services, and establishing parental rights and responsibilities.⁵ However, the effectiveness of pronatalist policies remains a

subject of debate. For instance, the provision of benefits may have limitations, as these benefits can be misused, ultimately failing to effectively support childcare.⁶

The declining birth rate in most developed countries has raised concerns among governments regarding the increasing burden on the working population to support a growing proportion of retirees.⁷ This trend began in the European region during the industrialization era, which brought about significant economic shifts and expanded the roles of women in the workforce. Additionally, cultural factors in affluent societies have contributed to this decline, such as delaying parenthood to pursue higher education or careers, as well as improved access to healthcare and birth control.⁸ Moreover, high levels of wealth and education in modern industrial societies have reshaped perspectives on parenting. Children are no longer seen merely as dependents to be fed but as individuals who must also be clothed, educated, and provided with increasingly expensive resources as they grow.⁹

In recent years, the phenomenon of declining population numbers has also emerged in several Asian countries, including Japan, South Korea, Taiwan, and Singapore. These nations are characterized by extremely low fertility rates. Over the past five years, all four countries have consistently reported fertility rates below the replacement level of 2.1 births per woman.

¹ UNDESA. 2021. *World Population Policies In International Affairs* <<https://doi.org/10.2307/2615426>>

² Cheng, Mira. 2024. "Global Fertility Rates to Plunge in Decades Ahead, New Report Says," *CNN* <<https://edition.cnn.com/2024/03/20/health/global-fertility-rates-lancet-study/index.html>> [accessed 19 February 2025]

³ Ibid.

⁴ Pendleton, Brian F. 1978. "An Historical Description and Analysis of Pronatalist Policies in Italy, Germany and Sweden," *Policy Sciences*, 9.1: 45–70 <<https://doi.org/10.1007/bf00137978>>

⁵ Sleebos, Joelle. 2003. *Low Fertility Rates in OECD Countries: Facts and Policy Responses*, pp. 1–62

⁶ Ibid.

⁷ Malak, Natalie, and Terry Yip. 2016. "Baby Bonus, Anyone? Examining Heterogeneous Responses to a Pro-Natalist Policy," *SSRN Electronic Journal* <<https://doi.org/10.2139/ssrn.2846802>>

⁸ Aarssen, Lonnie W. 2005. "Why Is Fertility Lower in Wealthier Countries? The Role of Relaxed Fertility-Selection," *Population and Development Review*, 31.1: 113–26 <<https://doi.org/10.1111/j.1728-4457.2005.00054.x>>

⁹ Ibid.

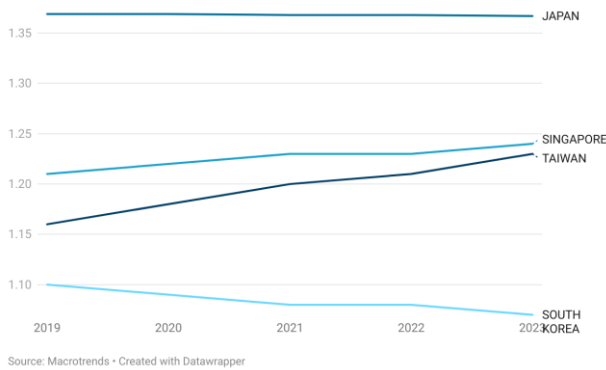


Figure 1. Comparison of Fertility Rates in South Korea, Japan, Taiwan, and Singapore in 2019-2023

Source: Proceeds from Macrotrends

This phenomenon is closely tied to the significant economic growth experienced by these countries. Since the 1960s, Singapore, South Korea, and Taiwan have achieved rapid economic expansion fueled by industrialization and export-driven strategies, propelling them into the ranks of the world's wealthiest nations and earning them recognition as part of the Four Asian Tigers, alongside Hong Kong.¹⁰ Similarly, Japan, with the third-largest GDP globally, ranks as the fourth-largest economy in terms of purchasing power parity.¹¹ As their economies have advanced, these nations have also experienced a marked decline in fertility rates. In response, all four countries have introduced various pronatalist policies, including subsidies, tax incentives, and other measures designed to support parents and encourage childbirth.

This study is significant for several reasons. First, there is still limited research examining the effectiveness of pronatalist policies in the Asian context, where social and cultural conditions differ markedly from those in European countries. Second, this research provides a cross-country comparative analysis using updated fertility data and policy evaluations from 2015 to 2023. Third, its findings are expected to inform policymakers

globally—particularly in Asia—as they navigate an increasingly uncertain demographic future.

Previous studies have often addressed fertility issues in Asia in a limited scope, focusing only on specific policies in isolation. This study aims to evaluate the effectiveness of pronatalist policies implemented in Japan, South Korea, Taiwan, and Singapore in addressing declining fertility rates. Using the concept of pronatalist policy, it analyzes the typology of effective measures adopted in each country. A comparative quantitative research method is employed, drawing on secondary data from diverse and credible sources to ensure accurate and reliable findings.

Conceptual Framework

Reproductive decisions made by individuals during their productive years are influenced not only by personal preferences or values but also by external factors beyond their control. Governments have the ability to address these external factors through the implementation of accommodative public policies. Pronatalist policies, specifically, are a deliberate approach by national governments to increase fertility rates.¹² These policies create a framework within which individual reproductive choices are made by influencing key aspects such as work regulations, eligibility criteria for social benefits, the quality and accessibility of education and healthcare services, and parental rights and responsibilities in professional environments. This is particularly relevant for women, as their professional goals and aspirations often face significant challenges when they commit to having children.

According to Hugo,¹³ pronatalist policies can be divided into two categories: direct and indirect. Direct policies aim to influence fertility rates explicitly by providing financial incentives to

¹⁰ Bloomenthal, Andrew. 2011. "Four Asian Tigers: What They Are, Economic Strengths Explained," *Investopedia* <<https://www.investopedia.com/terms/f/four-asian-tigers.asp>> [accessed 19 February 2025]

¹¹ Mamchii, Oleksandra. 2024. "Richest Countries in Asia," *Best Diplomats* <<https://bestdiplomats.org/richest-countries-in-asia/>> [accessed 19 February 2025]

¹² Op.Cit, Pendleton. 1978.

¹³ Hugo, Graeme. 2000. "Declining Fertility and Policy Intervention in Europe: Some Lessons for Australia?," *Journal of Population Research*, 17.2: 175–98 <<https://doi.org/10.1007/bf03029464>>

families and individuals with children while introducing disincentives for those who choose not to have them. These measures often include monetary rewards for each child, preferential access to public housing, free or subsidized healthcare and education, and tax benefits linked to the number of children in a family. On the other hand, indirect policies focus on creating a supportive environment for individuals deciding to have children. These policies include family-friendly initiatives that help balance work and family life, efforts to promote gender equality within families and broader society, reforms to tax and pension systems, and strategies to foster community support for children and parenting practices. These indirect measures address the underlying societal and structural factors that shape reproductive decisions.

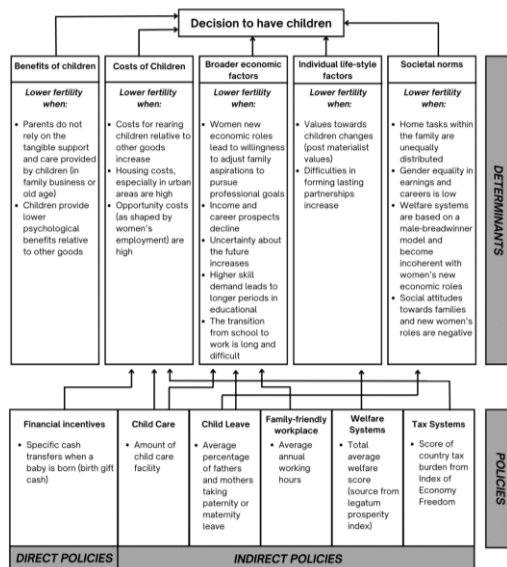


Figure 2. Determinants and Policy Measures of Decision to Have Children

Source: Proceeds from Sleebos¹⁴

Hugo's theory provides a basis for Sleebos in explaining the determinants and estimates of

policies aimed at encourage child ownership. The map above illustrates six potential policies that may be implemented by the government. The author adopts Sleebos' map and refines Sleebos' definition of the policy forms by incorporating quantifiable data, enabling this study to assess the effectiveness of each policy.

Financial incentives are direct policies aimed at reducing the cost of childbearing through benefits or tax deductions. These benefits are typically provided by the state in the form of grants or loans at key life stages such as the birth of a child, when a child starts school, or at certain ages. The benefits are often directed towards the child's primary caregiver or mother, to support the child's well-being. Previous studies have indicated a weak but positive relationship between these incentives and childbearing. In Canadian strong incentives can create greater opportunities for change in childbearing patterns.¹⁵ Sleebos also summarized prior research examining the relationship between incentives and family size, showing that higher family benefits correlate with larger families.¹⁶

Second, child care policies focus on providing support that impacts fertility rates by creating an environment where parents can balance work and family responsibilities. Castles identified a positive relationship between fertility rates and the availability of formal child care, particularly for children under the age of three in OECD countries.¹⁷ Similarly, Del Boca reported a positive correlation between child care availability and fertility in Italy, noting that a 10% increase in child care availability raised the likelihood of having a child by 0.2.¹⁸

Third, child leave policies, such as maternity or parental leave, are designed to allow parents to care for their children without hindering their participation in the workforce, particularly for mothers. Buttner and Lutz found in their study in

¹⁴ Op.Cit, Sleebos. 2003.

¹⁵ Duclos, Edith, Pierre Lefebvre, and Phillip Merrigan. 2001. "A 'Natural Experiment' on the Economics of Storks: Evidence on the Impact of Differential Family Policy on Fertility Rates in Canada," *CREFE Working Papers*

¹⁶ Op.Cit, Sleebos. 2003.

¹⁷ Castles, Francis G. 2003. "The World Turned Upside Down: Below Replacement Fertility, Changing Preferences and Family-Friendly Public Policy in 21 OECD Countries," *Journal of European Social Policy*, 13.3: 209–27

¹⁸ Del Boca, Daniela. 2002. *Low Fertility and Labour Force Participation of Italian Women: Evidence and Interpretations*

Germany that changes in maternity leave provisions, including a 40% increase in the duration of maternity leave and the introduction of special paid leave for working mothers with two or more children, had a positive impact on fertility rates.¹⁹

Fourth, family-friendly workplace policies aim to provide more flexible working hours, allowing parents to care for sick children, attend school events, or take children to important activities. Castles reported a positive relationship between the percentage of employees working flexible hours and fertility rates in OECD countries. Similarly, Del Boca found a positive correlation between the availability of part-time work and fertility rates in Italy.

Fifth, welfare systems are policies designed to improve the welfare of a population. Sleebos specifically identifies welfare systems as those free from the "male breadwinner" assumption, which can perpetuate the bias that men should be employed as household heads while women are expected to solely care for family members. Essentially, this policy aims to create a gender-neutral environment.

Finally, tax systems are policies designed to ease the financial burden on parents after having children, such as through tax deductions or tax consolidation for married couples. This policy helps alleviate the costs associated with childbearing for couples who choose to have children. Milligan found a positive, though weak, impact of tax exemptions on families with children.

Although this phenomenon has previously occurred in several European countries, the outcomes of pronatalist policies can vary significantly depending on each country's cultural, economic, and social norms. In some cases, such policies may even become counterproductive.

This is illustrated in Paul Demeny's analysis of fertility trends in Western countries, which highlights how pronatalist interventions often yield limited effectiveness, risk creating economic burdens, and may reinforce gender inequalities that disproportionately affect women.²⁰ This study aims to examine the influence of these policy variables in South Korea, Japan, Singapore, and Taiwan.²¹

Research Methods

This study aims to compare the effectiveness of pronatalist policies in South Korea, Japan, Taiwan, and Singapore in addressing declining fertility rates. The data spans from 2015 to 2023 (N=9) across these four countries, providing insights into the latest trends in this phenomenon. The study is grounded in Sleebos' work, "*Low Fertility Rates in OECD Countries: Facts and Policy Responses*". This paper adopts six pronatalist policies identified by Sleebos as independent variables and fertility rates as the dependent variable. The data used are quantitative, with numerical data obtained from secondary sources. The data analysis technique employed is multiple linear regression using SPSS Version 25, which will assess the influence of the independent variables on the dependent variable by considering multiple independent variables. The hypothesis for this study is:

H1: Financial incentives **affect** the fertility rate.

H2: Child care **affects** the fertility rate.

H3: Child leave **affects** the fertility rate.

H4: Family-friendly workplaces **affect** the fertility rate.

H5: Tax systems **affect** the fertility rate.

H6: Welfare systems **affect** the fertility rate.

This paper will employ a comparative research method, which involves comparing cases to draw generalizable conclusions about political

¹⁹ Buttner, Thomas, and Wolfgang Lutz. 1990. "Estimating Fertility Responses to Policy Measures in the German Democratic Republic," *Population and Development Review*, 16.3: 539

²⁰ Demeny, P. (1986). Pronatalist policies in low-fertility countries: Patterns, performance, and prospects. *Population and Development Review*, 12, 335.

²¹ Milligan, Kevin. 2000. *SUBSIDIZING THE STORK: NEW EVIDENCE ON TAX INCENTIVES AND FERTILITY*.

phenomena.²² The strategy used in this study is the Most Similar Systems Design (MSSD), which focuses on comparing cases that are highly similar but differ in their dependent variables. Through the comparative method, this paper aims to systematically compare countries with similar characteristics, specifically those experiencing low fertility rates and implementing pronatalist policies to address this decline (i.e., Japan, South Korea, Singapore, Taiwan).

Result and Discussion

The results of the analysis in this study are divided into 2 parts, namely direct policy variables and indirect policies.

Table 1. Multiple Linear Regression Result of Direct Policies in Japan, South Korea, Singapore, and Taiwan

Direct Policies	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
	B	Std. Error	Beta	
Japan				
Financial Incentives	-1.120E-5	0.000	-0.261	0.498
South Korea				
Financial Incentives	-5.687E-5	0.000	-0.814	0.008
Singapore				
Financial Incentives	2.857E-6	0.000	0.624	0.073
Taiwan				
Financial Incentives	0.000	0.000	0.600	0.088

The results in the table above demonstrate the influence of direct policies, such as financial incentives, on fertility rates in each country. Overall, the findings indicate that financial incentives do not have a significant impact on fertility rates. Japan has a B value of (-1.120E-5), Standardized Beta of (-0.261), t-value of (-0.715), and Sig. of (0.498), indicating that financial incentives do not significantly affect fertility rates in Japan. South Korea has a B value of (-5.687E-5), Standardized Beta of (-0.814), t-value of (-3.712), and Sig. of (0.008), showing that financial incentives have a significant effect, but the negative coefficient suggests they actually contribute to a decrease in fertility rates in South Korea. Singapore has a B value of (2.857E-6), Standardized Beta of (0.624), t-value of (2.111), and Sig. of (0.073), indicating that financial incentives have a positive effect on fertility rates,

though not statistically significant. Taiwan has a B value of (0.000), Standardized Beta of (0.600), t-value of (1.982), and Sig. of (0.088), suggesting that financial incentives have a positive but insignificant influence on fertility rates in Taiwan.

Table 2. Multiple Linear Regression Result of Indirect Policies in Japan, South Korea, Singapore, and Taiwan

Indirect Policies	Unstandardized Coefficients	Standardized Coefficients	T	Sig.
	B	Std. Error	Beta	
Japan				
Child Care	5.035E-5	0.000	1.268	0.219
Child Leave	-0.001	0.001	-0.399	0.504
Family Friendly Workplace	0.000	0.000	1.495	0.155
Welfare Systems	0.041	0.237	0.064	0.174
Tax Systems	8.630E-5	0.000	0.252	0.671
South Korea				
Family Friendly Workplace	0.000	0.000	0.943	0.008
Welfare Systems	0.578	0.299	0.185	0.111
Tax Systems	0.000	0.001	-0.070	0.351
Singapore				
Child Care	0.000	0.000	0.960	0.004
Child Leave	-0.001	0.001	-0.197	0.300
Welfare Systems	-0.147	0.231	-0.195	0.559
Tax Systems	0.002	0.012	0.052	0.167
Taiwan				
Child Care	0.000	0.000	0.914	0.002
Child Leave	5.500E-5	0.001	0.004	0.087
Family Friendly Workplace	-9.790E-5	0.000	-0.078	0.416
Welfare Systems	0.141	0.314	0.020	0.449
Tax Systems	0.002	0.001	0.095	0.183

The table above illustrates the indirect policy impact on fertility rates in each country. In certain countries, specifically South Korea and Singapore, several variables were removed to obtain more accurate results regarding the effectiveness of policies in these nations.

The first variable, Child Care, shows the following results: Japan has a B value of (5.035E-5) and Sig. of (0.219), indicating a positive but insignificant effect on fertility rates in Japan. Singapore has a B value of (0.000) and Sig. of (0.004), indicating a positive and significant effect on increasing fertility rates in Singapore. Taiwan also shows a similar result with a B value of (0.000) and Sig. of (0.002), indicating a positive and significant effect on fertility rates. This variable was not used in South Korea due to a high collinearity with other variables, which could interfere with the interpretation of the regression results.

The second variable, Child Leave, shows the following results. Japan has a B value of (-0.001) and Sig. of (0.504), indicating a negative but

²² Lijphart, Arend. 1971. "Comparative Politics and The Comparative Method," *The American Political Science Review*, 65: 682–93

insignificant effect on fertility rates in Japan. Singapore has a B value of (-0.001) and Sig. of (0.300), indicating a negative and insignificant effect on fertility rates in Singapore. Taiwan has a B value of (5.500E-5) and Sig. of (0.936), suggesting a positive but insignificant effect on fertility rates in Taiwan. This variable was not used in South Korea to avoid interfering with the interpretation of the regression results.

The third variable, Family Friendly Workplace. Japan has a B value of (0.000) and Sig. of (0.155), indicating a positive but insignificant influence on fertility rates in Japan. South Korea has a B value of (0.000) and Sig. of (0.008), indicating a positive and significant influence on fertility rates in South Korea. Taiwan has a B value of (-9.790E-5) and Sig. of (0.416), suggesting a negative and insignificant influence on fertility rates in Taiwan. This variable was not used in Singapore to avoid interfering with the interpretation of the regression results.

The results for the fourth variable, Welfare Systems, are as follows: In Japan, the B value is (0.041) and Sig. is (0.504), indicating a positive yet insignificant impact on fertility rates. In South Korea, the B value is (0.578) and Sig. is (0.111), showing a positive but insignificant influence. In Singapore, the B value is (-0.147) and Sig. is (0.559), suggesting a negative and insignificant effect on fertility rates. Meanwhile, in Taiwan, the B value is (0.141) and Sig. is (0.684), indicating a positive but insignificant influence on fertility rates.

The fifth variable, Tax Systems. In Japan, the B value is (8.630E-5) with a Sig. of (0.550), indicating a positive but insignificant effect on fertility rates. In South Korea, the B value is (0.000) with a Sig. of (0.111), suggesting no significant influence on fertility rates. In Singapore, the B value is (0.012) with a Sig. of (0.875), indicating a positive but insignificant effect on fertility rates. In Taiwan, the B value is

(0.002) with a Sig. of (0.183), showing a positive but insignificant influence on fertility rates.

The findings reveal that only a few variables have an impact on fertility rates, including the child care variable in Singapore and Taiwan, and the family-friendly workplace variable in South Korea. This section will explore each variable in more detail to understand the reasons behind their influence, or lack thereof, on fertility rates.

Financial Incentives

The reluctance to have children is largely driven by the growing costs associated with raising them, particularly as awareness increases that children not only require food but also education and other essential needs. Having children also means establishing a family, which necessitates a decent place to live, typically in an urban area with enough space to comfortably support the child's development. Additionally, having children comes with the opportunity cost of foregoing other potential benefits that could be gained without children. As a result, the decision to have children is often viewed as an economic one. Becker suggests that children should be considered both as durable consumer and production goods.²³ Providing financial incentives is a government effort to alleviate the financial burden on families, making the desire to have children stronger.

The data utilized in this study pertains to the cash bonuses provided to parents upon the birth of their first child. The structure and amount of these grants vary across countries. In Japan, the grant is disbursed at the time of birth, amounting to \$3,348.20, reflecting a 19% increase compared to 2022. In Singapore, the Baby Bonus Cash Gift (BBCG) scheme provides a total of \$14,417.48, distributed in stages every six months until the child reaches 6.5 years of age. In South Korea, a cash grant is offered to all residents with children, whether newborn or adopted. The grant has increased from \$577 in 2022 to \$1,469.49. Similarly, in Taiwan, the grant for the first child has

²³ Becker, Gary, James Duesenberry, and Bernard Okun. 1960. "An Economic Analysis of Fertility," in

Demographic and Economic Change in Developed Countries (Columbia University Press), pp. 209–40

doubled since 2022, reaching \$1,243.12, as part of measures to address the low birth rate in Taipei.

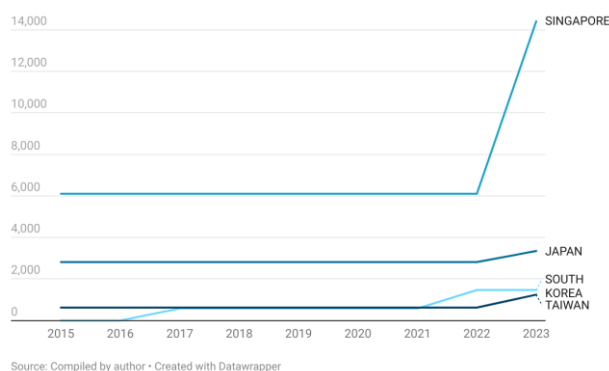


Figure 2. Financial Incentives in Japan, South Korea, Singapore, and Taiwan from 2015-2023

Source: Compiled by author

Figure 2. illustrates that the financial incentives provided by each country tend to increase over time. Singapore offers the highest financial incentives, while Taiwan provides the lowest. However, these incentives do not yield significant effects on fertility rates. In Japan and South Korea, for instance, financial incentives have shown a negative correlation with fertility rates, contributing to a decline. Although financial incentives are generally associated with positive effects on fertility, modern societal dynamics complicate this relationship. Between 1980 and 2022, the average years of schooling more than doubled, rising from approximately 5.6 years to 12.1 years for men and from 3.7 years to 11.3 years for women.²⁴ Prolonged education delays subsequent life transitions, such as workforce entry, marriage, and parenthood.²⁵ This shift has altered societal priorities regarding childbearing. Individuals marrying in their 20s often require additional time and financial support to transition from careers to parenthood. Conversely, those marrying in their late 30s can dedicate more time

to family life, though women in this age group face increased pregnancy risks.²⁶ Moreover, financial incentives prove ineffective when they fail to account for rapidly rising living expenses.²⁷ This mismatch further undermines the impact of such policies in addressing fertility challenges.

Child Care

The provision of childcare is a critical component of family-friendly policies, designed both to support working mothers and to provide opportunities for those without employment to pursue training or find paid work.²⁸ The primary aim of childcare services is to mitigate the conflict between work and family responsibilities, a common challenge in industrial and post-industrial societies. For women, particularly those actively participating in economic activities, balancing work with the demands of raising young children poses significant challenges. Mothers with young children often find it unfeasible to work because bringing children to the workplace or leaving them unattended is not an option. This conflict between the demands of work and family frequently leads to decisions to delay or forego having additional children. At the micro level, this dynamic has resulted in a negative correlation between female labor force participation and fertility rates. At the macro level, the cumulative effect has been extremely low fertility rates in numerous countries.²⁹

²⁴ Tan, Jolene. 2023. "Perceptions towards Pronatalist Policies in Singapore," *Journal of Population Research*, 40.3

²⁵ Furstenberg, Frank F. 2010. "On a New Schedule: Transitions to Adulthood and Family Change," *The Future of Children*, 20.1: 67–87

²⁶ Op.Cit. Tan, 2023.

²⁷ Choo, Dahae, and Hugo Jales. 2021. "Childbearing and the Distribution of the Reservation Price

of Fertility: The Case of the Korean Baby Bonus Program," *Journal of Asian Economics*, 77: 101395

²⁸ Op.Cit. Sleebos, 2003.

²⁹ Rindfuss, Ronald R., David K. Guilkey, S. Philip Morgan, and Ystein Kravdal. 2010. "Child-Care Availability and Fertility in Norway," *Population and Development Review*, 36.4: 725–48

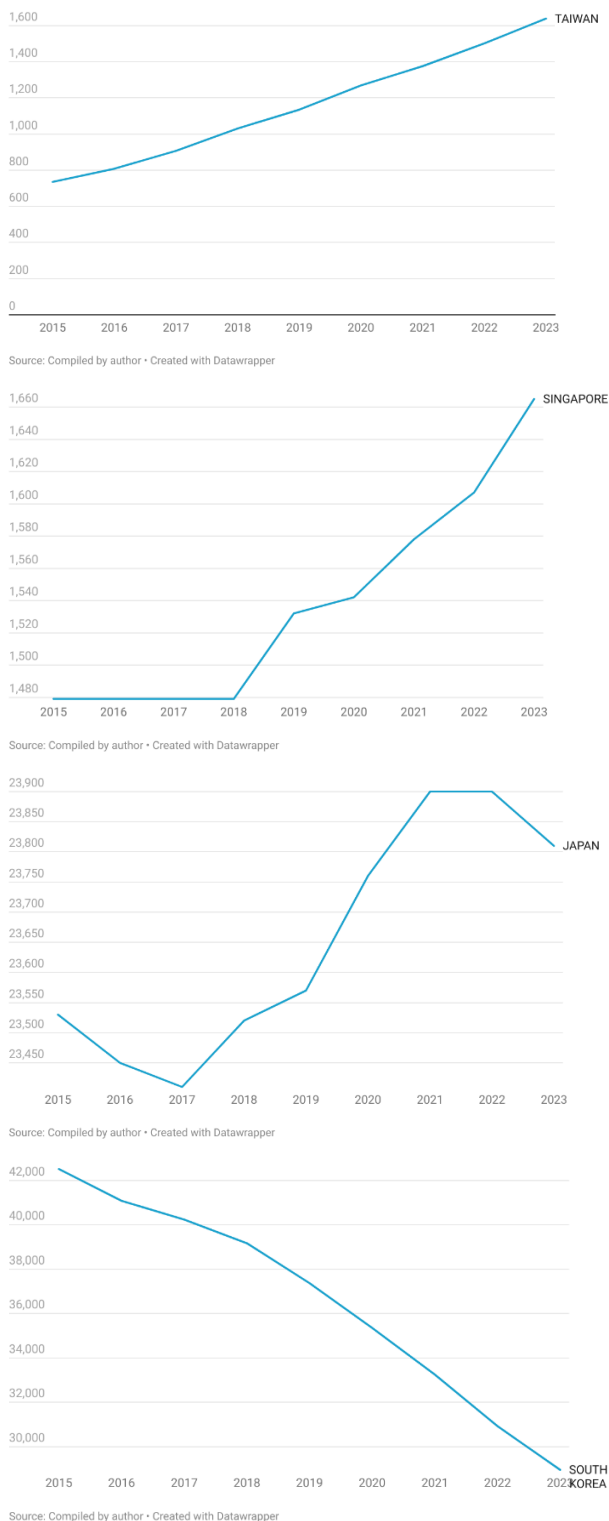


Figure 3. Total Child Care Number in Japan, South Korea, Singapore, and Taiwan from 2015-2023
Source: Compiled by author

Figure 3. Shows the number of child care centers in each country from 2015-2023, in Taiwan and Singapore, the number continues to increase. As a result, the child care center policy has a positive and significant effect on fertility. This proves that this policy is able to reduce the conflict between work and family responsibilities, thus successfully increasing fertility, which is closer to the replacement level.

However, the effectiveness of childcare policies can be paradoxical in certain contexts. In Japan, for instance, the provision of childcare centers has not significantly mitigated the declining fertility rate. In 2023, the number of childcare centers in Japan actually decreased, driven in part by a reduced demand for enrollment. According to data from the Ministry of Health, Labour and Welfare, the number of children on waiting lists for licensed childcare centers and similar facilities in Japan dropped by 52.3% compared to 2022.³⁰ This policy, intended to help women balance work and family responsibilities, proves suboptimal when there are insufficient births to sustain demand for childcare services. Similarly, in South Korea, the low birth rate has led to a sharp decline in the number of childcare centers, with many facilities forced to close due to inadequate enrollment.

The issue extends beyond the mere availability of childcare and encompasses broader societal factors, particularly the degree to which gender equality accommodates female workers. In Taiwan, the government has significantly revised key gender equality laws in recent years, including the Sexual Harassment Prevention and Control Act, the Gender Equality in Employment Act, and the Gender Equality Education Act. These revisions have strengthened penalties for offenders, enhanced victim protection services, and established professional and qualified systems to prevent sexual harassment.³¹ In Singapore, inclusive regulations for female workers have also

³⁰ NIPPON. 2022. "Japan Sees 90% Drop in Daycare Waiting Lists over the Last Five Years," *Nippon.Com*.

³¹ Gender Equality Committee Taiwan. 2024. *Telephone Poll on Gender Equality Perceptions*

advanced. Initiatives such as flexible work arrangements enable women to balance career and family responsibilities. Additionally, diversity councils aim to increase women's representation on boards of private companies and public organizations, resulting in a rise in female directors from 15.6% to 17.6% by 2020. Efforts to close the gender wage gap have further improved workplace equity.³² A workplace environment free from gender discrimination can enhance women's comfort in fulfilling dual roles as mothers and professionals. This creates conditions where childcare provisions can play a more significant role in supporting family life and potentially increasing fertility rates.

In contrast, Japan continues to face significant gender inequality, particularly in the career sector. Despite an increase in the number of women entering the workforce and politics, opportunities for career advancement and wage growth remain limited. Additionally, sexual harassment persists, and women's representation in politics is minimal, largely due to inadequate support from major political parties.³³ Challenging workplace conditions make women hesitant to have children. If gender disparities are pronounced during singlehood, they may become even more evident and burdensome for women with children, further discouraging family expansion.

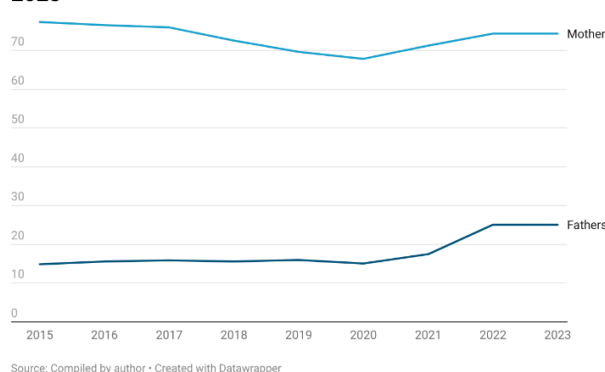
Child Leave

Caring for children is a time-intensive responsibility, and leave policies play a crucial role in enabling parents to balance their personal and professional lives. Child-related leave typically falls into three categories: paternity leave, primarily available to fathers; maternity leave, which mothers take for childbirth and postpartum recovery; and parental leave, which either parent can use for childcare purposes. Unlike paternity and parental leave, maternity leave is more universally implemented, reflecting traditional

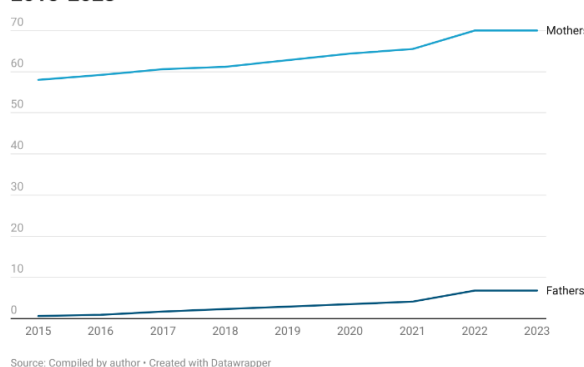
social norms that emphasize male breadwinners as the primary economic providers. Consequently, maternity leave policies often reinforce the role of women as primary caregivers, perpetuating gendered divisions of labor.³⁴

To evaluate the effectiveness of this policy, the author examines the average percentage of paternity and maternity leave taken. The results indicate that the policy has no significant impact in any of the countries studied. In fact, in Japan and Singapore, the effect is negative. A comparison of leave usage between mothers and fathers reveals a notable disparity, with mothers taking a significantly higher percentage of leave than fathers.

Parental Leave Use by Fathers and Mothers in Taiwan 2015-2023



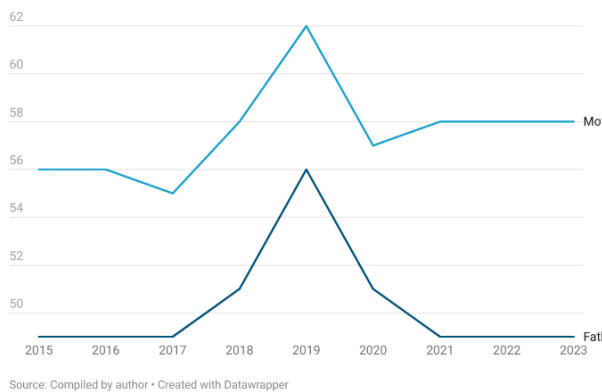
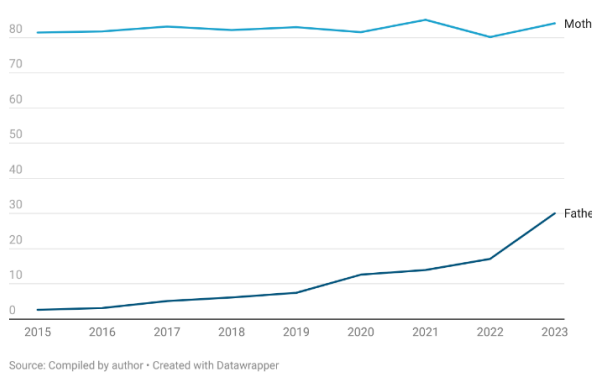
Parental Leave Use by Fathers and Mothers in South Korea 2015-2023



³² Ministry of Manpower Singapore. 2021. "A Gender-Inclusive Workforce," *Ministry of Manpower*

³³ Dalton, Emma. 2022. "Japan's Stubborn Gender Inequality Problem," *East Asia Forum*.

³⁴ Son, Keonhi, and Tobias Böger. 2021. "The Inclusiveness of Maternity Leave Rights over 120 Years and across Five Continents," *Social Inclusion*, 9.2: 275–87.

Parental Leave Use by Fathers and Mothers in Singapore 2015-2023**Parental Leave Use by Fathers and Mothers in Japan 2015-2023****Figure 4.** Parental Leave Use by Fathers and Mothers in South Korea, Japan, Taiwan, and Singapore 2015-2023**Source:** Compiled by author

The figure above shows that the rate of fathers taking leave remains very low, despite a gradual increase. In South Korea, only 2.53% of fathers take leave annually, which is significantly lower than the 55.74% of mothers who take leave each year. In Taiwan, the average annual percentage of fathers taking leave is around 9.03%, far below the 82.5% of mothers. Similarly, in Japan, only 10.93% of fathers take leave, while 82.5% of mothers take leave to care for children annually. In contrast, the gap is narrower in Singapore, where 50.2% of fathers take time off, compared to 57.5% of mothers.

Over the past few decades, childcare responsibilities have been predominantly associated with mothers, while fathers have been relegated to the role of breadwinners. This division has resulted in mothers sacrificing their careers, while the bond between fathers and children has diminished. Several factors contribute to this, including the continued rarity of fathers taking time off to care for children, especially in traditionally masculine workplaces, which often create structural barriers to fathers' involvement in childcare.³⁵ In these environments, when male employees defy gender stereotypes such as by requesting paternity leave for childcare they may face workplace harassment. Fathers who request family leave are also more likely to receive lower work evaluations. As a result, many fathers are hesitant to utilize leave entitlements.³⁶ Furthermore, leave policies are frequently not accompanied by adequate income replacement, meaning that fathers who choose to take leave are faced with the challenge of managing childcare without a source of income. Even when mothers have careers, their earnings are often lower than those of fathers due to the ongoing gender pay gap.³⁷

Family Friendly Workplace

Parenting can be particularly challenging when parents are also balancing work commitments. Growing children require not only material provisions but also emotional support, love, and quality time with their parents. Therefore, flexible working hours are crucial in fostering the development of a healthy new generation. Additionally, excessive working hours can pose risks to prospective parents, potentially leading to infertility or complications during pregnancy due to fatigue. Previous studies have shown that women working more than 40 hours

³⁵ Lee, Youngcho. 2022. "Norms about Childcare, Working Hours, and Fathers' Uptake of Parental Leave in South Korea," *Community, Work & Family*, 26.4: 466–91

³⁶ Miyajima, Takeru, and Hiroyuki Yamaguchi. 2017. "I Want to but I Won't: Pluralistic Ignorance Inhibits

Intentions to Take Paternity Leave in Japan," *Frontiers in Psychology*, 8.

³⁷ Op.Cit. Lee, 2022.

per week are at a higher risk of premature birth, miscarriage, and other pregnancy-related complications. Ideally, working hours should be kept below 40 hours per week to mitigate these risks.³⁸

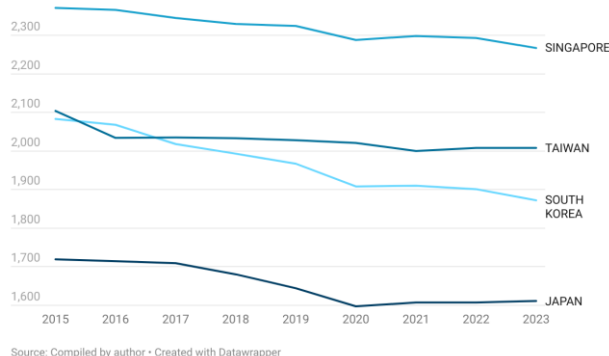


Figure 5. Average Annual Working Hours in South Korea, Japan, Taiwan, and Singapore 2015-2023

Source: Compiled by author

Figure 5 shows the average working hours of employees each year. Japan had the lowest working hours, with 33 hours per week in 2015, which further decreased to 30.9 hours per week in 2023. South Korea ranked second, with working hours of 36 hours per week in 2023, down from 40.5 hours per week in 2015. Taiwan follows, with 38 hours of work per week in 2023, a decrease of 2 hours from 40.46 hours per week in 2015. In contrast, Singapore had the highest working hours, with 43.6 hours per week in 2023.

The policy of reducing working hours has a positive and significant effect in South Korea, which has the second-lowest working hours after Japan. However, while it is unclear whether working hours affect fertility in Singapore, working more than 40 hours per week could lead to infertility issues and pregnancy risks for women planning to conceive. In contrast, in countries with working hours below 40 hours, such as Japan and Taiwan, this policy remains insignificant. Several factors may explain this, including the possibility that employees may still work longer hours

unofficially, particularly in companies that avoid labor laws.³⁹ Additionally, the opportunity cost associated with free time often leads individuals to use this time to earn more income, as seen in Japan, where overtime work is common.⁴⁰ Another contributing factor is the gender disparity in the use of free time. While women typically spend their free time on childcare and family activities, men often use this time to enhance their work skills or pursue other interests.⁴¹

Welfare Systems

This variable is calculated using research indicators from the Legatum Prosperity Index 2023, selecting several indicators that represent the determinants of Sleafos' theory on welfare state variables, specifically focusing on changes in values toward children and the increasing difficulties in forming lasting partnerships. The selected indicators include antenatal care coverage, which measures the percentage of women aged 15-49 who received at least one antenatal care service during pregnancy from a skilled health worker (doctor, nurse, or midwife); female labor force participation, which represents the percentage of the female working-age population (aged 15-64 years) who are economically active, either by working or seeking employment; and freedom from hiring and workplace discrimination, a composite measure assessing the likelihood of discrimination in hiring based on socioeconomic, ethnic, or other immutable characteristics. Other indicators are protection of women's workplace, education, and family rights, a composite measure evaluating the extent of protection women receive from discrimination in various societal domains; family gives positive energy, which reflects the percentage of people who "strongly agree/agree" with the statement, "family gives me positive energy"; and help from family and friends when in

³⁸ Kim, Taewook. 2023. "The Impact of Working Hours on Pregnancy Intention in Childbearing-Age Women in Korea, the Country with the World's Lowest Fertility Rate," *PLOS ONE*, 18.7.

³⁹ Op.Cit. Kim, 2023.

⁴⁰ Kohara, Miki, and Bipasha Maity. 2020. *Review of Economics of the Household The Impact of Work-Life Balance Policies on the Time Allocation and Fertility The Impact of Work-Life Balance Policies on the Time Allocation and Fertility Preference of Japanese Women*

⁴¹ Ibid.

trouble, which measures the percentage of people who answered “yes” to the question, “If you are in trouble, do you have relatives or friends you can count on to help?”⁴² These six indicators are used to measure a country’s prosperity in line with Sleetbos’ definition, emphasizing that true prosperity goes beyond material wealth and includes a gender-neutral society where all genders can live safely and comfortably.

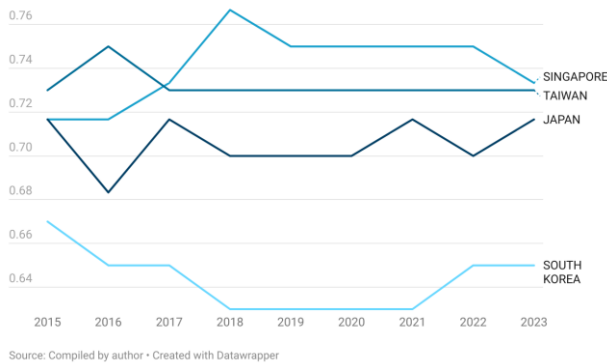


Figure 6. Average of Total Welfare Score in South Korea, Singapore, Taiwan, and Japan 2015-2023

Source: Legatum Institute⁴³

Figure 6 shows the fluctuating total score in each country. South Korea scored the lowest at 0.65 in 2023, while Singapore achieved the highest score, although it decreased from the previous year's score of 0.73. Taiwan also scored 0.73, while Japan was slightly below Singapore and Taiwan with a score of 0.71. As a result, this variable has no significant effect in any of the countries, indicating that the current environment and policies are not gender-neutral.

In the Asian region, the concept of the male breadwinner remains a deeply entrenched traditional notion within the social and cultural environment. This concept affects both women and men, with men as breadwinners holding a

stronger socio-economic and political status, which reinforces women's economic dependence on men.⁴⁴ When women or men deviate from these prevailing gender norms, they often face social sanctions and stigma, such as ridicule, negative judgment, or criticism, which can harm their sense of social identity.⁴⁵ For married couples, the social pressure to conform to cultural and gender norms can create stress, potentially worsening the romantic relationship between them and even leading to separation.⁴⁶ Beyond separation, this pressure may discourage people from having children or even from marrying. In South Korea, for instance, which has the lowest welfare score, 457,069 families relied on a single source of income primarily from the father—creating an economic burden that ultimately falls on men, while women are often burdened with childcare and housework.⁴⁷ If these policy conditions persist, both women and men may become reluctant to marry, considering the financial burdens men must bear when settling down and the pressure women face to sacrifice their careers in favor of childcare and domestic responsibilities.

Tax Systems

The tax burden in each country varies based on different policies. In some countries, married couples can pay taxes jointly (joint tax) or receive tax exemptions. Becker and Schultz developed an economic theory to analyze human fertility behavior, highlighting the relationship between economic and demographic factors, specifically the desire to have children.⁴⁸ Singapore, Taiwan, Japan, and South Korea have tax policies that are relatively favorable to married couples, including tax exemption policies. The authors use Heritage's

⁴² Legatum Institute. 2023. *Source and Indicators*

⁴³ Ibid.

⁴⁴ Koo, Eunjung. 2019. “Women’s Subordination in Confucian Culture: Shifting Breadwinner Practices,” *Asian Journal of Women’s Studies*, 25.3: 417–36.

⁴⁵ Knize, Veronika J. 2021. “What Gender-Neutral Activation? Understanding the Gender Sanction Gap in Germany’s Welfare System,” *Social Politics: International Studies in Gender, State & Society*, 29.4: 1286–1313.

⁴⁶ Ibid.

⁴⁷ Jeong, Jin-Ho, and Ji-Eun Seo. 2023. “In Korea, More Women Are Becoming Breadwinners,” *Korea JoongAng Daily*.

⁴⁸ Huang, Jr-Tsung. 2007. “Personal Tax Exemption: The Effect On Fertility In Taiwan,” *The Developing Economies*, 13.1: 32–48

Economic Freedom Index scoring to examine the effect of a country's tax burden on fertility.

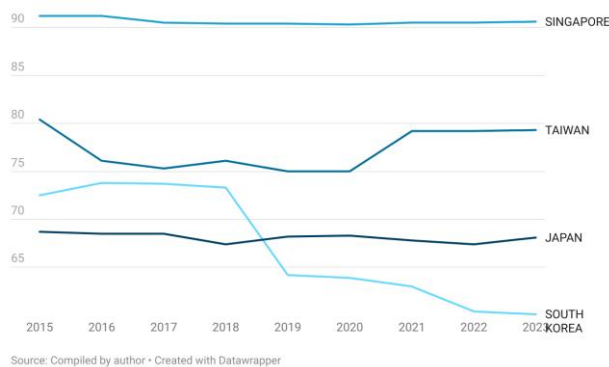


Figure 7. Score of Country Tax Burden in South Korea, Japan, Taiwan, and Singapore 2015-2023
Source: Heritage’s Economic Freedom Index (2024)

Figure 7 shows a very high tax burden freedom score of 90.7 in 2023, a slight decrease from 2015, when it was 91.2, indicating a high level of freedom from taxes. Taiwan displays a similar trend, with a score of 80.4 in 2015 dropping to 79.3 in 2023, suggesting it remains mostly free from taxes. Japan's score has remained relatively stable, with a slight decrease from 68.7 in 2015 to 68.1 in 2023, indicating it is moderately free from taxes. Meanwhile, South Korea experienced a significant decline, with a score of 72.5 in 2015 dropping to 60.1 in 2023, indicating it is also moderately free from taxes. Despite these variations, this tax policy did not have a significant effect on fertility rates.

Tax exemption policies vary across countries. In Singapore, the tax exemption policy differs based on the number of children, offering \$5,000 for the first child, \$10,000 for the second child, and \$20,000 for the third and subsequent children.⁴⁹ In Taiwan, tax exemptions apply to couples with an annual income of less than NT\$270,000, or if the annual income exceeds that amount, the tax reduction is limited to NT\$270,000.⁵⁰ South Korea provides tax deductions up to 1.5 million won per year, with additional deductions for spouses or dependents

(e.g., children or parents) earning less than 1 million won per year.⁵¹ In Japan, the tax deduction is determined by the couple's age: if both are under 70 years old, they receive a deduction of 380,000 yen, while if both are over 70, the deduction increases to 480,000 yen, which can be multiplied by the number of dependents. While each country's tax exemption policy appears to be supportive, the tax reductions may be insignificant for several reasons, such as the high economic burden that may not be fully alleviated by the tax relief. Additionally, non-economic factors, such as lifestyle and dominant social norms, may play a more significant role in influencing decisions related to childbearing.

When Helping Hurts: The Hidden Risks of Pronatalist Policies

Policy Type	Empirical Effects	Potential Negative Effects	Country Context
Financial Incentives	Slight increase in fertility, stronger effects when incentives are large and sustained (Milligan, Canada)	Fiscal burden without guaranteeing permanent fertility increases	The provision of financial incentives does not have a significant effect. In Japan and South Korea, it even has a negative impact. Financial support is not aligned with the rising cost of living. The reluctance to have children stems not only from financial constraints but also from shifting societal priorities toward education and career advancement.
Childcare	Access to daycare increases likelihood of childbearing (Castles, OECD, Del Boca, Italy: 10% increase in daycare = +0.2% likelihood of childbearing)	Poor daycare quality may lower parental trust	It has a positive and significant impact in Taiwan and Singapore. A paradoxical situation arises in Japan and South Korea, where the number of childcare facilities has decreased due to a lack of enrollment. Although the quality of daycare is guaranteed, women are reluctant to have children because of the persistent stigma attached to motherhood.
Parental Leave	Extension of maternity leave and introduction of paid leave positively affect fertility (Brunner & Latz, Germany)	Long leaves may hinder women's career progression, reinforcing gender bias	It does not have a significant impact in any of the countries. Mothers who take extended leave experience career disruptions. Fathers who take long leave are viewed as unusual, and mothers' wages are generally lower than fathers' wages (gender pay gap issue).
Family Friendly Workplaces	Flexible working hours positively correlate with fertility (Castles, OECD, Del Boca, Italy)	Limited adoption across sectors reduces overall effectiveness	It has an impact in South Korea but becomes insignificant in other countries due to a strong work culture that leads employees to prioritize overtime. Leisure time after work is also used differently: women tend to spend it on family care, while men use it to improve their skills.
Tax Systems	Tax reductions for families moderately increase fertility (Milligan)	May exacerbate inequality, benefiting high-income families more	Tax exemption policies are exclusive due to specific requirements, making them less inclusive for the broader population and becoming insignificant when the economic burden remains high.
Welfare Systems	Gender-equal welfare systems positively impact fertility (Skechos)	The vanished of traditional "male breadwinner" models may liberate women's labor participation	This policy becomes insignificant when the social and cultural conditions of a country still strongly uphold the male breadwinner concept.

Despite extensive efforts to address declining fertility rates, many pronatalist policies particularly those offering financial incentives have yielded limited or even counterproductive results. Studies show that lump-sum birth bonuses or tax benefits

⁴⁹ Inland Revenue Authority of Singapore. 2024. "Tax Savings for Married Couples and Families," IRAS.
⁵⁰Taiwan Government. (2024). *Exemption and Deduction*.

⁵¹Ministry of Economy and Finance. (2022). *KOREAN TAXATION*.

rarely result in sustained increases in fertility, especially when unaccompanied by deeper structural reforms.⁵² In countries such as South Korea and Japan, deeply embedded gender norms and inflexible labor markets significantly undermine the effectiveness of such policies, regardless of their monetary value.⁵³ Generous maternity leave policies, if not matched by equally strong support for paternal leave and workplace flexibility, risk reinforcing traditional gender roles and discouraging women's long-term participation in the workforce⁵⁴. This underscores a crucial point: policy success depends heavily on alignment with the country's cultural, institutional, and social context. Western countries, where egalitarian norms are stronger and public childcare is widely accessible, tend to see more favorable outcomes from pronatalist initiatives, while the same models falter in more conservative or work-centric societies like Asian Countries.⁵⁵

Conclusion

This study examined the effectiveness of six pronatalist policy types in shaping fertility outcomes in East Asia through a holistic lens. It found that while financial incentives, childcare support, and workplace reforms can influence parental decisions, their success depends on how well they align with the social and cultural realities of each country. Singapore and Taiwan show modest progress, but similar policies in Japan and South Korea remain less effective, often due to persistent gender norms and rigid work cultures. By moving beyond economic tools, this study contributes to a broader understanding of how complex and context-dependent fertility policy outcomes truly are. However, the study is limited by a relatively short time span of available data, given that many policies have only recently been implemented. In addition, high collinearity

between some policy variables required the exclusion of certain measures, potentially narrowing the scope of analysis. Future research should draw on richer, longitudinal data and incorporate firsthand perspectives to capture the lived realities behind fertility choices.

Acknowledgement

I would like to express my gratitude to my supervisor, Mr. Adhi Cahya Fahadayna and Alvinda Putri Ruriana for their invaluable guidance, support, and encouragement. Their insights and expertise have been instrumental in shaping the direction of this research. Also, for my family, friends, and Ferry who shared journey of writing this paper.

Reference

Article

- Aarssen, Lonnie W. 2005. "Why Is Fertility Lower in Wealthier Countries? The Role of Relaxed Fertility-Selection," *Population and Development Review*, 31.1: 113–26 <<https://doi.org/10.1111/j.1728-4457.2005.00054.x>>
- Buttner, Thomas, and Wolfgang Lutz. 1990. "Estimating Fertility Responses to Policy Measures in the German Democratic Republic," *Population and Development Review*, 16.3: 539 <<https://doi.org/10.2307/1972835>>
- Castles, Francis G. 2003. "The World Turned Upside Down: Below Replacement Fertility, Changing Preferences and Family-Friendly Public Policy in 21 OECD Countries," *Journal of European Social Policy*, 13.3: 209–27 <<https://doi.org/10.1177/09589287030133001>>
- Choo, Dahae, and Hugo Jales. 2021. "Childbearing

⁵² Gauthier, A. H. (2007). *The impact of family policies on fertility in industrialized countries: A review of the literature*. Population Research and Policy Review.

⁵³ Raymo, J. M., & Park, H. (2020). *Childbearing and changing gender roles in East Asia*. Demographic Research, 42, 1349–1372.

⁵⁴ OECD (2023). *Family Database – SF2.1: Parental leave systems*.

⁵⁵ Oláh, L. S., Kotowska, I. E., & Richter, R. (2021). *The new roles of men and women and implications for families and societies*. Families and Societies Working Paper Series.

- and the Distribution of the Reservation Price of Fertility: The Case of the Korean Baby Bonus Program,” *Journal of Asian Economics*, 77: 101395 <<https://doi.org/10.1016/j.asieco.2021.101395>>
- Demeny, P. (1986). Pronatalist policies in low-fertility countries: Patterns, performance, and prospects. *Population and Development Review*, 12, 335. <<https://doi.org/10.2307/2807916>>
- Furstenberg, Frank F. 2010. “On a New Schedule: Transitions to Adulthood and Family Change,” *The Future of Children*, 20.1: 67–87 <<https://doi.org/10.1353/foc.0.0038>>
- Gauthier, A. H. (2007). *The impact of family policies on fertility in industrialized countries: A review of the literature*. Population Research and Policy Review.
- Huang, Jr-Tsung. 2007. “PERSONAL TAX EXEMPTION: THE EFFECT ON FERTILITY IN TAIWAN,” *The Developing Economies*, 13.1: 32–48
- Hugo, Graeme. 2000. “Declining Fertility and Policy Intervention in Europe: Some Lessons for Australia?,” *Journal of Population Research*, 17.2: 175–98 <<https://doi.org/10.1007/bf03029464>>
- Kim, Taewook. 2023. “The Impact of Working Hours on Pregnancy Intention in Childbearing-Age Women in Korea, the Country with the World’s Lowest Fertility Rate,” *PLOS ONE*, 18.7: e0288697 <<https://doi.org/10.1371/journal.pone.0288697>>
- Knize, Veronika J. 2021. “What Gender-Neutral Activation? Understanding the Gender Sanction Gap in Germany’s Welfare System,” *Social Politics: International Studies in Gender, State & Society*, 29.4: 1286–1313 <<https://doi.org/10.1093/sp/jxab037>>
- Koo, Eunjung. 2019. “Women’s Subordination in Confucian Culture: Shifting Breadwinner Practices,” *Asian Journal of Women’s Studies*, 25.3: 417–36 <<https://doi.org/10.1080/12259276.2019.1648065>>
- Lee, Youngcho. 2022. “Norms about Childcare, Working Hours, and Fathers’ Uptake of Parental Leave in South Korea,” *Community, Work & Family*, 26.4: 466–91 <<https://doi.org/10.1080/13668803.2022.2031889>>
- Malak, Natalie, and Terry Yip. 2016. “Baby Bonus, Anyone? Examining Heterogeneous Responses to a Pro-Natalist Policy,” *SSRN Electronic Journal* <<https://doi.org/10.2139/ssrn.2846802>>
- Miyajima, Takeru, and Hiroyuki Yamaguchi. 2017. “I Want to but I Won’t: Pluralistic Ignorance Inhibits Intentions to Take Paternity Leave in Japan,” *Frontiers in Psychology*, 8 <<https://doi.org/10.3389/fpsyg.2017.01508>>
- Oláh, L. S., Kotowska, I. E., & Richter, R. (2021). *The new roles of men and women and implications for families and societies*. Families and Societies Working Paper Series.
- Pendleton, Brian F. 1978. “An Historical Description and Analysis of Pronatalist Policies in Italy, Germany and Sweden,” *Policy Sciences*, 9.1: 45–70 <<https://doi.org/10.1007/bf00137978>>
- Raymo, J. M., & Park, H. (2020). *Childbearing and changing gender roles in East Asia*. Demographic Research, 42, 1349–1372.
- Rindfuss, Ronald R., David K. Guilkey, S. Philip Morgan, and ØYstein Kravdal. 2010. “Child-Care Availability and Fertility in Norway,” *Population and Development Review*, 36.4: 725–48 <<https://doi.org/10.1111/j.1728-4457.2010.00355.x>>
- Sleeboos, Joelle. 2003. *Low Fertility Rates in OECD Countries: Facts and Policy Responses*, pp. 1–62
- Son, Keonhi, and Tobias Böger. 2021. “The Inclusiveness of Maternity Leave Rights

over 120 Years and across Five Continents,” *Social Inclusion*, 9.2: 275–87
<<https://doi.org/10.17645/si.v9i2.3785>>

Tan, Jolene. 2023. “Perceptions towards Pronatalist Policies in Singapore,” *Journal of Population Research*, 40.3
<<https://doi.org/10.1007/s12546-023-09309-8>>

Online Reference

Bloomenthal, Andrew. 2011. “Four Asian Tigers: What They Are, Economic Strengths Explained,” *Investopedia*
<<https://www.investopedia.com/terms/f/four-asian-tigers.asp>> [accessed 19 February 2025]

Cheng, Mira. 2024. “Global Fertility Rates to Plunge in Decades Ahead, New Report Says,” *CNN*
<<https://edition.cnn.com/2024/03/20/health/global-fertility-rates-lancet-study/index.html>> [accessed 19 February 2025]

Dalton, Emma. 2022. “Japan’s Stubborn Gender Inequality Problem,” *East Asia Forum*
<<https://eastasiaforum.org/2022/06/28/japans-stubborn-gender-inequality-problem/>> [accessed 19 February 2025]

Inland Revenue Authority of Singapore. 2024. “Tax Savings for Married Couples and Families,” *IRAS*
<<https://www.iras.gov.sg/taxes/individual-income-tax/basics-of-individual-income-tax/tax-reliefs-rebates-and-deductions/tax-savings-for-married-couples-and-families/>> [accessed 19 February 2025]

Jeong, Jin-Ho, and Ji-Eun Seo. 2023. “In Korea, More Women Are Becoming Breadwinners,” *Korea JoongAng Daily*
<<https://koreajoongangdaily.joins.com/2023/01/09/business/economy/Korea-singleincome-mother/20230109173901073.html>> [accessed 19 February 2025]

Mamchii, Oleksandra. 2024. “Richest Countries in Asia,” *Best Diplomats*
<<https://bestdiplomats.org/richest-countries-in-asia/>> [accessed 19 February 2025]

Ministry of Manpower Singapore. 2021. “A Gender-Inclusive Workforce,” *Ministry of Manpower*
<<https://stats.mom.gov.sg/Pages/a-gender-inclusive-workforce.aspx>>

NIPPON. 2022. “Japan Sees 90% Drop in Daycare Waiting Lists over the Last Five Years,” *Nippon.Com*
<<https://www.nippon.com/en/japan-data/h01428/>> [accessed 19 February 2025]

OECD (2023). *Family Database – SF2.1: Parental leave systems*.
<https://www.oecd.org/social/family/database.htm>

Report

Del Boca, Daniela. 2002. *Low Fertility and Labour Force Participation of Italian Women: Evidence and Interpretations*
<<http://ideas.repec.org/p/oec/elsaaa/61-en.html>>

Duclos, Edith, Pierre Lefebvre, and Phillip Merrigan. 2001. “A ‘Natural Experiment’ on the Economics of Storks: Evidence on the Impact of Differential Family Policy on Fertility Rates in Canada,” *CREFE Working Papers*

Gender Equality Committee Taiwan. 2024. *Telephone Poll on Gender Equality Perceptions*

Kohara, Miki, and Bipasha Maity. 2020. *Review of Economics of the Household The Impact of Work-Life Balance Policies on the Time Allocation and Fertility The Impact of Work-Life Balance Policies on the Time Allocation and Fertility Preference of Japanese Women*

Legatum Institute. 2023. *Source and Indicators*

Ministry of Economy and Finance. (2022). *KOREAN TAXATION*.

Taiwan Government. (2024). *Exemption and*

Deduction.

UNDESA. 2021. *World Population Policies In International Affairs*
<<https://doi.org/10.2307/2615426>>