

ANALYSIS

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Unpaid Work and Gender Bias— A Missing Link in GDP?

INTRODUCTION

Gross domestic product, the workhorse of economists, is easily the most widely used measure to assess economic prosperity and performance. It is a key input to government policymaking, plays an important role in private sector decisions, and is commonly referenced as a measure of both economic and more general wellbeing. This universal usage persists despite well-known limitations. Since the first national accounts standard was released in 1953, the limitations of GDP as a measure of welfare have been universally acknowledged. GDP aims to measure the monetary value of the goods and services the economy produces less the value of the goods and services used up in production. However, large components of activity are not generally measured by national statistics offices and are excluded from the system of national accounts.

Unpaid Work and Gender Bias—A Missing Link in GDP?

BY JEEMIN BANG, KATRINA ELL, DAWN HOLLAND AND ADITI RAMAN

- » Across the member states of the OECD, 25% to 55% of hours worked are excluded from the measurement of national statistics because they are not remunerated.
- » As a result, global GDP underestimates the value of the goods and services produced by \$10 trillion to \$50 trillion—women produce approximately 70% of this unmeasured output.
- » Non-market activities, or unpaid work, absorb nearly as much time as paid work in OECD economies.
- » The heavy gender bias in unpaid work contributes to lower female labour force participation rates, persistent gender wage gaps, and a higher risk of poverty for women.
- » In countries such as India, South Korea and Japan, policies to redress gender inequalities in the labour market have had mixed results.
- » The provision of maternity and paternity leave, affordable childcare, voucher systems that subsidise household service work, and flexible working conditions have all been shown to narrow gender gaps in both unpaid and paid work globally.

‘Gross national product . . . measures everything in short, except that which makes life worthwhile.’ -Robert F. Kennedy, 18 March 1968

INTRODUCTION

Gross domestic product, the workhorse of economists, is easily the most widely used measure to assess economic prosperity and performance. It is a key input to government policymaking, plays an important role in private sector decisions, and is commonly referenced as a measure of both economic and more general wellbeing. This universal usage persists despite well-known limitations. Since the first national accounts standard was released in 1953, the limitations of GDP as a measure of welfare have been universally acknowledged (for example, Kuznets¹). GDP aims to measure the monetary value of the goods and services the economy produces less the value of the goods and services used up in production. However, large components of activity are not generally measured by national statistics offices and are excluded from the system of national accounts. For example, GDP does not account for the following:

- » Non-market activities (goods produced and services provided with no financial transaction involved)
- » Much of the informal or underground economy (unreported or untaxed cash or barter transactions)

1 Simon Kuznets, “How to judge quality,” *The New Republic* Vol. 147 (October 1962): 29-32.

- » Negative externalities (such as environmental damage and pollution)
- » Quality of life (such as leisure time, health and personal safety)
- » Depletion of natural resources

Non-market activities—or unpaid work—absorb nearly as much time as paid work in OECD economies. Unpaid work includes household chores, caring for children, and volunteering in the community. These services are instrumental to the functioning of a healthy economy. Nonetheless, because there is no observable price for these services, it is difficult to quantify their contribution to economic activity, and they are excluded from GDP. There is a heavy gender bias in unpaid work, so, by extension, there is a degree of gender bias in the measurement of GDP.

Across the globe, women continue to shoulder a higher share of unpaid work, which contributes to lower female labour force participation rates, wages, pensions, and higher risks of poverty. The failure to quantify the value of unpaid work helps perpetuate these gender inequalities, as policy efforts to support the services provided through unpaid work are not fully aligned with their economic importance.

On that note, we review the structure of unpaid work around the world, explore ways to quantify this missing component of GDP, consider why measuring unpaid work matters, and examine the success and failure of policy measures in selected countries to address gender inequalities in unpaid work.

MEASURING UNPAID WORK

HOW DO WE DEFINE UNPAID WORK?

Unpaid work is work that is not remunerated. So, the question is, how do we distinguish between ‘work’ and other activities? In many cases, this distinction may not be clear-cut. For example, many people engage in cooking or gardening as a hobby or consider time spent with family members as leisure. To clarify the definition, in 2013, the International Conference of Labour Statisticians formalized the definition of work for the purposes of measurement as ‘any activity performed by persons of any sex and age to produce goods or to provide services for use by others or for own use’. More intuitively, activities are considered ‘work’ if a third person could perform this activity for remuneration. This includes routine household tasks such as cleaning, cooking, shopping, laundry and home repairs, as well as caring for children, the elderly and the sick within the household. It also includes volunteer work such as providing services to the community or assistance to other households.

WHAT STATISTICAL RESOURCES ARE THERE FOR UNPAID WORK?

Time use surveys, in which respondents complete detailed activity diaries, provide the most accurate accounts of time spent on unpaid work. More than 90 countries worldwide have conducted at least one time use survey in the past 25 years. However, surveys are costly, and in many cases, the frequency of updates is low. International efforts are working towards integrating questions related to unpaid work into standard labour force surveys to provide more timely information and a better understanding of how time use and unpaid work are evolving over time. There are four statistical resources that we have drawn on for this study:

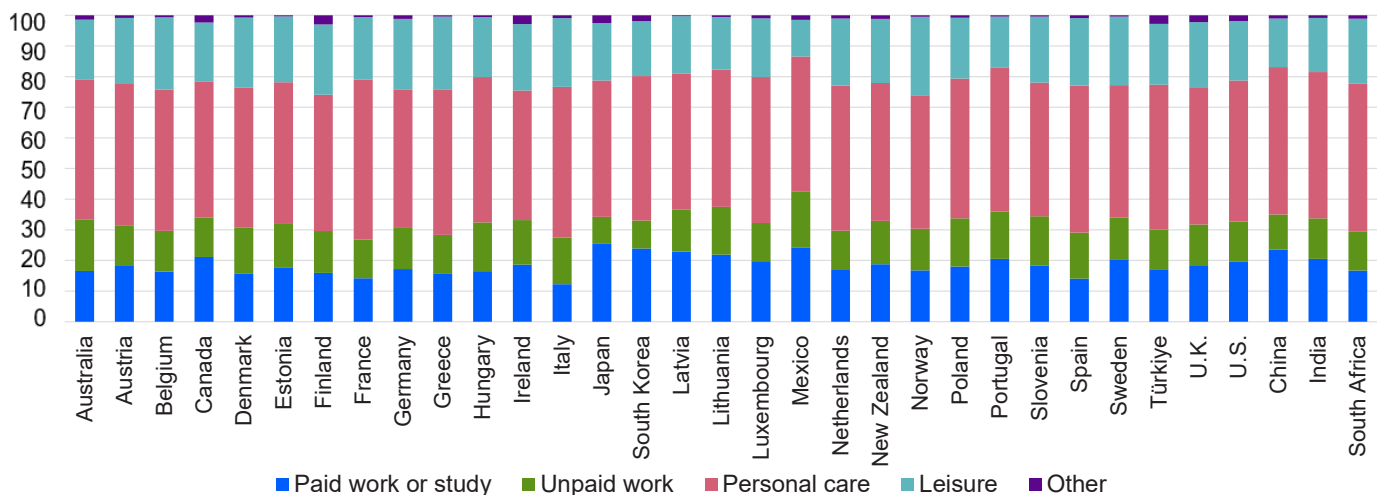
- » National statistical offices, which report time use information on an ad hoc basis
- » The OECD Time Use Database, which provides a common set of relatively detailed time use statistics for 30 countries
- » The U.N. Sustainable Development Goals Indicators Database, which reports the proportion of time spent on unpaid domestic chores and care work by sex, age and location
- » ILOSTAT, which reports the share of people outside the labour force due to care responsibility by sex and location

HOW MUCH TIME IS SPENT ON UNPAID WORK?

Although many of us may feel like we work 24/7, individuals aged 15-64 in the 30 countries illustrated in Chart 1 tend to spend less than half their time on paid or unpaid work.

Chart 1: Paid and Unpaid Work Takes Up Less Than Half of an Average Day

% of avg 24-hr period (inclusive of holidays and weekends), aged 15-64



Sources: OECD Time-Use database, Moody's Analytics

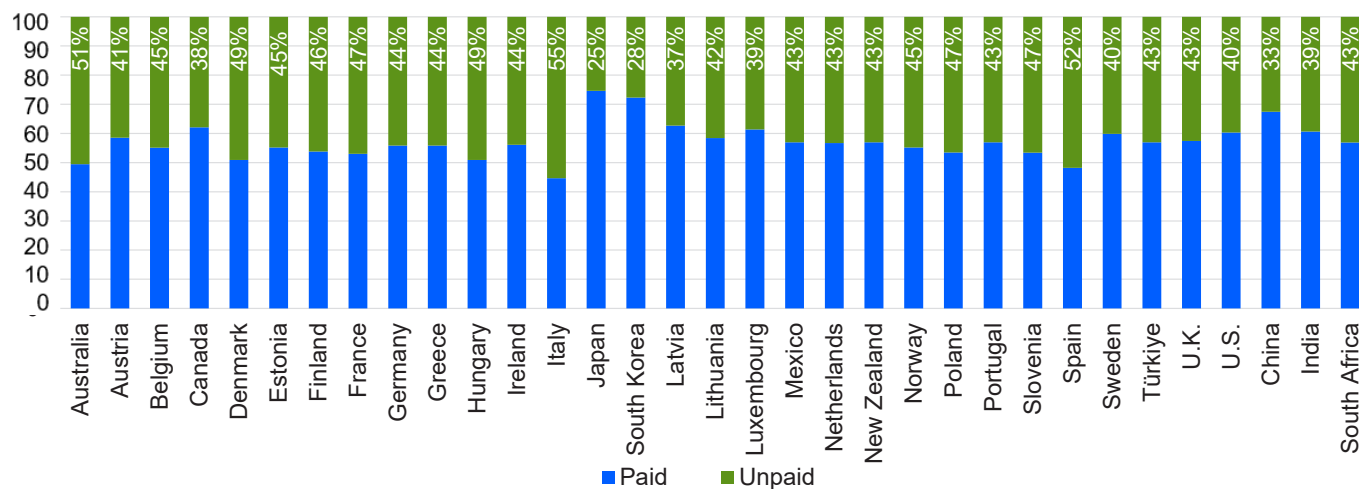
However, we should remember that this is based on a representative 24-hour period and includes time sleeping, which captures a sizeable chunk of the personal care category.

Focusing on work, 25% to 55% of hours worked in this set of countries are classified as unpaid (see Chart 2). This alone gives us a starting point for assessing the magnitude of GDP mismeasurement.

Routine housework—of which precise definitions differ across countries but generally encompass cooking, cleaning, laundry, gardening, DIY, and household admin tasks such as paying bills—accounts for the lion's share of unpaid work (see Chart 3). On average, caring for children and other household members accounts for just 13% of unpaid work, with smaller shares generally devoted to shopping, travel related to household activities, and other unpaid work.

Chart 2: Unpaid Work Accounts for 25%-55% of Working Hours

% of daily work, aged 15-64, paid and unpaid



Sources: OECD Time-Use database, Moody's Analytics

Chart 3: Routine Housework Accounts for Bulk of Unpaid Work

% of unpaid work in avg 24-hr period (inclusive of holidays and weekends), aged 15-64



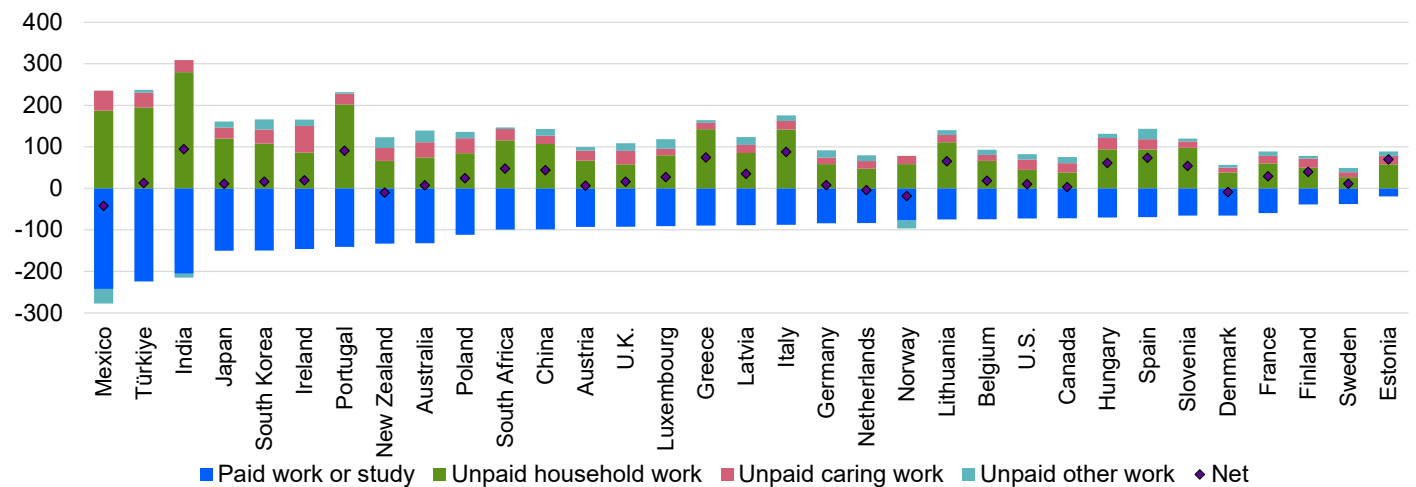
Sources: OECD Time-Use database, Moody's Analytics

GENDER BIAS IN UNPAID WORK

There are strong gender gaps in paid and unpaid work across the globe. Men tend to spend more hours in paid work, while women spend more hours in unpaid work (see Chart 4). On average, women perform 65% of unpaid work in the 30 countries illustrated in the figure below.

Chart 4: There Are Wide Gender Gaps in Paid and Unpaid Work

Avg minutes per day spent by females – avg minutes per day spent by males, aged 15-64



Sources: OECD Time-Use database, Moody's Analytics

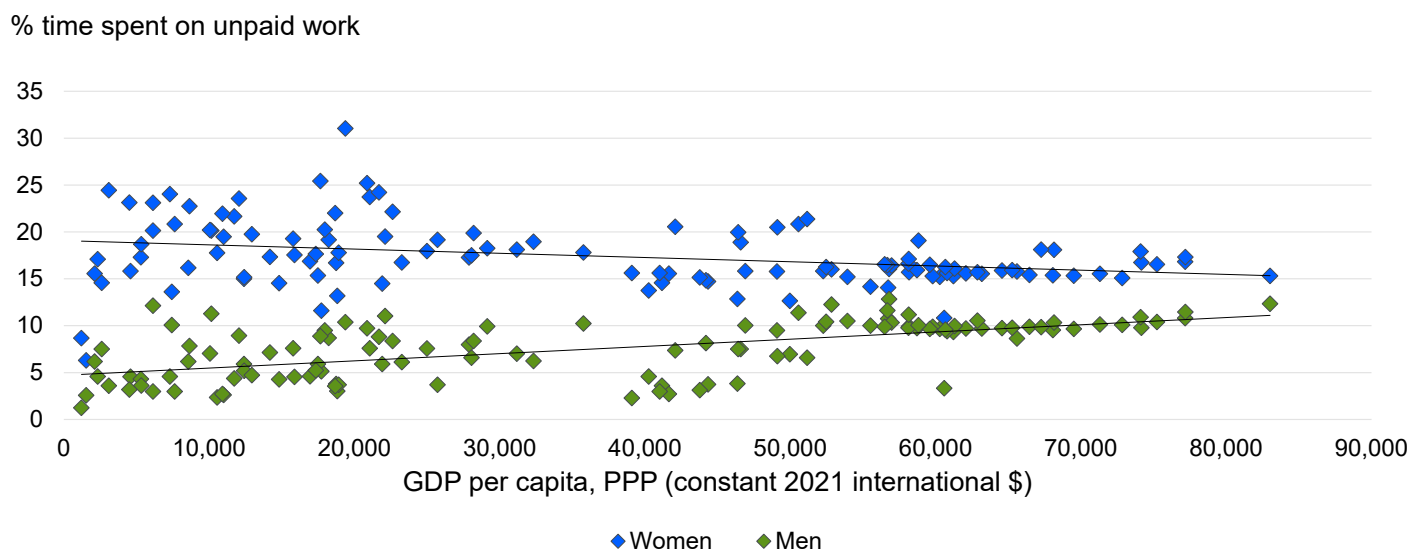
In most countries, women tend to spend more time in work in aggregate, as illustrated by the 'net' gender gap in both paid and unpaid work. One interesting observation from Chart 4 is that as the gap in paid work narrows, the net gender gap in total hours of work tends to rise. This suggests that the increase in female participation in paid work is not fully compensated by a decrease in the number of hours women spend in unpaid work.

If we broaden the sample to include a larger number of developing countries, we observe that the gender bias in unpaid work tends to narrow as GDP per capita rises (see Chart 5). This reflects a combination of higher rates of male participation in unpaid work in higher-income countries, greater access to time-saving technology (for example, washing machines) and infrastructure (such as running water), and higher rates of outsourcing domestic work to paid employees.

QUANTIFYING UNPAID WORK RELATIVE TO GDP

Since there is no observable price for unpaid work, it is difficult to quantify its contribution to economic activity, and hence it is excluded from GDP. Statisticians have proposed two primary approaches to quantify the value of these services: replacement cost and opportunity cost. The replacement cost approach values one hour of unpaid work as the cost of hiring someone to perform that work on your behalf. In practice, this is generally close to the minimum wage in many countries. The opportunity cost approach takes into consideration that unpaid work often comes at the expense of paid work. This approach values one hour of unpaid work by the foregone income from not engaging in employed work

Chart 5: Gender Bias in Unpaid Work Narrows as GDP Per Capita Rises



Sources: UN SDG Indicators, World Bank World Development Indicators, Moody's Analytics

during that hour. Studies have approximated this by the economy-wide average hourly wage. We can consider these as upper and lower boundaries to estimate the value of unpaid work.²

The labour income share of GDP from the International Labour Organisation measures the contribution of paid work to GDP. Globally, this averages slightly more than 50% of measured GDP. Adjusting a country's labour income share by the ratio of average time spent on unpaid work to average time spent on paid work from Figure 2 above offers a simple estimate of the value of unpaid work as a share of GDP according to the opportunity cost approach, where unpaid work is valued at the same average rate as paid work. Adjusting this upper boundary by the ratio of the statutory minimum wage to the average national wage sourced from ILOSTAT produces an estimate of the value of unpaid work if it were compensated at minimum wage (replacement cost approach).

Applying these two approaches, the value of unpaid work constitutes 10% to 50% of GDP in major economies (see Chart 6). Extrapolating to the global level, the measured level of global GDP rises by between \$10 trillion and \$50 trillion if the value of unpaid work is included in its measurement. Women are responsible for approximately 70% of this unmeasured economic production.

Differences across countries in Chart 6 stem from three sources: the labour income share of GDP, the ratio of unpaid to paid work, and the gap between the minimum and average wage.

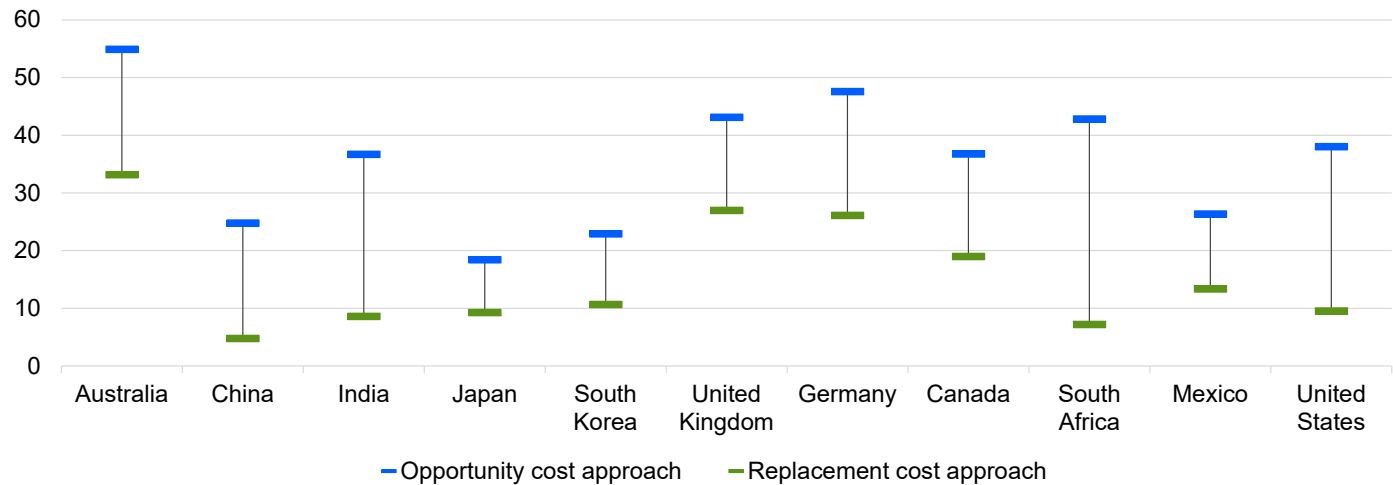
The labour income share of GDP is lower in Mexico (35%) than in other countries in the sample (50% to 60%). This is common for commodity-exporting countries, as extraction activities are less labour-intensive than most others. This holds back the valuation of unpaid work relative to the economy's GDP.

According to the OECD time use surveys, Japan and South Korea have lower ratios of unpaid to paid work than other countries in the sample (see Chart 2 above). This may reflect higher

² These simplified approaches make no adjustments for potential productivity differentials between own product and outsourced work.

Chart 6: A Significant Share of Production Is Missing From GDP

Value of unpaid work as a % of nominal GDP



Sources: OECD Time Use Survey, ILOSTAT, National statistical authorities, Moody's Analytics

levels of outsourcing of domestic work but may also indicate different interpretations of 'work' across countries and cultures. This suggests that differences between countries in Figure 6 should be viewed with some caution.

The distance between the upper and lower boundaries of the estimates in Chart 6 reflects the gap between minimum and average wages in a country. China, India, the United States, and South Africa all stand out with notably wider wage gaps than in other countries in the sample, where the minimum wage is less than 25% of the average wage. Other countries in the sample set a minimum wage equivalent to at least 50% of the average wage.

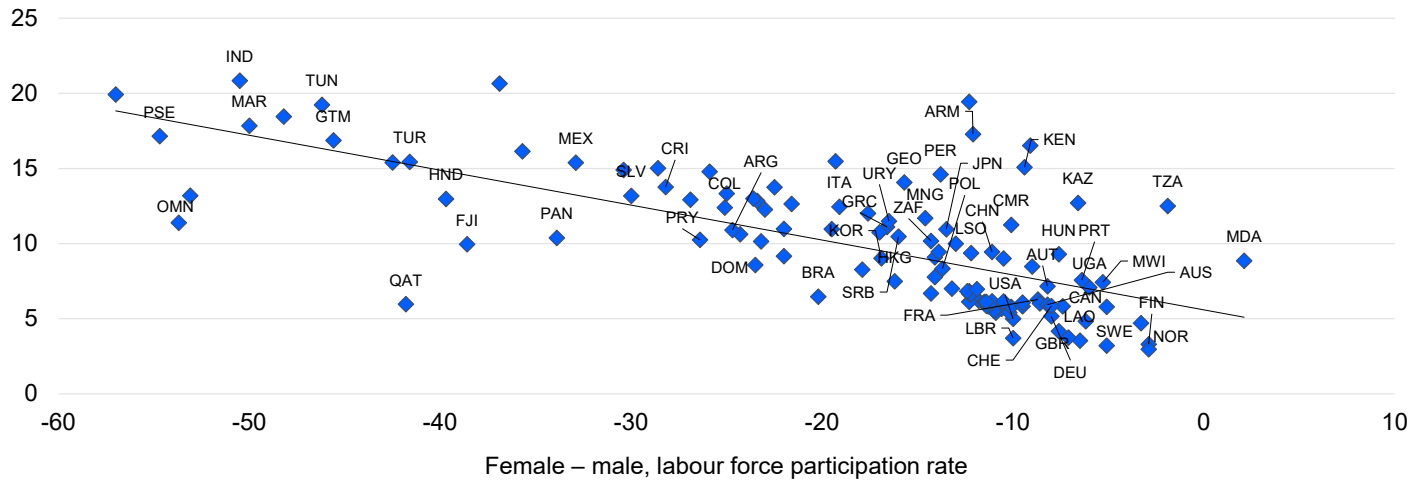
BROAD ECONOMIC IMPLICATIONS OF UNPAID WORK

LABOUR MARKET PARTICIPATION AND PRODUCTIVITY

One of the most direct economic impacts of gender bias in unpaid work is on women's participation in the labour market. The substantial time commitment required for unpaid household tasks limits the hours women can dedicate to paid employment. This time constraint often results in lower labour force participation rates for women, reducing the overall talent pool available in the economy. This delivers a strong correlation between the gender gap in unpaid work and the gender gap in labour force participation (see Chart 7). The International Labour Organization reports that in 2023, 748 million people aged 15 and above were outside the labour force due to care responsibilities, of which 708 million (95%) were women. This highlights the obstacle that unpaid work poses for paid work.

Chart 7: Gender Gap in Participation Closely Related to Unpaid Work Gap

Female-male, % time in unpaid work



Note: Where multiple time periods are available for a country, the label is attached to the most recent observations.

Sources: UN SDG Indicators, ILOSTAT, Moody's Analytics

Even when women do participate in the labour market, the dual burden of paid work and unpaid household responsibilities can hinder their productivity and career progression. Women may opt for part-time positions or jobs with flexible hours, which typically offer lower wages and fewer opportunities for advancement. This contributes to the gender wage gap and perpetuates economic inequality (see Chart 8).³

ECONOMIC GROWTH AND GDP

The gender disparity in unpaid household labour also affects economic growth. When a significant portion of the population is unable to fully engage in the labour market, the economy operates below its potential output. Studies have shown that increasing women's labour force participation can have a substantial positive impact on GDP. Addressing this imbalance and harnessing the full potential of the female workforce could unlock considerable economic growth.

HUMAN CAPITAL DEVELOPMENT

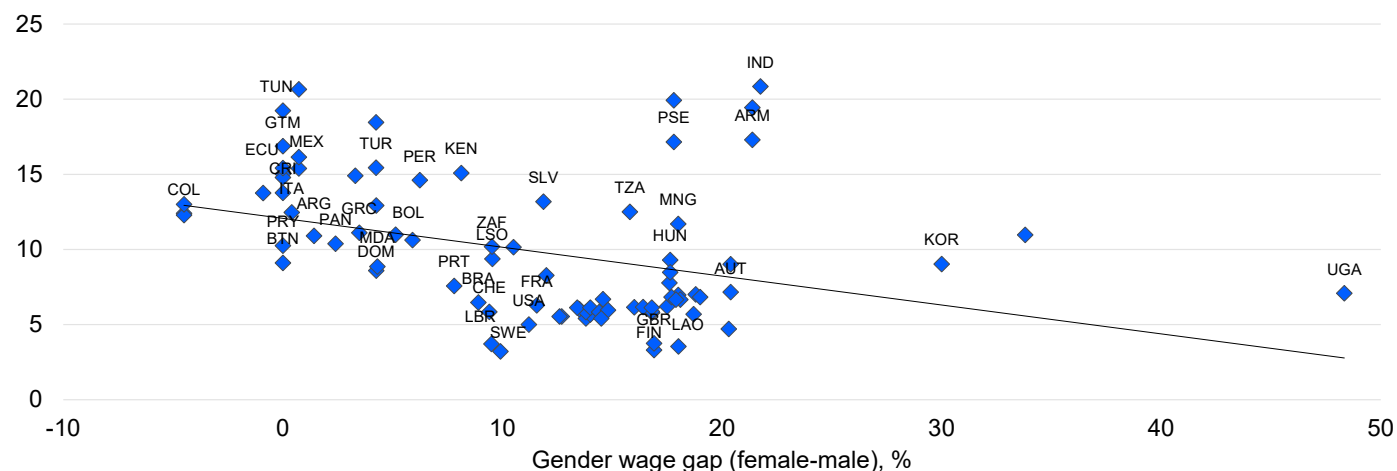
The unequal distribution of unpaid household tasks also has long-term implications for human capital development. Women who are overburdened with household responsibilities have less time and energy to invest in education and skill development. This can limit their career opportunities and earning potential over their lifetime, further entrenching economic disparities.

³ OECD studies confirm a statistically significant relationship between the gender gap in unpaid work and the gender wage gap after factoring out GDP per capita, the fertility rate, the urbanisation rate, maternity leave, and gender gaps in labour force participation, unemployment and education.

Gaëlle Ferrant, Luca Maria Pesando and Keiko Nowacka, "Unpaid Care Work: The Missing Link in the Analysis of Gender Gaps in Labour Outcomes," OECD Publishing, Paris, 2014. <https://doi.org/10.1787/1f3fd03f-en>

Chart 8: Gender Bias in Unpaid Work Associated With Gender Wage Gap

Female-male, % time in unpaid work



Note: Where multiple time periods are available for a country, the label is attached to the most recent observations. The ILO defines the gender wage gap as the difference between the hourly wages of men and women, expressed as a percentage of men's wages.

Sources: UN SDG Indicators, ILOSTAT, Moody's Analytics

Moreover, the societal expectation that women should bear the brunt of household labour can influence education and career choices from a young age, steering women away from fields perceived as incompatible with family responsibilities.

COUNTRY DEEP DIVES

INDIA

India is home to the largest population in the world and is rapidly growing. In 2024, India's GDP surpassed that of the United Kingdom to become the fifth largest globally. Despite being ranked among the largest economies, gains have been unequal within the country. Income and gender disparities remain wide, and progress has not kept pace with economic growth.

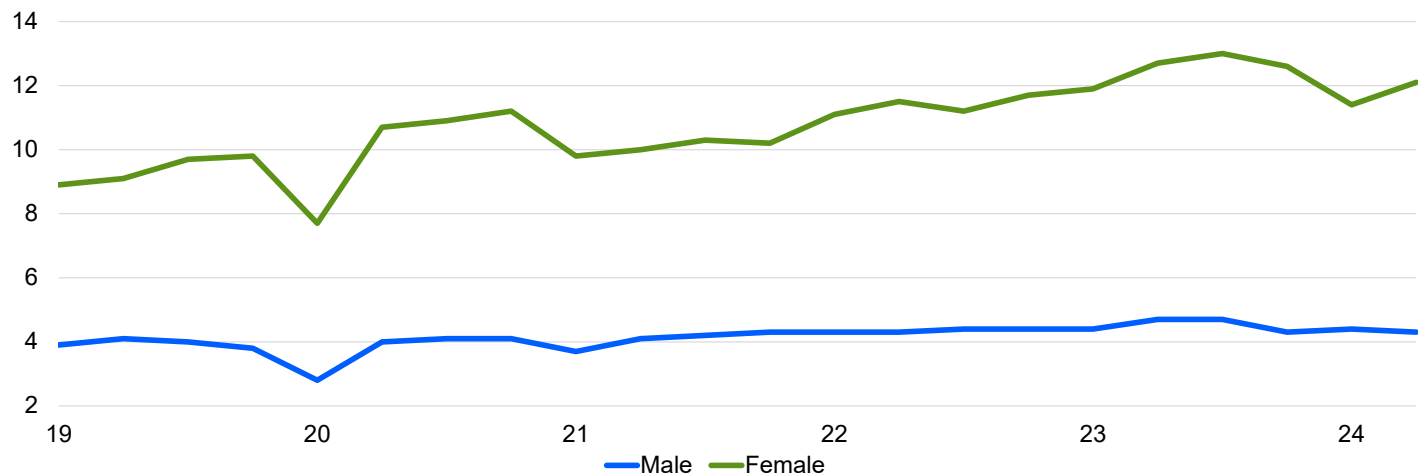
Unpaid work is one of the many ways in which these disparities manifest, with Indian women bearing a disproportionately larger share of the burden. The national statistics office's 2019 Time Use Survey found that women spent around 134 minutes per day on unpaid caregiving work, whereas men spent close to 76 minutes. The difference was even larger with domestic work, with women spending 200 minutes more on this than men.

A narrower analysis by the national statistics office labelled individuals solely engaging in unpaid work as self-employed and part of India's labour force. The survey results found that a growing share of women included in the labour force are actually engaged in unpaid work, while the share of men included in the labour force but engaged in unpaid work has been mostly stagnant (see Chart 9). The root cause of this disparity lies in social and cultural norms, particularly the traditional role that women have played for centuries.

The heavy burden of unpaid work by women is associated with large-scale economic disempowerment, with many women prevented from fully participating in the labour market.

Chart 9: Gender Divides in India’s Unpaid Labor Force Are Growing

Proportion of unpaid helpers in household enterprises in labour force, India, %

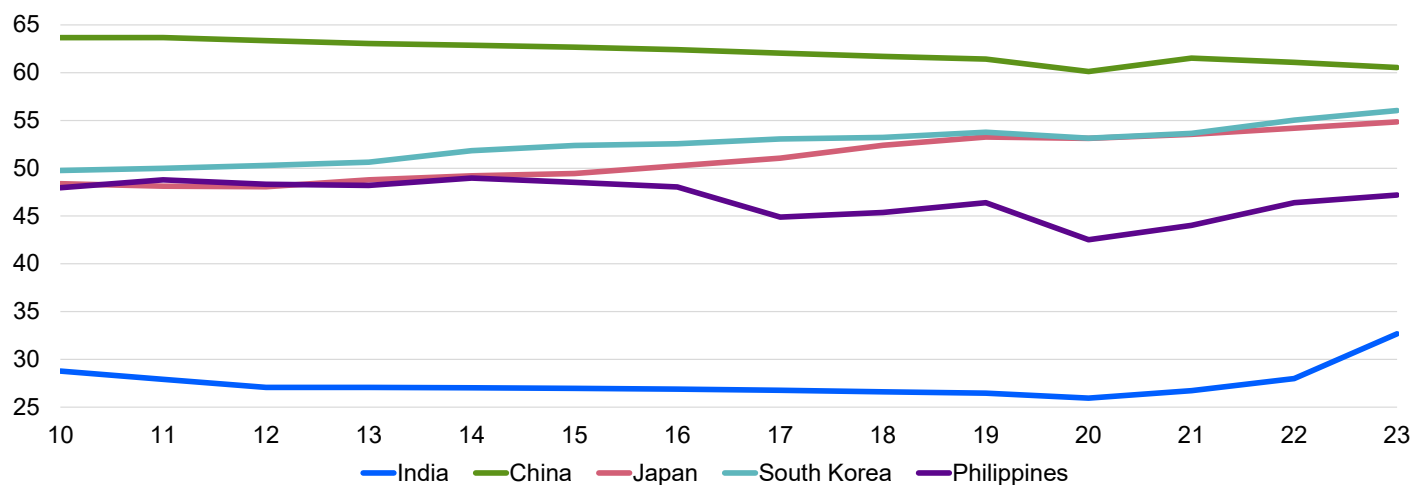


Sources: Ministry of Statistics and Implementation, Moody’s Analytics

Labour force participation rates differ by almost 20 percentage points between Indian men and women, with female labour force participation rates in India far behind that of its competitors (see Chart 10).

Chart 10: India’s Female Labor Force Participation Lags Competitors

Labor force participation rate, % of female population ages 15 and older, modeled ILO estimate

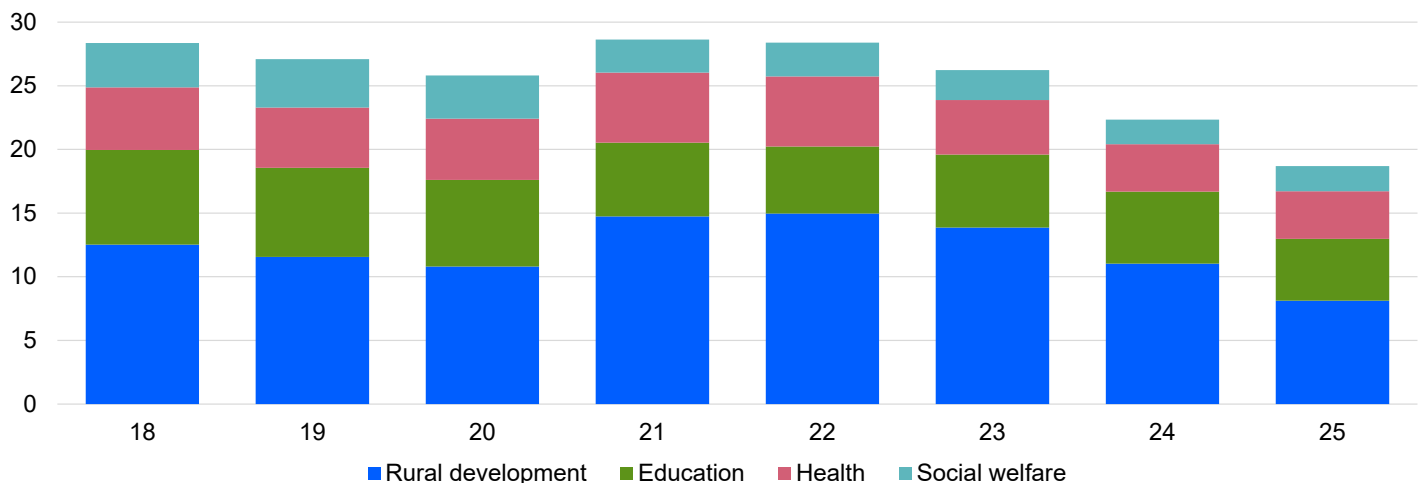


Sources: ILOSTAT, Moody’s Analytics

There have been some attempts to reduce the burden of unpaid work at the macro level. Large-scale policy initiatives focused on improving institutional infrastructure, especially education and health facilities, have been given steady funding in recent years. Funding in such areas can reduce time spent on caregiving and domestic activities. For instance, investment in public childcare facilities or elderly care centres can alleviate the caregiving burden, particularly for women, enabling them to participate more fully in the labour force. However, the share of Union Budget expenditure allocated to such facilities has fallen since the pandemic (see Chart 11).

Chart 11: Funding Targeting Unpaid Work Is Less of a Priority

Union budget expenditures on major items, India, % of total expenditure



Sources: Ministry of Finance, CEIC, Moody's Analytics

Ground-level policies have tended to be more successful in redressing the gender imbalance in paid and unpaid work. There have been several initiatives geared towards promoting gender equality in households on the national level. Formal policies such as the Maternity Benefit Act and the National Creche Scheme have made childcare more affordable, allowing more women to remain attached to the paid workforce while raising children. In addition, Beti Bachao, Beti Padhao is one of several educational campaigns set up to improve the status of girls and women through awareness programs.

The prioritisation of redressing gender disparities differs across regions. For example, the Kerala state government practises gender budgeting, mandating that 10% of funds given to local governments focus on women-specific schemes. The state government has also set up gender awareness campaigns for college women and young girls, which emphasise the sharing of domestic and caregiving responsibilities within the household. Such initiatives intrinsically bridge gender gaps ingrained by decades of social and cultural norms.

SOUTH KOREA

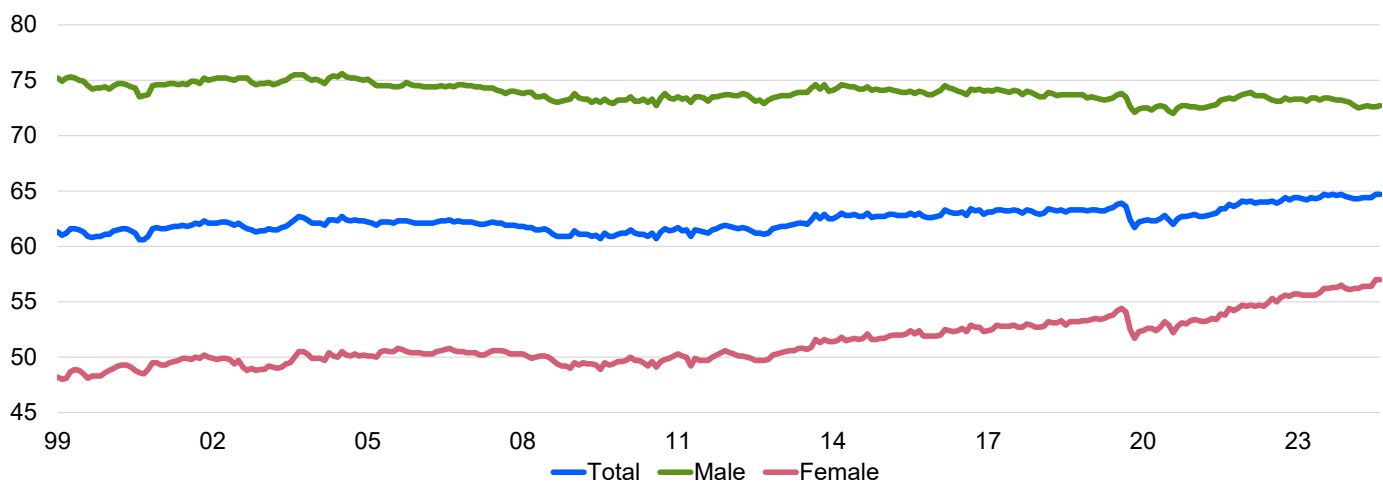
South Korea went through an impressive economic development in the late 20th century. GDP per capita increased from slightly more than \$10,000 at the beginning of the 21st century to more than \$35,000 by 2023, more than tripling over the last two decades. However, cultural

norms are evolving more gradually than economic growth and development, and perceptions of gender roles remain entrenched within people's mindsets.

Female labour force participation has rapidly increased in the last few decades (see Chart 12). This has resulted in a rise in the number of dual-income households. However, an equivalent increase in male participation in household work has not matched this change. Women still disproportionately shoulder household duties, including cleaning, cooking and childcare.

Chart 12: Female Labor Force Participation Rate Is Rising Faster

% of working age population, South Korea



Sources: Statistics Korea, Moody's Analytics

Most South Korean households consider house care as a woman's job. Meanwhile, men continue to make a higher contribution to household income, so are less willing to participate in domestic care responsibilities. This, in turn, perpetuates the weaker engagement of women with the paid workforce. This phenomenon is particularly entrenched among older generations, although surveys suggest that attitudes are beginning to evolve among the young (see Chart 13).

South Korea has pushed forward important policies aimed at reducing the burden on women, but low adoption is a testament to how difficult changing cultural norms can be. For instance, South Korea offers generous parental leave policies, including up to one year of paid leave for both mothers and fathers. However, in 2023, only 7.4% of eligible fathers took parental leave, compared with more than 70% of eligible mothers (see Chart 14).

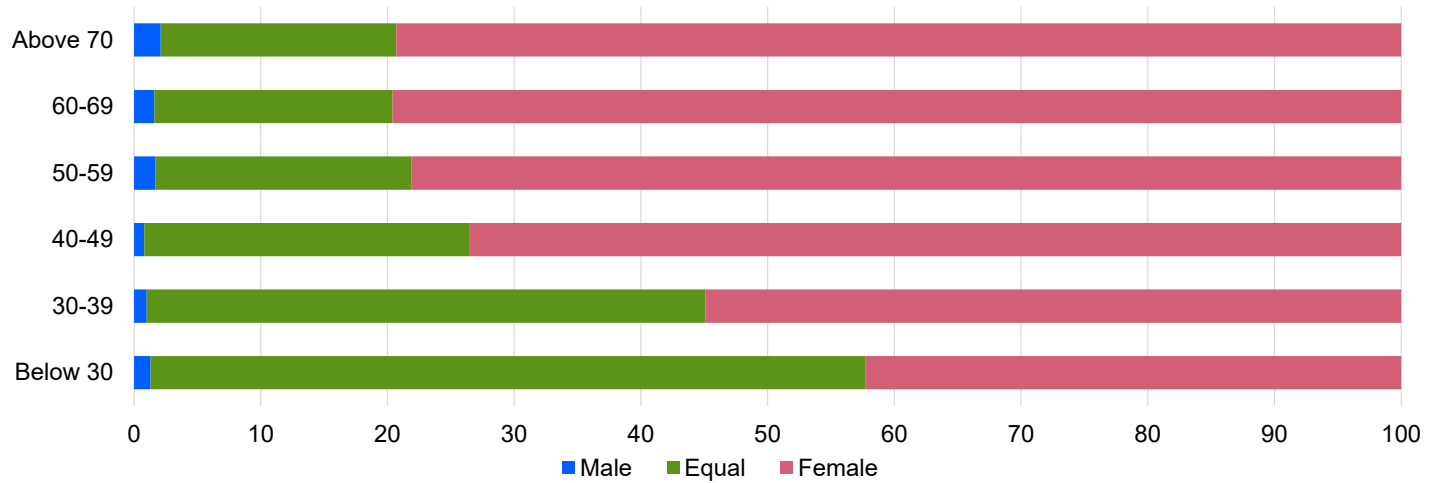
The South Korean government has also invested in expanding affordable childcare services to support working parents. The introduction of the Nuri Curriculum, a free preschool program for children aged 3 to 5, is one such effort. However, the availability and quality of these services need improvement to appropriately support working mothers.

JAPAN

Unpaid work in Japan, encompassing household chores, caregiving and community service, is significantly gendered, with women bearing the bulk of these responsibilities. According to a 2020 survey by the Ministry of Internal Affairs and Communications, Japanese women spend an average of 4.6 hours per day on unpaid work, compared with just 1.5 hours for men.

Chart 13: Division of Household Work Is More Equal in Younger Generation

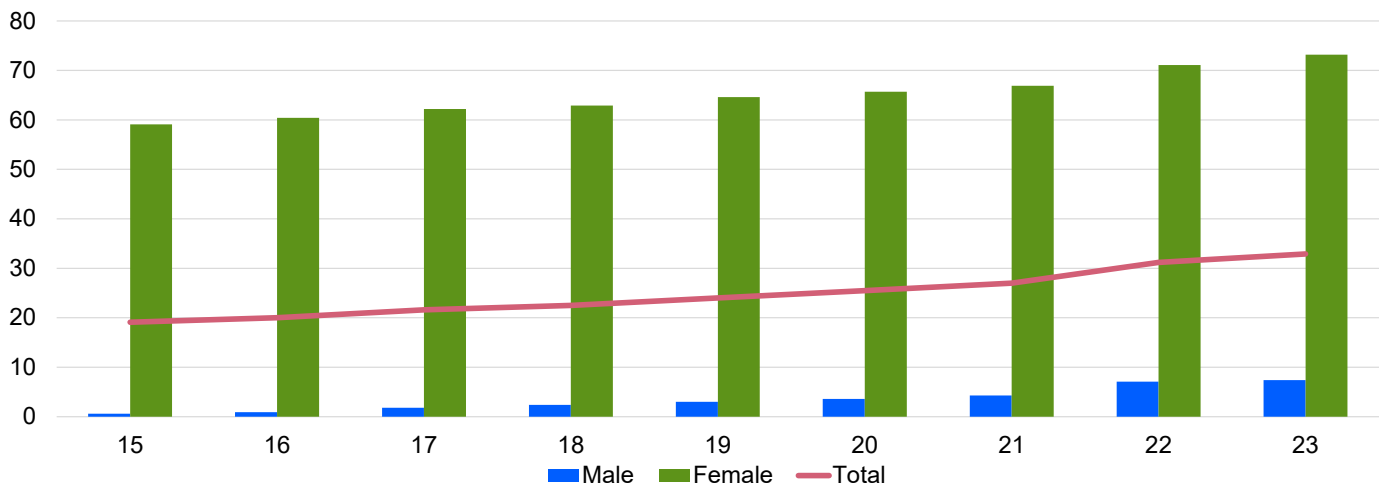
Primary responsibility for household work by age group, %, 2023 family survey



Sources: Ministry of Gender Equality and Family, Moody's Analytics

Chart 14: Parental Leave Usage Still Deeply Imbalanced in South Korea

% uptake of eligible parents



Sources: Statistics Korea, Moody's Analytics

The economic implications of unpaid work are profound. A 2019 Cabinet Office study estimated that the value of unpaid work in Japan amounted to approximately ¥147 trillion (\$1.3 trillion) annually, exceeding the estimates reported in Chart 6 above. This substantial figure underscores the critical, yet often overlooked, contribution of unpaid labour to the Japanese economy. However, since this labour is not monetarily compensated, it is not reflected in conventional economic metrics like GDP, leading to an undervaluation of women's contributions to the economy.

Caregiving is a significant component of unpaid work in Japan, particularly due to the country's aging population. Japan has the highest proportion of elderly citizens in the world, with almost 30% of its population aged 65 and over in 2024. This demographic shift has placed enormous pressure on families, especially women, who are traditionally expected to care for aging relatives. The economic burden of elder care is substantial; a 2018 report by the Dai-ichi Life Research Institute estimated that informal caregiving by family members contributes the equivalent of ¥6.8 trillion (about \$50 billion) per year in unpaid labour.

Household chores also represent a significant portion of unpaid work. Progress has been slow, despite policy efforts such as the Ikumen Project, which aims to encourage men to participate more in household and childcare duties. The persistent culture of long working hours in Japan, where the average worker logs more than 1,700 hours per year, limits men's ability to share domestic responsibilities. This imbalance not only perpetuates gender inequality but also affects women's participation in the labour force. The World Economic Forum's Global Gender Gap Report 2020 ranked Japan 121st out of 153 countries in terms of economic participation and opportunity for women.

Japanese women are highly educated, with a higher percentage of women than men graduating from university. However, the employment rate for Japanese women with higher education is significantly lower than that for men, partly due to the demands of unpaid household labour. This results in the underutilisation of the country's human capital and limits women's economic contributions.

Japan offers generous parental leave policies, including up to one year of paid leave for both mothers and fathers. However, cultural norms and workplace pressures often discourage men from taking paternity leave. In 2020, only about 7.5% of eligible fathers took paternity leave—similar to the uptake in South Korea reported above—compared with nearly 100% of eligible mothers. Increasing the uptake of paternity leave among men could help balance household responsibilities. Adopting policies like those employed in Sweden, where a share of parental leave is reserved for fathers, might help achieve this. If fathers do not use their parental leave, the family's entitlement to parental leave is reduced.

The Japanese government has made efforts to expand affordable childcare services, such as daycare centres. However, the country still faces a shortage of childcare facilities, leading to long waiting lists and forcing many women to stay at home. The Plan for Raising Children With Peace of Mind initiative aims to increase the number of childcare centres to eliminate childcare waiting lists.

CONCLUSION

Unpaid work, including household chores and caregiving, plays a crucial yet often overlooked role in the economy. We estimate the economic contribution of unpaid work to be in the range of 10% to 50% of global GDP. The International Labour Organization stresses that a well-functioning care economy, much of which is supplied through unpaid work, not only supports individuals and families but also contributes to a healthier workforce, creates jobs, and enhances productivity, positively impacting businesses, workers and society as a whole.

This adds an additional multiplier effect to our direct estimates of unpaid work's contribution to GDP. This work is predominantly carried out by women, leading to significant gender disparities in labour force participation and economic opportunities. While in many cases unpaid work may be undertaken entirely by choice, cultural norms, a lack of public services, or a lack of flexible working policies are at the root of gender inequality in the burden-sharing of unpaid work. As a result, many women cannot engage with the paid labour market, or they choose jobs that are below their skill level to balance paid work and unpaid obligations.

Recognising and quantifying unpaid work can help direct policies towards redressing these imbalances. Flexible working conditions, the provision of equal amounts of maternity and paternity leave, affordable childcare and preschool, state-supported elder care, and voucher systems that subsidise household service work have all been shown to narrow the gender gaps in both unpaid and paid work.

ABOUT THE AUTHORS

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